

WORLD METEOROLOGICAL ORGANIZATION

Weather • Climate • Water

EXECUTIVE COUNCIL

FIFTY-SIXTH SESSION

GENEVA, 8–18 JUNE 2004

ABRIDGED FINAL REPORT WITH RESOLUTIONS



WMO-No. 977

Secretariat of the World Meteorological Organization - Geneva - Switzerland

REPORTS OF RECENT WMO SESSIONS

Congress and Executive Council

- 903 — Executive Council, fifty-first session, Geneva, 27–29 May 1999
- 915 — Executive Council, fifty-second session, Geneva, 16–26 May 2000
- 929 — Executive Council, fifty-third session, Geneva, 5–15 June 2001
- 932 — Thirteenth World Meteorological Congress, Proceedings, Geneva, 4–26 May 1999
- 945 — Executive Council, fifty-fourth session, Geneva, 11–21 June 2002
- 960 — Fourteenth World Meteorological Congress, Geneva, 5–24 May 2003
- 961 — Executive Council, fifty-fifth session, Geneva, 26–28 May 2003
- 972 — Fourteenth World Meteorological Congress, Proceedings, Geneva, 5-24 May 2003

Regional associations

- 924 — Regional Association II (Asia), twelfth session, Seoul, 19–27 September 2000
- 927 — Regional Association IV (North and Central America), thirteenth session, Maracay, 28 March–6 April 2001
- 934 — Regional Association III (South America), thirteenth session, Quito, 19–26 September 2001
- 942 — Regional Association VI (Europe), thirteenth session, Geneva, 2–10 May 2002
- 944 — Regional Association V (South–West Pacific), thirteenth session, Manila, 21–28 May 2002
- 954 — Regional Association I (Africa), thirteenth session, Mbabane, 20–28 November 2002

Technical commissions

- 921 — Commission for Hydrology, eleventh session, Abuja, 6–16 November 2000
- 923 — Commission for Basic Systems, twelfth session, Geneva, 29 November–8 December 2000
- 931 — Joint WMO/IOC Technical Commission for Oceanography and Marine Meteorology, first session, Akureyri, 19–29 June 2001
- 938 — Commission for Climatology, thirteenth session, Geneva, 21–30 November 2001
- 941 — Commission for Atmospheric Sciences, thirteenth session, Oslo, 12–20 February 2002
- 947 — Commission for Instruments and Methods of Observation, thirteenth session, Bratislava, 25 September–3 October 2002
- 951 — Commission for Agricultural Meteorology, thirteenth session, Ljubljana, 10–18 October 2002
- 953 — Commission for Aeronautical Meteorology, twelfth session, Montreal, 16–20 September 2002
- 955 — Commission for Basic Systems, extraordinary session, Cairns, 4–12 December 2002

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2004

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GENERAL SUMMARY OF THE WORK OF THE SESSION

The Executive Council (EC) of the World Meteorological Organization (WMO) held its fifty-sixth session at the WMO Headquarters from 8 to 18 June 2004, under the chairmanship of Mr A.I. Bedritsky, President of WMO.

1. ORGANIZATION OF THE SESSION (agenda item 1)

1.1 OPENING OF THE SESSION (agenda item 1.1)

1.1.1 The President of the Organization, Mr A.I. Bedritsky, opened the session at 10 a.m. on 8 June 2004.

1.1.2 In his opening remarks, the President extended a warm welcome to all members of the Executive Council, to their alternates and advisers, and to representatives of the United Nations and other international organizations.

1.1.3 The President extended a special welcome to the recently elected acting members, Messrs A.D. Moura and I. Obrusnik, and to the new *ex officio* members of the Council, Messrs R. Michellini and D.K. Keuerleber-Burk, acting presidents of RA III and RA VI, respectively. Four additional acting members were later designated by the Council. A complete list of the participants is given in Appendix A to the report.

1.1.4 The President paid tribute to the outgoing members of the Council, Messrs A.C. Vaz de Athayde, T. Kitade and H. Al-Sha'er, who recently ceased to be members of the Council, for their important contributions to the work of the Council and to the international meteorological and hydrological communities during their terms of office. The President also placed on record the Council's appreciation to Messrs H.B. Valiente and P. Korkutis, the former acting presidents of RA III and RA VI, respectively, for their outstanding services to their respective Regions and to the Council as a whole.

1.1.5 The President highlighted several of the major issues that the Council would have to deal with such as climate change, natural disasters, environment and challenges facing WMO and NMHSs over the next few years. He emphasized that it was the Council's responsibility to guide the Organization in the implementation of the decisions made by Fourteenth Congress in 2003. He expressed his confidence that the Executive Council would take effective measures and make constructive proposals to address the concerns of the Members of WMO. In that context, he stressed the need to maintain the powerful tradition of cooperation, information sharing and compromise, which had always characterized the operations of WMO.

1.1.6 The President drew attention to the special nature of the Council in that its members were elected in their individual capacity and not as

national representatives. The President reminded members, in particular the new members at the session that, when performing their functions in the Council, they were officers of the Organization, as laid down in WMO Convention and General Regulations.

1.1.7 The President encouraged the members of the Council, especially the new members, to participate fully in the deliberations of the session. He invited the presidents of technical commissions, hydrological advisers and representatives of other WMO subsidiary bodies as well as partners of the Organization to contribute fully to the discussions on the various items. He urged the members to cooperate closely with the Secretary-General and the staff of the Secretariat and to use fully the new technology so as to ensure the success of the session.

1.1.8 The Secretary-General welcomed all participants, in particular the new members of the Council and representatives of the United Nations and other partner organizations. He emphasized briefly the major issues facing the Organization and NMHSs such as natural disaster reduction and mitigation, observation, protection of the environment and water resources management. He was confident that the session would be conducted in a most effective manner in the traditional spirit of cooperation under the leadership of the President and the support of the Vice-Presidents, and the other members of the Council. He assured the Council that the Secretariat would provide the necessary support to the session.

1.1.9 The Council elected Messrs K. Nagasaka, J.K. Rabadi, G. Love and D. Rogers as new acting members of the Council. The Council welcomed them and looked forward to their contributions to the work of the Council.

1.1.10 The Council paid a special tribute to Mr J.W. Zillman, who relinquished his position as Permanent Representative of Australia with WMO on 8 June 2004. The Council recognized that Mr Zillman, an outstanding meteorologist, was highly devoted to WMO and had for nearly three decades been promoting the ideals of WMO. He had worked very hard for the Organization in various capacities, including for eight years as President of the Organization. The Council was confident that Mr Zillman would continue to serve as an ambassador of WMO with his rich and wide experience, and that his advice would still be available to WMO. The Council wished Mr Zillman well in his future endeavours. Mr Zillman expressed his appreciation for the kind words and for the support and cooperation he had received over the years from the members of the Council, the Secretariat and the Members of WMO. He believed

that WMO and NMHSs would play a more important role in support of sustainable development.

1.2 APPROVAL OF THE AGENDA (agenda item 1.2)

The Executive Council approved the proposed provisional agenda.

1.3 ESTABLISHMENT OF COMMITTEES (agenda item 1.3)

1.3.1 The Executive Council decided to establish three Working Committees. The various agenda items were shared among those Committees. Committee A was chaired by Mr A.-M. Noorian, the First Vice-President, with Mr Chow Kok Kee as vice-chairperson; Committee B was chaired by Mr T.W. Sutherland, the Second Vice-President, with Mr A. Ndiaye as vice-chairperson; and Committee C was chaired by Mr M.A. Rabiolo, the Third Vice-President, with Mr J. Lumsden as vice-chairperson.

1.3.2 A Coordination Committee was established in accordance with General Regulation 28. It was composed of the President, the three Vice-Presidents, the vice-chairpersons of the Working Committees, the Secretary-General or his representative, as well as others invited by the President, as necessary.

1.3.3 The Council decided to establish a number of subcommittees to consider special items:

- (a) A subcommittee on scientific lectures, chaired by Mr E. Zárate H. and Mr J.R. Mukabana as vice-chairperson. That subcommittee was open for all members;
- (b) A subcommittee on the Membership of JSC for WCRP with Mr Qin Dahe as chairperson, Mr A. D. Moura as vice-chairperson and Mr Chow Kok Kee as member;
- (c) A subcommittee on the evolving role of WMO, chaired by Mr U. Gärtner and Mr M.L. Bah as vice-chairperson. This subcommittee was also open to all members;
- (d) A subcommittee on the theme for World Meteorological Day 2006 with Ms M. Couchoud Gregori as chairperson. That subcommittee was open to all members of the Council.

1.3.4 The Council appointed Mr Q.-uz-Z. Chaudhry as Rapporteur on the Previous Resolutions of the Executive Council.

1.4 PROGRAMME OF WORK OF THE SESSION (agenda item 1.4)

The necessary arrangements concerning the working hours and the allocation of agenda items to plenary meetings, meetings of the Committee of the Whole and to the Working Committees were made.

1.5 APPROVAL OF THE MINUTES (agenda item 1.5)

The Executive Council noted the decision made by its fiftieth session and confirmed by Thirteenth Congress that no minutes of plenary meetings at sessions of the Executive Council,

regional associations and technical commissions should be prepared unless otherwise decided for special items. Tape recordings of plenaries would continue to be made and would be retained for record purposes.

2. REPORTS (agenda item 2)

2.1 REPORT BY THE PRESIDENT OF THE ORGANIZATION (agenda item 2.1)

2.1.1 The Executive Council noted with appreciation the report of the President on the activities of the Organization since its fifty-fifth session. The President highlighted the progress and achievements that had been made in various fields. He emphasized the importance of further cooperation with the United Nations system and other international organizations including non-governmental organizations, academic institutions and the civil society in the implementation of WMO Programmes and its objectives. He invited all Members to work together to address the challenges that lay ahead for the benefit of all nations.

2.1.2 The Council confirmed the action taken by the President on its behalf since its last session, as followed:

- (a) In accordance with Article 4.2 of the WMO Financial Regulations, the President approved inter-part budgetary transfers within the 2002-2003 appropriations;
- (b) In accordance with Regulation 9(5) of the WMO General Regulations, the President agreed to the proposal of the Secretary-General to seek the assistance of the External Auditor to undertake certain specific supplementary activities.

2.1.3 The other issues raised in the report requiring actions and decisions were dealt with under the relevant agenda items.

2.2 REPORT BY THE SECRETARY-GENERAL (agenda item 2.2)

2.2.1 The Executive Council noted with appreciation the report by the Secretary-General, which highlighted the major thrusts among the Programmes and activities of WMO and in particular that on cross-cutting issues such as disaster reduction, observation, climate, water resources, capacity-building as well as changes in the Secretariat. The Council welcomed the efforts aimed at enhancing support to Members, at promoting the role, contribution and visibility of WMO including NMHSs, and at ensuring improved mutually beneficial interaction with relevant operational, scientific, academic, capacity-building and policy making institutions and bodies at the national, regional and international levels. In that regard, the Council noted the changes being introduced in the Secretariat that included a more horizontal structure, increased ownership and transparency, enhanced communication and wider use of ICT. The Council particularly welcomed those measures aimed at improving efficiency and at enhancing the

effectiveness of the Secretariat in support of Members and their NMHSs.

2.2.2 The specific questions in the report requiring action or decisions were dealt with under the relevant agenda items.

2.3 REPORTS BY THE PRESIDENTS OF REGIONAL ASSOCIATIONS (agenda item 2.3)

2.3.1 The Executive Council noted with appreciation the reports of the presidents of regional associations and expressed satisfaction at the effective manner in which the activities of the Associations were being implemented. It commended the presidents for their continued dedication to meeting the objectives of the respective Associations in the development of the NMHSs of their Members and the promotion of meteorology, hydrology and related geophysical sciences.

2.3.2 The Council expressed its appreciation to Messrs F. Quintas Ribeiro (Portugal) and P. Korkutis (Lithuania) for their valuable contribution while serving as president and acting president of RA VI, respectively, and to Messrs H. Valiente Ramirez (Paraguay), acting president of RA III, and Hung-Kwam Lam (Hong Kong, China), vice-president of RA II.

2.3.3 The views of the Council regarding activities reported by the presidents of regional associations were reflected under different agenda items.

2.4 REPORT OF THE FINANCIAL ADVISORY COMMITTEE (agenda item 2.4)

The Executive Council considered the report of the Financial Advisory Committee. It noted with appreciation the various recommendations of the Committee contained in Annex I to this report. The Council took account of those recommendations in making its decisions under the various related agenda items.

2.5 REPORTS ON THE 2003 AND 2004 MEETINGS OF THE PRESIDENTS OF TECHNICAL COMMISSIONS (agenda item 2.5)

Report on the 2003 Meeting of the Presidents of Technical Commissions

2.5.1 The report of the 2003 Meeting of the Presidents of Technical Commissions, held in Geneva on 5 and 7 February 2003, was presented by Mr A.M. Noorian, First Vice-President of WMO, who chaired the Meeting.

2.5.2 The Executive Council noted with appreciation that the Intercommission Task Group, composed of the presidents of technical commissions, had developed a draft overall approach for a WMO QMF. It further noted that the 2003 Meeting of Presidents of Technical Commissions had discussed the overall approach for the WMO QMF and, that after incorporation of modifications, it had been presented to Fourteenth Congress as part of the documentation on quality management issues. The Council recalled that Congress had endorsed the recommendations of the

presidents of technical commissions (*Abridged Final Report with Resolutions of the Fourteenth World Meteorological Congress* (WMO-No. 960), general summary paragraph 7.2.34).

2.5.3 The Council recalled that, following the recommendations stemming from the 2002 Meeting of the Presidents of Technical Commissions, a draft project proposal entitled Natural Disaster Reduction in Coastal Lowlands had been endorsed by the fifty-fourth session of the Executive Council. As regarded further developments in that area, the Council noted that the co-president of JCOMM had submitted an additional proposal to that project to the 2003 Meeting of the Presidents of Technical Commissions. The Council noted that that proposal included the development of a generic system for mitigating the impacts of natural disasters, in particular tropical cyclones, in coastal lowlands, based on an assessment of those impacts on agricultural and other socio-economic sectors. The Council also noted that the recommendation of the Meeting, to incorporate the proposed activities in the project, had been submitted to Fourteenth Congress and that Congress had agreed that the new initiative should be treated as a demonstration project implemented in one of the countries affected by tropical cyclones.

2.5.4 As regarded the WMO mandatory and other technical publications, the Council noted that the presidents of technical commissions had requested the Secretary-General to consider:

- (a) The issue of overlapping and duplication among the mandatory and other technical publications;
- (b) The preparation of a strategy (or plan) for the transition to electronic publishing, including how to best approach the problem, what were the priorities, cost, Members' requirements for printed versions in the initial period, etc.;
- (c) The preparation of a consolidated plan for updating WMO mandatory publications and other technical publications within the responsibilities of technical commissions.

Report on the 2004 Meeting of the Presidents of Technical Commissions

2.5.5 The report of the 2004 Meeting of the Presidents of Technical Commissions, held in Geneva on 2 and 3 February 2004, was presented by Mr A.M. Noorian, First Vice-President of WMO, who chaired the Meeting.

2.5.6 The Council noted with appreciation that the presidents of technical commissions had been keen to continue and bring to fruition the development and implementation of the FWIS within WMO. It further noted that the presidents had felt that a strong, high-level coordination and collaboration mechanism spanning across the technical commissions would be more effective for achieving that challenging task than the current interprogramme collaboration mechanism within a CBS expert team. The Council also noted a proposal of the presidents to establish

an Intercommission Steering Group on FWIS (see agenda item 3.1).

2.5.7 Regarding the Earth Observation Summit initiative, the Council noted that the presidents had welcomed the planned establishment of a WMO cross-cutting project on the integration of WMO and WMO-sponsored observing systems and had hoped that that process would, inter alia, facilitate an active involvement of the technical commissions in that initiative, and in particular in the development and subsequent implementation of the ad hoc Group on Earth Observation's 10-year implementation plan.

2.5.8 The Council endorsed the emphasis placed by the presidents on the further analysis of the mechanisms on how the different commissions could contribute to the new major Programme on Natural Disaster Prevention and Mitigation.

2.5.9 The Council recognized that the presidents had given further consideration to the WMO QMF, namely to a draft plan for the development of the WMO QMF in the period 2004-2007.

2.5.10 The Council endorsed the presidents' proposal that a phased approach should be pursued in the development of technical guidance on the QMF, and that the first phase should seek to address the QMF for the WMO observing systems. The follow-on phase could then be focused on QMF guidance for data management, processing and exchange.

2.5.11 The Council endorsed the Meeting's recommendations:

- (a) To revise the terms of reference of the Intercommission Task Team on QMF with a view to bringing it in line with the relevant deliberations and the resolution of Fourteenth Congress; the membership of the Team might need to be adjusted to include specific quality management or ISO 9000 experience/expertise;
- (b) To review the guidance material relating to quality management that existed within the WMO Programmes and published in technical *Guides*, with a view to amalgamating that material into generic QMF guidance relevant to all WMO Programmes; that generic material should be published as early as possible;
- (c) Based on the generic guidance, to develop a pilot project on developing and implementing the quality management for the surface and upper-air network of an NMHS of one volunteering Member country;
- (d) To consult with the ISO Secretariat with a view to obtaining practical advice on the development of the WMO QMF and inviting ISO expertise on a case-by-case basis and as appropriate;
- (e) To invite the present session to give serious consideration to the resources that would be needed to carry out the above activities.

2.5.12 With respect to the performance indicators for various WMO Programmes within the 6LTP, the Council supported the view of the presidents that

consideration would need to be given to generic and commission- or programme-specific indicators and that the consideration of performance indicators would have to be done in the light of how best to monitor and evaluate the overall implementation of the 6LTP.

2.5.13 Regarding the preparation of the 7LTP, the Council noted that the meeting had provided comments, which were taken into account by the Executive Council Working Group on Long-term Planning in April 2004. Those included WMO leadership and its evolving role, the use of new technologies including ICT, enhanced consistency between the LTP framework (vision-outcomes-strategies) and the WMO programme structure, resources aspects as well as the active participation of technical commissions and their presidents in the LTP process.

2.5.14 The Council noted with appreciation the fact that presidents would nominate focal points for the coordination of the International Polar Year 2007-2008 activities inside WMO. It endorsed the recommendation of the meeting that Permanent Representatives should be regularly informed on the status of preparation of the International Polar Year.

2.5.15 The Council further noted that the president of CCI had proposed to initiate the development of a universally-acceptable definition for an "El Niño event" and that an intercommission team might lead that effort.

2.6 REPORT OF THE CHAIRPERSON OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE (agenda item 2.6)

2.6.1 The Executive Council expressed its appreciation to the Chairperson of the IPCC, Mr R.K. Pachauri, for his report on the current status of the work of the Panel.

2.6.2 The Council warmly congratulated the Panel on the high level of progress in the scoping process for structuring the Fourth Assessment Report (AR4) and the acceptance by the Panel of the outlines of the working group contributions to the AR4. It noted that the process that would enable decisions on the preparation of the AR4 Synthesis Report had been established and follow-up work had started.

2.6.3 The Council noted that more than 1 900 nominations had been received from Governments and organizations for potential authors to work on various components of the AR4. After carefully considering geographical balance, required disciplinary expertise, scientific background, practical experience and knowledge of languages other than English, the teams of coordinating lead authors, lead authors and review editors had been selected. The Council noted that participation of experts from developing countries in the work of IPCC was a very important element of capacity-building and noted that active participation of experts was increasing. It urged NMHSs to continue to support and be involved in the activities of the Panel.

2.6.4 The Council further welcomed the progress that had been made in the preparation of two Special Reports dealing with the relationship between efforts to protect the stratospheric ozone layer and global climate system (issue related to hydrofluorocarbons and perfluorocarbons), and carbon dioxide capture and storage and that it looked forward to their completion in 2005.

2.6.5 The Council also congratulated the Panel for the successful completion of the report on *Good Practice Guidance for Land Use, Land-use Change and Forestry* and the report on *Definitions and Methodological Options to Inventory Emissions from Direct Human-induced Degradation of Forests and Devegetation of other Vegetation Types* which had been accepted by the IPCC and which had been published. The Council requested that those publications be made available to WMO Members. It also welcomed the approval of the outline and work programme for preparing the 2006 IPCC *Guidelines for National Greenhouse Gas Inventories* and noted that the author teams had been selected from more than 400 nominated experts.

2.6.6 The Council expressed appreciation for the ongoing IPCC outreach activities, in particular translation of IPCC reports in the official United Nations languages, the preparation of CD-ROMs and their wide distribution. It was also noted that the Panel had considered how to improve its ways of communication and how to increase the user friendliness of future IPCC products and to facilitate access to information in IPCC reports for different user groups.

2.6.7 In that connection, the Council adopted Resolution 1 (EC-XLVI).

3. WORLD WEATHER WATCH PROGRAMME (agenda item 3)

3.1 WWW BASIC SYSTEMS AND SUPPORT FUNCTIONS; THE IN-DEPTH REPORT OF THE PRESIDENT OF CBS (agenda item 3.1)

3.1.1 The Executive Council noted with appreciation the in-depth report of Mr A. Gusev (Russian Federation), acting president CBS, and the progress made in the activities of the Commission. It noted in particular the strong emphasis that was being given to the need for support by the basic systems to all WMO Programmes. The Council noted that sufficient financial resources were a critical precondition for continuing the development of the basic systems support to the other programmes. The Council expressed its appreciation for the progress made, despite very limited resources, in all programmes for which CBS had been asked to take the technical responsibility, including ERA, the WMO Space Programme and PWS.

3.1.2 The Council recalled its request to CBS and CAeM to work towards the integration of AMDAR into the WWW and its coordination mechanisms, while avoiding duplication of efforts among CBS,

CAeM and the AMDAR Panel. It was pleased that CBS had established a rapporteur on AMDAR activities within the OPAG on IOS and that studies had been initiated on required training activities relevant to AMDAR data. In preparation for CBS-XIII, expert teams of both CBS and CAeM would develop appropriate recommendations on those matters.

3.1.3 The Council noted that COSNA, in its plenary meeting held in August 2003, had decided to end its programme and to incorporate its future activities into the EUCOS Programme of EUMETNET. It was noted with satisfaction that the Scientific Evaluation Group of COSNA would continue to make important studies and contributions to the redesign of the GOS within the working structure of CBS. The Council thanked all the Members who had contributed financially and in kind over many years to facilitate the work of COSNA, which had resulted in strengthened land and sea-based observing systems in that geographic region. It also thanked the Secretary-General for the effective Secretariat support it had provided to COSNA according to Resolution 5 (EC-XLII) — Composite observing system for the North Atlantic (COSNA).

3.1.4 The Council noted with appreciation that CBS was planning some modifications to its working structure to take into account the WMO Space Programme in its future work programme (see agenda item 12), since Congress had assigned CBS the lead responsibility for that Programme, and to support and cooperate with THORPEX. In that connection, the Council stressed the important input that THORPEX was expected to make to the GOS redesign activities and welcomed the coordinated efforts of CAS and CBS in the organization and implementation of observing systems envisaged by THORPEX. CBS also needed to address other new challenges and tasks, such as the WWW contributions to the International Polar Year 2007-2008, the Earth Observation Summit and GEOSS (see agenda item 13.4). The Council also agreed that the thirteenth session of the Commission could be postponed by a few months, but not later than February 2005, in order to ensure better preparation of several high-priority projects and comprehensive conclusions and recommendations to the Council. The Council realized that some of the important CBS activities would depend on additional financial resources and addressed that issue under agenda item 18.4.

3.1.5 As regarded Resolution 27 (Cg-XIV) — Quality management, the Council was informed on activities carried out so far under the WWW (see also agenda item 13.3).

3.1.6 With respect to the future work of the Commission, the Council endorsed the view expressed by the acting president on the main issues and challenges that faced CBS. Those included:

- (a) To promote individual and multilateral efforts of Members, including VCP and other support, to

rehabilitate and strengthen observational programmes in the regions concerned;

- (b) To continue the redesign of the GOS, including the optimization of various mixes of observing sub-systems in the composite GOS, adaptable observing programmes, and taking into account relevant outcomes of the EOS/GEO initiative;
- (c) To achieve the full implementation of the improved MTN and upgrade of the GTS through cost-effective techniques, particularly in developing regions and areas with adverse conditions;
- (d) To progress the development of the FWIS, including the evolution of the GTS towards the FWIS backbone;
- (e) To promote the utilization of relevant international industry standards for the GTS, FWIS and data management, and the coordinated use of the Internet;
- (f) To protect radiofrequency allocations for meteorological and related environmental activities, including relevant space-based systems;
- (g) To develop further WMO metadata standards, in coordination with other WMO Programmes and in collaboration with ISO;
- (h) To pursue the migration to table-driven code forms, including related training activities;
- (i) To enhance WWW monitoring to cover data and products in binary forms;
- (j) To increase the operational use of EPS products for forecasting high-impact weather;
- (k) To develop methodology and procedures to enhance the use of available NWP products to meet the user requirements for forecasts and advisories of high-impact weather;
- (l) To develop further the Global Producing Centres for long-range forecast products including related verification schemes;
- (m) To modernize and expand ERA to meet new user requirements and to include other environmental emergencies with large-scale atmospheric pollution;
- (n) To contribute to the development of the WMO QMF.

3.1.7 Noting the persisting shortcomings in the WWW implementation in some developing countries, particularly in parts of Regions I, II and III, the Council emphasized that the strategic plans for enhancing the basic infrastructure and services of NMHSs, which had been developed and adopted by certain regional associations, were the road maps for developing projects aiming at the implementation of basic systems components. That was specifically true for projects for the improved observing and telecommunication systems, and for introducing limited area NWP models, running on inexpensive computer systems, with a view to enhancing the operational and forecasting capability of NMHSs.

Global Observing System

3.1.8 The Council noted with satisfaction that GOS continued to provide essential meteorological data for weather analysis, forecasts, warnings and for other environmental applications to meet the requirements of all WMO Programmes. It also noted that the overall implementation of the RBSNs continued to be generally stable and sustainable. A graphical summary of the percentages of SYNOP and TEMP reports received during the period 1991-2003 is given in Annex II to this report. Significant deficiencies still continued to exist in RAs I and III. At 77 per cent of the expected reports, the availability of SYNOP reports at MTN centres showed in 2003 some increase, as compared with the years 2000-2002, and the availability of expected upper-air reports was about 63 per cent in 2002 and 2003 and 61 per cent in 2000 and 2001. The Council noted with appreciation the continued efforts of Members to rehabilitate and upgrade their observational programmes and, in particular, the plans of Brazil to put into operation, as from 1 July of 2004, eight new upper-air stations in the Amazon region. The Council also noted with appreciation improvements in the availability of data produced by other GOS subsystems, in particular the marine networks and AMDAR. It noted the progress in the availability of AMDAR data in RA II and the plans of some Members of the Region to contribute to AMDAR through equipping national aircraft.

3.1.9 The Council recalled that the high cost of radiosondes continued to be a major reason for the low availability of upper-air data, especially in developing countries. In that regard, the Council was concerned with the cost implications that new radiosonde designs to be put into operation in the near future would have, as those would require upgrading or, in some cases, replacing the existing ground system. The Council requested CBS and CIMO to continue to address the issue of the reduction of the cost of consumables and also give consideration to arrangements, such as a centralized purchasing system for equipment and consumables, which should make lower purchase prices possible.

3.1.10 The Council noted with satisfaction that the space-based subsystem of the GOS now comprised operational meteorological satellites and environmental R&D satellites. With regard to meteorological satellites, they continued to prove invaluable to WMO NMHSs through the provision of a multitude of services including imagery, soundings, data collection and data distribution. The present system included the following geostationary and polar-orbiting satellites: GOES-10, GOES-12, NOAA-15, NOAA-16 and NOAA-17 operated by the United States; GMS-5 operated by Japan; METEOR 3M-1 operated by the Russian Federation; Meteosat-5, Meteosat-6, Meteosat-7 and Meteosat-8 (formerly MSG-1) operated by EUMETSAT; and FY-2B, FY-1C, FY-1D operated by China. Additional satellites in orbit included GOES-9 and GOES-11 operated by the United States. The Council recalled that Japan

and the United States initiated a back-up operation of GMS-5 with GOES-9 on 22 May 2003. The Council was informed of JMA's activities in striving for the earliest possible launch of MTSAT-1R as well as the development of MTSAT-2. JMA expressed its gratitude to the United States for the provision of GOES-9 as back-up until MTSAT-1R would be launched and placed into an operational status. JMA also emphasized the critical importance of long-term contingency planning for satellite operations. With regard to R&D satellites, NASA's Aqua, Terra, NPP, TRMM, QuikSCAT and GPM missions, ESA's ENVISAT, ERS-1 and ERS-2 missions, NASDA's GCOM series, data from Rosaviakosmos' research instruments on board ROSHYDROMET's METEOR 3M N1 satellite, as well as on its future Ocean series and CNES's JASON-1 and SPOT-5, either were, or would be after launch, part of the R&D constellation. The Council noted the plans of the Russian Federation to launch METEOR 3M N2 in 2005, GOMS N-2 in 2005 and a joint Russian Federation/Ukraine oceanographic satellite mission, SICH-1M, in late 2004 (see agenda item 12).

3.1.11 The Council was pleased to note the continued activities of CBS on the redesign and establishment of a future composite GOS, which was carried out in accordance with decisions and recommendations of CBS-Ext.(02), Fourteenth Congress and the fifty-fifth session of the Executive Council. In particular, it noted the accomplished revision of Statements of Guidance for marine meteorology, agrometeorology, aviation meteorology, hydrology and water resources and atmospheric chemistry together with updates of observational data requirements and expected performances of various observing systems. It stressed the importance for the redesign process of the results of Observing System Experiments suggested by CBS and carried out by some leading NWP centres. The Council reiterated the importance of NWP model experiments in evaluating observing system sensitivity and data quality. In that connection, it welcomed the results of the Third WMO Workshop on the Impact of Various Observing Systems on NWP (Alpbach, Austria, 9-12 March 2004) and supported by the COSNA Fund, as important input for the redesign of the GOS and recommended that CBS continued to convene such workshops on a regular basis.

3.1.12 As regarded the impact of the redesign of the GOS in developing countries, the Council underlined the importance of the experience being gained in the implementation of the strategic plans for implementation and improvements of the WWW components in Regions I and II. It reiterated that measures, which might ease the situation, included joint arrangements by Members to operate observing stations, deployment and operation of a larger number of AWSs and roving instrument maintenance teams. A wider use of satellite imagery and derived products as well as AMDAR, and potentially TAMDAR data, would be

especially helpful to Members in supplementing data from the RBSNs.

3.1.13 The Council was informed of arrangements to develop a systematic approach for CBS and regional associations to implement the concept of targeted (adaptable) observation programmes. That concept should result in enhancing the quality and operational effectiveness of early warnings of severe weather, high-impact weather and weather-related disasters in disaster-prone regions and seasons. The Council invited CBS and regional associations to give particular attention to that activity in taking up the development of feasible plans at the global, regional and subregional levels.

3.1.14 The Council noted with satisfaction the activities undertaken on updating the GOS regulatory material in response to evolving requirements. In particular, it welcomed a comprehensive revision of the *Manual on the GOS* (WMO-No. 544), which was being processed for publishing, and the preparation of a revised and improved version of *Weather Reporting* (WMO-No 9), Volume A.

3.1.15 The Council was pleased to note the enhanced cooperation that existed between CBS and GCOS in implementing of GSN and GUAN. It thanked JMA and NCDC for their commitment to operate as CBS Lead Centres for monitoring the performance of the GSN. Furthermore, it stressed the increasing role of RBCNs established in all WMO Regions and in the Antarctic for better implementation and maintaining of CLIMAT and CLIMAT TEMP reporting stations. The Council also noted the establishment of national focal points which should maintain a direct link to countries with the above Lead Centres to facilitate solving problems in GCOS stations operations. It welcomed the development, in four languages on CD-ROM and on the Web, of a handbook for compiling CLIMAT and CLIMAT TEMP reports for use by observers and technicians, which was expected to help increase the climate data availability. The Council also welcomed the organization, in cooperation with GCOS, of training workshops in the Regions to improve the generation and exchange of the climatological data. The Council urged Members to ensure that their operational observing stations compiled and transmitted the CLIMAT and CLIMAT TEMP messages according to the existing regulations.

WWW information system and services, including GTS and data management

Global Telecommunication System

3.1.16 The Council noted with satisfaction the continuing progress made in the implementation of the GTS, through the increasing utilization of cost-effective advanced data-communication techniques and services. It noted with much satisfaction that the implementation and operation of the IMTN using managed data-communications network services had progressed as planned, extending to Regions II, IV, V and VI, and it expressed its great appreciation for the collaborative effort made by the NMHSs

concerned. Further efforts were required for the implementation of the IMTN in Regions I and III. As regarded RMTNs, the Council particularly noted the significant upgrades to frame relay or digital links made in Regions II and V, and the provider's Framework Contract for the new RMDCN in Region III that was concluded by the Secretary-General. Those upgrades would enable NMHSs to enhance considerably their reception and use of highly valuable data and products.

3.1.17 Satellite-based data-distribution systems were playing an increasingly important role as integrated components of the GTS for the distribution of large volumes of information, in complement to the dedicated connections. Satellite-based systems using digital video broadcasting techniques were implemented in Region VI and extended to cover Region I, including RETIM operated by France and EUMETCast operated by EUMETSAT and were also supporting DWDSAT of Germany. The Council was also informed that the NMS of Italy was operating a new satellite-based system using digital video broadcasting techniques, called NUBIS, after a successful pre-operational phase of more than one year; the NUBIS system was covering Europe, North Africa and the Middle East. Satellite-based systems using digital audio broadcasting techniques for "datacasting" were also used by the WorldSpace Radio and Internet (RANET) experiment over Africa, and by the NMS of India (IMD) for replacing and upgrading the radiobroadcast from RTH New Delhi. The International Satellite Communication System operated by the United States that was providing for the RMTN in Region IV as well as data distribution over Regions III and V, was upgraded to TCP/IP procedures with an increased capacity. With respect to the satellite-based EMWIN, which was a crucial source of data, warnings and forecasts for the Pacific and some parts of the Caribbean, in particular for small island countries, the Council emphasized the important and urgent issue of the replacement of all EMWIN receivers to match the new technical specifications planned for 2007.

3.1.18 The Council noted, however, that serious shortcomings persisted in some Regions at the regional and national levels. The Council encouraged Members and regional associations, with the technical support of CBS, to pursue their fruitful efforts towards cost-effective upgrade of the GTS, while giving particular attention to national and regional data collection in the specific areas where the GTS was weak or deficient, particularly in developing regions and areas with adverse conditions. The Internet, despite some shortcomings (delays and security) was increasingly used for meteorological and related data exchange, and was the only affordable telecommunication means for several small NMHSs, in particular in developing areas and/or sparse areas. The Internet was also providing NMHSs with useful communications services to complement the GTS. The Council noted with appreciation that CBS was further developing and updating guidance

material on procedures and implementation options that would minimize the operational and security risks, in the light of technological development and of actual experience, including operational tests.

3.1.19 The Council reaffirmed the prime importance of using relevant international industry standards on information and communications technology to the largest extent possible, which were providing better opportunities for considerable enhancements in the capacity, versatility and cost effectiveness of information systems and services, especially the GTS. It particularly emphasized the cost-effectiveness of using the TCP/IP procedures and digital data-communication services, such as frame relay, at the national and international levels. It noted with appreciation the work that was carried out by CBS in that respect, and requested it to pursue with that aim the continuous review, update, further development and promotion of relevant recommended practices and guidance.

WWW data management

3.1.20 Recalling and underlining the crucial importance of metadata for describing, archiving and retrieving data generated and exchanged by all WMO Programmes, the Council noted with satisfaction that CBS was further developing, in coordination with ISO, a WMO core metadata standard based on the ISO standard for geographic metadata. The detailed parts of the WMO metadata standard were being developed on the basis of the experience gained in implementation and trials. The next step would be the development of the standard required for the request/reply mechanism. The Council urged all technical commissions and their WMO Programmes to join their efforts in the further development of the WMO metadata standard, in particular for the detailed specific extensions required by each WMO Programme.

3.1.21 The Council was pleased that a survey was being conducted on the migration to TDCF. The results would help to focus and design better the migration strategy. The Council was pleased that ECMWF and NOAA had made available software for decoding BUFR, CREX and GRIB free of charge for WMO Members and with limited remote assistance via the Internet. It also noted that some other WMO Members had indicated that they would make similar software available on request. Several countries had started to transmit experimentally traditional observations in BUFR (e.g. AWS report, oceanographic data via ARGOS, ship observations). The coding of observations in BUFR format aboard VOSs might be a difficult and lengthy process, and the Council noted in that connection that JMA was providing for the conversion of SHIP observations into the BUFR format at RTH Tokyo. So far, only a few Members had prepared a national plan for migration to TDCF. The Council urged all Members to develop such a plan as soon as possible, so as to work towards a WMO-wide coordinated transition.

3.1.22 The Council was pleased that two training seminars on TCDF were organized in 2003 for RA I (English-speaking countries), for RA III and RA IV, and that a seminar for RA II and RA V was planned for 2004. The Council requested the Secretary-General to pursue the organization of the TCDF training, including the use of CAL tools, with a view to covering all WMO Regions.

3.1.23 Many WWW centres were participating in the annual global monitoring of WWW operations. The special MTN monitoring was providing complementary results, thus enabling more detailed analysis. CBS continued to improve monitoring procedures and was refining an integrated monitoring plan. The Council confirmed that efforts should be pursued to monitor all types of data and products, with particular attention to binary forms within the framework of the migration strategy to TCDF.

Future WMO information system

3.1.24 The Council recalled that Congress endorsed the concept of the FWIS, as an overarching approach to meet information exchange requirements of all WMO Programmes. Congress requested CBS to pursue the further development of the FWIS towards the refinement and consolidation of the concept and then the design and implementation planning phases, while emphasizing that all WMO Programmes and technical commissions should actively participate and contribute their own expertise and resources in all phases of the development of the FWIS.

3.1.25 The Council was pleased that the CBS Interprogramme Task Team on FWIS, taking into account Congress directives, further refined and consolidated the FWIS concept with the participation of representatives of technical commissions. The Task Team considered data management and communication structures and plans of other WMO Programmes and reviewed pilot projects relevant to the development of the FWIS, including the WMO Core Metadata Standard, the Virtual (distributed) Global Information System Centre in RA VI, the Earth System GRID, the Community Data Portal, the EUMETNET UNIDART project and the Roshydromet CliWare project as well as other centres' projects. The success of FWIS would depend upon volunteering Members actively supporting and contributing to pilot projects related to various WMO Programmes, which had the potential to initiate the implementation of the FWIS. The experience gained through pilot projects would be shared with all Members to promote and facilitate the early introduction of FWIS elements. As regarded the information exchange requirements to be met by the FWIS, the Council noted with appreciation that a questionnaire was addressed to presidents of technical commissions to assess in some detail the data exchange requirements of WMO Programmes, at present and for the foreseeable future, their

integration into a common information system and issues related to metadata and data catalogues.

3.1.26 The Council noted that at the 2004 Meeting of the Presidents of Technical Commissions (Geneva, 2-3 February 2004), the presidents were keen to continue and bring to fruition the development and implementation of the FWIS within WMO. FWIS should be based on common data management and data-communication standards, and should utilize international industry standards for protocols, hardware and software; FWIS was therefore expected to maximize cross-programme standardization of data exchange, archiving, formats and data retrieval, etc. and would achieve data connectivity between all applications. With respect to the EOS initiative, the FWIS, once developed and implemented, would also be an important backbone building block within GEOSS for achieving greater interoperability and connectivity among individual component observing systems.

3.1.27 The Council was of the view that the FWIS, and its related data management elements, would, to a large extent, help WMO achieve avoiding and eliminating data incompatibilities, duplication of effort and undue limitation in the use of highly valuable data. However, for meeting that goal effectively, the Council emphasized that it was necessary to:

- (a) Give adequate recognition to the importance of FWIS and the related data management in all relevant programmes;
- (b) Share knowledge, resources and commitment to management of data between the technical commissions and their associated programmes;
- (c) Increase coordination or communication among the experts of the technical commissions concerned;
- (d) Strengthen mechanisms for coordinating issues between the technical commissions, which were currently too weak to be fully effective and comprehensive;
- (e) Ensure active involvement and participation of the technical commissions in the FWIS development and implementation planning.

3.1.28 The Council noted that the presidents of technical commissions agreed that a strong, high-level coordination and collaboration mechanism spanning across the technical commissions would be more effective for achieving that challenging task than the current interprogramme collaboration mechanism within a CBS expert team. The Council agreed with that view and adopted Resolution 2 (EC-LVI).

Operational Information Service

3.1.29 The Council was pleased to note the continued improvement in the WWW Operational Information Service. The operational information, which was updated in quasi-real time, was available on the WMO server for direct access. *Weather Reporting* (WMO-No. 9) was distributed on CD-ROMs once a year. The *WWW Operational Newsletter* had been converted to an electronic

format and was mailed to registered recipients through the Internet every month. The Secretariat posted on the WMO server the relevant content of the *Manuals on the GOS* (WMO-No. 544), *on the GTS* (WMO-No. 386), *on the GDPFS* (WMO-No. 485) and *on Codes* (WMO-No. 306) in order to facilitate electronic access to reference information required for WWW operations. An important goal was to facilitate the access to operational information through interactive on-line access services. The Council noted that an application to facilitate the interactive access to a part of the information was being developed.

Radio frequencies for meteorological activities

3.1.30 The Council noted with appreciation that the World Radiocommunication Conference 2003 had a favourable outcome and closed serious issues that had been debated since 1992, including the bands 401-406 MHz, 1 675-1 710 MHz (radiosondes and meteorological satellites) and 2 700-2 900 MHz (meteorological radar) which were therefore consolidated as important allocations for meteorological operations. The Council thanked CBS for the preparatory work done on those issues, which had contributed to positive results. The next World Radiocommunication Conference was planned for 2007. The most important issues were related to the protection of space-borne passive sensing, as emphasized by Congress (Resolution 3 (Cg-XIV)) — Radio frequencies for meteorological and related environmental activities. Noting with serious concern the threat that was developing in some regions to the exclusive 23.6-24 GHz passive band (water vapour absorption line), the Council urged all NMHSs and meteorological and environmental satellite operators to do their utmost to safeguard that frequency band as it was crucial for WMO. In that respect, the Council noted that ITU-R Task Group 1/8 was the ITU-R body currently entrusted with the spectrum requirements of ultra-wideband devices (e.g. short-range radars) that spread across several microwave bands including passive sensing bands, and the related compatibility issues. It noted with appreciation that WMO, meteorological and R&D satellite agencies and several NMSs were participating in ITU-R Task Group 1/8 activities. In addition, other commercial radiocommunication systems might request access to radiofrequency bands used for meteorology in the future. The Council, with reference to Resolution 3 (Cg XIV), urged Members to participate actively in national, regional and global (i.e. ITU-R) activities regarding radio frequencies to ensure that meteorological and related environmental interests were protected. It also requested CBS, with the support of the Secretariat, to pursue its review and guidance on those issues.

Global Data-processing and Forecasting System

3.1.31 The Council noted with satisfaction that within GDPFS, 69 GDPFS Centres ran an NWP system; among them 16 Centres ran global models. In the last year, the number of NMCs running limited

area models had increased. However, the Council noted that only five NMCs in RA I ran an NWP system.

3.1.32 The Council noted that 14 Centres ran operationally an EPS and, that overall, producers had increased the number of ensemble members in their EPS. Specific EPS for tropical cyclone forecasting had been implemented producing, for example, strike probabilities and storm tracks, also in the medium range.

3.1.33 The Council agreed that CBS should continue to promote the use of EPS and, inter alia, address the difficulty of delivering EPS-based information to the public. Since users of EPS information would have to be made aware of the value of probability forecasts for risk management, training would be needed.

3.1.34 With regard to severe weather forecasting, the Council was pleased to note that a goal of CBS was to define methodologies to improve techniques to deliver forecasts to authorities and the public, including the concept of risk assessment by probabilities. The Council asked CBS to give consideration to the development of guidance and support systems for forecasting. In that respect, it was noted with satisfaction that CBS had started work on the development of WMO standards or recommended practices for weather forecasting, as was requested by Fourteenth Congress. A first conceptual plan on the approach to tackle that task was being reviewed and would be considered by the next CBS session.

3.1.35 Currently, 14 GDPFS Centres were producing operationally long-range forecasts as input to the RCCs and climate forums. It noted that work was needed to be continued among the Lead Centres to refine further the verification of long-range forecasts, establish a Lead Centre Web site and develop a system to help RCCs and NMHSs assess the skill of long-range forecast products from verification data.

3.1.36 A training course on the use of ECMWF products for WMO Members was organized by ECMWF in 2003, with co-funding from WMO. The Council thanked ECMWF for that valuable contribution and welcomed the fact that a similar course was again planned for 2004. The Council also thanked Brunei Darussalam for having hosted a GDPFS/PWS training event.

3.1.37 The Council agreed that when providing training, emphasis should be given to severe weather forecasting and enhanced use of EPS products. The Council felt that CAL tools should become an integral part of the GDPFS-related training.

Emergency Response Activity programme

3.1.38 CBS was addressing new requirements of Members and IAEA for improved products as a response to nuclear emergencies, including the ensemble methodology and a coordinated and secure Internet use in replacement of telefax. It also noted the work, according to decisions of Congress,

to expand and enhance the emergency response capability of NMHSs through new methodologies, and the development of emergency response arrangements related to volcanic eruptions, wildland fires, air-borne diseases and chemical accidents, which would take account of the requirements and existing capabilities in NMHSs. The Council stressed that that work should also include the provision of technical guidance, training and coordination with the national emergency disaster management. It was also important to maintain coordination with other relevant international organizations, specifically UNEP with respect to chemical accidents, ICAO concerning volcanic eruptions, and UNEP, UN/OCHA and ISDR concerning wildland fires.

Antarctic activities

3.1.39 The Council recognized that in order to assure effective participation of WMO in the activities under a Third International Polar Year 2007-2008, additional arrangements to coordinate operations of the WWW basic systems in the Antarctic and the Arctic region would be required. The Council noted with appreciation the long service of observations provided by some Members in the Antarctic. In particular, it was pleased to note that Argentina's first Antarctic station established in 1904 had completed its 100 years of uninterrupted operations in 2004.

3.2 INSTRUMENTS AND METHODS OF OBSERVATION PROGRAMME; THE REPORT OF THE PRESIDENT OF CIMO (agenda item 3.2)

3.2.1 The Executive Council noted with appreciation the report of the president of CIMO and expressed its gratitude to all CIMO members for their valuable contributions to the achievements of the Commission, particularly in providing experienced experts for, and hosting of, specific meetings carried out within the last 12 months.

3.2.2 The Council noted with satisfaction that steps had been taken by CIMO to proceed with the urgently needed WMO intercomparisons according to the programme for WMO intercomparisons set up by CIMO-XIII. The Council also noted that intercomparisons were essential for the WMO Programmes that demanded accurate homogenous measurements. The Council encouraged CIMO to exchange widely the results of its intercomparison studies, noting that there was considerable interest in the results in the climate community, including scientists outside the NMSs. CIMO and HMEI were also encouraged to collaborate with CHy in the intercomparison of the flow-measuring instruments and techniques. The Council also noted the need to consider in future the intercomparisons of modern technologies, such as radiometers and profilers, and to seek active collaboration with the relevant international programmes and organizations, such as EUMETNET, COST, BIPM and ISO.

3.2.3 The Council expressed satisfaction that the WMO Laboratory Intercomparisons of Rainfall Intensity Gauges would possibly be held in the

laboratories of the Royal Netherlands Meteorological Institute, *Météo-France* and the NMS of Italy (University of Genova), if the necessary funds could be identified.

3.2.4 The Council noted that the corresponding WMO field intercomparisons, to be held in locations subject to high intensity rainfall events, would follow after completion of the laboratory intercomparisons. It also noted the plan to organize the WMO Intercomparison of Thermometer Screens/Shields in conjunction with Humidity Measurements, to be held in two sites, one in an Arctic region with the exact locations and dates, and one in tropical or desert regions, the place and period to be defined in due course.

3.2.5 The Council was informed that the World Radiation Centre (Davos, Switzerland), initiated preparations for the Tenth International Pyrheliometer Comparison and conjoint Regional Pyrheliometer Comparisons planned for September/October 2005. The Council noted that no funds were available in the regular budget to support the participation of Regional and National Radiation Centres.

3.2.6 The Council appreciated the offer of Mauritius to host the WMO Intercomparison of Radiosonde Systems in February 2005. It agreed that, following the WMO Intercomparison of GPS Radiosondes (Brazil, 20 May–10 June 2001), manufacturers of high quality radiosondes identified the origins of production faults and inherent system problems and developed new designs that needed to be intercompared in 2005, before being widely used in observing networks. The Council asked CIMO to use that opportunity to discuss with the manufacturers the implications of new designs on the operation of the upper-air networks and the need to maintain proven designs for a longer period of time during an operational phase of the new ones.

3.2.7 The Council recognized that the Field Intercomparison of Rainfall Intensity Measuring Instruments and the Intercomparison of Thermometer Screens/Shields in conjunction with Humidity Measurements could only be implemented as planned if the necessary financial resources would be made available. As successful conduct of the WMO intercomparisons also depended on extrabudgetary resources, the Council invited Members and HMEI to support actively and participate in the above instruments inter-comparisons.

3.2.8 The Council noted with appreciation that since its fifty-fifth session, five IOM Reports were published in CD-ROM format and on the CIMO/IMOP Web site, indicating great interest and significant resources by CIMO experts. It especially welcomed the *WMO Catalogue of Radiosondes and Upper-Air Wind Systems in Use by Members in 2002 and Compatibility of Radiosonde Geopotential Measurements for the Period from 1998 to 2001* (IOM Report No. 80, WMO/TD-No. 1197), and urged Members to take into account information provided in

the Report in the operation and planning of their upper-air networks.

3.2.9 The Council also noted with interest the progress in updating the seventh edition of the *Guide to Instruments and Methods of Observation* (WMO-No. 8). It was planned for publication in an electronic version in the first half of 2006.

3.2.10 The Council noted with satisfaction the significant progress made in the area of training and capacity-building. Following the success of the Training Workshop on Upper-air Observations for Region I English-speaking countries (Gaborone, Botswana, 7-11 April 2003), another training workshop was organized for Region I French-speaking countries and hosted by Morocco on 1-5 December 2003. Those training workshops were aimed at improving the knowledge and skills of senior operational personnel in-charge of the national upper-air networks and were supported by the HMEI through a provision of ground equipment, radiosondes and lecturers. The Council asked CIMO to continue organizing capacity-building workshops also in other Regions and requested the Secretary-General to allocate necessary resources as far as possible. The Council welcomed the fact that the RMTC Buenos Aires was offered as a host venue for a future Training Workshop on Upper-air Observations in Region III and appreciated that Argentina was prepared to assist in providing resource staff and in the translation of training material. The Council noted the training activities of ASECNA and welcomed the proposal that WMO organize, in collaboration with ASECNA, instrument training in EAMAC also for non-ASECNA countries.

3.2.11 The Council was pleased to note that Romania had offered to host the technical conference TECO-2005 and the exhibition of instruments and equipment, METEOREX-2005, which were considered major CIMO events for information exchange and capacity-building. The Council noted that, due to the lack of financial resources, simultaneous interpretation would not be possible.

3.2.12 The Council requested CIMO to continue the updating of the Instrument Catalogue, possibly in collaboration with the HMEI, to assist Members in selecting the most suitable instruments for applications within their operational networks. It also requested that the Catalogue be posted on the Web site.

3.2.13 The Council noted the need to strengthen further the RICs in developing countries. It was pleased to note that the RIC in Barbados was being refurbished under the WMO/Finland SIDS-Caribbean Project. In that connection, the Council requested CIMO to review the requirements for the calibration of various instruments, in particular barometers, and to develop an action programme for that purpose in collaboration with the RICs and with special attention to the needs of the developing countries.

Professor Dr Vilho Vaisala Award

3.2.14 With respect to the nineteenth Professor Dr Vilho Vaisala Award, the Selection Committee of the Executive Council recommended that Messrs I. Holleman and H. Beekhuis (both from the Netherlands) should receive the nineteenth Professor Dr Vilho Vaisala Award for the paper entitled "Analysis and correction of dual PRF velocity data" published in the *Journal of Atmospheric and Oceanic Technology*, Volume 20, Number 4, April 2003. The Council approved the proposal of the Selection Committee.

3.2.15 The Council recalled that, over the years, almost all award winners were from developed countries, as the criteria for granting the Professor Dr Vilho Vaisala Award practically confined a successful competition to leading-edge researchers.

3.2.16 In that connection, the Council appreciated the initiative of the Secretary-General to raise that issue with Vaisala Oyj, which resulted both in the pledge by the firm for an additional award that would be focused on, and encourage instrument work in, developing countries and countries with economies in transition, and in a proposed modification to the Guidelines for Granting the Awards. Both awards would be granted on a biennial basis in connection with the WMO TECO/METEOREX with a cash prize of US\$ 10 000 each. Vaisala Oyj would be prepared to pledge an additional €100 000 into a trust fund for the establishment of the second award.

3.2.17 The Council welcomed that offer and decided to establish a second Professor Dr Vilho Vaisala Award and expressed its sincere gratitude to Vaisala Oyj for its continuing support to the IMOP Programme and WMO. It adopted the Guidelines for Granting the Professor Dr Vilho Vaisala Awards, as given in Annex III to this report, and requested the Secretary-General to establish the Trust Fund as appropriate. It agreed that the nineteenth Dr Vilho Vaisala Award (2004) would be the last according the current Guidelines and the next selection of winner(s) would be done at its fifty-eighth session in 2006 according to the new Guidelines.

3.3 TROPICAL CYCLONE PROGRAMME (agenda item 3.3)

3.3.1 The Executive Council recognized the need for a further enhanced training programme for tropical cyclone forecasters in operational conditions aimed at further upgrading operational capabilities of NMHSs. It expressed its desire that all tropical cyclone RSMCs make arrangements for the attachments of such operational forecasters to their centres, especially during the cyclone season.

3.3.2 The Council reaffirmed the endorsement and enhanced support of Fourteenth Congress to the TCP. It further stressed the need for the full support of the Secretary-General to the programme, including the continuation of the annual RA IV Hurricane Committee sessions.

3.3.3 The Council noted with satisfaction the continuation of co-sponsorship by WMO of the

annual RA IV Workshops on Hurricane Forecasting and Warning organized by NOAA at the RSMC Miami, the biennial Southern Hemisphere Training Courses on Tropical Cyclones by the Australian Bureau of Meteorology, and the biennial RA I Training Courses on Tropical Cyclones by *Météo-France* at the RSMC La Réunion. With a view to strengthening further human resource development of tropical cyclone forecasters, the Council requested the Secretary-General to invite young scientists, especially women, in the tropical cyclone basins, as well as in other regions including Eastern Africa, to attend such training events, whenever feasible. The Council was pleased to note that two female forecasters from Hong Kong, China and Malaysia would be attending the annual Fourth Typhoon Operational Forecasting Training at the RSMC Tokyo-Typhoon Centre from 28 July to 6 August 2004. The Council also expressed satisfaction with the ongoing tropical cyclone training that was being done by RSMC Honolulu through the International Pacific Desk Internship.

3.3.4 The Council was informed that a technical advisory working group established during the fourth Tropical Cyclone RSMC Technical Coordination Meeting (Nadi, 26-29 November 2002) had requested that TCP look into determining the conversion factors connecting the various wind averaging periods. The Council commended that the TCP had made the necessary arrangements to undertake reviews and assessments that would lead to the recommendation of suitable conversion factors between the WMO 10-minute standard average wind and one-minute, two-minute and three-minute "sustained" winds. The Council was pleased to note that a technical report from that study would be subsequently included in the updated edition of the *Global Guide to Tropical Cyclone Forecasting* and in the Operational Plans/Manual of the five tropical cyclone regional bodies. In view of the importance of strengthening further the coordination among the tropical cyclone RSMCs and Tropical Cyclone Warning Centres, the Council endorsed the fifth Tropical Cyclone RSMC Technical Coordination Meeting which was planned to be held in Honolulu, in late 2005.

3.3.5 The Council stressed the significant role of the TCP in the newly established Natural Disaster Prevention and Mitigation Programme, specifically on the planning and implementation of activities towards tropical cyclone disaster reduction.

3.3.6 Noting with concern the very slow progress in the implementation of the project on storm-surge disaster reduction in the northern part of the Indian Ocean, the Council urged the remaining Members of the Panel on Tropical Cyclones, who had not yet obtained their Government's approval, to do so with a view to making it possible for the Secretary-General to approach possible potential donor institutions and countries towards early implementation of the project as a matter of urgency.

3.3.7 The Council was informed that the TCP had approved a proposal of the Typhoon Committee to undertake a detailed pilot study in the Philippines on the economic and social impacts of tropical cyclones with emphasis on the assessment by end-users of relevant weather services. That study, which fell within TCP subproject No. 25 which had been endorsed by Fourteenth Congress, and would be used as a basis for undertaking similar studies in other tropical cyclone-affected areas in the world.

3.3.8 The Council was informed that the JMA Web site had now posted, in real-time, the typhoon forecasts of nine NWP centres and would shortly provide the ensemble mean of those forecasts.

3.3.9 The Council encouraged the continued close collaboration between TCP and JCOMM in the series of Workshops on South China Sea Storm Surge, Waves and Ocean Circulation Forecasting. It was pleased to note that the second workshop, jointly organized by JCOMM and TCP in Kuantan, Malaysia from 15 to 19 September 2003, had been highly successful. The Council noted with pleasure the planned third workshop to be held in 2005. The Council urged that similar workshops should also be conducted in other tropical cyclone basins.

3.3.10 The Council stressed the need for enhanced participation of hydrologists in the activities of the TCP, in general, and in associated flash flood forecasting and warning, in particular. To that effect, it also emphasized the need for active participation of hydrologists in the regular sessions of the five tropical cyclone regional bodies aimed at forging closer collaboration between hydrologists and meteorologists in the field of tropical cyclone forecasting and research.

3.3.11 The Council recognized the urgent need for the Rapporteur on Tropical Cyclone Prediction Research of the CAS Working Group on Tropical Meteorology Research to promote further research initiatives, particularly those related to tropical cyclone tracking, forecasting and landfall, with a view to improving current operational tropical cyclone forecasting techniques.

3.3.12 The Council affirmed that resolving the issue related to multiple voice of tropical cyclone forecasts and warnings was entirely a national responsibility.

3.3.13 The Council was pleased to learn of the publication entitled *Annual Summary of Global Tropical Cyclone Season — 2000, 2001 and 2002* (TCP Report No. 46, WMO/TD-No. 1082). The publications for 2001 and 2002 were available on the TCP Home page (<http://www.wmo.int/web/www/TCP/TCP-home.html>).

Aside from providing an overview of the cyclone season, the annual publication also gave a report on the significant activities during the cyclone season of the six tropical cyclone RSMCs (i.e. Honolulu, La Réunion, Miami, Nadi, New Delhi and Tokyo) and four Tropical Cyclone Warning Centres (i.e. Brisbane, Darwin, Perth and Wellington).

4. WORLD CLIMATE PROGRAMME (agenda item 4)

4.1 WORLD CLIMATE PROGRAMME AND ITS COORDINATION, INCLUDING THE REPORT OF THE PRESIDENT OF CCI (agenda item 4.1)

4.1.1 The Executive Council noted with appreciation the forward-looking plans of the president of CCI on its activities since the fifty-fifth session (contained in Annex IV to this report). The Council noted with pleasure the offer from China to host the upcoming fourteenth session of CCI (November 2005). The Secretariat noted that kind offer and acknowledged that there was another offer as well. The decision on the venue for CCI-XIV would be made in due course.

World Climate Data and Monitoring Programme

Observing requirements and standards for climate

4.1.2 The Council recalled that Fourteenth Congress had endorsed the CCI efforts to promote increased cooperation with GCOS. It noted the resulting clarification that GCOS held responsibility for global climate observations that were coordinated by GCOS, while CCI was to focus on the remaining climate observation issues.

4.1.3 The Council expressed its appreciation to WCDMP for the efforts with CCI to develop Guidelines on Climate Observation Networks and Systems. The Guidelines, which were part of a series, provided information on how to organize and implement climate services, and presented solutions that addressed the situation and needs of smaller NMSs with limited resources. The Council noted the importance of making the information most useful to all climate staff in all NMSs and the whole climate community, and urged the Secretary-General to explore extrabudgetary resources to enable all CCI Guidelines to be translated into the WMO official languages and distributed on CD-ROMs.

4.1.4 The Council requested that CCI complete Statements of Guidance for observations providers through the rolling requirements review as a matter of urgency, for the full suite of climate services, i.e., monitoring, climate change detection and climate applications. That was considered as an important effort that would enable developing countries to address authoritatively climate change scenarios generated at the national or regional levels.

4.1.5 The Council noted with appreciation the collaboration between WCP and GCOS, funded by the United States, to produce software to encode and decode CLIMAT and CLIMAT TEMP messages, and requested that the software be provided promptly to Members. It was informed that that CCI-led project would be completed and ready for implementation in July 2004.

Climate alert system

4.1.6 The Council noted with appreciation the work of the CCI Expert Team to Develop Guidance

on Climate Watches. The terms of reference and work plan included a schedule to create Guidelines on Climate Watches. The Expert Team drafted a statement of the concept, definitions and terminology, and the outline of the Guidelines, which would be coordinated with appropriate representatives of CBS. Regarding the scope of, and responsibility for, climate watches, the Expert Team considered that while it was highly desired that the climate information be useful in decision processes that resulted in action, the Expert Team should only address and describe awareness functions of a climate watch, and should not address "warning" functions. The Council concurred with the Expert Team's conclusions that the NMSs retained exclusive responsibility for the issuance of climate warnings and advisories for their countries and territories, as well as for meteorological warnings, and that any information produced on a global or regional scale would be called "guidance", unless decided otherwise by the relevant NMSs and their regional associations. It also noted that the Expert Team proposed that the watch process (including development of content and format of watch products) should involve continual interaction with user sector representatives and the related agencies.

4.1.7 The Council noted with appreciation the capacity-building focus within the Expert Team's terms of reference and work plan.

Climate analysis and monitoring techniques (including climate change detection)

4.1.8 The Council expressed its support for the activities of the CCI/CLIVAR Expert Team on Climate Change Detection, Monitoring and Indices. It noted with appreciation that the Expert Team's objectives supported monitoring and understanding the global climate system; collection, rescue and management of climate data; detection and assessment of climate variability and changes; and capacity-building, transfer of knowledge, techniques and guidance. It noted with appreciation the Expert Team's plans to develop indices of climate change and variability with emphasis on daily to seasonal extremes, and standardized software packages; and to study additional indices and their application as input data to models and homogeneity issues. It urged Members to provide daily data records to build the data sets needed for the calculations of indices.

4.1.9 The Council endorsed the Expert Team's intention to provide guidance for NMHSs, software to calculate indices, participation in training workshops, and the use of results in the WMO's climate system monitoring programme. It noted with appreciation the workshops planned for all WMO Regions to generate indices and to fill gaps in the global climate data sets.

4.1.10 The Council noted that it might be important to identify Focal Points at the national and regional levels who would be responsible for climate change detection initiatives. In that connection, NMHSs

might be called upon to establish Climate Change Monitoring and Detection units/sections within their Services.

Climate system monitoring

4.1.11 The Council noted with interest the collaboration with the NOAA NCDC to produce a global climate review, published in the June 2004 issue of the *Bulletin of the American Meteorological Society* and planned to be enhanced and published by WMO. WMO had arranged for extensive participation of international authors. The Council endorsed CCI's intention to explore that process as a cost-effective means to provide future WMO Global Climate System Reviews and requested that the Secretary-General explore the possibility of providing regionally-focused reviews on an annual basis.

4.1.12 The Council recalled the endorsement by Fourteenth Congress of analysis tools that characterized extremes and trends in near-term climatic events and noted with appreciation the use in the WMO *Statement on the Status of the Global Climate in 2003* (WMO-No. 966) of a climate monitoring index to delineate the areas of Europe most affected by extreme heat in 2003.

Data rescue, digitization and data exchange

4.1.13 The Council expressed appreciation for the accelerated DARE support provided through coordinated installations, workshops and training. It noted the upper-air projects conducted by the United States in seven African countries, and by France in 14 African countries, the WMO project in Viet Nam with funding from the United States, and the components in the SIDS-Caribbean project. It welcomed the support by Belgium for equipment and training in 20 countries in West and Central Africa. The Council also appreciated the initiation of national DARE projects that resulted from the workshops WMO conducted in all Regions in 2003.

4.1.14 The Council noted the significant benefits derived through the project, both for the NMHSs and for the entire climate community. It encouraged Members to support, through the VCP and other extrabudgetary resources, the high priority DARE projects. It noted the relevance to all Members of the DARE project proposed by ICPAC to rescue several Members' data from obsolete seven- and nine track tapes, and urged donors to consider providing support for its implementation.

Data sets and metadata

4.1.15 The Council noted the imminent conclusion of the World Weather Records for 1991-2000. It expressed appreciation for the regional collection provided by 10 Members and for NOAA NCDC's coordination and production of the data sets.

4.1.16 The Council expressed appreciation for the completion of the Guidelines on Climate Metadata and Homogenization and urged Members to provide full metadata with data sets they exchanged, to ensure better understanding of climate variability and change.

Climate database management systems

4.1.17 The Council recalled the request of Fourteenth Congress for CDMS training material and manuals, and endorsed CCI's plans for the relevant Implementation Coordination Team to develop WCDMP Guidelines on Climate Database Management.

4.1.18 The Council welcomed the accelerated transition from CLICOM to CDMSs. It noted with appreciation that 16 CDMSs were installed and that 21 more were planned in 2004, while 30 more requests or expressions of interest were received. It noted with appreciation the extrabudgetary contributions through the SIDS-Caribbean project, AGRHYMET and ACMAD that enabled the implementation of several CDMSs in Regions I and IV, as well as support by the Czech Republic, France, the Russian Federation and Zimbabwe for systems in Regions I, II and VI.

4.1.19 The Council noted the importance of maintaining a database on significant weather events and encouraged the Secretariat to determine how best to implement such a database.

4.1.20 The Council urged Members to support through the VCP and other extrabudgetary resources the high priority CDMS projects.

World Climate Applications and Services Programme, including CLIPS

4.1.21 The Council commended the continued effort to develop the CLIPS Focal Point network and the progress being made to build their capacity through regional workshops in Regions I, V and VI. The Council expressed satisfaction with the structure of those workshops and recommended their continuation in the remaining Regions.

4.1.22 The Council expressed satisfaction with the development of the CLIPS Training Curriculum and the CLIPS Web site. The Council encouraged further development of the Curriculum in collaboration with the relevant Expert Teams, the WMO Education and Training Programme and volunteer experts, and its continued use in capacity-building activities.

4.1.23 The Council stressed the importance of projects that demonstrated the value of climate services and the importance of developing, within those projects, decision methods and processes that converted climate information and predictions into actions maximizing the benefits. The Council called for implementation of further projects of that type wherever possible in different parts of the world. It further noted that CCI was organizing a multidisciplinary conference on decision processes in climate applications, to be held late in 2005. The Council reiterated the importance of holding that conference.

4.1.24 The Council was pleased to note that the new CCI structure of Expert Teams and Rapporteurs under the OPAG on Climate Applications, Information and Prediction Services, had, in general, operated well to fulfil its intended objectives. However, the Council noted that although the new

structure was designed to improve efficiency in carrying out CCI activities more transparently, some Expert Teams had not yet carried out their duties satisfactorily. The Council expressed the need to strongly encourage the Expert Teams to ensure that their objectives were met. In addition, the Council urged that WMO take all necessary actions to facilitate selection and approval of experts to participate in the various Expert Teams.

4.1.25 The Council noted the potential benefits that could be realized through enhanced links between CLIPS, research institutions such as IRI, and other programmes such as CLIVAR, with respect to research and development across medium to longer timescales. The Council appreciated the support provided by CLIPS in the development of Regional Climate Models that might provide future downscaled predictions that were more suitable for applications than those directly available from the global scale models. The Council encouraged that further steps be taken to extend links between CLIPS and other research programmes and institutions, in particular CLIVAR and IRI.

4.1.26 The Council expressed its appreciation for the continued development of the RCOFs and noted the significant role they now played in some regions. For example, in Africa, RCOFs provided important support to sectors such as health, water resources and food security. It further noted the important role which the RCOFs played in educating climate prediction experts and information users through involving them in RCOF capacity-building activities and meetings. It further noted significant growth in understanding the links between the climate system (including climate variability and change) and socio-economic activities, in identifying beneficial applications, in estimating the potential value of climate services, in collaborating with decision makers in specific applications sectors, and in raising the visibility of NMHSs and specialized regional centres. The Council noted that sustainability of the RCOFs was an issue in some Regions. The Council urged continued support of RCOF activities including technology transfer, and recommended a "philosophy of quality", including estimation and demonstration of the value of the predictions, which would facilitate acquisition of sustainable funding from donors and clients.

Regional Climate Centres

4.1.27 The Council reiterated its support for the establishment of RCCs, where appropriate, in order to assist NMHSs to interpret and apply seasonal to interannual forecasts and to carry out regional climate services. The Council noted that the regional associations were responsible for establishing RCCs, while recognizing the advice provided by the Executive Council Advisory Group on Climate and Environment. The Council urged those regional associations interested in RCCs to proceed quickly toward implementation. It was stated that the

designation of RCCs had a process to follow established by the Ad Hoc Team of Experts discussed in general summary paragraph 4.1.29. Within Regions, establishment of trust funds to assist implementation and ensure sustainability of RCCs would be helpful.

4.1.28 The Council reaffirmed the fact that regional associations that implemented RCCs might also choose to follow established procedures for the designation of RSMCs and that the process should involve all relevant Commissions in order to discriminate clearly the additional activities of the Centres from those of existing GDPFS RSMCs. The demonstration of capabilities of proposed Centres fell into the remits of both CBS and CCI. The Council recognized the important relationship between climate and water and urged that CHy be included in the planning and implementation of RCCs.

4.1.29 The Council noted with appreciation that a CCI Ad Hoc Expert Team was convened in Geneva (27-28 November 2003) to develop guidelines for use by regional associations in describing requirements and procedures for implementing RCCs. The Council noted that there might still be a need in some Regions for continued expert support from WMO in establishing RCCs. Furthermore, the Council urged regional associations to make use of existing infrastructure and institutions in that process.

Climate and human health

4.1.30 The Council noted the progress made by CCI to provide guidance on heat waves through developing guidelines on HHWSs for use by NMHSs to establish HHWS and to advise the public. The Council further noted that the Meeting of Experts to Develop Guidelines on HHWSs (Freiburg, Germany, 14-16 April 2004) and a WMO brochure on heat waves had produced drafts of that document and had also considered guidelines to develop the Universal Thermal Climate Index.

4.1.31 The Council noted with appreciation the ongoing, effective collaboration between WMO, UNEP, and WHO on issues related to the application of climate information and products in mitigating the impacts of climate variability and change to the health sector. It noted that through that collaboration, three regional Workshops on Climate and Health in Small Island States had been held. The latest and third workshop in the series was held in Bandos Island, Maldives on 1-4 December 2003. The Council further noted that two books had been published through that collaboration: *Climate Change and Human Health: Risks and Responses* and *Methods of Assessing Human Health Vulnerability and Public Health Adaptation to Climate Change*. The Council urged WMO to continue to enhance its participation in that collaboration and with other institutions working on similar issues. Furthermore, the Council noted the importance of developing assessments of impacts of climate

variability and change on sectors including human health.

Showcase Projects: Heat/Health Warning Systems

4.1.32 The Council was informed of progress in the Showcase Projects on Climate and Human Health. It noted with appreciation that efforts were being made to initiate a follow-up phase to evaluate the status and lessons learned from the Rome and Shanghai, projects. The Council further noted with interest the extensive activities to implement HHWSs in Toronto and in a number of United States and European cities. It noted the importance of relating climate and environmental information to the decision processes in the health community, and urged CCI to expand its programme through collaboration with other relevant agencies and institutions. In that regard, the Council stressed the need for capacity-building for NMHSs in such methodologies. Furthermore, the Council recommended expansion of climate and human health studies to include diseases such as malaria, and emerging diseases such as highland malaria and severe acute respiratory syndrome.

Urban and building climatology

4.1.33 The Council was pleased to learn of the activities that addressed environmental issues related to megacities and urban areas, in particular those that dealt with urban issues in the context of human health. The Council noted that CCI had given much emphasis on that theme, which would increase focus in the work of the Commission and requested that it be developed further in collaboration with the urban-related projects of other Commissions.

Climate services for energy

4.1.34 The Council noted the WMO efforts to support activities that promoted the development of renewable energy resources for efficient use of energy. The Council noted with appreciation that CCI had decided to revise a number of outdated WMO Technical Notes on energy to enhance their usefulness in demonstrating that climate, water and weather information were vital for sustainable energy.

Climate into the 21st Century

4.1.35 The Council noted with appreciation that Japan has already translated the WMO book *Climate into the 21st Century* into Japanese and that other Members had begun to translate the book into their national languages. The Council urged other Members to consider similar initiatives. It was noted that some difficulties in the copyright of pictures had been encountered during the translations. The Council requested the Secretariat to look into how best to solve that problem.

4.2 CLIMATE COORDINATION ACTIVITIES, INCLUDING THE REPORT OF THE EXECUTIVE COUNCIL ADVISORY GROUP ON CLIMATE AND ENVIRONMENT (agenda item 4.2)

4.2.1 The Executive Council recognized that the coordination of climate activities among Members, other international agencies and within WMO continued to be an expanding and important task. It was recalled that the fifty-fifth session of the Executive Council had requested the Secretary-General to work with its Advisory Group on Climate and Environment to develop a discussion paper on climate with special emphasis on steps necessary to maintain WMO leadership in climate. The Council was pleased to note that that had been completed and that a special side event was held on it during its session (see general summary paragraph 4.2.14).

4.2.2 The Council was pleased to note that in January 2004 the Secretary-General had issued a service note that clarified the WMO internal coordination of climate activities. The Council expressed its opinion that improved internal coordination with the Secretariats of GCOS, WCRP and IPCC was an excellent first step in the process of maintaining WMO leadership in climate. It was further noted that the newly formed Steering Group for Climate in the matrix management scheme was a major step toward unifying all of the WMO climate activities and would improve Secretariat staff utilization for vital emerging issues.

4.2.3 The Council noted the importance of active participation of WMO in the Inter-Agency Task Force on the International Strategy for Disaster Reduction and in the Second World Conference on Early Warnings (Bonn, 16-18 October 2003). It also approved increasing the interactions in climate and the environment with UNEP and other international agencies and requested the Secretary-General to encourage more of those interactions as a means of leveraging WMO resources to assist Members and to increase WMO visibility and contributions, in addition to developing the WMO Natural Disaster Prevention and Mitigation Programme.

4.2.4 The Council was pleased that the Secretary-General had begun important steps to increase the visibility of WMO in the UNFCCC, UNCCD and CBD through a series of side events, new brochures and active participation in each of those important conventions.

United Nations Framework Convention on Climate Change

4.2.5 The Council was pleased to note that GCOS continued its interaction with the UNFCCC at the eighteenth session of SBSTA (Bonn, 4-13 June 2003), the ninth session of COP (Milan, 1-12 December 2003), and the accompanying nineteenth session of SBSTA (Milan, 1-9 December 2003). On system observation, SBSTA considered the Second Adequacy Report, completed by GCOS in April 2003 and prepared a draft decision that was adopted by COP-9. Decision 11/CP.9 — Global Observing

Systems for Climate, included inter alia, requests for: (a) GCOS to prepare a five- to 10-year Implementation Plan for COP-10 (Buenos Aires, December 2004) arising from the findings of the Second Report on the Adequacy of the Global Observing Systems for Climate in Support of the UNFCCC; (b) the Group on Earth Observations to treat global climate monitoring as a priority and to collaborate closely with GCOS on implementation planning; (c) the sponsors of GCOS and the GTOS to develop a framework for preparing standards, etc. for terrestrial observing systems for climate; (d) GCOS and GOOS to report on the initial ocean climate observing system; and (e) incorporating the GCOS Climate Monitoring Principles for in situ and satellites into the UNFCCC reporting guidelines for systematic observation. The Council stated that that decision, and other current UNFCCC activities on climate impacts and adaptation, offered significant opportunities for engagement by WMO and GCOS in United Nations activities on climate.

4.2.6 The Council noted the recent participation of the WMO Secretary-General in COP-9, but noted further that GCOS and the IPCC continued to be the most visible groups within WMO on UNFCCC issues. High level cooperation existed between the IPCC and the UNFCCC SBSTA. The Council noted the use by the UNFCCC of the IPCC's Third Assessment Report in developing policies to deal with climate change issues. The Council urged the Secretary-General to take steps to increase the participation of the major scientific climate programmes (WCP, WWW and AREP) of WMO in the deliberations of the UNFCCC.

United Nations Convention to Combat Desertification

4.2.7 The Council expressed its appreciation to the Secretary-General for his continued support to the UNCCD activities and the Convention Secretariat and for the active participation of WMO at COP-6 to the Convention. It noted with satisfaction that Members were informed of the major decisions taken at COP-6.

4.2.8 The Council noted the emphasis placed by COP-6 on case studies to demonstrate the use of traditional knowledge to combat drought and desertification and on early warning systems and urged the Members to examine the possibility of undertaking such case studies with appropriate institutions in their countries.

4.2.9 The Council noted that the priority issue addressed in depth at COP-6 by the Committee on Science and Technology on land degradation, vulnerability and rehabilitation would be further discussed at COP-7. It urged Members to work closely with national focal points in ensuring that the input of NMHSs on that priority issue was included in the national reports to COP-7.

Convention on Biological Diversity

4.2.10 The Council expressed its appreciation to the Secretary-General for the report on the ninth

session of the CBD SBSTTA that was held in November 2003. It noted that increasing attention was now being paid by the CBD to several important weather- and climate-related issues related to biological diversity.

4.2.11 The Council was pleased to note that WMO was a member of the CBD Ad hoc Technical Expert Group on Biological Diversity and Climate Change and that that Group had now published a book on the subject.

4.2.12 The Council agreed with the conclusions of SBSTTA that there were opportunities to implement climate change mitigation and adaptation activities in ways that were mutually beneficial and synergistic, and that that would contribute simultaneously to the UNFCCC, CBD, and other international agreements, all within broader national development objectives.

4.2.13 The Council noted the recommendation of SBSTTA that called for case-studies on interlinkages between biodiversity and climate change and encouraged the Members to examine the opportunities for such case studies in their countries in collaboration with relevant agricultural universities and research institutions.

Executive Council Advisory Group on Climate and Environment

4.2.14 The Executive Council Advisory Group on Climate and Environment met in Geneva from 4 to 6 February 2004, with Mr Noorian, First Vice-President of WMO, as the chairperson. The Council was pleased to note that the discussion paper entitled "WMO leadership in climate and environment: background and recommendations for future directions", had been reviewed and edited at that meeting and was now completed. The Advisory Group recognized that all efforts in maintaining the WMO leadership in climate were based on science and the activities of WMO and its Members. It noted that the Advisory Group had made six major recommendations to facilitate WMO re-establishing its leadership in climate, specifically:

- (a) Establishment of clear Organization-wide priorities in climate;
- (b) Strengthening WMO's core climate capabilities;
- (c) Improvements to WMO's organizational structure and management dynamics;
- (d) Development of strong and ongoing relations with key international agencies;
- (e) Development of effective climate products and services to enhance capabilities and contributions of the Members; and
- (f) Establishment of strong visibility in climate on the national, regional and international levels.

The Council took note that the leadership effort that WMO would be trying to sustain was within the core climate capabilities of WMO, while recognizing that WMO could not be the leader in all aspects of climate. The Council was pleased to note that a side event had been held during the present session of the Executive Council to discuss that paper in detail and to agree on specific actions under each recommendation. The Council requested the

Secretary-General to take action urgently on those recommendations by implementing specific actions as defined in the side event on that subject.

4.2.15 Concerning the organization of a Third World Climate Conference, the Advisory Group, after reviewing the results of its previous four meetings on that subject and noting the reluctance of Fourteenth Congress to begin organizing a Third World Climate Conference, still endorsed unanimously holding that conference. In reaching that conclusion, the Advisory Group stated that a major international conference would greatly benefit WMO in re-establishing its scientific leadership position in climate and would serve as an opportunity to follow-up and consolidate the actions and results of the important science activities of the UNFCCC, the Group on Earth Observations and the IPCC Fourth Assessment Report. The Council requested the Secretary-General to establish an ad hoc exploratory committee to determine funding sources, requirements, venue and science programme for such a conference. The Council requested that that be reviewed by the Advisory Group and the results be reported to its fifty-seventh session.

4.2.16 The Council appreciated the guidelines that had been developed for the implementation of the RCCs by the ad hoc expert group within CCI. However, the Advisory Group wished to advise the Executive Council of the importance of ensuring that:

- (a) The concept and modus operandi of the RCCs were fully integrated into the overall architecture of global environmental monitoring and provision of services;
- (b) The role of RCCs in supporting the national operational and services of NMHSs were built strongly into the proposed framework;
- (c) The various proposed functions of the RCCs in education and training, capacity-building, research and service provision were appropriately coordinated with the corresponding functions under other WMO-sponsored programmes;
- (d) Regional associations became fully engaged in the decisions on establishing RCCs to ensure that individual RCCs were designed to meet clearly articulated and recognized regional needs.

The Council concurred with the advice provided by the Advisory Group and requested that the Secretariat ensure that all regional associations, WMO Programmes and technical commissions were made aware of that advice and, as necessary, that those bodies worked in concert to ensure maximum benefit was derived for the NMHSs from the RCCs.

4.3 GLOBAL CLIMATE OBSERVING SYSTEM (agenda item 4.3)

4.3.1 The Executive Council welcomed the report from the chairperson of the GCOS Steering Committee, Professor Paul Mason, on the progress being made by the GCOS programme. Major activities carried out in the previous year included implementation and further planning of the GCOS

baseline networks; continued interactions with the UNFCCC, including progress in the Regional Workshop Programme; development of a GCOS Implementation Plan; and pursuit of the resources needed for GCOS and the GCOS Secretariat, including a GCOS Cooperation Mechanism, to meet those substantial demands.

4.3.2 The Council was pleased by the continuing close collaboration between GCOS and several other WMO Programmes, notably WWW and the WCP regarding GSN and GUAN; AREP regarding GAW; HWRP in establishing a Global Terrestrial Network for Hydrology, and the WMO Space Programme regarding the satellite observations needed as part of an integrated global observing system for climate. It also welcomed continuing cooperation between GCOS and relevant WMO technical commissions, in particular CBS, CCI, CHY and JCOMM.

4.3.3 The Council noted the progress in the implementation of GSN and GUAN under the guidance of the AOPC and in cooperation with CBS, while recognizing the need to improve the availability of data from those stations. It welcomed the collaboration between CBS and GCOS centres concerning the performance and data quality of CLIMAT and CLIMAT TEMP reporting and expressed strong appreciation to the Members and agencies hosting those centres (DWD, JMA, NCDC, ECMWF and the UK Met Office Hadley Centre) for their support. The Council also welcomed the direct support provided by several Members (notably Australia, New Zealand, the United Kingdom and the United States through its Climate Change Research Initiative) to revitalize operations at a number of specific GUAN and GSN stations, as well as to support specific GAW activities, and urged that that effort be extended to all stations to the extent feasible. It noted in particular the continuing difficulties being encountered in Regions I and III, for example, due in many cases to the high cost of consumables, and welcomed the activities being carried out under the guidance of CIMO to investigate potential solutions to that problem. The Council urged Members to continue and where possible, to strengthen their support for the GSN and GUAN networks, noting that robust, backbone networks which met the goals of GCOS could provide significant benefits for other WMO objectives.

4.3.4 The Council noted with appreciation the collaboration between GCOS/AOPC, CCI and the CBS Expert Team on Observational Data Requirements and Redesign of the Global Observing System in developing statements of guidance on the needs for observations in support of climate applications. The Council also noted with satisfaction the participation of GCOS, in cooperation with WCRP, in the WMO Consultative Meetings on High-Level Policy on Satellite Matters, and the increased attention that climate requirements were receiving in that forum.

4.3.5 The Council noted with satisfaction the progress in establishing an operational ocean observing system for climate under the guidance of the GCOS/GOOS/WCRP OOPC. It noted in particular the encouraging increase in commitments of Argo floats and strongly urged the continuation of efforts to establish and maintain the full Argo network, recognizing the importance of in situ observations of the oceans, as well as the atmospheric and terrestrial domains, to the implementation of GCOS. The Council also welcomed the commencement of the demonstration period for the Global Ocean Data Assimilation Experiment and the progress made by the OOPC/AOPC Working Groups on Sea-Surface Temperature and on Surface Pressure.

4.3.6 The Council noted with approval the increasing activity of the GCOS/GTOS TOPC in defining better the essential terrestrial variables for climate and key integrated terrestrial climate products.

4.3.7 Noting the significant progress that had been made in implementing the GCOS baseline networks, the Council expressed its appreciation to those Members that had made significant contributions to the GCOS programme. It welcomed in particular the contribution of Germany in supporting a junior professional officer in the GCOS Secretariat, recognizing the increasing demands being placed on it as additional networks were being defined and implemented. The Council urged other Members to consider similar support for the Secretariat and/or contributions to the Climate Observing System Fund.

4.3.8 The Council welcomed Decision 11/CP.9 — Global Observing Systems for Climate, adopted by the ninth session of the UNFCCC COP concerning global observing systems for climate, taken in response, inter alia, to inputs developed by GCOS on behalf of its sponsors, including the Second Report on the Adequacy of the Global Observing Systems for Climate in Support of the UNFCCC. The Council noted that that decision, in welcoming the Second Adequacy Report, had requested Parties to consider what actions they could take to address its findings. It had also requested that the GCOS Secretariat, under the guidance of the GCOS Steering Committee and taking into account international and intergovernmental mechanisms, coordinate the development of a phased five- to 10-year implementation plan for the integrated global observing systems for climate, using a mix of high-quality satellite and in situ measurements, dedicated infrastructure and targeted capacity-building, and that GCOS and the ad hoc Group on Earth Observations collaborate closely in developing their respective implementation plans. The Council noted with appreciation the draft implementation plan that had been developed by GCOS and looked forward to its completion and further collaboration with the Group on Earth Observations process. It also urged Members to support the recommendations in the

COP decision to the extent possible and, where feasible, to assist other Members in their responses.

4.3.9 The Council noted with appreciation the efforts of the GCOS Secretariat in responding to the decisions of COP and commended the continuing interactions between GCOS, on behalf of WMO Members and the global observing systems for climate, and UNFCCC. It encouraged GCOS to continue the strategy of engaging the UNFCCC and its subsidiary bodies to develop support for the global climate observing systems, as had been endorsed by Fourteenth Congress.

4.3.10 The Council welcomed the establishment of GCM, aimed at addressing priority improvements in observing systems for climate, especially in developing countries. That mechanism, established through the common action of a number of donor countries, was intended to complement and work in cooperation with other funding and implementation mechanisms, especially the VCP, in order to identify and make the most effective use of resources available for improving global observing systems for climate in developing countries. The Council urged Members in a position to do so to contribute to GCM to support the priority needs identified in Second Adequacy Report and in regional action plans. The Council also noted that the GCM could be an important instrument for consideration in the Group on Earth Observations initiative in the context of its capacity-building efforts, and encouraged the GCOS Secretariat to highlight that potential at appropriate sessions of the Group on Earth Observations.

4.3.11 The Council reiterated its strong support for the GCOS Regional Workshop Programme. It noted with satisfaction that COP-9 had also re-confirmed its support through its invitation to the Global Environment Facility to give appropriate consideration to addressing the priority needs identified by non-Annex I Parties in their regional action plans relating to global observing systems for climate (Decision 4/CP.9 — Additional guidance to an operating entity of the financial mechanism). The Council expressed satisfaction that two additional workshops had been completed (for countries of South America and Central Asia) and that development of action plans was under way. It encouraged Members to support, as appropriate, the remaining three workshops and to participate fully in implementation of all regional action plans. The Council noted with appreciation the offer of India to host the planned workshop for South and South-West Asia and the contributions of Germany in leading efforts to organize a workshop for Eastern and Central Europe. It furthermore welcomed the suggestion that consideration be given to holding a regional workshop focussed on GCOS observations in the polar regions.

4.3.12 The Council noted the extensive developments on issues of systematic observation of the climate system that had taken place through discussions at a number of high-level meetings since

its fifty-fifth session. Those meetings included: (a) the G8 Summit held in Evian, France from 1-3 June 2003; (b) the eighteenth session of the UNFCCC SBSTA held in Bonn, Germany from 4-13 June 2003; (c) the first Earth Observation Summit held in Washington, USA, on 31 July 2003; (d) the World Climate Change Conference held in Moscow, Russian Federation from 29 September to 3 October 2003; (e) the ninth session of COP to the UNFCCC held in Milan, Italy from 1 to 12 December 2003; and (f) the Second Earth Observation Summit held in Tokyo, Japan on 25 April 2004. It noted with satisfaction the strong participation of Members and the Secretariat in those events and welcomed the substantial progress being achieved, especially at the highest international levels, in highlighting the importance of systematic global observations for weather, climate and water. The Council was especially pleased to be advised that climate would be a major agenda item at the G8 Summit in the United Kingdom in 2005.

4.3.13 The Council recognized the efforts that had been made by the Secretary-General to provide adequate support to the GCOS Secretariat in the past and requested that high priority be given to enhancing such support during the current biennium, using whatever flexibility existed within approved resources, as had been requested by Fourteenth Congress.

4.4 WORLD CLIMATE IMPACT ASSESSMENT AND RESPONSE STRATEGIES PROGRAMME (agenda item 4.4)

4.4.1 UNEP was responsible for implementing WCIRP. The Executive Council noted that UNEP's activities pertinent to WCIRP were in conformity with the twenty-second session of its Governing Council that had decided, inter alia, "that UNEP, as part of its responsibility within the World Climate Programme and the Climate Agenda, should strengthen its existing role, within available resources and in the light of its programme of work, to support regional and national actions and programmes including national adaptation programmes of action for least developed countries as well as programmes to reduce the vulnerability of developing countries to climate change, particularly the least developed countries and small island developing States, in cooperation with the Convention on Climate Change Secretariat and other relevant bodies, seeking to ensure that UNEP activities were complementary to, and not duplicative of, work carried out by other agencies". The Council expressed its desire, for the mutual benefit of WMO and its Members, to work closely together with UNEP, and emphasized the opportunities for the NMHS's in that effort.

4.4.2 In pursuit of that decision and with regard to UNEP's overall climate change strategy, the Council took note of the following major activities.

Adaptation to climate change

4.4.3 The Council stated that adaptation to climate change was one of the most important issues facing

nations today and was very pleased with the work UNEP had accomplished in that area. Specifically, UNEP had prepared adaptation case studies for Bangladesh, Ethiopia, Malawi and Nepal and used them as training material for regional workshops for LDCs in Asia and Africa. The regional workshops were held in Bhutan, Burkina Faso and Ethiopia in 2003. In addition, UNEP continued to assist 15 LDCs to prepare National Adaptation Programmes of Action identifying urgent adaptation needs. The Council emphasized the requirement for NMHS's to be deeply involved in the development of adaptation strategies.

4.4.4 UNEP assisted the Russian Federation in organizing the World Climate Change Conference held in Moscow from 29 September to 3 October 2003.

4.4.5 UNEP was funding the project on Impact and Adaptation Assessment of Climate Change on Morocco's Coastal Zones. The objective of that project was to examine the implications of climate change and sea-level rise, including the potential for adaptation to those changes, on Morocco's coastal zones. The primary focus would be the estimation of land loss, with qualitative assessment of other impacts.

4.4.6 UNEP, through GEF funding, was also supporting the project on Developing Generalizable Method for Adaptive Management and Protection from Climate Change in Mangrove and Coral Reef Ecosystems. The project would focus its initiatives on a single ecosystem type — mangrove with near shore coral reefs.

4.4.7 Another project UNEP that project was on Sustainable Enterprise Network for Climate Change Exposure. That project was an online information clearinghouse and decision-support system that would provide vulnerable countries and islands with a "one-stop-shop" for scientific, technical, policy, and financial support information to help them protect their natural and economic resources that might be at risk from climate change.

Sustainable development and climate change

4.4.8 The Council was informed by UNEP that its Risoe Centre on Energy, Climate and Sustainable Development was leading the Development and Climate Project that combined efforts of 12 institutes from developing and developed countries. The project explored the idea that a less polarized way of meeting the challenges of sustainable development and climate change was to build environmental and climate policy upon development priorities that were vitally important to developing countries. The case studies had focused on development projects that were considered to interlink with climate change policies. Case studies had been done for Bangladesh, Brazil, China, India, South Africa and West Africa and included:

- (a) Assessments of long-term development objectives and development trends;
- (b) Reviews of current development plans;

- (c) Identification of stakeholders and expertise to support the project;
- (d) Identification of development policies that supported climate change objectives including mitigation as well as adaptation strategies.

Sustainable energy and climate change mitigation

4.4.9 The Council was most interested in UNEP's energy activities which were linked to mitigation and finance, and were generally developed with broader objectives relating to energy for sustainable development. Recent initiatives of UNEP in that field were focused on the following projects: the Solar and Wind Energy Resource Assessment project which provided solar and wind resource data and geographic information assessment tools to the public and private sector, with a US\$ 6.7 million investment from the GEF, was developing new information tools for energy planners and project developers, including regional and national maps of solar and wind energy resources; the Cleaner Production — Energy Efficiency project aimed to promote industrial energy efficiency through a cleaner production/environmental management system framework; the Energy Management and Performance Related Energy Savings Scheme referred to a project supporting energy efficiency efforts in Eastern and Central Europe; The Global Network on Energy for Sustainable Development was launched as a type II partnership at the WSSD and had now been operationalized with a core group of developing country centres of excellence as the members (Argentina, Brazil, India, Kenya, Senegal South Africa and Thailand).

Integrating land use change and forestry issues and climate change

4.4.10 The Council was informed that UNEP, along with its partners like FAO and IUCN, were jointly implementing an initiative to provide support to developing countries in Africa, Asia and Latin America for environmentally-sound and socially-equitable forest projects under the Clean Development Mechanism. As part of that initiative, the report *Carbon, Forests and People: Towards the Integrated Management of Carbon Sequestration, the Environment and Sustainable Livelihoods* was published in 2002. UNEP, FAO, and IUCN had also convened regional technical meetings on forests and climate change in Africa, Asia and Latin America for the UNFCCC negotiators and staff of the Designated National Authorities.

Kyoto mechanisms and national policy instruments

4.4.11 The Council noted that the project Capacity Development in the Clean Development Mechanism was implemented by the UNEP Risoe Centre. Through that project, experience on how to establish a Designated National Authority had been built through activities undertaken in the targeted countries as well as exposure to countries, mainly in

Latin America, that had established a Designated National Authority. The project overall aimed at: (a) generating in participating developing countries a broad understanding of the opportunities offered by the Clean Development Mechanism; and (b) developing the necessary institutional and human capabilities that allowed them to formulate and implement projects under the Clean Development Mechanism.

Support to the IPCC

4.4.12 The Council was pleased to note the continued strengthening of UNEP and WMO cooperation on IPCC, particularly in the management of the IPCC Secretariat. That support continued through providing a principal Officer and a contribution to the IPCC Trust Fund.

Information, outreach and capacity-building

4.4.13 The Council noted that UNEP used its out-posted offices to raise awareness on climate change through information and media activities, and support the UNFCCC Secretariat with its media needs.

4.4.14 The Council was pleased to note that progress had been made by UNEP in the development of the WCIRP. The Council stated that WCIRP and its projects complemented the work going on in the other three components of the WCP and requested that WMO and UNEP work to re-establish their close working relationship of the past.

4.5 WORLD CLIMATE RESEARCH PROGRAMME (agenda item 4.5)

4.5.1 The Council noted with approval the progress being made in the implementation of the WCRP and on its future scientific direction and priorities. In the latter context, the WMO/ICSU/IOC JSC for the WCRP had produced a discussion document entitled "The WCRP Strategy 2005-2015: Coordinated Observation and Prediction of the Earth System (COPES)", which had been distributed to a wide range of WCRP's stakeholders, including the Council, for their information and comment. The COPES strategy had arisen from the JSC's recognition that, as WCRP approached its twenty-fifth anniversary in 2005, it faced new opportunities and challenges in addressing its two main objectives: to determine the predictability of climate and the effect of human activities on climate. The aim of COPES was to facilitate prediction of Earth system variability and change for use in an increasing range of practical applications of direct relevance, benefit and value to society. The intention of COPES was to provide a framework for ensuring collaboration among nations and synergy across WCRP activities; build new tools to describe and analyse climate variability and change, and their combined effects; assess why those effects were occurring; build improved and more comprehensive climate system models; make climate predictions of greater utility from weeks to centuries and on global to regional scales; and enable improved climate-change assessments for use in widespread applications.

Under the framework of COPES, WCRP would set a number of specific objectives, with clear rationale for their importance and relevance and also with associated timescales for achieving them, and milestones and metrics to map out and measure their progress. The Council noted that the challenges, opportunities, aims and specific scientific and technical problems to be addressed within COPES had much in common with those also being addressed in THORPEX. The Council therefore endorsed fully the need for close cooperation and collaboration between those two initiatives. Following the proposal of Fourteenth Congress, the Council was pleased that the JSC was planning special publications and meetings to celebrate the twenty-fifth anniversary of WCRP, with the prospect of a major international conference to announce COPES in 2006.

4.5.2 The representative of IOC expressed satisfaction with the management and work of the WCRP, as it underwent the challenging process of defining an overall framework for future progress through the COPES plan. The IOC supported the work of the WCRP through its support to OOPC, and had a particularly close relationship with WCRP's CLIVAR study, which had recently started providing expertise on individual ocean basins to the OOPC. CLIVAR and the IOC were jointly sponsoring a new Indian Ocean Panel, which had its first meeting in February 2004, and was developing plans for sustained observations in that region in support of climate and monsoon research and predictability. The legacy of past WCRP projects such as the WOCE had been at the base of both the growing GODAE ocean data assimilation effort and the Argo profiling float network, both of which were making important contributions to our understanding and ability to predict the oceans and climate. The IOC reaffirmed its commitment to supporting the JCRF, and through IOC governing bodies would continue efforts to encourage IOC Member States to support and participate in the marine-related activities of the WCRP.

4.5.3 The Council was informed that ICSU was currently in the process of developing a strategy that would be presented at its General Assembly (17-21 October 2005, Suzhou, China). One element in that strategic development was the Priority Area Assessment on Environment and its relation to Sustainable Development. In that report, the responsible ICSU Assessment Panel, commended the progress made through the WCRP in establishing the physical basis for understanding and predicting *El Niño* events, and the improved understanding and predictability of natural variability and human-induced climate change at the regional and global scales. In addition, that ICSU Panel had recognized that the ESSP, comprising the four ICSU-sponsored GEGR programmes (i.e. DIVERSITAS, IGBP, IHDP and WCRP) was an important new development and that the joint projects being developed under ESSP were expected to provide

significant results of high relevance to the science for sustainable development. However, that report also stressed that it was important to recognize that the science underpinning those joint ESSP programmes would come primarily from research conducted within the individual GEGR programmes.

4.5.4 The Council welcomed specific advances in regional initiatives under the CLIVAR study, with its focus on monsoonal systems worldwide. Those advances included: preparation of an atlas of African climatology; establishment of an Indian Ocean Panel, jointly with IOC, to help drive forward the implementation of ocean observations in the region; and, the successful execution of the South American Low-Level Jet Experiment field campaign, which was a major contribution to the Variability of the American Monsoon System project. Major studies of the role of the oceans in climate were also being organized, in particular: variability of the thermohaline circulation in the Atlantic; dynamics and predictability of the Atlantic inter-tropical convergence zone and its regional climate influences; atmospheric forcing and upper-ocean teleconnections and feedbacks on tropical sea surface temperature; the Kuroshio extension; and Pacific upwelling. Increased emphasis was being placed on ensuring the application of CLIVAR results. To that end, the CLIVAR Working Group on Seasonal to Interannual Prediction was leading a major preliminary initiative under COPE to determine the extent to which seasonal prediction was possible and useful in all regions of the globe with currently available models and data. The First International CLIVAR Science Conference (Baltimore, United States, June 2004), would assess progress to date and identify future challenges for CLIVAR. A major topic of the Conference was how best to deliver the knowledge, products and information brought about by CLIVAR research to end-users, decision and policy makers.

4.5.5 The Council noted that the GEWEX CEOP had continued its main observation and data collection period, which had started in October 2002 and would finish at the end of 2004. CEOP, in conjunction with other components of the WCRP, aimed at assessing the influence of continental heat and moisture sources and sinks on the global climate system. Data from the first CEOP enhanced observation period, July-September 2001, had already been archived at the CEOP Data Centre at the University of Tokyo, and the first composite products were available on the Internet. CEOP had been endorsed by the Integrated Global Observing Strategy Partnership as a pilot study contributing to the IGOS Integrated Global Water Cycle Observations Theme, for which WCRP was playing a leading role. It might also prove to be an instructive preliminary campaign for the emerging COPE. Another major activity, sponsored by both GEWEX and CLIVAR, was the African Monsoon Multidisciplinary Analysis being planned as a follow-up, and extension of, the earlier Coupling of the Tropical Atmosphere and Hydrological Cycle project.

The other GEWEX continental-scale experiments continued to be pursued with increased coordination.

4.5.6 The Council reaffirmed the importance of the task undertaken by the GPCC in Offenbach, Germany, to collect rain gauge data worldwide, to develop a global climatology and to monitor continuously global precipitation on a monthly basis in the framework of GCOS and WCRP. The Council recognized the progress made during the 15 years of operating the Centre and providing near-real-time gridded data sets of monthly precipitation, and highly acknowledged the participation of 170 Members by contributing rain gauge data. The Council urged Members to continue to assist the Centre in that work, provide long-term time-series of related climate data and make available current data in a timely fashion. In that context, the Council noted with approval that a further letter from the Secretary-General to Members had recently been prepared requesting continuing support for the GPCC. A corresponding letter requesting support from Members had also been prepared with respect to the Global Runoff Data Centre in Koblenz, Germany.

4.5.7 The Council recognized the achievements of the WCRP ACSYS, which had held a successful final science conference on the ACSYS Decade and Beyond, at the Arctic and Antarctic Research Institute, in St. Petersburg, Russia, in November 2003. ACSYS had contributed significantly to our understanding of Arctic ocean circulation, the hydrological regime of the ocean basin, and sea-ice and atmospheric conditions over the northern high latitudes. The Arctic had experienced strong warming in concert with the global trend during the last three decades. The new WCRP core project, CliC, was a sequel to ACSYS and aimed to enhance systematically monitoring, understanding and modelling of complex processes through which the cryosphere interacted with the global climate system. Studies had already indicated recent significant changes in the Earth's cryosphere including: record low multi-year sea-ice extent in the Arctic Ocean, with lowest levels in September 2002 and 2003; extensive melting of the Greenland ice sheet since satellite observations began in 1980; break-up of the Larsen B ice shelf in the west Antarctic Peninsula in 2002; and the accelerated melting of mountainous glaciers on all continents. CliC was expected to cover several important gaps in global climate research and observations including investigation of the possibility of additional releases to the atmosphere of greenhouse gases from frozen soils. The Council noted that a first CliC Science Conference would be held in Beijing, China, on 11-15 April 2005. WCRP was also contributing significantly to the planning of the International Polar Year 2007-2008 in which climate research and related observations were expected to form a major part.

4.5.8 During the past year, the SPARC project had elaborated new strategic areas of research, namely: the detection, attribution and prediction of

stratospheric changes; stratospheric chemistry-climate interactions; and stratosphere-troposphere coupling. Recent SPARC activities had been concerned with stratospheric indicators of climate change, various assessments and development of stratospheric data assimilation. An assessment of stratospheric aerosol was due to be completed in 2004. Jointly with the International Global Atmospheric Chemistry Project of the ICSU-sponsored IGBP, SPARC was supporting the development of a new system for verification of global climate models that had a comprehensive atmospheric chemistry module. Through the analysis of observations and modelling, evidence had been obtained of a significant impact of stratospheric processes on tropospheric predictability. It had been possible to use the new generation of models to reproduce the appearance of the ozone hole in the polar stratosphere. New techniques for blending data from different sources had generated a basis for new assessments of stratospheric trends including the so far unexplained positive water vapour trend in the lower stratosphere. The Council noted that chemistry-climate interactions would be the central topic of the third General Assembly of SPARC, (Victoria, Canada, 1-6 August 2004), and that a further new SPARC initiative would be an assessment of polar stratospheric clouds.

4.5.9 The Council was informed that the closer collaboration established between the WCRP Working Group on Coupled Modelling and the Global Analysis, Integration and Modelling element of IGBP was working well, especially in respect to the Coupled Carbon Cycle Climate Model Intercomparison Project. Also, the Second Coupled Model Intercomparison Project Workshop had been held in Hamburg, Germany in September 2003. The WCRP was also a strong advocate of multi-year re-analyses of the atmospheric circulation with state-of-the-art assimilation/analysis schemes; re-analyses formed an important component of the sessions of the joint CAS/JSC Working Group on Numerical Experimentation. The Council was pleased to hear, therefore, that the comprehensive, now 45-year (1957-2002), ECMWF re-analysis (ERA-40) had been completed in April 2003 and that a wide range of ERA-40 products were now available on the Internet. Also, the 25-year re-analysis (JRA-25) for 1979-2004, being conducted by the JMA in collaboration with the Central Research Institute of Electric Power Industry (Japan) was progressing well with a view to completion in 2005. The Working Group on Numerical Experimentation had also continued to be active on a number of issues related to regional climate modelling including, with other WCRP Working Groups, holding the Workshop on Regional Climate Modelling (Lund, Sweden, 29 March–2 April 2004).

4.5.10 The Council noted the progress being made under the banner of the ESSP, which had been initiated by WCRP, IGBP, IHDP and DIVERSITAS (an international programme of biodiversity science)

for the integrated study of the Earth System, the changes that were occurring to the System, and the implications of those changes for global sustainability. At the present early stage of its development, ESSP was undertaking three types of activity: joint projects, regional activities and global change open science conferences. The first four ESSP joint projects focussed on: the global carbon cycle, food systems; the global water system, and global environmental change and human health. In each case, the goal was to identify the challenges caused by global change, to understand the implications of human-driven change and to build a research agenda of direct relevance for societies. The Council encouraged WCRP to participate fully in the development and implementation of the innovative initiatives of the ESSP.

4.5.11 The Council welcomed the information that, at its twenty-fifth session (Moscow, March 2004), the JSC for the WCRP had shared a formal, joint one-day session with the Scientific Committee for the IGBP. The agreements and decisions reached jointly on that day had laid a foundation for continuing and closer future collaborations between WCRP and IGBP, both on a bilateral basis and as key members of the wider ESSP.

4.5.12 The Council decided on its final proposal for the list of candidates to serve on the JSC for the WCRP. The list would be discussed with ICSU and IOC in order to select replacements for outgoing members or extend their terms of appointment.

5. ATMOSPHERIC RESEARCH AND ENVIRONMENT PROGRAMME (agenda item 5)

WMO Research Award for Young Scientists

5.0.1 Based on the recommendation of its Selection Committee, the Executive Council conferred the 2004 WMO Research Award for Young Scientists upon Mr A. Gahein (Egypt) for the paper entitled "Diagnostic study on the relation between ozone and potential vorticity" and upon Mr N. Semane (Morocco) for the paper entitled "A very deep ozone minihole in the northern hemisphere stratosphere at mid-latitudes during the winter of 2000", published in *Tellus*, Series A, Volume 54A, Number 4, August 2002.

5.0.2 The Council re-established its Selection Committee to consist of Messrs M.A. Rabiolo (chairperson), J. Lumsden, F.P. Mote and Ms M. Couchoud Gregori.

5.1 ATMOSPHERIC RESEARCH AND ENVIRONMENT PROGRAMME; THE REPORT OF THE PRESIDENT OF CAS (agenda item 5.1)

5.1.1 The Executive Council noted with appreciation the report of the president of CAS on the activities of the Commission since its fifty-fifth session and on actions undertaken on a number of issues raised by Congress. The Council appreciated the innovative collaborative efforts of CAS in the implementation of AREP component programmes, in

cross-cutting WMO activities, primarily in the Natural Disaster Prevention and Mitigation Programme, and in promoting WMO leadership in relevant fields. The Council recognized that AREP programmes encompassed all the components in the prediction of atmospheric environment and stated its appreciation for the effective approach to integration of multiple disciplines in the development of predictive capability.

Global Atmosphere Watch including support to ozone and other environment-oriented conventions

5.1.2 The Council expressed its satisfaction with the CAS Working Group on Environmental Pollution and Atmospheric Chemistry and its Scientific Advisory Groups' activities and guidance for the GAW implementation and in support of the Vienna Convention for the Protection of the Ozone Layer, the UNFCCC and the Convention on Long-range Transboundary Air Pollution. The Council endorsed the addendum to the *Strategy for the Implementation of the Global Atmosphere Watch Programme (2001-2007): A Contribution to the Implementation of the WMO Long-term Plan* (GAW-142, WMO/TD-No. 1077) that resulted from the mid-term review of the GAW implementation process.

5.1.3 The Council noted with satisfaction that the IGOS Partnership approved in May 2004 the strategy for the implementation of an Integrated Global Atmospheric Chemistry Observation (IGACO) system developed under the leadership of WMO/GAW. The Council encouraged CAS to support further the WMO leading efforts in the implementation of the IGACO system and recommended to focus initially on ozone and aerosols. The Council agreed with CAS that the IGACO system should be implemented by GAW in close collaboration with the WMO Space Programme and other relevant programmes and invited the technical commissions to contribute as necessary.

5.1.4 Recognizing GAW as an important contributor to the *Second Report on the Adequacy of the GOS for Climate*, the Council requested CAS to provide leadership in determining a network of GCOS essential climate variables, such as greenhouse gases, aerosols, ozone and ultraviolet radiation, which would be based on the existing comprehensive GAW network.

World Weather Research Programme

5.1.5 The Council appreciated the considerable efforts of CAS on the development of THORPEX, led by the CAS International Core Steering Committee. It noted the depth and breadth of the programme and recognized that THORPEX was presently equivalent to GARP. The Council suggested that the CAS International Core Steering Committee consider a more appropriate name to reflect the focuses of the programme, which was developing into a global research programme on atmospheric and related sciences. It recognized that THORPEX would

contribute significantly to the new WMO Natural Disaster Prevention and Mitigation Programme and to ISDR. In that respect, it requested the Secretary-General and encouraged Members to bring THORPEX to the attention of the broader community, governments and international organizations through appropriate United Nations mechanisms. The Council noted the development of an International Science Plan and endorsed the establishment of an ad hoc group of experts for the development of a THORPEX International Implementation Plan. The Council requested that that plan be prepared before its next session on the basis of international and regional plans, of new opportunities to accelerate improvements rapidly in weather forecasting and of the use of improved forecasts in social and economic decision-making. The Council strongly encouraged Members to support THORPEX and to participate in its planning and implementation to ensure that national and regional priorities consistent with the THORPEX overall goals were identified and accommodated in that programme.

5.1.6 The Council further noted with satisfaction the active collaborative efforts between CAS and CBS, which led to broadening and strengthening cooperation between the two Commissions on the involvement of WWW in THORPEX. Recognizing that THORPEX was very relevant to the WWW research needs in all programme areas, the Council welcomed the CBS decision to take part in the development of the THORPEX International Implementation Plan. In that connection, the Council appreciated the fact that the president of CBS acted as a member of the THORPEX International Core Steering Committee and that the chairpersons of CBS OPAG/IOS and OPAG/DPFS were members of the Ad Hoc Group of Experts for the development of a THORPEX International Implementation Plan. The Council requested the presidents of CAS and CBS to pursue collaboration further and to consider further practical steps to ensure effective implementation of the programme for the benefit of all Members.

5.1.7 The Council appreciated the activities of the CAS Science Steering Committee for WWRP and welcomed its new initiatives focusing on prediction of high impact weather events in short, medium and extended ranges such as planning for new projects: the Beijing Olympic Games 2008, intense rainfall in the Alps, sand and dust storm research, establishing new working groups on nowcasting, verification (jointly with WGNE) and planning to establish new groups for warm season QPF and societal impacts.

5.1.8 The Council encouraged the international research teams in their efforts to develop societal applications of their work. To that end, the Council welcomed the plan of the CAS Science Steering Committee/WWRP to establish an Advisory Group on Societal Impacts, which would serve as a resource to all WWRP projects and working groups, and endorsed the organization of a WWRP

workshop on societal impact of weather forecasts in 2005.

5.1.9 The Council welcomed the decision of the CAS Science Steering Committee/WWRP to establish a working group on nowcasting to promote and advise on the long-term development of nowcasting science. In that regard, the Council endorsed the organization of a WMO international conference on nowcasting in 2005.

5.1.10 The Council supported the view of CAS concerning the need for enhancing the scientific and forecasting capabilities of developing countries, and encouraged more active participation of developing countries in WWRP activities.

Activities of the CAS/JSC Working Group on Numerical Experimentation

5.1.11 The Council was satisfied with the fundamental role played by the CAS/JSC WGNE for all relevant CAS activities, particularly in the development of atmospheric models for use in weather prediction on all timescales, data assimilation, physical parameterization, ensemble and seasonal predictions, forecasting tropical cyclone tracks, and the verification of precipitation forecasts.

5.1.12 The Council noted the valuable contribution of the WGNE to the development of the THORPEX International Science Plan, especially in the areas of major interest for WCRP, and welcomed further the WGNE efforts in developing and strengthening that important collaborative programme. The Council also welcomed the establishment of a Joint CAS Science Steering Committee/WWRP WGNE working group on forecast verification.

Tropical Meteorology Research Programme

5.1.13 The Council noted with satisfaction the continuing progress of the programme, particularly in the areas of tropical cyclone and monsoon studies. The Council recognized that great challenges existed for improving the prediction of tropical cyclone landfall and endorsed the organization of an international workshop on tropical cyclone landfall processes in 2005, which would contribute to improving further safety and to reducing the economic losses of tropical cyclone affected countries.

Physics and Chemistry of Clouds and Weather Modification Research

5.1.14 The Council endorsed the recommendation of the president of CAS for the preparation of the WMO/IUGG Science Assessment of Aerosol Effects on Precipitation on local, regional and global scales and the establishment of a CAS ad hoc international aerosol precipitation science assessment group. The Council authorized the organization of two workshops on the subject and requested a peer-reviewed report to be published by the time of its fifty-eighth session.

5.2 GLOBAL ATMOSPHERE WATCH, INCLUDING SUPPORT TO OZONE AND OTHER ENVIRONMENT-ORIENTED CONVENTIONS
(agenda item 5.2)

5.2.1 The Executive Council noted that GAW continued successfully to fulfil its essential mission in the global effort to: (a) monitor systematically atmospheric chemical composition and related physical parameters on a global to regional scale; (b) analyse and assess atmospheric chemical processes key to environmental conventions and policy development; and (c) promote the development of a predictive capability for future atmospheric states. Climate, air quality, ozone depletion and long-range transport and deposition of pollutants were major issues addressed. GAW provided support to international conventions and scientific assessments through the coordination of scientific expertise, technical resources and partnerships.

5.2.2 The Council encouraged Members to continue to maintain and develop GAW through the support of GAW global, regional and contributing partner stations operated with common data quality objectives, quality assurance standards and data archiving practices. It expressed its appreciation to Botswana and South Africa for establishing a new GAW station in Botswana. It encouraged the scientific community to participate in, and initiate, atmospheric studies at existing GAW stations, making use of the expanded facilities, especially at Ushuaia, Argentina and Danum Valley, Malaysia. Noting that there were still substantive gaps in certain measurements, strong partnerships with major networks outside WMO were recognized as critical.

5.2.3 The Council noted the considerable momentum and scope of GAW activities carried out since its last session. Those included several technical publications dealing with updated guidelines for atmospheric trace gas data management, aerosol measurement procedures and a report on the quality assurance in monitoring solar ultraviolet radiation. A number of technical expert meetings on measurements were hosted, for instance on carbon dioxide concentrations and related tracer measurement techniques, and on a global surface-based network for long-term observations of column aerosol optical properties.

5.2.4 The Council expressed its appreciation to Argentina, Spain and the United States for initiating GAW regional calibration centers for total ozone measurements in Europe and South America. The Council thanked the United States for the establishment of the GAW Central Calibration Laboratory for methane and carbon monoxide at NOAA/CMDL that complemented ongoing United States support of reference standards for carbon dioxide and nitrous oxide. In addition, the announcement by Russia to re-establish greenhouse gas monitoring through the Main Geophysical Observatory was recognized as filling a major gap in

the global GAW network. The introduction of ultraviolet forecasts was an important addition to WMO products. In that connection, the Council welcomed the plan of Japan to implement an operational ultraviolet forecasting system next year. The Council recognized the need for ultraviolet radiation calibration facilities and encouraged the development of a European centre.

5.2.5 The Council was informed that the International Halocarbon Intercomparison Experiment, initiated in 2003 by WMO/GAW, NASA and NOAA, was the first of its kind to link the measurement scales of major networks and laboratories for halocarbons. The Council supported the continued participation of WMO in that activity relevant to greenhouse gases and ozone depletion research.

5.2.6 The Council noted with appreciation that GAW effectively led the partnership between the meteorological, atmospheric chemistry and satellite communities for the development of a strategy for the IGACO system, which was approved by the IGOS Partnership. The Council recognized that the implementation of the IGACO system would meet the growing need for comprehensive chemical composition observations in weather and air quality forecasting, climate and chemical transport modeling and other environmental applications. That strategy formed a basis for the WMO Statement of Guidance on Atmospheric Chemistry for Integrated Observing System. It was considered as an important contribution to the WMO process conducted by CBS on the redesign of the GOS, a core component of the future GEOSS. In that regard, the Council encouraged GAW to continue that challenging work in collaboration with relevant WMO Programmes and to pursue the leading role of WMO in the implementation of the IGACO system.

5.2.7 The Council noted that GAW successfully interacted with WCRP, WCP, GCOS and externally. As one of the key components of GCOS and as contributor to the *Second Report on the Adequacy of the GOS for Climate*, GAW supported the development and implementation of GCOS. The representation of GAW as a corresponding member in the IGBP IGAC project and in the IAMAS Commission for Atmospheric Chemistry and Global Air Pollution were important connections with global air chemistry research communities and should be maintained. The Council encouraged Members to facilitate developing and strengthening the cooperation of GAW with regional air quality networks such as EMEP, EANET, CAPMoN and NADP, and research activities such as the Atmosphere Brown Cloud project. The Council also noted the initiative taken by Japan to start an operational information service on dust storms in eastern Asia in the beginning of 2004.

5.2.8 The Council noted with satisfaction that the ESCAP/WMO Project on Support to the Implementation of the Regional Haze Action Plan of ASEAN Member Countries had been finalized and

recognized the need to follow up that activity. The Council expressed its appreciation to the Government of Malaysia for opening the new GAW station in Danum Valley, Sabah.

5.2.9 The Council appreciated intensive GAW capacity-building activities and those experts and centres hosting training through courses, personnel exchange and technical calibration workshops. In particular, the GAW Training and Education Centre in Germany hosted training courses on measurements of gases, aerosols and ultraviolet. Germany was acknowledged for the extension of that programme for another three years. Recognizing a critical need in the establishment and maintenance of GAW stations and training personnel in developing countries, the Council expressed its gratitude to the host countries and to the Governments of Canada, Germany, Japan, Switzerland and the United States for making substantial resources available, and to Argentina, the Czech Republic, Egypt and Spain for hosting ozone and ultraviolet measurement, training and calibration workshops. The Council encouraged Members to continue undertaking and hosting such training courses, especially for staff in developing countries.

5.2.10 The Council was informed that the GAW Station Information System was notably enhanced. It contained comprehensive information on all the GAW stations and could be accessed on-line through the user-friendly Web site. The Council was pleased that the Members could easily find information on GAW stations in a variety of formats, including maps by measurement parameters, and urged countries to update that information regularly so that the GAW Station Information System could develop further as a basic GAW network tool.

Ozone assessment and support to relevant conventions

5.2.11 The Council acknowledged the importance of the continued support in monitoring the chemical components and physical properties of the atmosphere related to international conventions. It emphasized that in order to detect the expected recovery of stratospheric ozone in the coming decades it was necessary to maintain the global network of ground-based ozone spectrophotometers and continuously support their calibrations in developing countries. In that regard, the Council adopted Resolution 3 (EC-LVI).

5.2.12 The Council welcomed Decision VI/2 — Ozone-related monitoring and research activities for the Vienna Convention, made during the Sixth COP to the Vienna Convention for the Protection of the Ozone Layer, to establish a trust fund at the UNEP Ozone Secretariat in Nairobi, with the primary aim to provide complementary support for the continued maintenance and calibration of the existing WMO/GAW ground-based stations for monitoring column ozone, ozone profiles and ultraviolet radiation in the developing countries and countries with economies in transition, to address global

coverage. The Ozone Secretariat would annually urge the Parties and international organizations for voluntary contributions to the Fund. The Council requested the Secretary-General to continue issuing the Antarctic Ozone Bulletins during the ozone hole season to inform Members, the scientific community and the public of the status of the ozone hole.

GAW Urban Research Meteorology and Environment project

5.2.13 Several of the members informed the Council of recently initiated urban activities and underlined the importance of GURME. The Council was pleased to note that a new GURME project on Improvement of Air Quality Forecasting in Latin American Cities had been developed following the GURME Expert Workshop on Air Quality Forecasting held in Mexico in 2002. That project sought to improve air quality forecasting in Mexico City, Santiago de Chile and Sao Paulo through capacity-building workshops. The first workshop was held in Santiago in October 2003. The second goal was to transfer knowledge gained in those three cities to others in Latin America. The Council was pleased to note that in that project, collaboration between countries and different agencies was taking place. The Council also noted that the passive sampler project had been successfully brought to an end and recommended that the deployment of passive samplers should be further promoted within GURME. Further workshops on air quality modelling and forecasting were seen as an important part of capacity-building.

5.3 WORLD WEATHER RESEARCH PROGRAMME (agenda item 5.3)

5.3.1 The Executive Council noted with satisfaction the progress made in the implementation of WWRP on development and application of improved weather forecasting techniques, with emphasis on high impact weather. The WWRP projects involved different timescales of weather prediction and addressed specific societal and economics research. The Council was pleased to note that the WWRP Sydney 2000 FDP had reached a successful conclusion. The Council commended and congratulated the Australia Bureau of Meteorology and all the participants for their hard work and excellent collaboration to ensure the FDP every success both during the main phase of the project and in the follow-up activities. It recommended that further technology transfer to the operational community be effected through cooperation with CBS and ETR. The Council was pleased with the guidance which the CAS Science Steering Committee/WWRP gave to FDPs in Olympic host countries and encouraged such practice to be continued.

5.3.2 The Council was pleased with the progress of MAP, especially in strengthening the involvement of the social impacts community, and the completion of the MAP re-analyses project at ECMWF. It

welcomed efforts to make those analyses and observations available to a wider community for use in research projects, including data assimilation at the mesoscale. The Council noted with satisfaction that, within the MAP Framework, an FDP had been started, which focuses on flood forecasting in the Alps. The Council was pleased to see the progress that had been made in aspects of the Mediterranean Experiment on Cyclones that Produce High Impact Weather in the Mediterranean and the Aircraft In-Flight Icing Project.

5.3.3 In view of the importance of research QPF, and on sand and dust storms in natural disaster reduction and mitigation, the Council welcomed the proposal of the CAS Science Steering Committee/WWRP to organize a WWRP exploratory workshop on the establishment of a warm season QPF test-bed. The Council urged Members in North Africa, the Middle East and other regions to enhance their research efforts to improve the prediction and early warning of sand and dust storms. The Council noted with appreciation that the International Symposium and WWRP Research Planning Workshop on Sand and Dust Storms would be held in Beijing on 12-16 September 2004, and further considerations would be given to those events.

THORPEX: a Global Atmospheric Research Programme

5.3.4 The Council noted with satisfaction that a new important and challenging WWRP component programme, THORPEX, had shown considerable progress in its organization and development since its establishment by Congress. The Council appreciated the prompt actions undertaken by the Secretary-General in the establishment of a THORPEX International Programme Office as an integral part of the AREP Department and a THORPEX Trust Fund to support the International Programme Office and international programme activities.

5.3.5 The establishment of a European THORPEX Regional Committee in addition to those in North America and Asia was very welcome. In accordance with national priorities of participating Members, committees were developing regional implementation plans focusing on large-scale phenomena that contained significant embedded mesoscale weather with high societal and economic impacts. In particular, the Council noted with appreciation that the Asian THORPEX Regional Committee, chaired by Japan, set up its regional programme including forecast experiment targeted at heavy rainfall events and tropical cyclone over the Asian Monsoon region and that details of that programme would be determined by the end of 2004. The Council highlighted that it was essential for the success of the THORPEX global campaign that more Members from all WMO Regions became involved in THORPEX experiments and research.

5.3.6 The Council was informed that the THORPEX North Atlantic Regional Campaign,

conducted jointly by North American and European THORPEX Regional Committees, had completed its field phase in October-December 2003 most successfully; a number of storms were targeted from the East Coast of North America through the Mediterranean. The following assessment and research phase of the campaign were under way. In that respect, the Council welcomed the organization of the First THORPEX International Science Symposium and THORPEX International Conference on Decision Making and Decision Support in 2004-2005. It encouraged THORPEX to envisage, whenever possible, real-time availability of additional measurements to all NMHSs (through GTS and other means) and to allow NWP centres access to the full set of experimental data to stimulate research activities worldwide. Those efforts would be supported by WWW.

5.3.7 The Council recognized that the THORPEX International Science Plan, developed in 2003, showed the strong potential of THORPEX to contribute considerably to the reduction and mitigation of natural disasters by transforming timely and accurate weather forecasts into specific and definite information in support of societal and economic decision-making. The Council was particularly interested in the Plan to develop a prototype multimodel ensemble forecast system, which would be developed as part of THORPEX by the major operational centres. The Council endorsed the idea that ensemble model products would be made available to Members, particularly in developing and least developed countries, who did not currently have their own numerical weather prediction capability, as a WMO product issued in real-time. The Council noted that the THORPEX International Implementation Plan, which would guide the execution of the programme during the next decade, with respect to regional and national priorities, was being developed in collaboration with the WWW, WCRP, the WMO Space Programme, and other relevant WMO Programmes and international organizations and in connection with the Group on Earth Observations. In that connection, the Council urged Members to favour the engagement of NMHSs (operational forecast and research entities and consumers of their products and services) and national academic institutions to THORPEX research, experiments (e.g. AMMA) and demonstration projects. Involvement of developing countries was especially welcomed. Recalling a WMO/ICSU initiative on the preparation of the International Polar Year 2007-2008 the Council noted with satisfaction that both the International Polar Year and THORPEX would be planned in a coordinated manner.

5.3.8 The Council was pleased with the manner of providing international coordination and management of the programme and recalled that the International Programme Office and priority international activities should be funded by Members participating in THORPEX and external contributors,

particularly through donations to a THORPEX Trust Fund. The Council expressed its gratitude to Canada, France and the United States for contributions to the Fund and to China for seconding an expert and welcomed plans of those Members as well as the United Kingdom to support further the International Programme Office. Aware of the necessity to sustain the activities of the International Programme Office, the Council strongly encouraged Members to make contributions through the Fund and to consider the secondment of appropriate experts.

5.4 TROPICAL METEOROLOGY RESEARCH PROGRAMME (agenda item 5.4)

5.4.1 The Executive Council was pleased to note that through Canada's initiation and the support of CAS, the Second International Workshop on Extratropical Transition of Tropical Cyclones was held in Halifax, Canada in November 2003. The Council noted also that the Seventh WMO Regional Workshop on Asian/African Monsoon Emphasizing Training Aspects, and an International Workshop on interaction between tropical and middle latitude weather systems would be organized during the current WMO biennium.

5.4.2 The Council re-iterated its support to hold the Third International Workshop on Monsoon Studies in China in November 2004 and hoped that priority would be given during the Workshop to the development of Web-based training documents, which would assist in updating forecasters on new forecasting techniques. The Council also hoped that the Workshop would provide necessary guidance and technical assistance that would enable the designated Monsoon Activity Centres in New Delhi, Nairobi and Kuala Lumpur to function more efficiently and effectively.

5.5 PROGRAMME ON PHYSICS AND CHEMISTRY OF CLOUDS AND WEATHER MODIFICATION RESEARCH (agenda item 5.5)

5.5.1 The Executive Council noted that according to the WMO Register of Weather Modification Activities about 70 countries were presently interested in precipitation enhancement and hail suppression. The International Meeting on Experts to Review Hail Suppression Methods and Results was held at the Hail Research Centre (Nalchik, Russian Federation, 27 September–2 October 2003). The methods for rain enhancement, especially for semi-arid zones of North Africa and Middle East, were discussed at the Regional Seminar on Cloud Physics and Weather Modification (Damascus, Syria, 17-20 October 2003) organized in collaboration with the Italian Ministry of Foreign Affairs and the League of Arab States. The Council emphasized the need for holding additional workshops and training programmes, focusing on precipitation enhancement and hail suppression projects planning and assessment, and encouraged donor countries to provide further support to allow developing countries to participate in such workshops. The Committee

noted with appreciation that a large rain enhancement programme, promoted by the Italian Ministry of Environment, would start in southern Italy in November 2004.

5.5.2 The Council was informed that a number of recent peer-reviewed publications including the National Academy of Sciences Report on the future of weather modification in the United States provided strong probabilistic evidence of a good cost/benefit ratio of precipitation enhancement. Notwithstanding some uncertainties in the broad field of weather modification, precipitation enhancement and/or hail suppression remained a real potential where proper conditions existed.

5.5.3 The Council emphasized that weather modification should be viewed as part of an integrated water resources management strategy; each project should be treated as a possible tool for water resource management and designed as a scientific project for understanding the relevant physical processes. Government decision makers and funding agencies should be aware that such projects needed meticulous planning, considerable funding and personnel resources as well as time to obtain conclusive results. In that regard, in order to facilitate the planning of precipitation enhancement and/or hail suppression projects on a scientific basis, the Secretary-General was requested to arrange for: (a) updating the WMO Precipitation Enhancement Project Report No. 3 (1976) containing guidelines for the proper planning of experiments; (b) making available on CD-ROM all other still valid Precipitation Enhancement Project Reports; (c) explore the curriculum for training in cloud physics for application to weather modification with universities that already had such programmes, make the information available to interested Members and, when, possible consider granting relevant fellowships; (d) encourage a regional approach to the studies, planning and execution of science-based experiments (e.g. the MEDSEEME region, the North-West Africa, Asian Mid-latitude area, hail-suffering middle latitude sub-regions); and (e) resubmission of the MEDSEEME-PEP project of interest to more than 20 countries to the European Commission for possible funding.

6. APPLICATIONS OF METEOROLOGY PROGRAMME (agenda item 6)

6.1 PUBLIC WEATHER SERVICES PROGRAMME (agenda item 6.1)

6.1.1 The Executive Council noted with appreciation the report of the PWS Programme on progress achieved in its implementation. It expressed satisfaction that activities and continuing developments within the PWS Programme, and the valued contributions of its serving experts, had assisted Members to improve the effectiveness of their own national PWS efforts. The Council re-emphasized the importance it attached to a vibrant PWS Programme and strongly supported its activities to enhance the visibility and status of NMSs

through the improved delivery of high quality, credible public weather services.

6.1.2 The Council stressed that capacity-building activities were a vital component of the PWS Programme and welcomed training events aimed at improving NMSs' capability to produce effective and comprehensive PWS to the community. As part of the capacity-building efforts, an RA III/IV workshop on PWS was held in Miami in April 2003. A PWS workshop was organized for Members of Region I, in conjunction with the Third RA I Training Course on Tropical Cyclones in October/November 2003, in St. Denis, La Reunion. An RA II/RA V Regional Training Seminar on Data Processing and Forecasting Systems in Improvement of Public Weather Services was held in Brunei Darussalam in December 2003. A workshop for Public Weather Services was organized for Members of Regional Associations II and V in June 2003 in Chobaksar, Russian Federation. The Council expressed appreciation to the Governments of Brunei Darussalam, France, Russian Federation and the United States for hosting the respective training events. The Council welcomed an expert meeting on capacity-building strategies to be held in the latter part of 2004 with the aim of preparing guidelines on that subject for Members.

6.1.3 The Council welcomed the preparation by experts within the PWS Programme of the following Technical Documents, noting that they emphasized performance assessment of PWS, public understanding and response to warnings, cross-border warnings exchange, and air quality forecasts and biometeorology:

- (a) *Supplementary Guidelines on Performance Assessment of Public Weather Services* (PWS-7, WMO/TD-No. 1103);
- (b) *Guide on Improving Public Understanding of and Response to Warnings* (PWS-8, WMO/TD-No. 1139);
- (c) *Guidelines on Cross-border Exchange of Warnings* (PWS-9, WMO/TD-No. 1179); and
- (d) *Guidelines on Air Quality Forecasts and Biometeorology* (in print).

6.1.4 The Council recognized natural disaster mitigation and public response as one of the most pressing concerns of Members and welcomed the efforts within the PWS Programme in that regard. It agreed that the publication of guidelines to assist NMSs in efforts to improve public understanding and response to warnings, as well as on the establishment of cross-border exchange of warnings, were effective steps in assisting Members. In addition, the Council requested that the PWS Programme collaborate with relevant WMO Programmes and activities in the area of human health as part of response to natural disasters. In that regard, the Council strongly supported close interaction between the PWS Programme and the new WMO cross-cutting major programme on Natural Disaster Prevention and Mitigation to assist Members in the all-round effort to minimize the

adverse effects of severe weather events. In that regard, the Council recalled the view of Fourteenth Congress that close attention should be paid to determining the most suitable place for the PWS Programme within the WMO structure to ensure its adequate prominence. In that respect, the Council requested the Secretary-General to make appropriate proposals to its next session.

6.1.5 The Council noted with satisfaction the interest of the international media on matters of mutual concern and the steps taken by the PWS Programme to prepare better NMSs to respond to demands by media for information, especially on weather-related disasters. Also, recognizing the importance of communication skills in transferring weather information to the public, the Council endorsed the emphasis on improving communication and presentation skills of NMS staff to ensure that the desired message got across effectively and the public and media received the level and quality of information they required. The Council welcomed a meeting in 2004 of an expert team on presentation skills and dissemination technologies to prepare guidelines for Members in that area. The Council, however, stressed that much more effort in building the capacity of NMSs in media and communication skills was essential and requested that the PWS Programme and the IPA collaborate closely in that area. It further requested the Secretary-General to place more emphasis on that aspect of the work of the PWS Programme to reflect adequately the needs and concerns of Members.

6.1.6 The Council welcomed the continued excellent work regarding the two Web-based pilot projects that facilitated media/public access to official NMS information. Currently, there were 128 Members globally participating in the WWIS Web site whose contents included city climatological information (for over 1 000 cities from more than 153 Members), forecasts for the next few days (for 887 cities from 90 Members), and hyperlinks to contributing Members' national Web sites. The SWIC Web site provided a centralized authoritative source for media access to official NMS tropical cyclone warnings and information. It had been implemented in phases and in close cooperation with relevant RSMCs and had global coverage. Nineteen Members, mainly from RAs II and V, were participating in the project. A new page on heavy precipitation based on SYNOP reports had been added to the Web site. The Council instructed that steps should be taken to promote awareness of those Web sites and urged Members to host other language versions. The Council welcomed the Portuguese and the Arabic versions of WWIS and noted plans for a French version. The Secretary-General formally launched the Chinese version of the WWIS Web site at the China Meteorological Administration in Beijing in February 2004. Future plans for WWIS included provision of links to tourism-related Web sites. The Council congratulated the Hong Kong Observatory which had

provided leadership for the development of the projects under the auspices of WMO, for winning the Certificate of Merit – Best in E-Government and Services, in the Asia Pacific Information and Communication Technology Awards 2003, held in Bangkok, Thailand. Even though Hong Kong, China would continue to maintain WWIS and SWIC for the foreseeable future, the Council requested that the provision of resources to support the long-term development and maintenance of the sites be kept in view.

6.1.7 The Council noted the PWS Programme's emphasis on the effective application of new technology and research in the development, design and delivery of PWS. Specifically, the Council reiterated a number of opportunities that could be applied to enhance PWS: the evolution of digital forecasting techniques based on forecaster interaction with a database, the increasing availability of EPS products from major NWP centres with new possibilities in probabilistic forecasting, the progressive improvement in operational NWP models that had made longer-range forecasts more feasible, the possibility of making operational nowcasting products available to the public on a real-time basis through the Internet and other wireless delivery channels, and the application of XML, a new generation computer language specifically designed for seamless data exchange between computers, which enabled information systems to inter-operate with each other. The Council encouraged NMSs to keep abreast of new evolving technologies and research with the potential for PWS application.

6.1.8 The Council was informed of steps taken by the PWS Programme to develop information-sharing with appropriate WWW experts on the needs of PWS in product exchange and service delivery especially in areas such as the development of GTS and FWIS, Internet use, and satellite data utilization. The Council was pleased with that successful start of collaboration and suggested that it should be extended to include other commissions as well.

6.1.9 As regarded quality management issues applicable to PWS, the Council stressed that whereas guidance material on verification and service assessment represented a valid step towards quality management, a more rigorous approach should be developed to ensure best practices in production and delivery of PWS. In that regard, the Council strongly supported the development of additional guidance on quality management and continuous improvement, with emphasis on objectives and principles of quality management in an NMS context, as well as consideration for ongoing quality management including approaches and strategies.

6.1.10 The Council stressed the importance of the participation of WMO Members in the future activities related to the organization of the Olympic Games. It noted that good quality meteorological information was important for the organization of the Games, as

well as for the participants and the visitors to the Games. The Council further noted that during the Athens 2004 Olympic Games, the Olympics Web site would be linked to the WMO Web site for the duration of the Games. Experience gained from the successful PWS/WWRP weather and climate project in collaboration with the Australian Bureau of Meteorology at the Sydney 2000 Olympics could serve as preparations for similar collaboration with the Hellenic NMS at Athens 2004 Olympics, and it was expected that the China Meteorological Administration would share the experiences of their Hellenic counterparts as they prepared to provide support to the Beijing 2008 Olympics. It encouraged Members to contribute to a WMO guide on weather and climate support to the Olympic Games currently under preparation.

6.1.11 The Council recalled Resolution 13 (Cg-XIV) — Public Weather Services Programme, that considered the provision of PWS as one of the most fundamental functions of NMSs and an important channel through which national communities could benefit from the work of the NMS. Satisfying the increasing public demand for more accurate, timely and understandable warnings delivered through reliable, advanced communication systems was the continuing immediate challenge to NMSs. The Council requested the Secretary-General to maintain the focus of the PWS Programme on strengthening the capacity of Members to deliver effectively the best quality public weather services and urged reciprocal action by Members to achieve the same. In order to accomplish that, the Council recommended that high priority be given to the following areas:

- (a) Capacity-building and transfer of knowledge and technology, including training in media skills;
- (b) Promotion of performance evaluation, including service assessment and incorporation of user feedback;
- (c) Development of quality management principles and practices to monitor quality of outputs and delivery of PWS;
- (d) Application of new technologies and scientific understanding to design, develop and deliver PWS;
- (e) Incorporation of confidence and degree of uncertainty to increase the effectiveness of forecast information for the public;
- (f) Enhancing cooperation and coordination with emergency management and raising the level of public understanding and response to warnings, as part of disaster mitigation efforts;
- (g) Continuing future work with organizations responsible for sporting events in order to improve the visibility of the NMSs and of WMO;
- (h) Cooperation with relevant WMO Programmes and activities and international organizations, in particular WHO on issues relating to human health;
- (i) Economic valuation of meteorological services;

- (j) Promoting awareness of the importance of the impact of high quality, well delivered public weather services on the image and visibility of the NMS.

6.2 AGRICULTURAL METEOROLOGY PROGRAMME: INCLUDING THE REPORT OF THE PRESIDENT OF CAgM (agenda item 6.2)

6.2.1 The Executive Council noted with appreciation the report of the president of CAgM, Mr R.P. Motha, on recent activities and future plans of the Commission. The Council considered the progress achieved as significant, especially in accomplishing the tasks of working groups and rapporteurs, publishing four CAgM reports, one technical note, one proceedings, and in organizing two workshops, three expert team meetings, one Implementation/Coordination Team meeting, two training events, and two meetings of the Working Group on Agricultural Meteorology of RAs II and VI.

6.2.2 The Council was extremely pleased to note that WAMIS went online in November 2003 at www.wamis.org. WAMIS was of great benefit to global users of agrometeorological information and in aiding Members with improving their own agrometeorological products. The Council congratulated NOAA for their support in funding WAMIS. The Council also strongly urged Members who had not already participated in WAMIS to do so. The Council recognized the importance, especially to developing countries, of WAMIS and requested the Secretariat to seek a donor to make that demonstration project sustainable. It emphasized the utility of operational products, such as the Drought Monitor, for the developing countries and requested the Secretary-General to ensure wider dissemination of such products for operational use. The Council also expressed its appreciation to the Secretary-General in publishing the *Proceedings of the Interregional Workshop on Improving Agrometeorological Bulletins* (AGM Report No. 5, WMO/TD-No. 1108).

6.2.3 The Council noted with appreciation the work of the CAgM Management Group and the progress that it was making with implementing the recommendations of CAgM-XIII and the new OPAG structure for CAgM. The Council suggested that the Management Group consider the question of enlarging the scope of the Agricultural Meteorology Programme to cover ecology-related matters, including ecological monitoring assessment and prediction. The Expert Team Meeting on Strengthening Information and Dissemination Networks, including Monitoring and Early Warning Systems was held in Seoul, Republic of Korea from 22 to 26 September 2003. The Expert Team Meeting on Reduction of the Impact of Natural Disasters and Mitigation of Extreme Events in Agriculture, Forestry and Fisheries was held in Beijing, China from 16 to 20 February 2004. The Council urged CAgM to update the *Guide to Agricultural Meteorological*

Practices (WMO-No. 134) within the present intersessional period and to ensure that it was available in a computer compatible form as well as hardcopy.

6.2.4 The Council expressed its satisfaction with the organization of the Roving Seminar on the Application of Climatic Data for Desertification Control, Drought Preparedness and Management of Sustainable Agriculture which was held in Antigua and Barbuda from 21 to 30 April 2004. The Council emphasized the importance of developing programmes aimed at understanding the causes for desertification, at reducing and mitigating its impacts, at predicting droughts and at forecasting floods. The Council felt that the areas of natural disaster mitigation and hydrological safety were important to the Agricultural Meteorology Programme. It also suggested that the programme consider the issue of hazardous weather events and insurance.

6.2.5 The Council congratulated the Secretariat on developing the Caribbean Agrometeorological Initiative and it emphasized the importance of developing closer links between meteorological services and agriculture, especially in small islands developing States.

6.2.6 The Council noted with appreciation the initiative taken by WMO to co-sponsor with FAO and the Philippine Atmospheric, Geophysical and Astronomical Services Administration the Interregional Workshop on Strengthening Operational Agrometeorological Services at the National Level, which was held in Manila, from 22 to 26 March 2004. The Council was pleased to note that the CAgM Implementation/Coordination Team on Agrometeorological Services acted upon the recommendations of the Interregional workshop at its meeting held from 29 to 31 March 2004 at the same venue.

6.2.7 The Council noted with appreciation the collaboration between WMO's Agricultural Meteorology Programme and the WCP CLIPS project in co-sponsoring the Regional Technical Meeting on CLIPS and Agrometeorological Applications for the Andean Countries from 8 to 12 December 2003 at CIIFEN in Guayaquil, Ecuador. The Council praised that initiative and requested expansion of their collaboration on that cross-cutting issue of seasonal forecasts and agriculture. The Council noted that a similar meeting for Region I was held in Gambia in 2002 and it requested the Secretary-General to organize such meetings in other Regions.

6.2.8 The Council noted that the meetings of the Working Group on Agricultural Meteorology of Ras II and VI were held in Jeddah, Saudi Arabia from 15 to 17 December 2003 and in Braunschweig, Germany from 17 to 19 December 2003, respectively. The Council supported the continuing work of those regional working groups and looked forward to the implementation of the results of their deliberations.

Training events

6.2.9 The Council noted with appreciation the initiative taken by WMO to co-sponsor the training Workshop on Remote-sensing Data Interpretation for Applications in Agricultural Meteorology (RA II), held in Dehradun, India from 7 to 11 July 2003. The Council requested the Secretary-General to continue to hold similar training seminars in other regions during the present intersessional period.

6.2.10 The Council noted with appreciation the initiative taken by WMO to sponsor the training Seminar on Information Technology Related to Internet for Agricultural Meteorology at ICPAC in Nairobi, Kenya from 1 to 5 December 2003. The use of Internet technology in disseminating information was important to Members, especially in Region I. Of particular interest to the Council was the status of Internet technology in the Member countries and that seminar provided useful information on that subject.

6.2.11 The Council approved the proposal of the Selection Committee for the Norbert Gerbier-MUMM International Award for 2005 and conferred the 2005 award on Drs G. Beig, P. Keckhut, R.P. Lowe, R.G. Roble, M.G. Mlynczak, J. Scheer, V.I. Fomichev, D. Offermann, W.J.R. French, M.G. Shepherd, A.I. Semenov, E.E. Remsberg, C.Y. She, F.J. Lübken, J. Bremer, B.R. Clemesha, J. Stegman, F. Sigernes, and S. Fadnavis for their paper entitled "Review of mesospheric temperature trends", published in *Reviews of Geophysics*, Volume 41, Number 4, 2003, pages 1-1 to 1-41.

6.3 AERONAUTICAL METEOROLOGY PROGRAMME; THE REPORT OF THE PRESIDENT OF CAeM (agenda item 6.3)

6.3.1 The Executive Council noted with appreciation the report of the president of CAeM on progress made to reach the goals contained in the 6LTP, highlighting significant aeronautical meteorology issues and events since the last Council session. The Council expressed its gratitude to all CAeM members for their valuable contribution to the achievements of the Commission, particularly in training and fostering contacts with aviation users — the highest priorities of the Commission — as well as to the continued implementation of the WAFS and the AMDAR Programmes.

6.3.2 The Council noted with satisfaction that WMO representatives and many Members had actively participated at six ICAO meetings during the intersessional period. The Council was pleased to note that the CAeM Management Group had met formally in Hall (Austria) in April 2004, had discussed progress made in implementing the agreed work programme activities, and had provided guidance on how best to implement its remaining tasks in time for the next Commission session, planned to be held in 2006.

Training in aeronautical meteorology

6.3.3 Despite the persistent lack of adequate funding for training, the Council noted with

satisfaction that thanks to the cooperation of Members and parent Organizations, since the last Council session training events that included in particular workshops on AMDAR, volcanic ash, and workstation operation and display of WAFS products in GRIB and BUFR code forms, were conducted and attended by participants from 104 countries. The Council expressed its appreciation to Canada, France, the Russian Federation, South Africa, Tonga and the United Kingdom for their contributions to the organization of those events.

6.3.4 The Council noted with satisfaction that three important guidance materials were published in 2004 to back-up training activities — namely the updated *Guide to Practices for Meteorological Offices Serving Aviation* (WMO-No. 732) in four languages, the booklet *Aviation and the Global Atmospheric Environment*, published jointly by WMO and UNEP in English, and the French version of the *AMDAR Reference Manual* (WMO-No. 958). In addition, the *Guide on Meteorological Observation and Information Distribution Systems at Aerodromes* (WMO-No. 731) was being updated.

6.3.5 The Council stressed the importance it placed on the need for training on such topics as cost recovery, quality management, and GRIB and BUFR. The Council recognized that, while training in aeronautical meteorology under the WMO 6LTP was given the highest priority, there was still a disparity between earmarked financial resources and the training needs of Members. The Council reiterated its appeal to Members to organize jointly aeronautical meteorology training events with WMO.

Fostering closer contacts with the aviation community

6.3.6 The Council recognized that the mutual participation of ICAO and WMO at meetings convened by the two Organizations and attended by aviation representatives contributed to fostering closer contacts with the aviation user community. Those meetings included the Third Workshop on Volcanic Ash (Toulouse, France, 29 September-3 October 2003), the MET Cost Recovery Workshop for the States in the Eastern Part of the ICAO European Region (Moscow, Russian Federation, 4-7 November 2003), the Sixth Meeting of the AMDAR Panel (Pretoria, South Africa, 15-17 October 2003) and the Sixth Meeting of the ICAO Committee on Aviation Environmental Protection (Montreal, Canada, 2-12 February 2004). Furthermore, cooperation between ASECNA and WMO continued through mutual consultation on various aeronautical meteorological issues and collaboration in holding training events.

Cost recovery

6.3.7 In addition to the MET Cost Recovery Workshop held in Moscow (see general summary paragraph 6.3.6), the Council was pleased to note that a successful Regional Seminar on Cost Recovery and Administration in RA V, hosted by Tonga on 1-5 December 2003, was attended by

19 participants from 16 countries from Region V, with the participation of Mr Neil Gordon, the president of CAeM, as one of the lecturers. In view of the importance given to cost recovery by many countries, the Council requested that cost recovery workshops also be organized as soon as possible in other WMO Regions, in particular Region I, in collaboration with ICAO. It noted the advantages of involving other interested stakeholders such as civil aviation, airlines and airport authorities in such workshops.

6.3.8 The Council noted with interest the important work undertaken by the ICAO Air Navigation Services Economics Panel (ANSEP) that had met three times since 2003 to review and update the ICAO *Manual on Air Navigation Services Economics* (ICAO Doc. 9161/3). The Council noted with satisfaction the active participation of WMO at those ANSEP meetings and thanked Members who designated advisors to be part of their national delegations that attended those Meetings. The Council was informed about a proposal to publish separately Appendix 6 to the current ICAO *Manual* that provided guidance for determining the costs of aeronautical meteorological service as well as a proposal that would require NMSs to pay for AIREP costs provided by the airline industry. As a result of serious concerns expressed by WMO and experts from a number of States regarding the two proposals, the last meeting of ANSEP held in May 2004 agreed to maintain that Appendix as part of the *Manual* and to avoid making reference to reimbursement of AIREP costs to the airlines. The Council requested the WMO Secretariat to remain vigilant on those and related issues. The Council requested that the *WMO Guide on Aeronautical Meteorological Services Cost Recovery: Principles and Guidance* (WMO-No. 904) be revised to reflect changes made to the ICAO *Manual* as soon as the work of ANSEP would be completed and endorsed by the relevant ICAO bodies.

6.3.9 The Council was informed that, on 31 March 2004, in line with the establishment of the Single European Sky, the European Union had implemented a regulation that required the separation of the role of the provider of aeronautical meteorological service from that of the regulator by 1 July 2005. The Council noted that the European Commission was developing a set of common requirements that included, among other things, certification and meteorological service costs auditing by independent bodies and the publication of accounts in accordance with European Union accounting standards. In view of the possible impact of such a regulation on other NMSs in other Regions, the Council re-iterated the view of Fourteenth Congress that requested CAeM and the Secretary-General to monitor closely the situation and to report to the Council. Moreover, the Council requested that such a report should highlight possible implications and lessons learned from the implementation of the Single European Sky. In that regard, the Council

encouraged collaboration between WMO and EUROCONTROL.

6.3.10 Members of the Council expressed their views on the advantages and disadvantages of the separation of the responsibility of the service regulator from that of the service provider, while noting that that was a matter for national or economic-grouping decision.

Implementation of the World Area Forecast System

6.3.11 The Council was pleased to note the continued progress made in implementing WAFS and noted with satisfaction that WAFS-related regulatory material would be in place as part of Amendment 73 to ICAO Annex 3/WMO Technical Regulations in November 2004 to facilitate the advent of the WAFS final phase in July 2005. The Council was informed that the First Meeting of the ICAO World Area Forecast System Operations Group was held in Lima (Peru) on 10-14 November 2003 and was attended by WMO.

6.3.12 The Council was informed about progress being made to ensure the continued dissemination of WAFS data and products through the SADIS and ISCS WAFS broadcasts. As a result of the decision to use the BUFR code form for the transmission of all WAFS SIGWX forecasts and the phasing out of all current T4 chart broadcasts planned for 1 July 2005, the Council emphasized the need for urgent actions to be taken by Members to upgrade their current software with the latest versions of the GRIB and BUFR visualization software to enable them to receive those broadcasts, preferably well before the target date of July 2005. The Council urged that the development of such visualization software be completed as soon as possible. The Council noted with satisfaction that training on workstation operation and display of WAFS products in GRIB and BUFR code forms had been completed in most Regions under the SADIS broadcasts and that plans were made to do the same for Regions under the ISCS broadcasts.

6.3.13 The Council was informed of plans to move to a second generation of SADIS workstations starting from 1 September 2004 and noted that there would be a need to assist developing countries in the acquisition of the new workstations. The Council was also informed of additional products provided by the Moscow World Meteorological Centre to members of the Commonwealth of Independent States to serve international aviation.

Observations, forecasts and warnings in the terminal area

6.3.14 The Council was pleased to note the active participation of WMO at the ICAO Aerodrome Meteorological Observing System Study Group Meeting held in 2003. The Council noted with interest that that meeting addressed, among other issues, aerodrome observation requirements including relevant draft provisions contained in

Amendment 73 to Annex 3/Technical Regulations, the capability of automatic observing equipment to meet aeronautical requirements, aerodrome forecast requirements and the review of the draft ICAO *Manual on the Use of the Automatic Observing Systems*.

Quality management issues

6.3.15 The Council was pleased to note that the Expert Team on Quality Management had been established in the new CAeM structure. The Council was informed that that Expert Team would carry out its tasks in close coordination with ICAO, among other things, to prepare joint ICAO/WMO guidance material to assist Members in developing quality management systems for the provision of meteorological service for international air navigation (Recommendation 4/3 of the 2002 Conjoint ICAO/WMO Meeting). The Council requested that that guidance be completed and made available as soon as possible.

Automated aircraft observations

6.3.16 The Council noted with satisfaction that the AMDAR Panel had played a major role in the increased availability of AMDAR observations and that, since its establishment, the number of aircraft observations disseminated on the GTS per day had increased to about 150 000 at the end of 2003, which represented over a three-fold increase since 1998. The number of countries involved in AMDAR activities continued to increase with the latest development being the operational JMA AMDAR Programme. The Council also took note of the promising developments of EUMETNET and its E-AMDAR Programme showing increased activities in close cooperation with airlines. The Secretariat and the AMDAR Panel were requested to assist NMSs in accessing AMDAR data and to facilitate the development and implementation of the ASECNA AMDAR Programme. The Council attached considerable importance to the continued activities of the Panel in four areas — namely, the completion of the initial four high priority AMDAR projects, assistance to CBS and CAeM to comply with the directives of Congress and Council to migrate AMDAR activities to the WWW GOS, the development of a humidity sensor, and assistance to AMDAR Members.

6.3.17 The Council recalled that, in relation to ongoing support to AMDAR activities and their sustainability, Fourteenth Congress agreed that AMDAR should be more fully integrated into the WWW Programme and requested the Council to consider appropriate measures in that regard. The Council further recalled that its 2003 session invited CBS and CAeM to address that integration. The Council noted with satisfaction that the fourth session of the CBS Management Group (Geneva, 13-16 October 2003) had strongly emphasized that AMDAR, as a component of the Integrated Observing Systems, should be fully integrated into the WWW Programme and its coordination

mechanisms. Furthermore, the CBS Management Group agreed that a Rapporteur on AMDAR activities be established within the OPAG on IOS, with links to the AMDAR Panel and to CAeM. The Council was informed that, following consultations with the president of CAeM and the chairperson of the AMDAR Panel, the acting president of CBS had nominated Mr J. Dibbern (Germany) as Rapporteur on AMDAR activities within the CBS OPAG on IOS.

6.3.18 The Council was pleased to note that the relocation of the Technical Coordinator to the Bureau of Meteorology in Australia and subsequent arrangements for his continued services to the Panel, agreed on between WMO and the Bureau, had resulted in a substantial reduction of the costs for the technical support of the Technical Coordinator to the Panel. The Council expressed its appreciation to the United Kingdom Met Office that had kindly hosted the Technical Coordinator from 1999 to 2003 and had provided him with the necessary services and facilities at no cost to the Panel, and expressed its gratitude to Australia for seconding the Technical Coordinator to WMO with similar services and facilities also provided at no cost to the Panel.

6.3.19 The Council re-iterated its concern that current AMDAR activities could be curtailed unless adequate contributions to the AMDAR Trust Fund were forthcoming. The Council expressed its appreciation to Members already contributing to the Fund and strongly encouraged others to do the same.

Aviation and the environment

6.3.20 The Council was pleased to note that the co-chairperson of the OPAG on TREND, Mr H. Pümpel (Austria), represented WMO at the Meeting of the ICAO Committee on Aviation Environmental Protection held in Montreal in February 2004. The Council was pleased to note that the booklet *Aviation and the Global Atmospheric Environment*, that summarized the current scientific and operational knowledge on the impact of aviation on the environment, prepared by WMO in cooperation with UNEP, was jointly published in English in 2004 by the two Organizations.

Thirteenth session of the Commission

6.3.21 The Council noted with appreciation the offer from the alternate to Mr M.M. Arafa for Egypt to host the thirteenth session of CAeM, planned to be held in 2006.

Report of the Conjoint WMO CAeM/ICAO Meteorology Divisional Meeting

6.3.22 The Council recalled that, in considering the report of the Conjoint WMO CAeM/ICAO Meteorology Divisional Meeting held in Montreal, Canada in September 2002, its fifty-fifth session had recorded its decision on 20 of the 28 Recommendations dealing with various aspects of aeronautical meteorology in Resolution 10 (EC-LV) — Report of the Conjoint WMO CAeM session/ICAO Meteorology Divisional Meeting. Similar to previous

practice, the Secretariat deferred the submission for consideration by the Council of eight other Recommendations of the Conjoint Meeting dealing with amendments to various existing provisions in ICAO Annex 3/WMO Technical Regulations [C.3.1] pending the results of consultations of States/Members undertaken by ICAO on behalf of both ICAO and WMO in accordance with established practice between the two Organizations.

6.3.23 The Council was informed that following the conclusion of the consultation process, the ICAO Council adopted the eight Recommendations on 25 February 2004 as Amendment 73 to Annex 3 — Meteorological Service for International Air Navigation, International Standards and Recommended Practices, which was identical, *Mutatis mutandis*, with Technical Regulations [C.3.1], *Technical Regulations* (WMO-No. 49), Volume II.

6.3.24 The Council, in adopting Resolution 4 (EC-LVI), approved the alignment of Technical Regulations [C.3.1] with Amendment 73 to Annex 3.

6.3.25 The Council noted that consequential amendments to Appendix 1 to Technical Regulations [C.3.1], Flight Documentation — Model Charts and Forms and Technical Regulations [C.3.3] that resulted from the implementation of Amendment 73, had been developed by WMO in coordination with ICAO. The Council, in adopting Resolution 4 (EC-LVI), also approved the alignment of the Technical Regulations [C.3.1] with Amendment 73 to Annex 3.

6.3.26 The Council noted that, due to the necessity for consequential code changes to be approved through CBS, there would be a small discrepancy between the *Technical Regulations* and the current *Manual on Codes* (WMO-No. 306) until the relevant code changes come into force, probably in 2005. It requested the Secretariat to take the necessary measures to avoid such situations in the future.

6.4 MARINE METEOROLOGY AND OCEANOGRAPHY PROGRAMME; THE REPORT OF THE CO-PRESIDENT OF JCOMM (agenda item 6.4)

6.4.1 The Executive Council noted with interest and appreciation the report of the co-president of JCOMM, Mr J. Guddal, on the work undertaken during the past year in the implementation of the Commission's work plan, as well as the planning now under way for JCOMM-II (Halifax, September 2005). It expressed its thanks to him, to his co-president, Mr S. Narayanan, to the chairpersons and members of the JCOMM component bodies and to all members of the Commission for their valuable efforts on behalf of WMO.

6.4.2 The Council noted with appreciation a number of substantive achievements of JCOMM during the past 12 months, including:

(a) The major JCOMM marine products workshop, Ocean Ops 04, which was hosted by *Météo-France* in Toulouse on 10-15 May 2004. The workshop had attracted a large number of both

the providers and users of operational ocean products, and had resulted in important input for the further development of the JCOMM Electronic Products Bulletin as well as implementation of MPERSS. The Council expressed its appreciation to *Météo-France* for its considerable efforts in hosting and supporting the workshop;

- (b) The implementation of the VOSclim Project, with data, metadata and quality monitoring results available through the project Web site;
- (c) A number of major capacity-building events, including the Workshop on Wind Wave and Storm Surge, Analysis and Forecasting for Caribbean Countries (Dartmouth, Canada 16-20 June 2003) and the Second Workshop on South China Sea Storm Surge, Wave and Ocean Circulation Forecasting (Kuantan, Malaysia, 15-19 September 2003); the Second International Workshop for Port Meteorological Officers (London, 21 July-1 August 2003); finalization of the WIOMAP Project Document for the Western Indian Ocean; and gradual implementation of the SEACAMP Project in the South-East Asian region;
- (d) Enhanced cooperation between JCOMM and the IOC International Oceanographic Data and Information Exchange, the development of joint pilot projects for integrated ocean data management and the close involvement of JCOMM in FWIS;
- (e) Publication of the JCOMM brochure entitled *Integrating and Modernizing Global Ocean Data and Services for the Benefit of the Maritime Community* and enhancement of the JCOMM Web site, including the new JCOMM logo. The Council expressed its appreciation to Australia for printing the brochure in four languages;
- (f) The implementation of a new Web site (<http://weather.gmdss.org>), hosted by *Météo-France*, providing, in real-time, the global marine forecasts and warnings broadcast via satellite under the marine broadcast system for the GMDSS;
- (g) Continued expansion of the JCOMMOPS facility, with new support tools and services being offered to users. The Council expressed its considerable appreciation to those Members which contributed financially to the operation of JCOMMOPS.

6.4.3 The Council noted with appreciation that the Memorandum of Understanding on JCOMM Rules and Procedures, which had been approved by Fourteenth Congress, had subsequently also been approved by the twenty-second IOC Assembly (Paris, July 2003) and signed by the Secretary-General and the Executive Secretary IOC. Preparations for JCOMM-II were now under way, on the basis of agreements laid down in the Memorandum of Understanding, with IOC having primary responsibility for the preparation and conduct of the session.

6.4.4 The Council noted the concern expressed by the JCOMM Management Committee, based on advice from the JCOMM Ship Observations Team, that it was now becoming critical to address the problem of unequal sharing of the costs of collecting ship-based observational data, if potentially serious reductions in the real-time availability of such data were to be avoided. To that end, the Management Committee was briefly advised that various options for resolving the problem were required, which might include some form of cost-sharing, and had requested the Ship Observations Team to proceed with the preparation of a proposal on that issue for consideration by the Executive Council. The Council recognized that the problem was not necessarily a global one, but might best be addressed on a regional basis, and that in any case more detailed information was required before any decisions could be considered. It therefore requested that such detailed information, together with possible options for solutions, should be made available for consideration by its fifty-eighth session in 2005.

6.4.5 The Council reiterated its belief in the continuing importance of real time, ship-based meteorological and oceanographic observations to operational meteorology and oceanography and to global climate studies. It recognized that such observations were normally made by ships' officers, acting as volunteer observers, and that it was therefore important to keep the observation and data transmission procedures as simple as possible, consistent with the quality and integrity of the data. In that context, the Council agreed that it was important to maintain flexibility in the codes used for ship to store data transmission, and in particular that the standard character codes (SHIP, BATHY, TESAC) should remain options for such transmission, within the overall context of the migration to table-driven codes for the GTS.

6.4.6 The Council noted with satisfaction that the special seminar to celebrate the 150th anniversary of the Brussels Maritime Conference of 1853, together with the second JCOMM Workshop on Advances in Marine Climatology (CLIMAR-II), which had taken place in Brussels on 17-22 November 2003, had been an outstanding successes. The celebration seminar, which was held under the High Patronage of H.M. King Albert II of Belgium, had provided a fitting tribute to what had been the first example of extended international cooperation in meteorology and oceanography, while CLIMAR-II had contributed to enhanced capabilities in marine climate data analysis and applications. The Council expressed its appreciation to Mr H. Malcorps and the Royal Meteorological Institute, Belgium, for hosting and supporting those important events, as well as to Mr S. Woodruff (United States) and all others who had contributed to their organization.

7. HYDROLOGY AND WATER RESOURCES PROGRAMME (agenda item 7)

The HWRP had continued to be implemented in accordance with the 5LTP and, more recently, the 6LTP as adopted by Thirteenth and Fourteenth Congress, respectively. Emphasis had been on bringing the tasks set by CHy-XI to a satisfactory conclusion, preparing for the twelfth session of CHy, to be held in Geneva from 20 to 29 October 2004, supporting the continued development of WHYCOS, designing and implementing a Flood Forecasting Initiative, and responding to the many new and urgent demands for cooperation originating from within and outside the Organization.

7.1 HYDROLOGY AND WATER RESOURCES PROGRAMME; THE IN-DEPTH REPORT OF THE PRESIDENT OF CHy (agenda item 7.1)

7.1.1 The president of CHy submitted to the Executive Council an in-depth report of the activities of the Commission, prefaced by a presentation on the state of the world's water resources and the role of hydrology and water resources within WMO. The Council also reviewed progress with the implementation of the HWRP on the basis of information provided by the president of CHy and the Secretary-General.

7.1.2 The Council thanked the president of CHy for his in-depth report. It noted that satisfactory progress in the five CHy projects, as well as in the individual activities of both subject-oriented working groups had been achieved, mostly due to the decision of the AWG for reorienting resources originally foreseen for second sessions of the Working Groups, in order to support experts in their tasks.

7.1.3 The Council noted also the efforts made towards enhancing the cooperation between CHy and the Regional Working Groups on Hydrology, as well as the continued collaboration with other technical commissions in areas such as the FWIS, the RCCs, natural disasters and the WMO QMF.

7.1.4 While it noted with interest that a closer alignment between the work of the HWR Department and the work of CHy had been achieved, the Council shared the concern of the president of CHy that a mechanism for tracking the progress of the designated experts was needed. In that sense, it welcomed the initiative of CHy to discuss at its twelfth session a more flexible approach to its structure.

7.1.5 As regarded the programme of work of CHy for the next intersessional period, the Council endorsed the thematic areas proposed by the AWG, and suggested that, in view of the limited resources available, particular emphasis should be placed on activities related to flood forecasting and water resources assessment. Specific mention was made of some additional aspects to be considered by CHy-XII, such as snowmelt-induced floods, flash

floods, intercomparison of models and optimization of precipitation in water-scarce areas, for its future activities.

7.1.6 The Council welcomed the offer made by the representative of HMEI, to involve experts from that association in the work of the Commission, especially in the field of technical development, as that would bring the perspective of the private sector into the work of CHy.

7.1.7 With respect to the HWRP in general, the Council stressed the need for raising its profile within WMO through its active participation in cross-cutting issues such as the Natural Disaster Prevention and Mitigation Programme, allocating more resources to it, and bringing synergy between the NHSs and NMSs to work closer together. The Council also emphasized the need for the HWRP to establish itself as a leader in water resources assessment and flood forecasting and management making use of WMO's unique position as the leader in weather, climate and water issues. It encouraged the programme to work with international organizations active in the water sector to leverage its position and gain visibility which could help in reaching out to extrabudgetary resources.

Panel of Experts on Fresh Water

7.1.8 The Council noted that in the light of Resolution 18 (Cg-XIV) — Panel of Experts on Fresh Water, the CHy AWG, at its third session in February 2004, had reviewed two alternative proposals for establishing a Panel of Experts on Fresh Water prepared by the Secretariat in consultation with the president of CHy. The AWG agreed that the alternative wherein the Panel was proposed to deal with all water-related activities under the ownership of UN-Water responded better to the spirit of Resolution 18 (Cg-XIV), as the other alternative was more limited in scope and would be dealt with more effectively in the framework of CHy. Therefore, that first proposal was presented to the UN-Water meeting held in May 2004 at WHO Headquarters in Geneva for consideration.

7.1.9 The Council noted the outcome of the consultations made by the Secretariat with other United Nations agencies working on water issues through UN-Water and the draft summary of discussions at the UN-Water meeting.

7.1.10 The Council recalled that UN-Water had been re-established in its present form as the coordination mechanism between various United Nations agencies involved in issues related to water with strong support and efforts of WMO and was now providing effective coordination, and at the same time acting as the voice of the United Nations on all water-related issues. The Council also noted the existence of the expert group on Target 10 of the Millennium Project Task Force on water that reported to the United Nations Secretary-General on best strategies for achieving the Millennium Development Goals and the recently established United Nations Secretary-Generals' Advisory Panel on Water and

Sanitation. The Council therefore observed that there was need to be more cautious in the approach in order to avoid any duplication of efforts. The Council also recognized the important role being played by various international non-governmental forum like the World Water Council and the Global Water Partnership, where WMO was actively involved being a Governor of the former and a Sponsoring Partner of the latter.

7.1.11 After debating at length various alternatives for the way forward on the issue, the Council recommended that given the limited resources, it would be appropriate to concentrate on delivering concrete outputs which would also be in the spirit of United Nations General Assembly Resolution 58/217 — International Decade for Action, "Water for Life", 2005-2015 (see general summary paragraph 7.1.35). The Council therefore saw little merit in continuing with the proposal and recommended that that issue might not be pursued any further.

Programme on Basic Systems in Hydrology

Water resources assessment

7.1.12 The Council noted that a CD-ROM had been published containing the fifth edition of the *Guide to Hydrological Practices* (WMO-No. 168) in English, French, Russian and Spanish and that it had been distributed to Members. The Council also noted that a Review Committee for the preparation of the sixth edition of the *Guide* had been established and activities were well under way for the preparation of a first draft to be submitted for comments to CHy-XII.

7.1.13 The Council was informed that a CD-ROM containing the WMO/UNESCO *Water Resources Assessment — Handbook for the Review of National Capabilities* in pdf format and training material on the subject, had been prepared. It requested the Secretary-General to ensure that the CD-ROM be distributed to all Members. The Council was also informed about progress on the development of a user-friendly manual for assessing the location and availability of the countries' water resources. It noted that a preliminary draft of the manual would be presented to CHy-XII.

Hydrological technology including HOMS

7.1.14 The Council was informed of the successful realization of five training workshops in three Region I countries, using as instructors the African professionals trained in 2002 in Ottawa, Canada. In total, 84 professionals from Ghana, Kenya and Nigeria had been trained from October to December 2003 in one-week courses on flood and low-flows frequency analysis and flood plain delineation procedures using Canadian HOMS components, where they were also introduced to the utilization of the *HOMS Reference Manual*, thus confirming the effectiveness of the strategy of technology transfer through roving seminars. The topics of the training activities had been chosen after consultation with representatives of several HOMS National

Reference Centres of the Region, thus ensuring that the content of the training was demand-driven.

World Hydrological Cycle Observing System

7.1.15 The Council was pleased to note the continuing progress in the development and implementation of the WHYCOS programme. It noted that in several cases, where projects' implementation had come to an end, new initiatives were being developed, thanks to strengthened regional cooperation, based on their achievements. In other cases, a second phase of the projects was being developed.

7.1.16 The Council was informed that, with financial support from the European Union, the IGAD-HYCOS project document had been finalized and the IGAD Secretariat had presented the document to donors for funding. It further noted with satisfaction the advanced negotiations under way with France for the support to Volta-HYCOS and Niger-HYCOS, and the island component of CARIB-HYCOS. The Council noted with interest the development in negotiations between SADC and the Netherlands and the European Union for the implementation of SADC-HYCOS Phase II. With regard to the Hindu-Kush-Himalayan-HYCOS, country consultations were nearing completion in preparation of a final high-level meeting that was expected to endorse the project document later in 2004. An amended Concept Document on the MEKONG-HYCOS project had been circulated to participating NMHSs for approval, after which a full project document would be prepared. Other projects were at varying stages of development. The Council was informed of the recent progress in the development of Carib-HYCOS island component and plans to hold a consultation workshop in Martinique by the end of the year to discuss the proposal among the participating countries before finalization of the project document.

7.1.17 The Council considered that the Arctic-HYCOS component would increase the contribution of WMO to the International Polar Year (2007-2008) and requested the Secretary-General to pursue the development of the Arctic-HYCOS project. The Council noted that the Amazon and La Plata basins were potential areas for developing HYCOS components and invited the Secretary-General to explore the possibility of developing those projects.

7.1.18 The Council noted that the WHYCOS coordination mechanism established by the Secretary-General continued to serve as a most valuable vehicle to review the programme activities and to develop future plans. It was informed on the outcome of the meetings of the WHYCOS International Advisory Group and the WHYCOS Coordination Group, which were held in the WMO Secretariat in 2003 and 2004. The Council was pleased to learn that HYCOS guidelines were in an advanced state of preparation and requested the Secretary-General to ensure that the first draft of the comprehensive report on HYCOS projects be submitted to its fifty-seventh session.

Programme on Forecasting and Applications in Hydrology

Hydrological aspects of disasters

7.1.19 The Council noted with interest the progress achieved in the WMO Flood Forecasting Initiative. The principal objective of the initiative was to improve flood forecasting by making use of advanced weather forecasting products through enhanced cooperation between NMSs and NHSs. That initiative was seen as being closely related to the CHy project on Global/Regional Short-term Hydrological Forecasting System. Noting that flash floods were high-risk phenomena in many parts of the world, the Council appreciated the offer of the United States to make a financial contribution to a conference on flash floods where the technical lead should come from WMO.

7.1.20 The Council noted that three regional workshops had already been organized as part of that initiative and similar meetings were planned in all the regions in accordance with the recommendations of the Preparatory Expert Meeting on Improved Meteorological and Hydrological Forecasting for Flood Situations (Geneva, 1-2 April 2003). The three regional meetings held up to date had gathered approximately 90 meteorologists and 70 hydrologists and had produced important recommendations to enhance flood forecasting activities in their respective regions. It also noted that based on inputs from the regional workshops a worldwide synthesis conference, supported through extrabudgetary resources, was planned in 2006.

Hydrology in the context of global environmental issues

7.1.21 The Council was informed on the present status of the activities of GRDC, GTN-H, WCP-Water and IGRAC.

7.1.22 The Council noted that the GRDC continued to be the principal provider of discharge information on a global level and that it had enhanced its role in its collaboration with WCP-Water and GTN-H.

7.1.23 The Council was informed that the Memorandum of Understanding between WMO and the Netherlands Organization for Applied Scientific Research for the establishment of IGRAC was in the process of being formally signed, that the Centre had been in an operational mode since May 2003, and that it had started working on the development of a Web-based Global Groundwater Information System and the collection and analysis of groundwater-related guidelines and protocols.

7.1.24 The Council took note of the proposal of the Russian Federation to establish a Global Centre on Lakes and Reservoirs at the State Institute of Hydrology in St. Petersburg.

Programme on Sustainable Development of Water Resources

7.1.25 The Council was pleased to learn that technical guidelines on the hydrology of urban areas

had been prepared. It was further informed of plans to organize workshops on groundwater resources management for small islands States and countries in arid and semi-arid zones. The Council encouraged the Secretary-General to investigate ways of implementing those projects in partnership with international and regional bodies, in order to optimize the limited resources available.

Programme on Capacity-building in Hydrology and Water Resources

7.1.26 The Council was pleased to learn that since its last session, the three WMO regular courses in the field of hydrology and water resources had been organized, namely the postgraduate course on Applied Hydrology and Information Systems for Water Management in Nairobi, the WMO/NOAA Course on Hydrological Forecasting in Kansas City and the Latin-American Postgraduate Course on Hydrology in Caracas. It also noted that the Latin-American course was being held for the first time as a distance-learning course.

7.1.27 The Council expressed its satisfaction with the publication of the *Guidelines for the Education and Training of Personnel in Meteorology and Operational Hydrology, Volume II: Hydrology* (WMO-No. 258). The final draft had been prepared by the Editorial Task Force — Hydrology, in a session held in Geneva in September 2003.

Regional activities

7.1.28 The Council was informed that the eighth session of the RA IV Working Group on Hydrology was held in Santo Domingo, Dominican Republic from 14 to 18 July 2003. The session considered the activities of its five subgroups and agreed on a work plan for the rest of the period. It also considered its cooperation with the Hurricane Committee and CHy, as well as the regional needs in hydrology and water resources, in order to propose future activities of the Regional Association in that field.

7.1.29 The Council was informed that the next session of the RA II Working Group on Hydrology would be held in Bangkok, Thailand from 12 to 16 July 2004.

7.1.30 The Council also noted with interest the development of a project for improving the cooperation among NMHSs in the four countries sharing the Sava River Basin in Region VI. It requested the Secretariat to continue the support provided to the countries in developing the project further.

7.1.31 The Council requested the Secretary-General to continue providing support to all the Regional Working Groups on Hydrology in the implementation of their working plans and other activities in hydrology and water resources in order to enhance the regional capacities for water resources management. While recognizing that available resources were limited, the Council encouraged the Secretary-General to multiply his efforts to address equitably the regional needs in

hydrology and water resources, in particular by strengthening the activities in RA V.

Programme on Water-related Issues

7.1.32 The Council noted that close collaboration had continued between WMO and other United Nations organizations dealing with water in the framework of UN-Water. One of the main activities of UN-Water was now directed towards preparing the second World Water Development Report with emphasis on development of performance indicators. WMO was contributing to the chapters on: "The nature of the resource", for which WMO had lead responsibility; "Managing risks" for which WMO had joint lead responsibility with ISDR; and "Ensuring the knowledge base" for which WMO was one of the contributing agencies. The Council noted with satisfaction the participation of WMO in various United Nations inter-agency initiatives.

7.1.33 The Council noted that WMO and ISDR had been the lead agencies within the United Nations System for the global celebration of World Water Day 2004 whose theme was "Water and disasters". The emphasis given in the awareness campaign was 'be informed and be prepared'. WMO had prepared an Information Kit that included a booklet, a poster and fact sheets on the activities of various United Nations agencies in the field of water-related disasters. The kit had been distributed to different stakeholders involved in the management of water-related disasters through various United Nations agencies and to the NMSs and NHSs of the Members. A Web site had been established and would be maintained for the year, where information and links related to water and disasters had been posted.

7.1.34 As regarded the proposal to establish a joint WMO/UNESCO committee on floods, the Council noted that the Task Team established by the two Secretariats would work towards establishing the Committee.

7.1.35 The Council noted with interest that the United Nations General Assembly, by its Resolution 58/217, adopted on 23 December 2003, had proclaimed the period from 2005 to 2015 as the International Decade for Action, "Water for Life", commencing on World Water Day, 22 March 2005. The resolution called upon the relevant United Nations bodies, specialized agencies, regional commissions and other organizations of the United Nations system to deliver a coordinated response, to make the "Water for Life a decade for action". The Council saw that resolution as an opportunity to raise the profile of WMO's activities in the field of hydrology and water resources and recommended making available the required resources.

7.1.36 As regarded collaboration with other international and non-governmental organizations, the Council learned with interest of progress in the implementation of the WMO/GWP Associated Programme on Flood Management and expressed

its appreciation for the continued support provided by Japan and the Netherlands.

7.1.37 The Council noted that WMO had participated in the fifteenth and sixteenth sessions of the Board of Governors of the World Water Council, as well as in the ordinary and extraordinary General Assemblies, and that it had been re-elected for a third term on the Board of Governors.

7.1.38 The Council noted that, in response to the request of Fourteenth Congress to the Secretary-General for maintaining WMO's support for the African Ministerial Council on Water, WMO had been very active in the preparatory process, being a member of the Steering Committee, of the Pan-African Implementation and Partnership Conference on Water (Addis Ababa, in 8-13 December 2003), convened by AMCOW. WMO coordinated activities of the thematic session on "Managing risks — water and climate", which was attended by 30 experts from the NMHSs of different African sub-regions and addressed by the Secretary-General of WMO. WMO's activities in the field of water and climate displayed at the Conference exhibition generated interest from a wide audience including Ministers and Heads of United Nations agencies.

7.1.39 The Council noted that the African Ministerial Council on Water had decided to focus its activities on concrete actions to achieve the Millennium Development Goals. It invited and urged the Secretary-General to assist Member countries from Africa in actions related to the implementation of that strategy.

8. EDUCATION AND TRAINING PROGRAMME (agenda item 8)

General

8.1 The Executive Council recalled the decisions of Fourteenth Congress on WMO activities in the field of education and training and, in particular, Resolution 19 (Cg-XIV) — Education and Training Programme. It stressed that training activities were vital for the success of all WMO Programmes and appreciated the assistance provided to RMTCs and national training institutions.

8.2 The Council noted with appreciation that WMO collaboration with education-related programmes of other international organizations and agencies had expanded, within the available resources. The Council encouraged the Secretary-General to pursue his initiatives to develop cooperation and partnership with other organizations and agencies in the field of education and training.

8.3 The Council expressed its appreciation to the members of the Standing Conference of Heads of Training Institutions of NMHSs and its Coordinating Committee for improving the cooperation between training institutions to the mutual benefit of all, including the development of distance education and computer-aided learning on a worldwide basis.

Executive Council Panel of Experts on Education and Training

8.4 The Council noted the report of the twenty-first session of the Executive Council Panel of Experts on Education and Training (Antalya, Turkey, 3-7 May 2004). The Council expressed its gratitude to the Government of Turkey for hosting and providing excellent facilities for the organization of the session and commended Mr A.I. Bedritsky, chairperson, and members of the Panel for their valuable contribution to the implementation of ETRP. The Council considered the views and recommendations of the Panel in its comments and decisions.

Resource mobilization for the Education and Training Programme

8.5 The Council requested the Secretary-General to explore the possibility of approaching the World Space Foundation in relation with upgrading the Internet connectivity of RMTCs and GEF for support to the fellowships programme. It agreed that the GCOS network implementation and the UNFCCC COP decisions might also offer training opportunities.

8.6 The Council requested that WMO high-level officials, including the President and Vice-Presidents as well as the presidents of regional associations and technical commissions and the Secretary-General, use their position to sensitize large multinationals and other private companies to support ETRP for developing countries.

Human resources development

8.7 The Council was informed that the 2002 worldwide survey of Members' training requirements was provided to relevant WMO bodies and Members. The Council recalled the decision of Fourteenth Congress to conduct another survey in 2006 and called on Members to participate actively in the survey.

8.8 The Council noted the need for NMHSs to prepare and implement human resources development plans. In that regard, it requested those Members that had experience, as well as the Secretary-General, to provide assistance to Members in need.

8.9 The Council recalled the importance of lifelong learning culture and continuing education and training. In that connection, it requested Members and the Secretary-General to explore the possibility of inviting external trainers for short-term training events organized at the national or subregional level.

8.10 The Council further requested the Secretary-General to consider including items on new approaches on education and training in the agenda of the conferences on management of NMHSs and seminars on capacity-building, in order to improve the awareness of heads and senior staff of NMHSs on that issue.

8.11 The Council emphasized the importance of an enhanced effort in education and training in management, public administration and meteorological economics for the staff of NMHSs. It particularly stressed the need for training in media presentation and in working with the media to address their needs if improving public weather services were to be enhanced worldwide.

8.12 The Council reiterated the call of Fourteenth Congress on the need to explore the possibility of having accreditation and certification in the field of education and training in meteorology and hydrology and requested that the matter should be given priority so as to increase the visibility and credibility of RMTCs. The Council also recognized the importance of accreditation in media and broadcast meteorology.

8.13 The Council noted that the Panel had established the Expert Team for Accreditation and Certification in Meteorological Education and Training, to address the issue of accreditation and certification in meteorological education and training in two complementary phases as followed:

- (a) Short-term approach — to address urgently the issue of how Members might ensure that their aeronautical meteorological personnel were suitably qualified;
- (b) Mid/long-term approach — to address the policy, legal and operational framework consistent with the views of the Executive Council and Congress.

New classification of personnel in meteorology and hydrology

8.14 The Council noted that the new edition of the *Guidelines for the Education and Training of Personnel in Meteorology and Operational Hydrology* (WMO-No. 258), Volume I — Meteorology, was translated into French, Russian and Spanish. The Council noted with satisfaction that WMO No. 258 — Volume II, Hydrology had been published. Those publications included the new classification of personnel in meteorology and hydrology.

8.15 The Council reiterated the request of Fourteenth Congress that the Secretary-General should assist Members, RMTCs and national training institutions in the implementation of the new classification.

Public education

8.16 The Council endorsed the view of the Panel on the need to undertake actions in order to make the professions of meteorologist and hydrologist more attractive. In that regard, it requested the Secretary-General to pursue his support to programmes on school and popular meteorological and hydrological education, and encouraged RMTCs to organize training activities for teachers in collaboration with relevant international programmes such as GLOBE. The Council further encouraged Members to introduce curricula in meteorology and hydrology in the primary and secondary schools.

Rapporteurs on Education and Training

8.17 The Council took note of the Panel's concern about the work of the RAs Rapporteurs on Education and Training and requested Permanent Representatives with WMO to ensure that Rapporteurs designated by regional associations got the necessary local support to fulfil their tasks.

8.18 The Council also requested the Secretary-General to provide RAs Rapporteurs on Education and Training with assistance, including financial support, within the limit of available resources.

Training publications

8.19 The Council noted with appreciation, the publication of the *Proceedings of the WMO Symposium on New Perspectives on Education and Training in Meteorology and Hydrology* (Madrid, 21-25 April 2003) and thanked the Government of Spain for its support.

8.20 The Council recognized the need to translate the *Guidelines for the Education and Training of Personnel in Meteorology and Operational Hydrology* (WMO-No. 258), Volume II — Hydrology into French, Russian and Spanish. It encouraged Members with the requested expertise to use their own resources to translate Volumes I and II into Arabic and Chinese and requested the Secretary-General to provide the necessary support, when possible.

Training activities

8.21 The Council noted that for the Tenth WMO Symposium on Education and Training, to be organized in 2006, the Panel favoured the main theme to be "Meteorological and hydrological education and training for better measures in the prevention and mitigation of disasters related to extreme weather, climate and water events".

8.22 The Council noted with satisfaction that during the interseasonal period, several training events of interest to the major scientific and technical programmes had been organized or co-sponsored by WMO, in particular the Training Seminar on Specialized Services/Meteorological Case Studies (Geneva, 17-25 November 2003).

8.23 The Council noted the services provided by the Training Library to Members and the efforts made to review the Virtual Training Library as a learning portal providing Web-based and other IT training resources in meteorology and hydrology. It encouraged the Secretariat to expand further such activities.

WMO Regional Meteorological Training Centres

8.24 The Council noted with appreciation that a majority of the 23 WMO RMTC contributed to the training of operational personnel from their regions. The Council encouraged RMTCs to continue their contribution to ETRP by offering, as far as possible, training opportunities to satisfy regional needs and requested the Secretary-General to continue to assist RMTCs, within the available resources.

8.25 The Council was informed that RMTC Angola was progressively reviving but more support was needed, including modern training technologies. The Council noted with appreciation the progress made under the "MeteoForum" project aiming at assisting WMO RMTCs in RAs III and IV to access real-time data for training and to facilitate sharing of training resources. It encouraged the Secretariat to continue to explore the possibility of launching similar initiatives in other Regions.

8.26 The Council encouraged RMTCs to implement new relevant programmes and advanced specialized courses on topics such as climate prediction, climate change, marine meteorology and physical oceanography, hydrology and economic meteorology. In that regard, the Council noted the need to continue efforts in the training of trainers.

8.27 The Council encouraged NMHSs and RMTCs to work more closely together to identify regional training requirements and to explore new ways to meet those needs.

8.28 The Council noted with satisfaction that the four RMTCs in China, India, Turkey and Uzbekistan were externally reviewed and the reports of the assessment teams were considered by the Panel. It agreed with the Panel recommendations that those training centres should continue to be recognized as WMO RMTCs.

8.29 The Council expressed its appreciation to the Panel of Experts on Education and Training for the progress made in developing an Action Plan on Future Role and Operation of RMTCs. It encouraged all stakeholders to make every effort for the effective implementation of the actions envisaged.

Education and training fellowships

8.30 The Council noted that many fellowships were awarded during the intersessional period, financed from VCP, Trust Funds, the regular budget and UNDP projects. The Council acknowledged with appreciation the generous contributions of VCP donor Members and UNDP, and appealed to them to maintain, and if possible, to increase further their support to the fellowships programme. The Council also appealed to Members to assist in the further enhancement of the fellowship programme, taking into account the growing demand for capacity-building in new and specialized fields of meteorology and operational hydrology.

8.31 The Council further noted with satisfaction the new initiatives and appropriate measures taken by the Secretary-General to ensure the highest possible level of effectiveness, fairness and equity in the distribution among disciplines in the Fellowships programme. The Council observed that those innovative measures would increase the efficiency and transparency of the Fellowships programme and would also assist Members in their requests for WMO fellowships and study tours.

8.32 The Council agreed with the Panel on the importance of monitoring and evaluating activities in the post-fellowship period for up to two years. It

further recognized that such activities would require more resources as well as recipient Members' commitment to ensure such activities.

8.33 Noting the need to make a distinction between the basic education and the training in specialized fields as well as the definition used by the United Nations, the Council approved the following terminology for WMO fellowships:

(a) Long-term fellowship: more than six months duration;

(b) Short-term fellowship: up to six months duration.

8.34 In order to maximize the benefit from limited resources, the Council encouraged Members to develop and implement tripartite fellowship schemes where a donor Member agreed to support a trainee from a recipient country for study in a relevant RMTC, rather than only going to the donor Member's country. However, for specialized training that might not be available at local RMTCs, the training could be offered in the donor country.

8.35 The Council approved the Panel recommendation for a stricter checking of the fellowship candidate's prerequisite qualification to be undertaken from the very beginning by the requesting Member, as well as subsequently by the WMO Secretariat and by the host institution.

8.36 With respect to the Executive Council criteria for the award of WMO fellowships, the Council agreed that the expression "special circumstances" for awarding fellowships lasting more than 18 months should be reasonably flexible and applied in a case-by-case approach taking into consideration, among other things, cost-effectiveness and local conditions.

Internal matters of the Panel

8.37 The Council recognized that the current cycle of the Panel sessions was not well synchronized with the preparatory cycle of the 7LTP.

8.38 The Council further noted that if a session of the Panel would be organized in 2005, conditions would be assured for a better integration of the Panel input on education and training into the 7LTP at an early stage. Consequently, the concerted decisions of various constituent bodies would provide better consistency of the various training priorities.

8.39 In that regard, the Council approved the Panel recommendation to organize an extraordinary Panel session in late 2005 with the following main agenda items:

(a) Consolidated proposal on the ETRP in the 7LTP;

(b) Future role and operation of RMTCs;

(c) Accreditation and certification in meteorological education and training.

8.40 The Council agreed that an expert in hydrology should be invited in future sessions of the Panel.

9. TECHNICAL COOPERATION PROGRAMME (agenda item 9)

9.1 The Executive Council noted that Members continued to benefit from the activities carried out

under the TCO Programme, which covered several areas such as project and programme development, resource mobilization and capacity-building. Those activities were implemented within the framework of various funding sources such as the WMO VCP, Trust Funds, UNDP, GEF, the World Bank, regional development banks and other sources.

9.2 The Council noted that the total delivery for technical assistance activities during the year 2003 amounted to approximately US\$ 23.61 million, of which US\$ 7.73 million from the VCP, US\$ 12.76 million from Trust Fund projects, US\$ 2.19 million from UNDP and US\$ 0.93 million from the WMO regular budget. The delivery had increased in 2003 in comparison with 2002.

Implementation of activities of the Programme

The WMO Voluntary Cooperation Programme

9.3 The Council noted that contributions to the WMO VCP in 2003 amounted approximately to US\$ 7.7 million. One hundred and one VCP projects for equipment were circulated among donor Members, and 47 VCP projects for equipment obtained partial or full support. A total of 734.0 person/month of fellowships of different duration were awarded under the VCP during 2003. The Council expressed its gratitude to VCP donors and recipient Members for the valuable efforts in supporting the VCP Programme. The Council further noted that in spite of the support provided, approximately 300 VCP(ES) projects and 100 requests for fellowships remained unsupported or not fully supported. The Council noted with appreciation that donor Members indicated their willingness to continue that support to the VCP Programme at the Informal Planning Meeting on the VCP and Related Technical Cooperation Programmes (Exeter, United Kingdom, 2-5 March 2004) and urged other Members to participate more actively in the Programme.

9.4 The Council was pleased to note that various efforts by the WMO Secretariat continued to be made to ensure the cost-effective and efficient management of the VCP Programme. The Council noted with appreciation the further enhancement of the TCO and VCP Web pages, for easier access to the information, which substantially improved the visibility of TCO and VCP Programmes and the timely distribution of the relevant information to Members as well as the general public. In that regard, the Council requested potential donors to consider further support to NMHSs for Internet connectivity.

United Nations Development Programme and related activities

9.5 The Council noted that the implementation of several UNDP projects continued in various countries, especially in the Libyan Arab Jamahiriya, for enhancing the capacity of the NMC and for strengthening cloud seeding research at the Cloud

Seeding Research Centre. In Zambia, strategies for enhancing the integration of weather and climate information and products into the national economic planning process were developed and workshops organized in the application of climate information and products. In Bahrain, long- and short-term training activities were conducted and a climate database management system installed. In the United Arab Emirates, an NWP system was installed to provide short- and medium-range forecasts.

9.6 Under the UNDP/GEF Project on Capacity-building for Observing Systems for Climate Change, regional workshops were organized for countries in South-East Asia; South America; Eastern, Southern and West Africa; Central America and Asia, and appropriate regional action plans were adopted. The Council encouraged Members to join efforts in mobilizing resources to support selected projects in support of GCOS.

9.7 The Council requested the Secretary-General to continue his efforts in enhancing cooperation with UNDP through furthering the proactive participation of NMHSs in United Nations processes at the country and regional levels.

Trust Fund projects

9.8 The Council noted with satisfaction the continued efforts to generate Trust Fund activities. In that connection, the support being provided to ICPAC and to the DMC in Harare, Zimbabwe was geared towards ensuring the secondment of experts for operational and training purposes, the provision of equipment for data processing and management and the organization of climate outlook forums. The Council also noted with appreciation that ICPAC was formally adopted as a specialized institution of IGAD and that the SADC Council of Ministers retained the Harare Centre as its specialized centre. The Council further noted that support continued to be provided to the CILSS countries by Italy and Switzerland.

9.9 The Council further noted that several projects were being implemented in support of water resources and environmental agencies in Brazil, including the project to enhance the operational capacity of the Brazilian National Meteorological Institute. The Council was pleased to note that the International Research Centre on *El Niño* in Guayaquil, Ecuador launched its *El Niño*-related activities in 2003. WMO provided support to several regional events organized by the Centre. The Council encouraged Members to support that Centre.

9.10 The Council was informed that under the Water Resources Management Project in Mexico, several missions were carried in the areas of meteorology, operational hydrology, telecommunications, groundwater, water quality, and water resources planning and administration. Under the WMO/Inter-American Development Bank study on the prediction and mitigation of the socio-economic impacts of ENSO in Latin America and the Caribbean, projects on climate information systems

for decision-making in socio-economic sectors affected by ENSO and other climate extremes were completed for Central America, Colombia and Mexico. WMO was assisting the Members concerned, in collaboration with regional organizations, in securing funds for those projects.

9.11 The Council was also informed that the regional Project on Preparedness to Climate Variability and Global Change in Small Island Developing States, Caribbean Region, funded by the Government of Finland, was being implemented with measurable success. ISCS workstations for the new VSAT system were installed in the countries. Automatic weather stations and conventional meteorological equipment were provided. Fourteen students completed the BIP-MT course in operational forecasting at the Caribbean Institute for Meteorology and Hydrology in October 2003. Similar training began in January 2003 with three trainees from the Dominican Republic at the University of Costa Rica, and three from Haiti at the *Météo-France* facilities in Toulouse, France.

9.12 The Council was further informed that a Memorandum of Understanding between the European Commission and WMO was concluded in December 2003 to enhance cooperation in areas such as climate change, natural disaster prevention and water resources management. The conclusion of that Memorandum of Understanding would facilitate the full participation of WMO and its Members in the development and implementation of national and regional projects. The Council requested the Secretary-General to ensure that NMHSs of Members drew the best benefit from that arrangement.

Technical Cooperation among Developing Countries and bilateral cooperation

9.13 The Council reaffirmed the importance and cost-effectiveness of the TCDC scheme and tripartite cooperation arrangements in support of meteorological and hydrological services and urged Members to make further use of that scheme.

Procurement activities

9.14 The Council noted that in 2003, equipment and services were purchased for 42 field projects and for the WMO Regional and Subregional Offices. A total of 134 purchase orders were issued and the volume of procurement reached US\$ 5.57 million. Goods such as telecommunication systems, meteorological and hydrological instruments, computer equipment and software, automatic weather stations and meteorological satellite-receiving equipment had been purchased for an amount of US\$ 4.05 million and major service contracts had been attributed for an amount of US\$ 1.52 million. The Council encouraged Members to utilize the WMO procurement facility for cost-effective bulk purchases of consumables and equipment. In that connection, the Council noted that

a meeting was organized in Geneva in November 2003, within the context of the RA I strategy for the enhancement of WWW basic systems in Africa, to consider problems facing NMSs in the Region in relation to the collection and exchange of meteorological data, information and products. The Council noted that the meeting had identified the high cost of acquiring meteorological equipment and consumables as one of the major problems. It therefore welcomed strategies proposed by the meeting for optimizing the acquisition of equipment, consumables and spare parts by NMSs in the Region, through the establishment of a common procurement platform with the assistance of the WMO Secretariat and regional economic groupings, as well as the development of local manufacturing, maintenance and calibration capabilities in the Region. In that regard, the Council also welcomed the GCOS initiative for establishing regional maintenance facilities in various regions.

Programme development activities

9.15 The Council was informed that special attention had been given to enhancing WMO's technical cooperation activities to support the promotion and development of NMHSs and related regional institutions in order to allow them to play their due roles in the socio-economic development activities of the respective countries. That issue was further addressed in general summary paragraphs 9.33 to 9.36.

9.16 The Council noted that several project proposals had been developed to support activities of the DMCs. Similar project proposals were developed for other countries in Asia, the Pacific and the Americas. The HYMES-TRACECA project was presented to the third annual meeting of the Intergovernmental Commission of TRACECA (Yerevan, Armenia, 9-10 October 2003) for consideration and was now under consideration by the National TRACECA Commission of each country.

Regional collaboration

9.17 The Council was informed that WMO continued to collaborate with regional economic groupings in Africa and other regions with a view to developing and implementing meteorological programmes and projects. WMO continued to support, in cooperation with EUMETSAT, the PUMA project. The Council noted the establishment of WMO Trust Funds for MSG for Africa (countries of the Mediterranean basin and South Africa) and for Europe, and was informed that France and Norway contributed to those Trust Funds to provide units of satellite-receiving ground equipment for some countries. In order to ensure the continued operation of the equipment after the PUMA project was completed in mid-2005, the Council requested the Secretariat to assist in establishing a mechanism to mobilize resources for the maintenance of, and support to, those facilities.

Report of the fifth session of the Executive Council Advisory Group of Experts on Technical Cooperation

9.18 The Council noted that the fifth meeting of the Executive Council Advisory Group of Experts on Technical Cooperation was held in Geneva from 9 to 11 March 2004. The Group reviewed its terms of reference as assigned by Resolution 1 (EC-LV) and agreed that there was a need for the activities to be developed and implemented in close consultation and cooperation with regional economic and geopolitical groupings, with strong support from regional associations and Regional and Subregional Offices. The Council also noted that the Group reviewed the progress made in the implementation of the Technical Cooperation Programme and endorsed the suggestions of the 2004 Informal Planning Meeting on various VCP-related issues. With regard to the terms of reference of the Group, the Council approved the amended version given in Annex V to this report. The Council expressed its appreciation to the chairperson and to the members of the Group for the excellent work done.

Recommendations of the Group relating to the VCP

9.19 The Council, in reviewing a summary of statistics on the valid evaluation reports carried out over the years from 1994 to 2002, considered that, throughout the five evaluations, VCP projects had proved to be successful in the availability of expected services for NMHSs in the recipient countries.

9.20 The Council was pleased to note the proposed measures to improve the monitoring and evaluation of the VCP projects and supported the proposals to improve the evaluation report process. It approved the proposed modifications to the Rules of the VCP, as given in Annex VI to this report, for the further improvement of the formulation and evaluation of VCP projects.

9.21 Following the recommendations of the Group, and taking into consideration the needs of Members and trends in technological developments, the Council approved the following VCP coordinated programmes:

- (a) Improvement of the global network of observing stations with special emphasis on GCOS upper-air network and HYCOS stations;
- (b) Improvement of the telecommunication systems, including common carrier technologies and the use of Internet technology, specifically for transmission of satellite data;
- (c) Improvement of the performance of NMCs;
- (d) Support to the Tropical Cyclone Programme;
- (e) Support to PWS activities;
- (f) Support to climate data management and CLIPS;
- (g) Support to training and human resource development for meteorology and operational hydrology;
- (h) Support to ACMAD activities.

9.22 The Council reviewed the report on the use of the VCP(F) in 2002-2003 and approved the allocations of VCP(F) for 2004, based on an estimated income amounting to approximately US\$ 240 000, as given in Annex VII to this report. The Council authorized the Secretary-General to implement the projects as funds became available.

9.23 The Council also reviewed the report on the use of the WWW Implementation Support Revolving Fund and agreed that, in view of the fact that in 2001-2003 no countries utilized the Fund, eligible Members should be encouraged to make use of it in accordance with the established rules. The Council considered the issue of long-term unpaid loans which were provided under that Fund and agreed that the Members who were not able to pay the outstanding reimbursements due to special circumstances, such as civil strife, could submit a normal VCP request to be tabled at the Informal Planning Meeting for its consideration.

9.24 The Council noted that emergency assistance had been provided to Members affected by disasters including civil strife for the restoration of meteorological and hydrological services within the framework of the existing WMO mechanism through the WMO Disaster Assistance Fund for Meteorological and Hydrological Services (Emergency Assistance Fund), the VCP and EART. The Council expressed its appreciation to Members for their contributions in cash and in kind for emergency assistance activities. It also noted the ongoing emergency assistance through EART activities to island States in the South-West Pacific affected by Tropical Cyclone *Heta*, and to countries emerging from conflict, such as Afghanistan, Liberia and Sierra Leone.

9.25 The Council further noted with appreciation the strong support of several Members, especially Australia, China, France, the Islamic Republic of Iran, Italy, Japan, the United Kingdom and the United States and their commitment to work with WMO for the reconstruction and modernization of the Iraqi Meteorological Organization through the establishment of a WMO Trust Fund. The Council encouraged Members to participate in the reconstruction of the Iraqi Meteorological Organization and requested the Secretariat to assure the successful implementation of that initiative.

WMO Programme for the Least Developed Countries

9.26 The Council noted that the Secretariat had developed strategies for implementing the new WMO programme for the LDCs established by Fourteenth Congress and that activities for the period 2004–2005 and project briefs had been prepared.

9.27 The Council was informed that a special WMO Trust Fund for the LDCs had been established for which contributions were expected from Members, bilateral and multilateral funding agencies including the World Bank, regional development banks and the private sector. In response to WMO

circular letters sent in September 2003, several countries, in particular Australia, Colombia, Egypt, Hong Kong, China, Pakistan and Turkey, had offered cash and in-kind contributions. The Council noted that other strategies would be pursued for the successful implementation of the Programme, including:

- (a) Developing specific projects for LDCs using strategic plans prepared for the rehabilitation and improvement of basic meteorological and hydrological infrastructure in various regions;
- (b) Mobilizing resources through the establishment of strategic partnerships with regional/subregional organizations and economic groupings, public and private sectors, banks, United Nations agencies, multilateral organizations and bilateral arrangements;
- (c) Ensuring coordination with interested partners through periodic consultative processes.

9.28 The Council endorsed the recommendations of the Group on the modalities of implementation of the WMO Programme for the LDCs, especially with regard to the selection of eligible countries and the process of formulation of project proposals, and requested the Secretary-General to take those factors into account when developing further proposals for the Programme.

9.29 The Council encouraged Permanent Representatives of Members to play an active role in the mobilization of resources for the NMHSs of LDCs, and requested the members of the Group to take a proactive approach in the process of resource mobilization for specific LDCs. The Council requested the Secretary-General to report to its next session on the progress made in that area.

Priority requirements of Members within the framework of WWW, GCOS and GEO

9.30 The Council noted that the strategic plans developed by regional associations were being implemented through the development of joint subregional and/or regional projects. The Council agreed that hydrological aspects should be emphasized in the priorities of the regional associations and in the relevant strategic plans. In that respect, HYCOS components should be prepared as necessary and submitted to potential sources of funding, as a matter of priority.

9.31 Concerning GCOS activities, the Council noted with satisfaction that a GCOS Cooperation Mechanism was established as a coordinated multi-governmental approach to address the high-priority needs for stable long-term funding for key baseline elements of global observing systems for climate in support of the requirements of the UNFCCC and other GCOS clients and taking into account the special needs and situations of LDCs and small island developing States. The Council requested the Secretary-General to continue working closely with relevant partners of that mechanism.

9.32 The Council noted that the TCO Programme, along with the ETR Programme, had an important

role to play in the development of future activities foreseen within the framework of the Ad Hoc Intergovernmental Group on Earth Observations, especially in the area of capacity-building. The Council agreed that there was a need to ensure coordination between the Secretariat and Members to help focus WMO's input to the GEO process. The Council agreed to use WMO's regional and bilateral relationships to inform Members, particularly from LDCs, of the GEO process and urged them to engage in GEO.

Promotion of technical cooperation activities

9.33 The Council was pleased to note that WMO had continued to take various initiatives with funding agencies to assist the development of NMHSs, using innovative approaches aimed at identifying new opportunities of potential funding sources for technical cooperation activities. In that regard, the Council noted that it was important to take into account the lessons learned in the past, especially the awareness by funding agencies of areas of competence of WMO, the priority areas of funding agencies relevant to NMHSs; project proposals to conform to formats and procedures of funding agencies; and the active involvement of the recipient NMHSs in all phases of project development and resource mobilization.

9.34 The Council further noted that several project proposals had been developed jointly with the World Bank, the Inter-American Development Bank and the European Commission in the areas of water resources management and early warning systems, on ENSO and other climate extreme events that impacted socio-economic sectors.

9.35 The Council recognized the importance of establishing strategic partnerships and alliances with NMHSs of donor countries, funding institutions, the United Nations system and regional and international organizations. In that respect, special attention should be paid to the contribution and participation of WMO to the implementation of international initiatives such as the WSSD Plan of Action, the United Nations Millennium Declaration, NEPAD and GEO.

9.36 The Council was pleased to note that a mechanism was being established by the Secretary-General for effective coordination and promotion of efforts in resource mobilization. The Council agreed on the organization of an international symposium on technical cooperation to promote WMO's role and the benefits of NMHSs to socio-economic development activities in the countries, and to enhance partnerships with funding agencies. The Council requested the Secretary-General to propose the organization of such a symposium, possibly during the next financial period. The Council also urged the Secretary-General to monitor closely capacity-building plans, priorities and activities under the GEO process to identify opportunities for regional and technical cooperation activities.

Secretariat support for the implementation of the Technical Cooperation Programme

9.37 The Council noted with satisfaction that in order to enhance support to Members and to increase the role, contribution and visibility of WMO, including NMHSs, the Secretary-General had taken a certain number of measures to effect structure and organizational changes in the Secretariat, especially with respect to Regional and Subregional Offices and the TCO Department. The aim was to improve delivery of services to Members and develop partnerships with national and regional institutions and organizations. In that regard, a new Department known as Regional Activities and Technical Cooperation for Development had been established to ensure the smooth and efficient implementation of activities within the framework of the Regional and the TCO Programmes. In that context, greater synergy and harmonization would be achieved using the available human and financial resources.

10. REGIONAL PROGRAMME (agenda item 10)

10.1 The Executive Council noted with satisfaction that the implementation of the regional events were proceeding satisfactorily and that the Regional Offices continued to serve effectively their respective regional associations and assist their presidents in their duties.

10.2 The Council noted the concerns expressed by the presidents of regional associations regarding the implementation of WMO Programmes in their Regions, which included among other things the following:

- (a) Maintenance of observing networks;
- (b) Inadequacy of GTS links and low speed of circuits including the replacement of all EMWIN receivers in small island developing States in the Pacific;
- (c) Replacement of old systems by modern facilities to access sophisticated products including global and regional NWP products;
- (d) Improvement of capabilities in predicting severe weather and climate events such as tropical cyclones, floods and droughts;
- (e) Climate, environment and related matters especially climate change, seasonal prediction and the establishment of RCCs;
- (f) Cost recovery, commercialization of products and services and certification/quality management;
- (g) Enhancement of capacity-building and human resources development;
- (h) Climate data management and data rescue issues;
- (i) Web sites for NMHSs.

10.3 The Council expressed appreciation for the increased role of the Regional Offices, namely, the Regional Office for Africa (Geneva), the Regional Office for Asia and the South-West Pacific (Geneva) and the Regional Office for the Americas (Asunción, Paraguay), which continued to provide effective

assistance to their respective regional associations, subsidiary bodies, presidents and their Members in implementing the WMO scientific and technical programmes and other activities. They also continued their efforts in assisting Members in meeting a number of high priority needs in the areas of science and technology, capacity-building, climate variability and change, water resources management and disaster mitigation as well as environmental issues. The Council noted that the Regional Offices had also established closer working relationships with relevant regional and subregional bodies.

10.4 The Council, noting the advantages and cost effectiveness of having Regional and Subregional Offices closer to concerned Members, requested the Secretary-General to take the measures required in consultation with regional presidents, to outpost the Offices now based in Geneva in due course.

10.5 The Council reviewed the activities of the WMO Subregional Offices for Western Africa (Lagos, Nigeria), for Eastern and Southern Africa (Nairobi, Kenya), for Northern America, Central America and the Caribbean (San José, Costa Rica), for the South-West Pacific (Apia, Samoa), and for Europe (Geneva). The Council noted that those Subregional Offices continued to contribute towards enhancing the implementation of WMO Programmes and activities in their respective subregions, and for the support provided to NMHSs of the Members in the identification of requirements and in the development of project proposals as well as in resource mobilization. Those Offices played an important role in responding to, and assisting, Members especially during natural disaster emergency situations, such as Tropical Cyclone *Heta* which affected some Pacific island countries in January 2004, Tropical Cyclone *Ivy* which affected Vanuatu in February 2004, and the disastrous floods and landslides in Haiti and the Dominican Republic in May 2004. In that regard, the Council expressed its condolences and sympathy to the Government and people of Cook Islands, Niue, Samoa, Tonga, and Vanuatu as well as to the Dominican Republic and Haiti for the enormous damage and losses of life due to those events.

10.6 The Council noted that the above-mentioned disasters were hydrometeorological in nature and felt that greater emphasis should be placed on improving flood warning capabilities, capacity-building on weather forecasting, public weather services and water resources management.

10.7 The Council urged that high priority be given to the implementation of various HYCOS components such as the CARIB and Pacific-HYCOS. The Council requested the Secretary-General and interested Members to provide the necessary support to HYCOS projects and expressed its appreciation to those institutions who had shown an interest to support those projects, in particular for the small islands developing States in the Pacific and the Caribbean.

10.8 The Council further noted that several activities had been implemented under various regional strategic plans and the four projects developed by the RA III Working Group on Hydrology. In that regard, the Council requested the Secretary-General and Members to continue providing assistance in the implementation of those plans and projects. The Council also noted that the Strategic Plan for Enhancement of National Hydrological Services in RA II and a Strategic Plan for RA VI Members were being developed.

10.9 The Council noted the establishment of the Conference of Directors of the Iberoamerican NMHSs and encouraged them to strengthen further their Services through that mechanism.

10.10 The Council noted with appreciation that WMO, through the Regional and Subregional Offices, continued to enhance its collaboration with regional and subregional economic groupings in the drafting of joint initiatives. The Council encouraged the Secretary-General to strengthen the existing working arrangements in order to foster joint programmes and activities for the benefit of NMHSs.

10.11 The Council noted with satisfaction that the Secretary-General had taken a certain number of measures to effect structural and organizational changes in the Secretariat, especially with respect to Regional and Subregional Offices and the TCP Department with the view to improving delivery of services to Members and enhancing partnership with national and regional institutions and organizations. In that regard, a new Department known as Regional Activities and Technical Cooperation for Development had been established to ensure the smooth and efficient implementation of activities within the framework of the Regional Programme and TCO Programme. The new structure was being implemented in a phased manner.

10.12 In that context, the Council expressed its support to the measures taken by the Secretary-General to provide better and more effective and comprehensive support to Members which should include keeping NMHSs informed of VCP and other resources for better enhancement of the Services in the Regions. The Council requested the Secretary-General to provide the necessary support and facilities, as well as managerial tools and flexibility, to the Regional and Subregional Offices for the efficient implementation of their activities.

10.13 The Council noted with appreciation the decision of the Secretary-General to establish the Subregional Office for Asia in Bahrain and the ongoing discussions with Brazil on arrangements to establish a WMO Office in Brasilia to support technical cooperation activities in the country.

11. NATURAL DISASTER PREVENTION AND MITIGATION PROGRAMME (agenda item 11)

11.1 The Executive Council recalled Resolution 29 (Cg-XIV) — Natural Disaster Prevention and Mitigation Programme, by which Congress decided

to initiate a major programme on Natural Disaster Prevention and Mitigation (DPM). The Council strongly supported the establishment of that Programme and noted that the Secretary-General had taken measures for its development and implementation by establishing a Steering Committee on Disaster Reduction in March 2004, as well as a programme team.

11.2 The Council noted that the Meeting of Experts on Natural Disasters (Geneva, 15-17 March 2004), with participants from the six WMO Regions, had prepared a draft implementation plan. The Council adopted the implementation plan of the DPM and the priorities proposed (see Annex VIII to this report). It urged Members to collaborate actively in the implementation of the new Programme.

11.3 The Council recalled Resolution 13 (Cg-XIV) — Public Weather Services Programme, which requested the Executive Council to consider an appropriate mechanism for its oversight of the PWS Programme in close collaboration with the related new Programme on Natural Disaster Prevention and Mitigation. It further recognized that there was a need to establish a more effective framework for the coordination of disaster prevention and mitigation matters and a continuous mechanism to review and advise on those matters on a regular basis. To enhance the delivery of the Programme, the meeting of experts emphasized the need to establish an advisory body to guide the Programme on all aspects of natural disaster prevention and mitigation. In that respect, the Council adopted Resolution 5 (EC-LVI).

11.4 The Council felt that in connection with the establishment of the new Programme it was necessary to ensure close collaboration between WMO and the Secretariat of the ISDR, since WMO was a key actor in the Strategy. In that context, the Council recommended the active participation of WMO in the World Conference on Disaster Reduction, to be held in Kobe, Japan, from 18 to 22 January 2005. The Council recognized the importance of participating in that Conference to enhance WMO's role as a leading international organization dealing with disaster reduction, promote the activities from the perspective of various WMO Programmes, and enhance the recognition of the contribution of NMHSs in disaster mitigation and management at the national and regional levels by decision makers, international organizations and development partners. The Council noted with appreciation that the Secretary-General had established a Task Team in the Secretariat for the preparation of the WCDR plan and for coordinating WMO's activities in that regard.

11.5 The Council noted that in the course of those activities, the following actions were undertaken: (a) preparation of a pamphlet, a brochure and media information material on WMO activities on disaster prevention and mitigation; (b) participation in various meetings, especially through the ISDR Inter-agency Task Force working groups in reviewing material on

prospective outcomes of the Conference preparation for the thematic events during the Conference in which the Organization would take a leading role; (c) sensitization of Members on events leading up to the Conference; (d) preparation of WMO's position paper.

11.6 The Council noted the development of the Web page on the new Programme in collaboration with Hong Kong, China and urged Members to provide support to that initiative. The Council recognized the importance of that Web page in enhancing WMO's visibility in the area of disaster prevention and mitigation. The Council emphasized the fact that to achieve that objective, the new Web page should be considered as a reference page on disaster risk management and it called on Members to provide contributions in that regard.

11.7 The Council noted with satisfaction that the activities of the International Research Centre on *El Niño* contributed to the DPM Programme. The Council requested the Secretary-General to provide the maximum support possible through the Programme to the International Research Centre.

11.8 The Council noted with satisfaction an example of dissemination of weather and climate information by NMHSs to rural communities in Africa through the use of RANET, which provided a basis for support to the vision of the DPM Programme. The Council recommended that WMO support in that effort through capacity-building activities in Member States, and encouraged sponsorship by WMO of a side event at the 2005 World Conference on Disaster Reduction, focused on dissemination and communication systems and methodologies for meteorological and hydrological hazards.

11.9 The Council noted that there were a range of hazards, both natural and human induced, that could cause disastrous impacts on communities. While meteorological-, hydrological- and climate-related disasters were a large component of that spectrum, policy makers were increasingly wishing to understand the total risk to communities from all hazards. The insurance industry had a similar requirement. Accordingly, DPM was encouraged to explore opportunities to develop an approach to hazard/risk assessment that fitted within what was known to some practitioners as an "all hazards approach". The Council recommended that in addition to reaching out to those specific interest groups, it was essential that concrete activities, such as provision of maps on disaster risks, were carried out.

11.10 The Council reiterated the need for NMHSs to be the authoritative voice in issuing weather warning for public safety at the national level, and for WMO to play a central leadership and communication role in natural disasters at the international level as it served as the authoritative voice in the United Nations system on scientific matters relating to weather, climate and water. Considering that natural disaster mitigation could not be achieved without concerted efforts of disaster

prevention authorities within each country, the Council strongly urged NMHSs to establish close linkages with other relevant agencies in their respective countries.

11.11 The Council noted that WMO continued to act as a permanent Member of the ISDR Inter-agency Task Force, namely that WMO participated in all the working groups of the new Task Force. The Council reiterated that WMO should continue to play a lead role in the Task Force, promote scientific and technical aspects, as well as the input of operational activities of NMHSs in the implementation of the Strategy.

11.12 The Council recognized that there were international organizations working in the area of natural disaster prevention and mitigation and that WMO cooperated in various activities with them as a member of the Task Force, as well as a member of the ProVention Consortium and as special supporting organization for the International Consortium on Landslides and through other ad hoc schemes of cooperation. The Council stressed that in order to enhance WMO's role in ISDR and other international and regional initiatives it was necessary to establish strategic partnerships and collaboration on a more permanent basis. The Council also noted that with the transition of the ProVention Consortium Secretariat to IFRC, it was expected that there would be more civil society organizations involvement in the activities of the Consortium.

11.13 The Council was informed of the activities of the EDRG within the WMO Secretariat and noted the involvement of the Regional and Subregional offices in those activities; in particular the prompt response to the impacts of Hurricane *Heta* in Samoa and Niue and the extensive flooding which affected the Dominican Republic.

12. WMO SPACE PROGRAMME (agenda item 12)

12.1 The Executive Council was informed of activities within the new major cross-cutting WMO Space Programme, including relevant results from the thirty-first session of CGMS, and the fourth session of the WMO Consultative Meetings on High-level Policy on Satellite Matters. It also noted that a status report on the space-based subsystem of the GOS was contained under agenda item 3.1.

12.2 The Council recalled that the European Commission, in coordination with EUMETSAT and WMO, had funded the PUMA project which would provide high resolution receivers for Members of RA I. Implementation was in progress and expected to be completed by September 2006 at which time RA I would achieve 100 per cent implementation for ground-receiving stations. WMO Members of RA I would have access to all satellite data and products in the PUMA workstations through the EUMETSAT-sponsored ADM service called EUMETCast at a data rate exceeding 2 Mbps.

12.3 The Council also noted with pleasure the tremendous impacts now being realized through the

Virtual Laboratory for Education and Training in Satellite Meteorology. It agreed that WMO, through its Space Programme, had acted as a catalyst to improve greatly the utilization of satellite data and products.

12.4 The Council was pleased to be informed of the formal commitments made by the Governments of India and the Republic of Korea to participate in the space-based component of the WWW GOS. The IMD recalled that it had a long history of satellites in both geostationary and polar orbits. As a result of new technologies, including the alternative dissemination method, it was now possible to make satellite data and products, including GTS data and NWP products, freely available to WMO Members. Detailed information would also be provided through correspondence. IMD announced its plans to meet the WMO requirements for half-hourly imagery in a phased manner with the ultimate goal to be achieved in the next three-four years. The Council was also informed that the Republic of Korea intended to participate in the space-based GOS with its new geostationary Communications, Oceanographic and Meteorological Satellites, due to be launched in 2008. KMA planned to make meteorological observations available for research, operations and applications without restrictions. Data would be distributed directly from Communications, Oceanographic and Meteorological Satellites or by alternative approaches such as Internet.

12.5 The Council was also informed of the plans by the United States for future satellites including the National Polar-orbiting Operational Environmental Satellite series with first launch expected in 2010 and the next generation geostationary satellite series starting with GOES/R with its launch expected in 2012. Those two new series would address requirements not only for meteorology but also for atmospheric chemistry, oceanography, land processes and the cyrosphere. NOAA intended to continue its back-up support to GMS-5 over the western Pacific.

12.6 The Director-General of EUMETSAT noted its intention to continue its support and contributions to WMO Members through satellite data, product and services available from its satellites, through its sponsorship of two centres of excellence in satellite meteorology in Africa as well as user forums. He also noted that the Czech Republic had recently joined EUMETSAT as a Cooperating State. The Council was pleased to learn that EUMETSAT intended to continue parallel operation of Meteosat-7 and -8 until the end of 2005 and that over the Indian Ocean, Meteosat-7 could replace Meteosat-5, when required, and provide coverage until the end of 2008. With regard to its new polar-orbiting satellite, Metop-1, the Council noted the intention of EUMETSAT to launch it at the end of 2005. Additionally, the EUMETSAT Council had approved a new programme for JASON-2. EUMETSAT also noted that it had conducted a training event in Oman in 2003.

12.7 The European Space Agency, in noting its first appearance at an Executive Council meeting as an observer, briefed the Council on its contributions to the space-based component of the GOS and its intentions to continue.

Coordination Group for Meteorological Satellites-XXXI (November 2003)

12.8 Council noted that CGMS-XXXI had discussed global contingency planning considered relevant to the space-based component of the GOS. The Council expressed its deep appreciation to the satellite operators in CGMS for their staunch dedication to providing continuity of data, product and services through contingency planning.

Comparable data content from geostationary satellites

12.9 CGMS had discussed the recommendations that all geostationary imagers should be upgraded to at least the level of spinning enhanced visible and infrared imager by the 2015 timeframe; and frequent infrared sounding should be made by spectrometers within the same timeframe. CGMS had unanimously endorsed those two recommendations in noting the goal to have comparable data content from comparable instrumentation with common spectral bands from all geostationary satellites.

Low Earth Orbit satellite contingency planning

12.10 CGMS had noted the less-than-optimum Equator crossing time plan by CGMS satellite operators. At CGMS-XXXI, both the ROSHYDROMET and CMA reconfirmed their willingness to consider placing their satellite missions in the afternoon orbit with a view to optimizing temporal coverage of the globe. In particular, CMA noted that if FY-3A (tentatively scheduled for launch in late 2006) was successful, it would consider putting FY-3B into an afternoon orbit when launched, now tentatively scheduled for 2008. ROSHYDROMET indicated that in view of the difficulties being experienced with the meteorological payload on Meteor 3M N1, Meteor 3M N2 could be launched in 2005 into a morning orbit. With a launch date of 2008, ROSHYDROMET expressed a willingness to consider placing Meteor 3M N3 into an afternoon orbit. CGMS had noted that with those possible shifts from morning to afternoon orbit near the end of the decade, the Equator crossing time plan would approach more optimal spacing. CGMS also noted the large gap in the early morning orbit contained in the existing satellite operators plans and that NOAA was the only satellite operator at present seeking to reduce the gap. Given the existing plans, the large gap would only be reduced in 2013.

Alternative dissemination methods

12.11 CGMS had recalled that the use of ADM was already being implemented by some satellite operators and that the capabilities were developing rapidly. CGMS had unanimously agreed in principle that ADM should be an integral part of all

contingency planning. CGMS had encouraged all satellite operators to develop the capability to deliver satellite data and products by ADM and that such systems allowed for the exchange of satellite information and in, that way, helped facilitate contingency planning. NOAA noted that it was already investigating means to exploit further ADM that could benefit WMO Members in Regions III and IV.

CGMS Global Contingency Plan

12.12 CGMS had noted that while considerable progress had been made, there was no consolidated description of the CGMS Global Contingency Plan. It agreed that such a description should be prepared and maintained. Thus, it proposed to consolidate CGMS discussions and agreements into a CGMS Global Contingency Plan that would reside as part of the CGMS Consolidated Report.

Fourth session of the WMO Consultative Meetings on High-level Policy on Satellite Matters

WMO Space Programme Implementation Plan

12.13 Council noted and agreed with the review by CM-4 of the WMO Space Programme Implementation Plan for 2004-2007, as contained in Section 4 and Annex III to the CM-4 Report and that the Implementation Plan provided further details to the WMO Space Programme Long-term Strategy as approved in the WMO 6LTP by Fourteenth Congress.

12.14 CM-4 was of the opinion that the WMO Space Programme Implementation Plan for 2004-2007 adequately described the scope and breadth of the new programme. Some sections, such as the description of the integrated global data dissemination service, were well structured and appropriately detailed although consideration should be given to dissemination services presently operated by NMHSs and other organizations, e.g., ICAO/WAFS. An opportunity now existed to improve data dissemination while integrating existing mechanisms. Other sections could be structured in a similar fashion. Additional emphasis should be made for satellite data collection systems, as well as amplification of the role in oceanography. It was also suggested that a project should be developed for inclusion in the Implementation Plan of assimilation of data from present and future R&D environmental satellites. An additional project should also be included in the Implementation Plan covering reanalyses related to retrospective satellite data from both operational and R&D environmental satellites. The Implementation Plan should also be careful to reflect the role of partner agencies when integrating across WMO-supported Programmes.

12.15 CM-4 noted the emphasis given by Fourteenth Congress to the establishment of the WMO Space Programme and additional resources allocated for training events, workshops and meetings. However, CM-4 felt that WMO should also

consider more staff resources for the WMO Space Programme Office as a matter of urgency and high priority. It recognized that a review of staff and priorities might be necessary to identify possible solutions.

12.16 The Council stressed the need for more staff resources in acknowledging the benefits already accrued since the establishment of the WMO Space Programme and the potential for far greater impacts especially in view of the growing importance of data, products and services from satellite systems and emerging activities such as the GEOSS. Thus it strongly urged WMO Members to consider providing seconded experts, for space agencies to continue and strengthen support either through the WMO Space Programme Trust Fund or through seconded experts, and for the Secretary-General to seek opportunities either through the regular budget or extra budgetary resources.

Towards the space component of an integrated WMO global observing system

12.17 The Council noted and agreed with the recommendation from CM-4 towards the development of the space component of an integrated WMO global observing system as described in general summary paragraphs 12.18 to 12.26. CM-4 recalled that at earlier Consultative Meetings the space agency representatives had encouraged WMO to move towards a more integrated framework for the space-based components of the observing systems of the various WMO Programmes.

12.18 CM-4 was pleased, therefore, to learn that Fourteenth Congress had specifically assigned as an overall objective of the WMO Space Programme to review the space-based components of the various observing systems throughout WMO Programmes and WMO-supported Programmes, e.g., WWW's GOS, AREP's GAW, GCOS, HWR's WHYCOS, JCOMM's Implementation of GOOS, etc., with a view towards the development of an integrated WMO global observing system that would encompass all present observing systems.

12.19 CM-4 agreed that the development of an integrated WMO global observing system was particularly timely in the context of the initiative now under way, through the ad hoc GEO mechanism to achieve high-level international (intergovernmental and inter-agency) commitment to the implementation, over a 10-year period, of a comprehensive, coordinated and sustained Earth observation system or systems. An effectively integrated WMO global observing system covering the atmosphere and those aspects of the ocean and land surface that fell within the WMO mandate would go a long way towards providing the nucleus of the more comprehensive Earth observation system that was the goal of the GEO initiative.

12.20 CM-4 recognized that the responsibilities of the Consultative Meetings extended only to the space-based component of such an integrated WMO global observing system. It felt satisfied, however,

that, given the long history of effective integration of the surface-based and space-based subsystems of the WWW GOS, a similar level of coordination and integration between the surface-based and space-based components of an integrated WMO GOS would follow naturally from the WMO processes.

12.21 CM-4 considered that the basic architecture of the space-based subsystem of the WWW GOS would extend logically to the space-based subsystem of an integrated WMO global observing system, and it would consist of three constellations and their associated ground segments based on the WWW subsystem of:

- (a) Operational meteorological polar orbiting satellites;
- (b) Operational meteorological geostationary satellites; and
- (c) Environmental research and development satellite constellations.

12.22 CM-4 agreed that the main challenge for WMO in giving effect to the decision of Fourteenth Congress would be in putting in place effective coordination and integration mechanisms across the various WMO observing systems serving the needs of the wide range of user communities represented by the individual programmes in areas such as agriculture, water resources, oceanographic and marine meteorological services, weather prediction and climate research and so on. It considered, however, that that process would be greatly facilitated by the fact that the WMO Space Programme had been constituted not just as a major WMO Programme but also as a cross-cutting programme with the resulting requirement to take a comprehensive view of the space aspects of all other WMO Programmes.

12.23 While recognizing that the detailed arrangements for cross-programme coordination and integration, including those relating to the staffing of the WMO Space Programme Office for that purpose, had still to be worked out, CM-4 lent its support to the concept of the space-based component of an integrated WMO global observing system composed of the space-based components of the observing systems of the various WMO and WMO-co-sponsored programmes, grouped in terms of the major user communities they served.

12.24 Given that, while WMO was responsible for almost all aspects of the observation and information/service provision for the atmosphere, it shared the responsibility for the ocean and land surface (including water resources) with many other international agencies and conscious, in particular, of the cross-cutting nature (ocean atmosphere, ocean and land surface) of the observation needs for natural disaster reduction and climate, the session agreed on the importance of careful and sensitive design of the integrated WMO observing system structure. It welcomed the fact that, in line with its long established role in coordinating of the WWW GOS, the WMO CBS had been assigned the

responsibility of WMO lead Technical Commission for the WMO Space Programme.

12.25 CM-4 looked forward, therefore, to CBS development in consultation with all other relevant WMO and co-sponsored bodies, of the space-based component of the integrated WMO global observing system on the basis of space-based observation components for three Earth-system domains and two cross-cutting sets of requirements* as followed:

- (a) The atmosphere, including sub-components meeting the needs of:
 - (i) The operational WWW and the various weather, climate and related applications and services based on it, including those of aviation meteorology (articulated through CAeM) and agricultural meteorology (articulated through CAgM);
 - (ii) Weather research such as for the WWRP as articulated through CAS;
 - (iii) Atmospheric chemistry, such as for GAW, as articulated through CAS;
- (b) The ocean, to meet the needs of the GOOS and the oceanographic and marine meteorological services and research based on it, as articulated through JCOMM;
- (c) The land surface and fresh water, to meet the needs of:
 - (i) WHYCOS and HWRP as articulated through CHy;
 - (ii) The WMO-co-sponsored GTOS;
 - (iii) Agricultural meteorology as articulated through CAgM;
- (d) Climate, incremental to, and integrating across, the domain-based observing systems, as coordinated through the Steering Committee for the WMO co-sponsored GCOS to meet the needs of:
 - (i) Climate research, articulated through WCRP;
 - (ii) Climate policy, articulated through SBSTA and COP based on information provided by IPCC, etc.;
 - (iii) Climate monitoring and services, articulated through CCI, CAgM and CHy;
- (e) Natural disaster reduction, incremental to, and integrating across, the domain-based observing systems and composed of those space-based instruments and missions providing geophysical and related information needed to support the WMO Natural Disaster Prevention and Mitigation Programme.

12.26 CM-4 noted that the practical implementation of the proposed integration would pose significant

* An alternative subsystem structure would be:

- (1) Operational meteorology (CBS, CAeM, CAgM ..).
- (2) Operational oceanography (JCOMM).
- (3) Operational hydrology (CHy).
- (4) Atmospheric research (CAS-AREP).
- (5) Climate (including climate research) (GCOS, CCI, WCRP).
- (6) Natural disaster reduction.

challenges in matrix management but it was confident that WMO and the entire space-based Earth observation stakeholder community would benefit from WMO taking a more integrated and coordinated approach. The Council acknowledged the need expressed by space agencies and WMO Members for a single set of climate requirements and agreed that that would be achieved by the Steering Committee of the WMO co-sponsored GOS through its coordination with relevant climate communities.

12.27 The Council strongly supported the concept for the space component of an integrated WMO global observing system and requested CBS, as a matter of urgency especially in light of the emerging new activity for a GEOSS, to further its development through its role as lead technical commission for the WMO Space Programme in consultation with all other relevant WMO and co-sponsored bodies.

12.28 The Council noted that the present session would be the last one that Mr Tillmann Mohr would attend. It recalled his many years of dedicated service to the meteorological community, first within the *Deutscher Wetterdienst* and as vice-president of CBS and as chairperson of the Executive Council Panel of Experts on Satellites. Most recently, his leadership as Director-General of EUMETSAT had resulted in marked improvements in the utilization of satellite data and products by many WMO Members. The Council thanked Mr Mohr for his many personal contributions to the overall goals of WMO.

12.29 The Council expressed its satisfaction with the role of the Consultative Meetings in the development of the WMO Space Programme and with the progress achieved towards an integrated WMO GOS. It especially appreciated the contribution of the space agencies of WMO Members and the international space agency providers contributing to the space-based component of the GOS with both operational and R&D satellites and in working with the meteorological and hydrological user community towards enhanced coordination in the best interests of the global community.

13. EMERGING ISSUES AND SPECIFIC CHALLENGES (agenda item 13)

13.1 THE EVOLVING ROLE OF WMO (agenda item 13.1)

13.1.1 The Executive Council expressed its appreciation for the work done by the Executive Council Ad hoc Group on the Evolving Role of WMO and for the report presented by its chairperson, Mr U. Gärtner. The report touched on the following areas of concern: WMO and its environment, WMO responsibilities, WMO Convention, mode of operation, and the WMO structure.

13.1.2 The Council recognized the importance and urgency of developing a strategy for action to address the various issues of concern raised, particularly relating to WMO's leadership role and rendering it more responsive, proactive and relevant. There was also a need to ensure greater political

awareness of its role and contribution in issues of concern to the nations it served such as natural disasters, climate change and water resources. Parallel consideration at the national level with respect to NMHSs should also be undertaken.

13.1.3 In that connection, there was a need for a clear and proactive WMO response to global concerns as expressed in the Millennium Development Goals adopted by the United Nations General Assembly in 2000 and the Johannesburg Plan of Implementation adopted by the World Summit on Sustainable Development in 2002; those include poverty alleviation, natural disaster mitigation, climate change and water resources needs. Account should also be taken of recent developments and initiatives such as on the global earth observation initiative (under preparation by the Earth Observation Summit and its ad hoc Group on Earth Observations).

13.1.4 The Council agreed that in the light of the report of the Executive Council Ad hoc Group on the Evolving Role of WMO, including the table of issues for consideration prepared by that Group (see Annex IX to this report which provided a schematic representation of the approach used by the Group) and its deliberation on that subject, there was sufficient material to enable action to be taken. The Council recognized that WMO needed to evolve with urgency, but carefully and sensitively, to respond to Members' changing needs and expectations, including their expectations for an agreed WMO strategy and strong leadership across a wide range of earth system science and service issues in the present rapidly changing world.

13.1.5 The Council recognized that the work to be done could be stratified into various timescales (i.e., immediate; 2004-2005; medium term up to 2007 and long term beyond 2007). It also recognized that a number of pertinent actions relating to the evolving role of WMO, as well as other items discussed during the present session of the Council, were within the authority and competence of the Secretary-General. It therefore requested the Secretary-General to take the necessary steps.

13.1.6 In that regard, the Council recalled that the 6LTP framework (vision, desired outcomes, strategies and associated goals) provided a useful basis for progressing the work.

13.1.7 Concerning the review of the WMO Convention, the Council felt that adequate preparatory work had already been made, but further progress needed to be made to ensure appropriate consideration by the time of Fifteenth Congress. That would require that specific recommendations and options should be ready by the fifty-seventh session of the Executive Council to allow for sufficient deliberation and communication to Members (who should be able to participate in the process, such as during sessions of regional associations) and so that those proposals that would need a decision by Fifteenth Congress were sufficiently "mature" by the time of the fifty-eighth session of the Executive

Council, i.e., the Council session before Fifteenth Congress. The Council requested that the proposal as developed for its fifty-fourth session of the Executive Council, together with related documentation and comments be provided to sessions of regional associations for their consideration.

13.1.8 With regard to the mode of operation, it was felt that that was the area where there was greatest feasibility of significant progress, particularly through improved ways of addressing cross-cutting issues, including use of matrix management, and various measures that had been proposed for achieving a more effective and efficient operation of the Executive Council.

13.1.9 Consideration should also be given on how best Members, constituent bodies and the Secretariat could coordinate better in relation to the provision of relevant information, including to the general public and the media, on issues of interest such as prevention and mitigation of natural disasters, climate change and water resources.

13.1.10 The Council decided to re-establish its Task Team to Explore and Assess the Possible Changes to the WMO Convention and to establish an Executive Council Action Group for an Enhanced WMO. In that connection, the Council adopted Resolutions 6 (EC-LVI) and 7 (EC-LVI). The work of those two subsidiary bodies should be coordinated and should take into account the 6LTP and its implementation, as well as lead to actions and recommendations that would influence the preparation of the 7LTP. Their work should also be coordinated with those of other pertinent bodies.

13.1.11 The Council also requested its Working Group on Long-term Planning to take the relevant considerations into account in connection with the assessment of the implementation of the 6LTP and the preparation of the 7LTP.

13.2 ROLE AND OPERATION OF NMHSs (agenda item 13.2)

13.2.1 The Executive Council recalled that Fourteenth Congress had recognized that the role and operation of NMHSs were intimately linked to many other issues of major interest to WMO. It was also recognized that such links should be carefully considered and should be such as to help WMO and its Members to strengthen complementarity and strategic alliances as well as to meet the major challenges and commitments facing the Organization. Congress adopted Resolution 28 (Cg-XIV) — Role and operation of National Meteorological and Hydrological Services.

13.2.2 Fourteenth Congress requested the Executive Council to keep relevant topics under review and the Secretary-General to take the necessary initiatives and provide the required support. In that connection, Congress felt that the work should proceed taking into account the evolving role of WMO.

13.2.3 In the light of its consideration of the wide range of issues associated with the role and

operation of NMHSs and its conclusion that those should be further pursued as a matter of great importance, the Council at its fifty-fifth session adopted Resolution 5 (EC-LV), which established the Executive Council Advisory Group on the Role and Operation of National Meteorological and Hydrological Services, with Mr A.I. Bedritsky as chairperson. The Council noted that the Group's first session was planned for early 2005.

13.2.4 The Council underscored the linkage between the leadership role, contribution and visibility of NMHSs at the national level, on the one hand, and of WMO at the international level, on the other. The NMHSs should be the official voice in issuing weather warning for public safety at the national level while WMO served as the authoritative voice in the United Nations system on matters relating to weather, climate and water. Their leadership roles stemmed from their respective core competence which should continue to be enhanced.

13.2.5 While maintaining leadership in the relevant areas, partnership should also be a key characteristic of the work of NMHSs and WMO. That could provide opportunities which might otherwise not be available to NMHSs and WMO.

13.2.6 The Council agreed that the NMHSs' and WMO's visibility could be further ameliorated by working more closely with the media and by ensuring that appropriate communications with them were established and/or maintained. In particular, possibilities in the way the World Meteorological Day was observed merited further study.

13.2.7 The Council noted that with respect to the economic framework for the provision of meteorological and hydrological services, there was increasing interest in pursuing economic valuation studies to strengthen the case for the recognition of the role and contribution of NMHSs. In particular, a process was under way to develop the subject of meteorological economics (see also general summary paragraph 8.11).

13.2.8 In that connection, the Council recalled that the organization of a high-level conference on the role and the socio-economic benefits of NMHSs was considered by Fourteenth Congress. It requested the Executive Council to study further that topic. The Council further recalled that Technical Conferences on the Economic and Social Benefits of Meteorological and Hydrological Services were organized in 1990 and 1994. It recognized the importance of further highlighting such socio-economic benefits. In that connection, the Council also recognized the emphasis on socio-economic benefits relating to the GEOSS initiative, in which WMO had had significant participation. The Council noted that GEOSS was being pursued at the highest levels of government and that there was a growing number of WMO Members involved. The Council concluded that the GEOSS offered an appropriate vehicle to highlight the socio-economic benefits of NMHSs and that WMO consideration of a conference should be directed, for the time being,

primarily toward ensuring appropriate recognition for NMHSs in the GEOSS.

13.2.9 The Council underscored that the topic of socio-economic benefits of NMHSs was closely linked to the role of Members and their NMHSs in the further development of the Natural Disaster Prevention and Mitigation Programme established by Fourteenth Congress.

13.2.10 The Council considered that the involvement of the media, the private sector and academia continued to be of particular interest. It recalled that Fourteenth Congress had noted that there was a growing recognition of the importance of cooperation with the media, the private sector and academia, and of the need to consider the opportunities that such cooperation could provide while recognizing the associated challenges. Congress recognized that that included both the involvement of the media, the private sector and academia in the international programmes of WMO and cooperation, at the national level, between those sectors and the NMHSs.

13.2.11 The Council noted that the management of NMHSs and capacity-building in that area had been frequently underscored as topics of major interest in a number of WMO forum such as during sessions of regional associations and at regional technical conferences. The Council recognized the importance and need for reinforcing capacity-building of NMHSs, particularly through training in relatively new areas such as management, partnership, networking, communication, user interaction, cost recovery, commercialization and valuation of the socio-economic benefits of meteorological and related services.

13.2.12 The impact on the role and operation of NMHSs of the tendency for certain WMO activities to move towards a cross-cutting approach (e.g. integrated observing system including the GEOS initiative and the WMO Space Programme, FWIS and the Natural Disaster Prevention and Mitigation Programme) would need to be examined.

13.2.13 The role and contribution of NMHSs in strengthening their leadership role in relevant areas at the national level and that of WMO at the international level also merited further consideration.

13.2.14 The Council emphasized the significance of giving due regard to the role and operation of NHSS in the work of its Advisory Group on the Role and Operation of NMHSs.

13.2.15 The Council also emphasized the importance of assessing continually the role and operation of NMHSs in the light of the rapid changes occurring and of identifying appropriate actions that might be taken by NMHSs and WMO.

13.2.16 The Council requested its Advisory Group to take into account the discussion of that session in planning and implementing its programme of work. It also requested the Group to keep in view relevant developments such as those on the evolving role of WMO and the WMO long-term planning.

13.3 WMO QUALITY MANAGEMENT FRAMEWORK (agenda item 13.3)

13.3.1 The Executive Council recalled that Congress had decided, by adopting Resolution 27 (Cg-XIV) — Quality management, that WMO should work towards a QMF for NMSs that would eventually include and develop the following distinct though related elements, which could address possibly on a phased basis:

- (a) WMO technical standards;
- (b) Quality management system(s) including quality control;
- (c) Certification procedure(s).

13.3.2 The Council thanked Mr Chow Kok Kee, Executive Council Focal Point on Quality Management, for his input and noted the recommendations of the 2004 Meeting of the Presidents of Technical Commissions. It emphasized again that the WMO QMF should facilitate the provision of early and relevant advice on the development of quality management systems. The Council noted that several Members had gained positive experience with the quality management system based on ISO 9000 that resulted in a continuous process of improvements in the operation and delivery of services to users. It was pointed out that the implementation at a quality management system could be pursued for separate sectors, such as for aeronautical meteorological, marine meteorological and climatological services, or for the Service as a whole. The Council also noted that some NMSs were implementing their own quality management system and audit mechanisms.

13.3.3 The Council noted that very useful material had already been developed, or was being made available by some Members. It welcomed the various initiatives taken by the Secretary-General as regarded development of the WMO QMF. Those included consultations with the ISO Secretariat with a view to obtaining practical advice and training to ensure that the staff involved were competent, specifically with respect to ISO 9001:2000. In that connection, the Council thanked EUMETSAT for the NMS Quality Assurance Managers Seminar (Darmstadt, Germany, 11 February 2004). Study reports had been completed on quality management implications on the instrument sector and on the quality management approach to in situ observing systems, and a draft guide on quality management procedures and practices for PWS was being prepared. CBS and CIMO would consider that material in due course, as appropriate.

13.3.4 The Council also welcomed the fact that the new edition of the *Guide to Practices for Meteorological Offices Serving Aviation* (WMO-No. 732) developed by CAeM now contained a new section on quality management, that ICAO was preparing a guide on quality management oriented towards ISO 9000 in collaboration with WMO, and that the new revision of the *Guide to Agricultural Practices* (WMO-No.134) being developed by CAgM, would have a chapter on quality management.

13.3.5 Appreciating that WMO was still at the beginning of the development of the QMF, the Council welcomed the fact that the Secretary-General had undertaken a survey among NMSs to assess the status of quality management activities and plans and their requirements for assistance through WMO. The survey revealed that more than 40 Members required technical guidance and other assistance from WMO as a matter of urgency. The Council was particularly grateful that several Members had offered quality management basic documentation developed in their NMS, which could be published by WMO. Noting that that material was written in national languages, the Council considered it appropriate, where necessary, to procure the English translation for the most useful material.

13.3.6 The Council noted that the QMF development was still in its early stage, and it endorsed the phased approach recommended by the presidents of the technical commissions. In particular, the Council agreed that the WMO QMF should focus on technical aspects of the operation of the NMSs and was pleased to recognize that the first step addressing the quality management aspects of observing systems had already been started. The Council emphasized the need to also address urgently the QMF aspects with respect to aeronautical meteorological services.

13.3.7 The Council expressed concern over the potential high costs involved. Some members recommended the development of a WMO-own certification procedure, but others felt that such a certification procedure would lack the full international recognition that would be important for strengthening their commercial activities and competitiveness.

13.3.8 The Council urged the technical commissions concerned to address the consolidation and updating of the pertinent technical standards and recommended practices as a priority activity within their regular work programme, to ensure their suitability as reference in the QMF. It invited the Secretary-General to give priority to the early publishing of guidance material in English and through electronic means (preferably as CD-ROM compilation) to meet the urgent needs of the Members who would have to address the quality management issues in the near future. The Council agreed that regional technical conferences should address the topic of the WMO QMF using advice from Members that had already implemented it.

13.3.9 The Council gave serious consideration to the resources that would be needed to carry out the above activities as a cross-cutting project, and recorded its decision under agenda item 18.4. The Council underlined the role and responsibility of the technical commissions in the provision of guidance, advice, review and assessment, and decided to establish the Intercommission Task Team on QMF by adopting Resolution 8 (EC-LVI). Noting that the PWS programme, as a particular programme within the purview of CBS, could bring important input and

expertise to the WMO QMF with respect to service delivery, the Council requested the PWS programme to contribute to the work of ICTT.

13.4 EARTH OBSERVATION SUMMIT FOLLOW-UP (agenda item 13.4)

The Ad Hoc Intergovernmental Group on Earth Observations Status and Plans

The first Earth Observation Summit (EOS-I)

13.4.1 The Executive Council was informed that at the invitation of the United States, on 31 July 2003 in Washington D.C., 33 nations, and the European Commission, joined together at the first Earth Observation Summit to adopt a Declaration that called for action in strengthening global cooperation on Earth observations. The purpose of the Summit was to:

Promote the development of a comprehensive, coordinated, and sustained Earth observation system or systems among governments and the international community to understand and address global environmental and economic challenges; and begin a process to develop a conceptual framework and implementation plan for building this comprehensive, coordinated, and sustained Earth observation system or systems.

13.4.2 To that end, the Summit participants launched the Ad Hoc Group on Earth Observations, with the goal of furthering the creation of a comprehensive, coordinated, and sustained Earth observing system or systems. The Group, co-chaired by the United States, the European Commission, Japan and South Africa, and joined by more than 21 international and intergovernmental organizations, began its work by organizing five subgroups, as well as a secretariat to support its activities. In order to promote the development of the now named GEOSS, GEO decided that a document describing the GEOSS framework and an associated 10-year Implementation Plan would be developed.

13.4.3 The Council noted that the document describing the GEOSS framework (referred to as the Framework Document) for the 10-year Implementation Plan was presented for adoption at the second Earth Observation Summit attended at the ministerial level in Tokyo on 25 April 2004, and the 10-year Implementation Plan itself would be presented for adoption at the third Earth Observation Summit hosted by the European Commission, to be held February 2005 in Brussels.

13.4.4 Building on those efforts, the Council noted that the GEO process would:

- (a) Cover the full spectrum of in situ and remotely-sensed (space-based and aircraft) observations;
- (b) Provide an opportunity for all nations and international organizations to work together for a common cause, under a commonly agreed approach, framework, and methodology;

- (c) Actively involve developing countries in making improved observations within their national territories, and access and use observations made by others;
- (d) Provide a means to build on the efforts of those international efforts to assess user requirements, identify gaps in global observations, improve communication among nations and organizations with common interests in similar observation capabilities;
- (e) Provide high-level (ministerial) recognition of the universal need for improved Earth observations;
- (f) Promote consensus-building among participants about the highest priority observation needs, which were unmet or require significant increase in resources to provide comprehensive solutions.

13.4.5 In the long-term, implementation of the 10-year Implementation Plan should result in:

- (a) Commitment of nations to make more complete long-term collection of high-priority Earth observations;
- (b) Filling of the gaps in observing capabilities;
- (c) Attention to capacity-building in both developing and developed countries;
- (d) Greater interoperability and connectivity among individual component observing systems for improved exchange and appropriate sharing of data and information to commonly agreed standards.

GEO-1 (August 2003)

13.4.6 The Council noted that the first session of GEO (GEO-1) occurred immediately following EOS-I. Following GEO-1, WMO Secretariat staff was nominated to participate in the work of each of the five Subgroups. Furthermore, two Subgroups were co-chaired by Permanent Representatives and WMO became one of three entities with co-chairpersons responsibilities for the Subgroup on Architecture.

13.4.7 GEO-1 requested each Subgroup, with assistance from the GEO Secretariat, to develop a Framework Document for review at GEO-2.

GEO-2 (November 2003)

13.4.8 The Council noted that GEO-2, which met in Baveno, Italy on 28-29 November 2003, had agreed with the following recommendation from the Subgroup on Architecture:

GEOSS should be a system of systems supplemented by new observing components as and where required. That architecture would allow existing individual observing systems, e.g., WMO's WWW GOS, to remain within their mandates as well as providing for new observing components. The architecture would require a new interface between individual observing components as well as a new component to exchange and disseminate observational data between those components. GEO members and participating organizations would need to agree upon a global interoperability specification to

which all individual observing components would adhere. GEOSS would contain the necessary network structure to make available all required observations to satisfy the data utilization model.

A possible high-level functionality that would address the advantages identified in the above discussion while mitigating the disadvantages could be based on the following description.

High-level functionality

GEOSS should be a comprehensive, coordinated, and sustained virtual observing system of systems. It should address all observations required within the application areas necessary to make informed analyses, products, forecasts and related decisions by members and participating organizations. User observational data requirements should include all those of the individual component observing systems, e.g. those of WMO, as well as those mutually agreed upon by Members and participating organizations.

GEOSS would include the system components required to exchange and disseminate observational data and information as well as the systems required to acquire the observations. GEOSS would provide access to all required observations in order to make informed analyses, products, forecasts and related decisions by members and participating organizations at local, national, regional and global entities. The GEOSS component required to exchange and disseminate observational data and information would provide interoperability between individual component observing systems.

GEOSS should be a system of systems. For existing individual observing system components, and their associated telecommunications services, their responsibility including technical operations, should remain with those entities having national, regional and/or intergovernmental ownership, e.g. WMO would maintain responsibility for the WWW GOS. For required new observing components, GEO members and participating organizations should establish, or encourage their establishment as appropriate, or find an organizational entity already existing to assume the new responsibility, while following the high level functionality. Each individual component should provide for the necessary interfaces following an appropriate global interoperability specification to allow full exchange of observations. That would be a new task for WMO to implement for the GOS if the GOS became one of the GEOSS existing systems. The global interoperability specification will be agreed upon and adhered to by all Members and participating organizations. The global specification will provide for full interoperability between all individual systems including all necessary metadata and the system

component required to exchange and disseminate observational data. Individual components would declare and adhere to their observing standards.

13.4.9 The Council also noted that GEO-2 had agreed that GEOSS should encourage an end-to-end process of transforming data into information. That implied that a WWW-like structure, including telecommunication and data processing should be developed for each of the end-user communities.

GEO-3 (February 2004)

13.4.10 The Council noted that GEO-3 was hosted by the Government of South Africa in Cape Town from 23 to 27 February 2004. There were four major accomplishments at GEO-3: approval of a draft Communiqué; approval of a draft Framework Document; agreement on terms of reference for an implementation plan task team; and approval of the report from all five Subgroups. The Council was pleased to note the prominence given to WMO's mandate in the draft Framework Document as well as the universally recognized-contributions made by the WWW in the draft Communiqué.

GEO-4

13.4.11 The Council was informed that at GEO-4, a draft 10-year Implementation Plan outline was reviewed. However, the initial proposed timeline to develop the Implementation Plan was rearranged to allow governments sufficient time to comment and approve it. GEO-4 also agreed to prepare three tiers of documentation for the 10-year Implementation Plan: a Communiqué, an Executive Summary of the 10-year Implementation Plan (to be called the 10-year Implementation Plan) and the Implementation Plan Technical Blueprint.

13.4.12 The Council noted that a major discussion area at GEO-4 concerned international cooperation. While significant progress had been made, agreement could not be reached on the successor mechanism to GEO. However, GEO-4 agreed on eighth principles (key considerations and strategy) towards such a successor mechanism. Furthermore, it agreed to meet again on 27-28 September 2004 in Brussels as a working session of GEO to discuss comments by GEO Members on the eighth principles. GEO-4 had requested those intergovernmental organizations with observing systems, especially those countries that were not within the GEO membership, to provide their views on the eighth principles. GEO-4 agreed that a successor mechanism must be identified in the near future to allow it to be inserted into the Executive Summary of the 10-year Implementation Plan and the Implementation Plan Technical Blueprint as required in the Framework Document. Thus, the Council discussed the eight key considerations and strategies and felt it appropriate to provide GEO with the following for consideration in preparation of EOS-III, to be held in Brussels on 16 February 2005. The Council agreed that the nine societal benefit areas outlined in the GEO Framework Document

would require a broad spectrum of observing technologies and modelling systems in order to turn observations into information. The Council also agreed that WMO Members had considerable experience in some, indeed many, of those societal areas while recognizing that other communities and national sectors, e.g. commercial, had comparable experience. The Council was of the opinion that one strength for the GEO process was its ability to draw upon and benefit from all those contributing to, and supporting it. WMO Members' experience and capabilities in observing systems for many application areas, and in assimilation and forecasting for NWP, would be valuable to GEO.

EOS-II

13.4.13 The Council noted that a Communiqué stating approval of the Framework Document, pointing the way forward in the GEO effort, and encouraging broad participation in, and support for, the GEO effort, was approved at EOS-II on 25 April 2004. Also agreed at EOS-II was a Framework Document consisting of a high-level synopsis of the GEO effort for senior policy makers; a description of the GEOSS purpose and expected benefits; and a broad framework for developing the 10-year Implementation Plan. The Framework Document was prepared by the GEO Secretariat with substantive input from GEO subgroups, GEO co-chairpersons, and high-level experts within GEO.

13.4.14 The Council noted that EOS-II had been opened by Mr Junichiro Koizumi, Prime Minister of Japan. Formatting. The Council was informed that the Secretary-General made two statements at EOS-II, the first describing WMO's experience in observations and its commitment and potential contribution towards the goal to establish a comprehensive, coordinated and sustained GEOSS. The second was a joint statement on behalf of the Executive Heads of FAO, UNEP, UNESCO, including its IOC, and WMO to identify modalities for increased integration and coordination of a resulting enhanced United Nations based observing system, and to seek approval from their respective governing bodies. The Executive Heads had also offered to work within the GEO process and resulting intergovernmental coordination mechanism in order to ensure the success of GEOSS. The Council noted that EOS-II culminated with the agreement of a Framework Document for GEOSS, as well as a Communiqué, endorsed at the ministerial level.

Future development of GEOSS

13.4.15 The Council was also briefed on the latest GEO activities including the structure of the various groups within the GEO process, the timetable being followed towards the approval of an Implementation Plan in February 2005 in Brussels, and an overview of the components and processes for the GEOSS. The Council was pleased to note the high level of participation in the various GEO groups by representatives of NMHSs and in many cases by the

Permanent Representatives, as well as by the WMO Secretariat. The Council also noted that the timetable established by GEO was intensive and required a near continuous presence by WMO Members and the Secretariat to ensure that WMO contributions, both existing and potential, were recognized. With regard to the Implementation Plan, the Council suggested that GEO take into consideration the existing processes already available in NMHSs to provide an ability to measure the success in the societal areas embraced by GEO as described in its Framework Document.

13.4.16 The Council was strongly of the opinion that GEOSS was one of the most important and key initiatives which would enable WMO to address the challenge of the coming decades. GEOSS was a significant opportunity to provide key benefits in many societal and economic areas worldwide and make data available to a broad range of user communities through improved observational systems. The Council strongly agreed that WMO's long-term experience in operational observing and telecommunications systems clearly demonstrated to those involved in the GEO process that WMO could provide effective leadership in the implementation and operation of GEOSS. The Council also acknowledged that the GEO Implementation Plan was not yet finalized nor approved. Several issues of importance to NMHSs remained, including their role, impacts on national services and ownership as well as national and NMHS benefits, that could be clarified after approval of the Plan. Thus, it was appropriate to wait for the Implementation Plan's final approval although WMO should continue its efforts to influence its development. Even though the final Implementation Plan would only be available in February 2005, the Council was strongly of the opinion that several WMO components would be candidates for GEOSS and certainly be a significant contribution if not the core to GEOSS. Those components would include WMO's unique systems, e.g. WWW GOS and GDPFS, GAW, WHYCOS, GTN-H, FWIS and cosponsored systems, e.g. GCOS, GOOS and GTOS. With regard to FWIS, the Council noted the requirement for GEOSS to establish a new data exchange and dissemination component and that FWIS could serve as an initial system requiring expansion as appropriate to accommodate other GEOSS-related data and products.

13.4.17 The Council also recalled its considerable experience in providing the venue for important and related secretariats within the Geneva Headquarters building, e.g. the IPCC Secretariat, the GCOS Secretariat and the WCRP Joint Planning Staff. Such co-location had proven to be of great benefit to all the involved sponsors. Thus, the Council agreed that the Secretary-General, if asked by GEO Members, should indicate a strong willingness to provide the venue for any future GEOSS Secretariat under conditions comparable to those enjoyed by the present co-located secretariats. The Council also

noted that WMO provided the necessary administrative infrastructure for Trust Funds supporting the working of co-located secretariats and that that service could also be made available to any future GEOSS Secretariat under similar conditions.

13.4.18 The Council considered the possible future institutional arrangements for GEOSS, bearing in mind that it would be built primarily on existing observing and data-processing and forecast systems of WMO and several of its sister agencies in the United Nations system. It considered it important that the successor arrangements to GEO achieved a strong sense of universal ownership among the entire WMO Members and expressed the hope that GEOSS would eventually become fully integrated into the United Nations system in a way that added value to the various observing systems that were sponsored or co-sponsored by WMO, UNESCO, IOC, FAO, UNEP and other international agencies and programmes. In that context, the Council felt that the ongoing discussion on amendments to the WMO Convention was of great importance.

13.4.19 The Council expressed its strong support for the initiative by the Secretary-General to work with his fellow Executive Heads and stressed the need to continue such activities especially in preparation for the GEO Governance meeting planned for September 2004, GEO-5 to be held in November 2004 in Ottawa, and EOS-III planned for February 2005 in Brussels. Such future joint statements could propose a joint working structure among the related United Nations components for the implementation of GEOSS. The Council also suggested that the Secretary-General take into account implications of GEOSS when considering any re-organization of the WMO Secretariat. It recalled the Secretary-General's use of matrix management within the Secretariat and agreed that it was an excellent example of an approach to optimize the effectiveness of the Secretariat.

13.4.20 The Council adopted Resolution 9 (EC-LVI) in affirming its full support for the GEO process and resulting GEOSS.

13.5 INTERNATIONAL EXCHANGE OF DATA AND PRODUCTS (agenda item 13.5)

Implementation of 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

13.5.1 The Council noted that three Members had submitted amendments to their list of additional data provided under Resolution 40 (Cg-XII). Those were Spain on 7 May 2003, Norway on 30 October 2003, and Bosnia and Herzegovina on 10 November 2003.

Implementation of Resolution 25 (Cg-XIII) — Exchange of hydrological data and products

13.5.2 The Council was informed that, following the request of Fourteenth Congress, the questionnaire on the exchange of hydrological data and products

had been circulated to River Basin Organizations and International Data Centres to obtain their comments and views on the status of the international exchange of data. The CHy AWG would then analyse the replies to be compiled with replies received previously from countries. It would report the outcome of the survey to CHy-XII, which would consider future actions in the spirit of Resolution 25 (Cg-XIII). The Council was also pleased to note that the technical report on the exchange of hydrological data and products prepared by CHy, after having been reviewed by the Regional Hydrological Advisers and the Executive Council, had been published and distributed in early 2004.

13.5.3 The Council noted with satisfaction the WMO efforts made in the Pan African Implementation and Partnership Conference on Water (Ethiopia, December 2003) to address the hydrological data exchange issues. It concurred with the recommendation of the CHy AWG that the issue of international data exchange be included in the agenda of international water forum, wherever possible, to encourage countries to implement Resolution 25 (Cg-XIII), and requested the Secretary-General to continue his efforts in that regard.

Climate data and products

13.5.4 With respect to the international exchange of climate data and products, the Council urged CCI to continue to work with CBS on the issues of the collection of CLIMAT and CLIMAT TEMP messages and their dissemination via the GTS or the Internet. The Council welcomed the development of software to encode and decode CLIMAT and CLIMAT TEMP messages and recommended that the software be thoroughly tested and distributed to relevant Members.

Aeronautical meteorological information exchange

13.5.5 The Council recalled that the Conjoint CAeM Session/ICAO Meteorology Divisional Meeting held in 2002 endorsed Recommendation 4/7 that called on ICAO, in consultation with WMO, to develop guidelines for access to aeronautical meteorological information for air navigation support purposes only. The Council further recalled that the ICAO Council and the WMO Executive Council approved that Recommendation in 2003. The Council noted with satisfaction that, as part of the implementation of Recommendation 4/6, ICAO established the Aviation Use of the Public Internet Study Group in September 2003 and WMO agreed to participate in the work of that ICAO Group. The Council was informed that the work of that Study Group would be completed in the near future.

13.5.6 The Council was further informed that, similar to previous guidelines for authorized access to the WAFS satellite broadcasts prepared by ICAO and already distributed to Members, ICAO had developed guidelines for access to aeronautical

meteorological information that had been also distributed to WMO Members. The Council noted with interest that the next step in the development of comprehensive guidelines related to the exchange of aeronautical meteorological information under ICAO responsibility taking into account Note 3 of Annex 4 to Resolution 40 (Cg-XII), would be the expansion of currently available guidelines as a result of the work of the Study Group.

Oceanographic data exchange policy

13.5.7 The Council noted with interest that the twenty-second session of the IOC Assembly (23 June-4 July 2003) had, inter alia, approved an IOC Oceanographic Data Exchange Policy, which both recognized and was compatible with the WMO policy and practice on the international exchange of meteorological and related data and products as expressed through Resolution 40 (Cg-XII). The Council expressed its appreciation to IOC for its efforts in that regard, which would further serve to strengthen cooperation and coordination between the two Organizations in the exchange of relevant geophysical data. The Council was pleased to note that JCOMM was developing its data exchange and management mechanisms and procedures within the context of the data exchange policies of both its parent Organizations, with a particular focus on ensuring the full and open exchange of oceanographic data from all sources.

Recent developments

13.5.8 The Council noted that recent developments and initiatives such as on the expanded satellite activities which now covered R&D satellites and the GEOSS initiative had implications to the free and unrestricted international exchange of meteorological and related data and products that were under consideration.

14. LONG-TERM PLANNING (agenda item 14)

14.1 The Executive Council recalled the importance given to WMO long-term planning by Fourteenth Congress and that its fifty-fifth session had established the Executive Council Working Group on Long-term Planning to assist in that area. The Council noted that the Working Group had met from 19 to 21 April 2004 and expressed appreciation for the work done by the Group and for the report of its chairperson, Mr A.M. Noorian.

General considerations

14.2 The Council agreed on the importance of identifying what WMO should be aspiring for as a basis for the WMO LTP, particularly in connection with its leadership role. It also agreed on the use of the 6LTP framework (vision, desired outcomes, strategies and goals) as a basis for future Long-term Plans. The Council further agreed that there was a need to survey Members in order to know more about the issues that concerned them. That would help in formulating an effective strategy on how to

address those concerns, as well as encourage their involvement and commitment to the long-term planning process, and in obtaining an indication of the usefulness of the Long-term Plans.

14.3 The Council also agreed that cross-cutting activities such as the Space Programme and the Natural Disaster Prevention and Mitigation Programme merited more in-depth consideration in the long-term planning process. In view of the increasing importance of cross-cutting issues, the WMO programme structure might need to be modified in the future. That was also related to developments on the further consolidation of WMO activities such as those on the integrated observing system (including the GEOS initiative) and FWIS.

14.4 Support to policy formulation and implementation by WMO (and NMHSs) in relation to natural disasters, climate, water as well as in other sectors such as aviation, agriculture, health and planning were recognized by the Council as also needing further improvement. Hence, WMO should address the essential, though difficult, challenge of how it and NMHSs could be more relevant to policy formulation and implementation in areas which fell within their competence.

14.5 The Council agreed that the relationship between WMO and NMHSs, on one hand, and the private sector, on the other, should be further examined with a view of ascertaining how best to ensure appropriate and effective partnership.

14.6 The issue of a quality management system as a means of achieving the high quality of the meteorological and related products was also noted. In that connection, the matter relating to costs associated with such a system remained a major concern in developing countries. Nonetheless, there was a need to prepare guidelines for NMHSs, and also a need to prepare them for related future challenges (see also agenda item 13.3).

14.7 The Council agreed on the importance of ensuring better appreciation of the socio-economic value of the NMHSs products, including in the context of the need to measure the value of the impact of what WMO did as an organization. It was also underscored that it would be necessary for WMO and NMHSs to undertake studies on the economic value of meteorological and related products as those could help to secure better recognition and more adequate resources for WMO and NMHSs.

14.8 There should be enhanced linkage between the Long-term Plans and the programme and budget to help ensure that expected results were clearly identified and the way to achieve those were well described.

The long-term planning process

14.9 The Council reaffirmed that the WMO long-term planning process, with its refinements over the years, had served the Organization in good stead. The purposes and characteristics identified for the process remained essentially valid.

14.10 The Council recognized the varied changes relating to national, regional and global issues. It was agreed that consideration should be given to carrying out risk analysis on the significant opportunities that were ahead of WMO and major challenges to be met in dealing with those opportunities, possibly through a strength, weakness, opportunities and threats analysis. Such analysis should also take into consideration WMO's future role in the United Nations system, trends in globalization, resource mobilization, evolution of the private sector and changing demands by users/consumers.

14.11 In the planning process, consideration should be given to the identification of various planning scenarios for the future, taking into account the leadership and strategic role of WMO (and NMHSs) in the areas of major interest to WMO, particularly on natural disasters, climate issues and water resources.

14.12 A scenario analysis should be helpful in determining the future WMO options and how to address those, with technical commissions providing scientific and technical input. In order that WMO could work in tandem with other partners, it was also suggested that the Long-term Plans of other international organizations should be examined. Further to that, the areas to concentrate on should be identified.

14.13 The Council underscored the need to have a clear strategy for the long-term while identifying short-term goals as well. That would help to build Members' capacity to have long-term goals, while also planning and operating within the short-term frame, making necessary adjustments, as appropriate.

Monitoring and evaluation of the Sixth WMO Long-term Plan

14.14 The Council agreed on the importance of ensuring the appropriate implementation of the 6LTP, as well as the related monitoring and evaluation of that implementation.

14.15 The Council recognized the importance of the key performance indicators as those helped to demonstrate WMO and Members' (particularly their NMHSs') achievement in the delivery of services as identified in the 6LTP. Such measurement could also help WMO and NMHSs seek more resources in support of their activities.

14.16 The Council noted the Working Group's recommendation to the present session that reports to future sessions of the Council (particularly by presidents of regional associations and technical commissions, as well as the Secretary-General) should address the way particular programmes were contributing to the implementation of the LTP and to confirm whether the implementation of the 6LTP in that particular area was on track or not. The report should also dwell on the programmes' contribution to the realization of the six WMO desired outcomes and the nine strategies (with their associated goals) contained in the 6LTP.

14.17 The Council noted that the Working Group also suggested that the possibility of external evaluation should be further considered, including the involvement of the user community, so as to have a more independent assessment of the value of the 6LTP and its implementation and that there would be a need to determine clearly its purpose, scope and methodology.

14.18 The Council requested that consideration be given on how best to provide an update on the 6LTP and its implementation in the light of latest developments such as the GEOSS initiative, the expanded satellite activities which now covered R&D satellites and the changes in the Secretariat including those related to the way cross-cutting issues were being addressed.

Preparation of the Seventh WMO Long-term Plan

14.19 The Council agreed with the Working Group that in the preparation of the 7LTP, the following issues should be taken into account, among other things:

- (a) Protection of life and property against natural disasters;
- (b) Poverty alleviation;
- (c) Safeguarding the environment;
- (d) Enhancing the economic and social well-being of various sectors of society in areas such as food security, water resources, energy, health, transport and tourism;
- (e) Policy-making and in meeting international commitments in pertinent areas through the provision of required information, assessments and advice;
- (f) Assuring the sustainability of the scientific leadership of the Organization by ensuring increasing attention to the further development of the WMO core scientific programmes, as well as by strengthening relationships with the appropriate research communities;
- (g) Development of strategic alliances within the United Nations system in the areas of weather, climate and water;
- (h) Consideration of ways of strengthening partnerships with the private sector, academia, media and non-governmental organizations in the work of the Organization;
- (i) Addressing proactively emerging issues with the aim of increasing the general responsiveness of the Organization;
- (j) Development of innovative ways of building the capacity of operators and potential users of the meteorological, hydrological and related infrastructure and facilities, particularly enhancing those in the least developed countries, as well as the products and services deriving from those;
- (k) Improvement of WMO visibility, communication and transparency;
- (l) Increased effectiveness and efficiency of WMO's mode of operation.

14.20 The 7LTP should also take into consideration the countries' concerns and recommendations as reflected in the United Nations Millennium Development Goals and the Johannesburg Plan of Implementation of the World Summit on Sustainable Development.

14.21 The presidents of regional associations and technical commissions should also be involved in the assessment process. Further clarifications should be made on the technical bodies that would be responsible for the cross-cutting issues. Guidelines should be prepared for monitoring the 7LTP, and the issue of resource mobilization for its implementation should be seriously looked into.

Linkage with other work in progress

14.22 The Council noted that the Working Group had reviewed the progress relating to the activities of the Executive Council Ad Hoc Group on Evolving Role of WMO, the Executive Council Working Group on Role and Operation of NMHSs and the Executive Council Advisory Group on Climate and Environment, whose tasks were related to those of the Working Group on Long-term Planning. The discussion on the evolving role of the Organization and WMO structure were closely linked to the long-term planning process.

Future work of the Executive Council Working Group on Long-term Planning

14.23 The Council agreed that in future, presidents of all regional associations and technical commissions should continue to be involved in the activities of the Working Group, as appropriate.

14.24 The Council requested the Executive Council Working Group on Long-term Planning to progress the work, taking into account the guidance provided by the Council and to report to the Executive Council on pertinent developments.

15. COOPERATION WITH UNITED NATIONS AND OTHER INTERNATIONAL ORGANIZATIONS (agenda item 15)

15.1 UNITED NATIONS (agenda item 15.1)

Resolutions addressed to specialized agencies of the United Nations

15.1.1 The Executive Council took note of the following resolutions addressed to the specialized agencies including WMO, by the fifty-eighth session of the General Assembly of the United Nations:

1A, 1B, 2, 3, 4, 7, 16, 25, 32, 33, 89, 90, 104, 107, 114, 117, 119, 130, 144, 148, 168, 172, 181, 199, 200, 201, 202, 206, 207, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 222, 228, 230, 232, 233, 234, 235, 236, 237, 240, 242, 243, 269, 278.

15.1.2 The Council noted with appreciation the circular letter of the Secretary-General on major outcomes of the fifty-eighth session of the United Nations General Assembly, of direct relevance to WMO. The information was useful to Members. The

Secretary-General was requested to continue to provide such information that might assist the NMHSs in promoting awareness of developments of the global and regional levels that had implications for the Services.

15.1.3 The Council urged the Secretary-General to take appropriate measures, in the context of the new initiatives related to liaison with the United Nations system and other international and regional organizations, to strengthen the outreach of the Organization through active involvement and participation in United Nations system activities in consultation and with the support of Member's representatives at the events. In order to ensure greater recognition for the Organization, the Council emphasized the importance of implementing United Nations resolutions, as highlighted in the Council's decisions and recommendations on the subject. Such efforts should contribute to the improvement and enhancement of the image and visibility of the Organization including NMHSs. In that regard, the Council invited the Secretary-General to submit a report on the status of implementation of the relevant resolutions, especially those on the International Decade for Action, "Water for Life", 2005-2015; and the improvement of the status of women in WMO.

Reports of the Joint Inspection Unit

15.1.4 The Council noted with appreciation the information provided on reports of the JIU referred to WMO and the follow-up on JIU reports and, where appropriate, the comments of the Secretary-General.

15.1.5 The Council expressed its appreciation for strengthening the relationship between JIU and WMO and noted the actions taken with respect to the relevant reports in the context of the WMO procedures of follow-up on JIU reports. The actions taken were reported under the relevant agenda items. The Council adopted Resolution 10 (EC-LVI).

15.2 SPECIALIZED AGENCIES AND OTHER INTERNATIONAL ORGANIZATIONS (agenda item 15.2)

15.2.1 The Executive Council noted with appreciation that a Memorandum of Understanding concerning the framework and arrangements for cooperation between the WMO and the European Commission as well as with the United Nations Economic and Social Commission for Asia and the Pacific, the Arab Organization for Agricultural Development, the East African Community and the European Meteorological Society had been signed in 2003. The Council welcomed the signature of such Memorandums of Understanding, which promoted the development of the NMHSs as well as their visibility and that of WMO.

15.2.2 The Council reviewed the status of the Organization's cooperation with other international organizations, especially those Agreements, Working

Arrangements and Consultative Status which were approved by Congress and the Executive Council and expressed its appreciation for the review. The Council requested the Secretary-General to assess the level of implementation of various cooperation arrangements and take appropriate measures to enhance the implementation of those that were beneficial to WMO and NMHSs. It also requested the Secretary-General to evaluate the need for continuing those agreements under which there had been no active cooperation over several years and none was envisaged. The Council requested the Secretary-General to provide a report on the subject including detailed information on the status of implementation of the cooperation agreements including Memorandums of Understanding to the next session of the Executive Council.

World Summit on Information Society

15.2.3 The Council recalled that the United Nations General Assembly had decided to organize the WSIS in two phases. WSIS-I took place in Geneva from 10 to 12 December 2003. WSIS-II was planned to be held in Tunis in November 2005. The Council was pleased to note the participation of the Secretariat in the Geneva phase of the WSIS, in particular as a member of the High-Level Summit Organizing Committee. The Council noted with satisfaction that the Declaration of Principles and the Plan of Action adopted at the Geneva meeting included themes and action relevant to WMO Programmes, in particular as regarded natural disasters.

15.2.4 The Council invited the Secretary-General to pursue the active involvement of WMO in WSIS for the preparation of WSIS-II. That preparation entailed a process of monitoring and evaluation of the progress of feasible actions laid out in the Geneva Plan of Action. The Council invited all Members to liaise with their respective relevant authorities in order to ensure that the parts of the Plan of Action relevant to the WMO Programmes were supported at the national level during the Summit preparatory process.

15.3 INTERNATIONAL POLAR YEAR 2007-2008 (agenda item 15.3)

15.3.1 The Executive Council recalled Resolution 34 (Cg-XIV) — Holding of a third International Polar Year in 2007-2008. Fourteenth Congress had requested the present session of the Executive Council to examine the preparation and holding of the IPY in collaboration with other relevant international organizations, as well as the establishment of an ad hoc working body to prepare a plan of action and to coordinate IPY implementation.

15.3.2 The Council noted that as follow-up actions, the Secretary-General had established in the Secretariat the Internal Steering Committee on the IPY, with a task team that developed an outline of programme activities to be implemented as

contributions of WMO Programmes to the IPY. The Council agreed that WMO contributions for the IPY should be focused on the following areas of activities:

- (a) Improvement and further development of the WWW GOS in the polar regions, including reactivation of existing and establishing new surface and upper-air synoptic stations, increasing the number of drifting buoys, VOS, and ASAP, particularly in the Southern Ocean, extending the AMDAR programme over the polar regions, and the use of existing environmental satellites and new series of operational polar-orbiting satellite with improved observational capabilities;
- (b) Enhancement of monitoring of the ozone layer, with an increased spatial and temporal coverage, using ground-based optical remote-sensing instrumentation and ozone sondes. Stratospheric aircraft campaigns should be conducted at both poles to provide measurements necessary to study the chemical and physical properties throughout a one- to two-year period;
- (c) Intensification of long-term integrated measurement/modelling of the transport of greenhouse gases and aerosols, particularly to the Arctic, and carrying out a study of processes of atmospheric chemical components to minimize the impact of ecosystem-related chemicals on the polar ecology;
- (d) Assessment of global-to-regional influences on initiation, evolution and predictability of high impact weather events of polar circulation within the framework of the WWRP THORPEX;
- (e) Intensification of polar climate studies addressing the role of stratosphere-troposphere coupling, cryospheric processes and feedbacks through which the cryosphere interacts with other components of the climate system; assessment of the impacts of past and future climate variability and change on components of the cryosphere and their consequences, particularly for global energy and water budgets, frozen ground conditions, sea-level change, and the maintenance of polar sea-ice covers in the framework of the WCRP CliC, CLIVAR and SPARC projects;
- (f) Establishment of a comprehensive database of polar climate data for specialized studies of current, and assessment and projection of future, climate change in polar regions. Investigation of teleconnections between polar regions and the lower latitudes, in an effort to improve implementation of climate prediction, through CLIPS, for more populated areas;
- (g) Investigation of physical processes in polar oceans, such as the formation of deep water, sea-ice formation and melting, iceberg discharge, atmosphere-ocean interaction as

well as the role of polar oceans in climate change. Establishment of Arctic Ocean and Southern Ocean Observing Systems, including the reactivation of existing and the establishment of new sea-level measurement stations as part of GLOSS, strengthening of the IABP and IPAB ice drifter networks, deployment of ocean moorings, upward-looking sonars for ice drift and Argo floats in the Southern Ocean, establishing of research stations on drifting ice and conducting marine expeditions on board ships, icebreakers, submarines, national airborne visual and radar patrols, supplemented by satellites with active and passive microwave sensors, optical scanners and sounding instruments;

- (h) Further development of capabilities to observe and model hydrological cycles of regions with cold climates, and to achieve quantitative understanding of fresh water input to the Arctic Basin. The implementation of an ARCTIC-HYCOS project should provide data on river input to the Arctic basin.

15.3.3 The Council stressed that comprehensive data sets and scientific findings obtained as a result of the above activities would ensure further development of environmental monitoring and forecasting systems, including prediction of severe weather. It would provide valuable contribution to the IPCC assessment of climate change and its impact in polar regions and serve as a basis for recommendations to governmental agencies and the socio-economical sector.

15.3.4 The Council emphasized that IPY would provide a great opportunity for NMHSs to improve their observing facilities in polar regions, particularly with regard to the upper-air observations and ozone soundings on the basis of international cooperation. It also stressed that observing networks established or improved during the IPY period should be kept in operational mode for as many years as possible to provide data for the detection and projection of climate change. In addition, the Council expressed the opinion that in some particular cases the geographic area of IPY might be extended to surrounding regions (e.g. southern part of the Indian ocean) to collect data from data-sparse territories. It also noted with appreciation the information provided by the representative of the ESA that it is planned to launch the polar-orbiting satellite CRYOSAT by the end 2004 and that that would provide an excellent opportunity to obtain data on sea-ice coverage from both polar regions during the IPY period.

15.3.5 The Council was informed that the idea of holding an IPY in 2007-2008 was considered by ICSU, which established its Planning Group in February 2003 to explore the possibility for IPY and formulate its objectives. The Council noted with satisfaction that close collaboration had been

established between WMO and ICSU on that matter, including participation of representatives of both organizations in the ICSU and WMO meetings on IPY. The Council expressed its appreciation to the Russian Federation for conducting the International Meeting on Cooperation for the IPY organized by Roshydromet and the Russian Academy of Science with the support of the European Commission, in St. Petersburg in January 2004. The meeting had determined priority areas for IPY and considered that for coordination and support of joint actions it would be necessary to develop a coordination plan based on a wide range of inputs. It therefore requested WMO and ICSU, in close cooperation with other relevant organizations, to undertake steps in that direction.

15.3.6 The Council was pleased to note that the ICSU Executive Board in February 2004 had decided to establish an IPY 2007-2008, subsequent to confirmation by the twenty-eighth General Assembly of ICSU, and proposed to WMO to sponsor jointly the IPY and establish a joint Committee for IPY planning and coordination. Recognizing that the ICSU concept on IPY addressed a broad range of scientific issues, and that it included strong climate and environmental monitoring components, the Council agreed that WMO and ICSU should act jointly as leading agencies for the preparation and implementation of IPY and decided to establish an IPY Joint Organizing Committee for planning and coordination of the IPY 2007-2008. It also decided to invite other relevant organizations such as IOC, UNEP, the Arctic Council, ATCM, IASC, SCAR, FARO and COMNAP to contribute, through their Members, to the intensification of scientific research and the development of technical and logistical infrastructure for operations and research in polar regions during the preparation and implementation stages of the IPY. In that connection, the Council was pleased to learn that an Initial Outline Science Plan for the IPY had been developed by the ICSU Planning Group together with WMO in April 2004 and had been distributed among the international organizations concerned for their comments and proposals that would be incorporated in final version of the Science Plan by October 2004.

15.3.7 The Council noted that a large number of national and international organizations had already expressed a strong intention to participate in the IPY implementation. In that respect, the Council felt that it would be desirable to establish an IPY Council consisting of representatives of national committees, governmental and non-governmental organizations to acknowledge their inputs and to ensure effective coordination in the IPY execution. It requested the Secretary-General to undertake the necessary actions in consultation with ICSU.

15.3.8 The representative of the International Ocean Institute expressed satisfaction with the

proposal to establish an IPY Council consisting of representatives of national committees, governmental and non-governmental organizations. He emphasized that that approach fully corresponded to the recommendations of the Rio and Johannesburg Summits on facilitating cooperation between governmental and non-governmental organizations. He expressed the interest of the International Ocean Institute to cooperate with other organizations in implementing IPY and to share with the Institute knowledge and experience in polar regions governance, capacity-building and training, and in creation of awareness of management and protection of polar regions. In the light of the above, an Implementation Plan for IPY should not only incorporate scientific programmes but also socio-economic, capacity-building public information and media strategies. The objectives of the IPY should be widely advertised and promoted, and the socio-economic value fully demonstrated.

15.3.9 Taking into account that ICSU was providing organizational and financial support for the IPY planning and implementation process, the Council requested the Secretary-General to identify funding for support to IPY planning and to JOC activities. It also encouraged Members to support those activities by contributing to a Trust Fund.

15.3.10 In that connection, the Council adopted Resolution 11 (EC-LVI).

15.3.11 The Council expressed the view that along with the establishment of an IPY Joint Organizing Committee which should take responsibility for overall IPY planning and implementation, an ad hoc body would be necessary to support JOC and coordinate activities within WMO, in particular among technical commissions and NMHSs participating in the IPY. It noted that the 2004 Meeting of the Presidents of Technical Commissions recommended that the presidents nominate focal points in each commission to coordinate IPY activities inside WMO. It also noted that following the recommendation of Fourteenth Congress, appropriate consultations were held by correspondence with the Executive Council Working Group on Antarctic Meteorology.

15.3.12 In view of the above and taking into account that IPY activities were planned to cover both polar regions, and that those activities would be closely related to the areas of responsibility of most WMO technical commissions, the Council agreed to establish an Intercommission Task Group on IPY to coordinate the WMO activities related to the IPY during the period of its preparation and implementation. The Council requested its Working Groups on Antarctic Meteorology to contribute to a large extent to the work of the Intercommission Task Group on IPY, in particular with regard to the IPY implementation in the Antarctic.

15.3.13 In that connection, the Council adopted Resolution 12 (EC-LVI).

15.4 UNITED NATIONS INTER-AGENCY COOPERATION ON GLOBAL MARINE ASSESSMENT AND GESAMP (agenda item 15.4)

15.4.1 The Executive Council was informed that United Nations General Assembly Resolution A/RES/57/141 — Oceans and the Law of the Sea, paragraph 45 and the WSSD Johannesburg Plan of Implementation, paragraph 36(b) called for the establishment under the United Nations of a regular process for the global reporting and assessment of the state of the marine environment (GMA) by 2004. WMO was called to collaborate, together with a number of United Nations agencies and members of the joint GESAMP. The Council recalled the substantial long-standing role that WMO had played in GESAMP since 1969, mainly through GAW. It recognized that WMO could significantly contribute to GMA through its programmes and inter-agencies bodies and observing systems in the following areas:

- (a) The atmosphere-ocean interaction, including the exchange of pollutants, the effects of global changes and other atmospheric-related processes on the marine environment (GAW, GCOS);
- (b) Ocean biosphere system and ultraviolet and ozone budget (GAW);
- (c) Hydrometeorological monitoring of the world ocean (AMP, GOOS);
- (d) Continental freshwater fluxes into the ocean (HWR);
- (e) Current climate and climate change (WCP, IPCC).

15.4.2 The Council was further informed that, since its last session, WMO had participated in a number of United Nations inter-agency consultations (involving the United Nations, UNEP, FAO, IAEA, IMO, UNDP/GEF, and the OSPAR, RAMSAR, Helsinki and London Conventions) and contributed to the report of the United Nations Secretary-General to the fifty-eighth session of the General Assembly — A regular process for the global reporting and assessment of the state of the marine environment: proposals on modalities. The Council was pleased to note that WMO was represented on a United Nations group of experts, established in December 2003 by United Nations General Assembly Resolution A/58/L.19 — Oceans and the Law of the Sea, paragraph 64(a), to produce a general framework and outline of a GMA process, and that in WMO that work was being done in a coordinated manner between programmes concerned. The Council endorsed the Secretary-General's arrangements for WMO involvement in the establishment of a GMA process and requested that those activities be pursued.

15.4.3 The Council further noted that GESAMP, the only existing United Nations inter-agency mechanism with long-standing experience in marine environment assessments, intended to provide scientific leadership and be a core scientific panel for GMA. In that respect, GESAMP had undertaken a review of its

organization and operation to respond better to new challenges, including the GMA process. GESAMP drafted its new strategic plan and revised Memorandum of Understanding, which were under consideration and would be presented for formal endorsement by the sponsoring organizations. The Council reaffirmed WMO support to GESAMP and requested that further information on the development of GMA and respective role of GESAMP be presented to its next session.

16. INFORMATION AND PUBLIC AFFAIRS PROGRAMME (agenda item 16)

16.1 The Executive Council decided that the theme for WMD in 2006 would be "preventing and mitigating natural disasters".

16.2 The Global Communication Strategy of the Organization comprised five basic elements: projecting a unified and consolidated image of WMO and the NMHSs; constituency-building both at the national and regional levels; spreading key messages giving a local voice to a global undertaking and vision; fostering strategic alliances with the media; and promoting a communication culture through which to demonstrate the great relevance of WMO and NMHSs to the daily lives of all citizens of the world. In that context, the Council invited the Secretary-General to pursue his efforts in promoting interaction between the WMO Communications and Public Affairs Office, the IPA Focal Points, United Nations Offices in the field and other partners, including the private sector, for enhanced visibility of WMO and NMHSs.

16.3 The Council expressed satisfaction with the initiatives undertaken for the celebration of WMD 2004 on the theme of "Weather, climate and water in the information age". It welcomed the information kit, including a film produced in the six official languages of the Organization on videotape and DVD, as well as the Public Service Announcement aired by CNN International during the period leading up to WMD 2004. It underlined the importance of the timely transmission of WMO information material to NMHSs, in order to allow for timely outreach to the public. It further encouraged the Secretariat to produce the WMD brochure as early in advance as possible, so that NMHSs could take advantage of it when planning their own activities, such as designing their weather calendars.

16.4 The Council noted with appreciation the attractive public information kit for World Water Day 2004 on the theme "Water and disasters", developed and disseminated worldwide by WMO, which jointly with UN/ISDR, was the lead agency within the United Nations system for the global public information campaign about the day. The information folder contained a poster, a booklet and fact sheets. In addition, a message from the Secretary-General and a press release were sent to all Members. The special Web site (<http://www.waterday2004.org>) set up by WMO and the electronic access for NMHSs to

artworks for both World Water Day 2004 and WMD 2004 had proven useful.

16.5 The Council encouraged the IPA Programme to continue to take advantage of available technologies for timely transmission and easy access to media and public information material issued by WMO and NMHSs. It noted the WMO Web site developments, such as a video library, a power point presentation on WMO Programmes, *News from Members'* segment aimed at increasing international attention to NMHSs' activities, as well as the ongoing Secretariat plans, based on the questionnaire sent to Members to review the *Bulletin* and other WMO public information material. The Council called upon its Members to continue to develop or establish, as necessary, their own Web sites.

16.6 The Council took note of the ongoing media outreach and IPA networking activities such as group visits to the Headquarters of various institutions. On specific WMO topics related to weather, climate and water, press releases and information notes were issued regularly and occasionally released jointly with other bodies. Those press statements were launched, among other things, at press briefings at the United Nations Office in Geneva. The annual *WMO Statement on the Status of the Global Climate in 2003* had generated particularly significant coverage by the international media. WMO experts participated in thematic television and radio programmes and made themselves available for media interviews and background briefings. The Council requested the Secretary-General to pursue his efforts in keeping the media fully briefed on major issues involving WMO and the NMHSs. It invited NMHSs to provide timely information to the Secretariat for media purposes, about severe weather events and occurrences of natural disasters of meteorological and hydrological origin. The Council invited the Secretary-General to consider the possibility of designating a WMO spokesperson, especially on matters related to extreme weather events. The Council requested the Secretariat to issue fact sheets explaining meteorological and hydrological activities to the general public. It further encouraged the Secretariat to provide soundbites for radio broadcast and to expand graphic materials available on the Web site for use by the media.

16.7 The Council noted with appreciation WMO's outreach activities for radio and television networks and communication professionals around the world. It welcomed the active involvement of WMO in the training event for television weather presenters from developing countries organized in connection with the First World Conference on Broadcast Meteorology, held in Barcelona in June 2004 at the initiative of the International Association of Broadcast Meteorology, as well as in the Conference proper, which benefited from the support of the Barcelona Forum 2004. Such training enhanced skills in effective presentation of accurate weather information.

16.8 The Council took note of the various outreach activities undertaken by the IPA Programme on the occasion of major events, such as the 150th anniversary of international cooperation in meteorology (Brussels, Belgium, 17-18 November 2003), ITU Telecom World 2003 (Geneva, Switzerland, 12-18 October 2003) and the eighty-fourth annual meeting of the American Meteorological Society and related meetings (Seattle, USA, 8-15 January 2004). Such activities encompassed the wide dissemination of WMO public information material, including a press release, a media encounter and an exhibition.

16.9 The Council welcomed the progress made in the "branding" of the Organization and the mention of the subtitle "Weather, climate and water" on all official correspondence and publications.

17. PROGRAMME SUPPORT SERVICES AND PUBLICATIONS (agenda item 17)

17.1 LANGUAGES (agenda item 17.1)

17.1.1 The Executive Council noted the request of Fourteenth Congress for the Secretariat to treat all official and working languages of the Organization in an equitable manner and encouraged the Secretariat to continue its efforts to ensure the timely production of documents in all languages. The Council recognized the need to have appropriate linguistic resources including core staff in all six official languages in order to maintain quality and timeliness of services.

17.1.2 The Council expressed its thanks to the Secretary-General for his support to the Arabic language. It congratulated the Secretary-General and the Secretariat on the new attractive format of all WMO's correspondence and publications, which was initiated in 2004. While expressing its deep appreciation, following the recent amelioration, for the high quality of the Arabic documents to the present session, it wished that the Arabic documents sent to countries previously could have been of the same high quality.

17.1.3 Further to the positive feedback from its members, the Council encouraged the Secretariat to continue expanding the preparation and distribution of documentation for constituent body sessions and executive body meetings in electronic form, in order to encourage the reduction of hard-copy distribution.

17.1.4 The Council noted that, after having tested several software options, the LSP Department had acquired new computer-assisted translation tools. It appreciated the fact that the selected software supported all WMO official languages and would enable the LSP Department to provide terminology and referencing support in all languages on an equal footing.

17.2 PUBLICATIONS (agenda item 17.2)

17.2.1 The Executive Council noted with appreciation the list of publications issued in 2003 (Annex IV to the *WMO Annual Report 2003*)

(WMO-No. 965). It recognized the necessity to initiate, as soon as possible the translation of relevant WMO *Guides* into Chinese. It expressed satisfaction at the substantial work done in eliminating the long-standing backlog in Arabic-language publications. It recognized that in order to comply with the decision of Fourteenth Congress to provide a full Arabic service, additional resources needed to be identified. The Council reaffirmed the importance of providing full services in Arabic, as had been decided by Fourteenth Congress.

17.2.2 The Council commended the Secretariat for simplifying the production process for the report of Fourteenth Congress and the fifty-fifth session of the Executive Council. It expressed support for that trend to continue for reports of other constituent body sessions. Therefore, the Council fully encouraged the Secretariat to provide further professional training to enable the LSP Department to optimize the work of its staff and to meet the growing demand for its services. It noted that, in view of the limited resources of the LSP Department, the aim of the training was to enable staff to expand their skills and become more versatile in their work.

17.2.3 The Council appreciated the efforts of the Secretariat to expand electronic publishing so as to reduce progressively the need for hard-copy publications. In that context, the Council encouraged further simplification of final abridged reports of meetings and their preparation and issuance in a more user-friendly electronic format (Microsoft Word). The Council congratulated the Secretariat for its effort to place all the documents of the session on the ftp server as well as for distributing relevant documents and publications for the session on CD-ROM. It encouraged the Secretariat to continue with that practice. The Council encouraged the Secretariat to consider the possibility of distributing the WMO *Bulletin* as a pdf file.

17.2.4 The Council encouraged WMO to continue its efforts in developing attractive, cost-effective and sophisticated publications, adapted to the purpose they were intended for, both with regard to their content and format.

17.2.5 The External Auditor had recommended that the Publications Fund be reviewed and expressed the view that Members could be provided with complete information on the various aspects of the publications activities from the regular budget only. The Council recalled that the Publications Fund was established by Congress to provide a source of funds for mandatory publications and that a part of those funds came from various sales and advertising revenue. It recognized that the production of some mandatory publications was sometimes measured in years and could span two financial periods. For those reasons, Congress had decided to set up the Fund as a rotating fund in order to avoid any disruption of funding across financial periods and to conform to the Financial Regulations.

17.2.6 In order to address the issue raised by the External Auditor, the Secretary-General reviewed the operations of the Publications Fund and reported to the Executive Council. The Council adopted Resolution 13 (EC-LVI) containing the revised purpose and limits of the Publications Fund, which better captured direct costs related to the production of mandatory publications and also reflected the multi-year requirements of those publications which went beyond the biennial period.

17.3 OFFICE AUTOMATION AND INFORMATION TECHNOLOGY SUPPORT (agenda item 17.3)

17.3.1 The Executive Council noted with appreciation the major improvements achieved in the area of the office automation and information technology in the Secretariat since Fourteenth Congress. It noted that the Secretariat had made available to the staff and Members advanced and more effective and practical ICT tools for the enhancement of office productivity.

17.3.2 The Council also noted that 105 Members' Web sites were linked to the WMO Web site. It also noted that Members were using other tools such as the ftp, provided by the Secretariat, in order to facilitate the uploading and downloading of information files. The ftp server held an average of 5 000 documents accessible by Members and the WMO Web server held about 9 500 Web pages. The Council suggested to have available all Executive Council working papers in electronic form during the session and all as well as all documents from previous sessions. Also, to explore the possibility to have available research documents related to the discussions of the session.

17.3.3 The Council recognized that the e-mail facility had been enhanced, providing faster, easier and more reliable messaging and information exchange. In addition, the facility to access the WMO mail system using the Internet technology had been enhanced.

17.3.4 The Council noted with appreciation that the WMO Intranet had been improved as an internal communication tool within the Secretariat. As a result, the exchange of information between the staff had been enhanced and administrative processes had started to be streamlined. The Council suggested to the Secretariat to implement the Extranet service for WMO Members.

17.3.5 The Council noted with appreciation that the in-house video system (IPTV) was another valuable tool for information dissemination within the Secretariat to enable authorized staff to follow meetings held in the Secretariat's main meeting room (Salle A), as appropriate. Some members suggested to implement Web casting facilities, as appropriate, to enable Members to view the Executive Council sessions if they are unable to be present. Some others proposed to strengthen video conferencing facilities for WMO meetings, as appropriate.

17.3.6 The Council noted that improvements of the information systems' infrastructure of hardware and

software had been implemented in the Secretariat. The Council also noted with appreciation the work carried out by the ICT team on the implementation of applications as a strategic approach to reduce costs, develop in-house technical knowledge and optimize the limited resources.

17.3.7 The Council, taking into account that Fourteenth Congress had recognized the vital role that ICT had on the functioning of WMO, recognized the efforts of the Secretary-General to maintain the Secretariat properly equipped with up-to-date ICT equipment and tools, which enhanced management of WMO Programme activities, including the communication with Members. In that respect, the Council welcomed the steps taken by the Secretary-General to find additional financial resources through the newly established ICT Trust Fund to enable the Secretariat to procure the software, hardware and qualified human resources with specific expertise, for the further development of the information and communications systems of the Organization. However, the Council mentioned that essential ICT improvements and new developments should not be entirely reliant on the Trust Fund.

17.3.8 The Council noted with appreciation the work and efforts made on the in-house development and maintenance of information systems applications to support the scientific and technical programmes and administrative activities.

17.3.9 The Council recognized that the nature of ICT was rapidly changing. The Council requested the Secretary-General to take further steps to strengthen the ICT structure and function within the Secretariat, in order to meet current and future needs.

18. GENERAL, LEGAL AND ADMINISTRATIVE MATTERS (agenda item 18)

18.1 FORTY-NINTH INTERNATIONAL METEOROLOGICAL ORGANIZATION PRIZE (agenda item 18.1)

18.1.1 The Executive Council awarded the forty-ninth IMO Prize to Dr Bennert Machenhauer (Denmark).

18.1.2 Mr John R. Lumsden was appointed to the Selection Committee to replace Mr Woon Shih Lai. The Committee now comprised of Messrs Qamar-uz-Zaman Chaudhry (chairperson), B. Kassahun, J.R. Lumsden and J.K. Rabadi.

18.2 CONSTITUTIONAL AND REGULATORY MATTERS (agenda item 18.2)

Questions concerning the WMO emblem and flag

18.2.1 In the context of WMO Global Communication Strategy, Fourteenth Congress urged the Members and the Secretary-General to promote the image and visibility of WMO. In that regard, the Executive Council requested the Secretary-General to consult Members through a

questionnaire on possible options for a future WMO logo/emblem which might include changes to the wind-rose and/or the addition of the acronym of the title of the Organization in the WMO language(s).

18.2.2 The Council welcomed the initiative of the Secretary-General to develop guidelines for the use of the WMO name and its logo/emblem.

Dobrilovic Trust Fund Award

18.2.3 The Council noted that the Borivoje Dobrilovic Trust Fund Award was extended in 1994 for 10 years and was due to expire by the end of 2004. The Fund consisted of a total amount of US\$ 38 667.

18.2.4 The Council agreed to maintain the Borivoje Dobrilovic Trust Fund Award for another period of 10 years and invited the Secretary-General to review the overall status of implementation of the Award and to report to its fifty-seventh session.

18.3 STAFF MATTERS (agenda item 18.3)

Amendments to Staff Rules

18.3.1 The Executive Council noted the amendments to the Staff Rules, applicable to Secretariat staff and to technical assistance project personnel made by the Secretary-General since the fifty-fifth session of the Council.

Pensionable remuneration of ungraded officials

18.3.2 The Council noted that, in accordance with the provisions of Article 54(b) of the Regulations of the United Nations Joint Staff Pension Fund, the scale of remuneration for the Professional and higher categories must be adjusted with the same effective date and by the same percentage as the net remuneration increase. The Council further noted that the ICSC had promulgated the consequent revised scale of pensionable remuneration applicable to those categories of staff and that comparable United Nations agencies (ITU and UPU) had consequently adjusted the pensionable remuneration of their ungraded officials. The Council therefore decided also to apply with retroactive effect from 1 September 2003 the following levels of annual pensionable remuneration:

Secretary-General	US\$ 264 345
Deputy Secretary-General	US\$ 244 306
Assistant Secretary-General	US\$ 226 090

18.3.3 The Council requested the Secretary-General to take appropriate action as required by the decisions thus taken.

Representation of women in the Secretariat

18.3.4 The Council noted with appreciation the establishment, on an experimental, part-time basis, of a gender expert function in the Secretariat with effect from June 2004, following the recommendation of the Second WMO Conference on Women in Meteorology and Hydrology in March 2003.

18.3.5 The Council took note of the statistics provided by the Secretary-General on gender

distribution in senior positions within the Secretariat, welcomed the increased number of women appointed to such positions since its fifty-fifth session, and encouraged the Secretary-General to further pursue his efforts towards a more equitable gender distribution within the Secretariat.

Restructuring of the former CLS and PDS Departments

18.3.6 The Council noted with satisfaction the report by the Secretary-General on the actions taken and progress made in respect of the restructuring of the former Conferences and Language Services (CLS) and Publications and Distribution Services (PDS) Departments into a Conference, Printing and Distribution (CPD) Department and a Linguistic Services and Publications (LSP) Department.

Review of the Pay and Benefits of the United Nations Common System

18.3.7 The Council took note of progress made in the context of the review of the Pay and Benefits System, encompassing, inter alia, the modernizing and simplification of allowances, the development of modalities for strategic bonuses, the implementation of a pilot study on broad-banding and performance pay to be carried out by certain volunteer organizations, and the review of job evaluation standards. The Council also welcomed actions taken so far under the aegis of the International Civil Service Commission in the context of the review of contractual arrangements.

18.3.8 The Council stressed the importance for WMO to continue to participate actively at all stages of the Review of Pay and Benefits, in particular with respect to the simplification of benefits and the review of contractual arrangements, and renewed its request that the outcomes of the Review be integrated into the human resources management policies of the Secretariat.

Staff Development Training and Learning Strategy

18.3.9 The Council took note of the progress made thus far in the implementation of the Staff Development, Training and Learning Strategy and encouraged the Secretary-General to continue to give priority to training and learning activities. In that regard, a training plan for the biennium 2004-2005 had been approved placing particular emphasis on leadership, management and working methods.

Early Retirement/Voluntary Separation Programme (ERP/VSP)

18.3.10 The Council took note of the successful manner in which the ERP/VSP was being implemented within the Secretariat. Fifteen staff benefited from the programme of which four were in the Professional category and 11 in the General Service category.

18.3.11 The Council noted the need for additional resources to fully implement ERP/VSP and reflected its decision under agenda item 18.4.

Development of a Human Resources Management Strategy (HRMS) for WMO

18.3.12 The Council noted the progress made in each of the building blocks of the HRMS, namely the structural review of the Secretariat; the work on process simplification; the adoption of the revised Master Standard for the evaluation of posts in the Professional Category and above; and the amendment to the Staff Rules. It encouraged the Secretary-General to continue the implementation of the Strategy.

Annual report of the International Civil Service Commission

18.3.13 The Council took note of the twenty-ninth annual report of the International Civil Service Commission, submitted in accordance with Article 17 of the Commission's Statute.

Views of the staff on conditions of service

18.3.14 The president of the Staff Association expressed her appreciation on behalf of the staff for having the opportunity to address the Council and to submit a document on the views of staff on their conditions of service. The staff considered it a privilege that was not taken lightly and one which the staff wished to be meaningful and constructive.

Internal matters of the Secretariat

18.3.15 The Council was pleased to be informed that the staff had appreciated the efforts of the newly appointed Secretary-General at the beginning of his mandate to embrace the aspirations of staff in their quest to be an active participant in the process of building confidence in the new management.

18.3.16 The Council expressed its appreciation for the prompt and collaborative work carried out by the staff and administration representatives to review the functioning of the Joint Consultative Committee and noted that the Secretary-General had approved the recommendation to revise the composition of that body.

18.3.17 The Council recognized with concern that there were a lot of uncertainties with respect to future employment and job security for some staff and requested the Secretary-General to continue efforts to find satisfactory solutions for those individuals and also to find ways to offer equal conditions of employment to all staff who were performing essential work for the day-to-day operations of the Secretariat. In that respect, the Council agreed that there was a need for an overall approach to staff costs that embraced all human resources.

18.3.18 The Council noted the view of Fourteenth Congress concerning the practice of employing

retired people and consultants to perform functions of a routine nature, and gave assurance that the Council would support all efforts to implement that request. The Council recognized that that practice resulted in a negative impact on the United Nations Joint Staff Pension Fund both from the point of view of the Fund's financial health and also because it might contribute to weakening WMO's position as a member of the Board. The Council further recognized that employing pensioners on a regular basis hindered a natural internal promotion process and career development of younger staff.

18.3.19 The Council was pleased to learn that the Secretary-General, in response to the request of Fourteenth Congress, had taken exceptional measures in implementing ERP/VSP in the Secretariat. It noted with appreciation that the implementation of those programmes had resulted in 15 ERP/VSP packages being offered to staff members having applied for the programmes. The Council requested the Secretary-General to consider retaining the possibility of offering staff incentives to separate from service as a management tool.

18.3.20 The Council encouraged the Secretary-General to explore ways of introducing a mobility scheme within the Common System and within the Member Countries of the Organization as a means of increasing the skills and competencies of serving staff and to provide motivation to those staff who had served the Organization for many years. The Council strongly supported the proposal for a scheme to be developed to allow secondments of staff to Meteorological Services as a means of upgrading skills and competencies of serving staff of the Secretariat.

18.3.21 The Council expressed its appreciation to the staff for their continuing dedication and professionalism in times of change and encouraged the Secretary-General and staff to continue to maintain an open and transparent relationship. The Council strongly supported the view that that was the right time to inject new fresh blood into the Secretariat and encouraged the Secretary-General to aim towards recruiting younger people. The Council further expressed the view that it was necessary to introduce new management practices and, in particular, innovative human resources policies.

18.3.22 The Council noted the concerns of staff as regards the Review of the Pay and Benefits System currently being discussed by the International Civil Service Commission. However, the Council expressed its support for a pay for performance system and its view that it was time for such a system to be introduced in the United Nations Common System.

18.3.23 The Council noted the position taken by the Staff Association on the desire for recognition of the right for staff associations to appeal, as a body, *locus*

standi to the International Labour Organization Administrative Tribunal.

Appointment of the Deputy Secretary-General

18.3.24 The Council considered the appointment of the Deputy Secretary-General in accordance with Article 21(b) of the Convention and with the procedures laid down by Ninth Congress. The Council approved the proposal of the Secretary-General to appoint Professor Yan Hong (China) as Deputy Secretary-General.

Report on appointments, promotions, nominations and transfers of staff in the Professional category and above

18.3.25 In accordance with Article 21(b) of the Convention, the Council examined and approved the appointments made by the Secretary-General since its fifty-fifth session, as followed:

<i>Name and nationality</i>	<i>Title, grade and organizational unit</i>	<i>Effective date</i>
Ms R. CHRIST (Austria)	Secretary (D.2), Intergovernmental Panel on Climate Change	1 May 2004
Mr J.W. MÜLLER (Germany)	Director (D.2), Resource Management Department	1 June 2004
Mr G.I. KORTCHEV (Bulgaria)	Director (D.1), World Weather Watch – Applications Department, renamed Applications Programme Department as of 23 January 2004	1 December 2003
Mr A. NDIAYE (Senegal)	Regional Director for Africa (D.1)	1 July 2004
Mr A.H. DELJU, (Islamic Republic of Iran)	Senior Scientific Coordinator (P5), Climate Coordination Activities Office, World Climate Programme Department	14 March 2004
Mr H.W. TEUNISSEN (Netherlands)	Senior Scientific Officer (P.5), Secretariat of the Global Climate Observing System	1 June 2003
Ms H.L. MALONE (Canada)	Scientific Officer (P.4), Climate Coordination Activities Office, World Climate Programme Department	16 August 2003
Ms D. KHOURY (Mauritius)	Human Resources Officer (P.4), Human Resources Management Division, Resource Management Department	1 October 2003

Mr K.E. AKANDE-ALASOKA, (Nigeria)	Public Information Officer (P.3), Information and Public Affairs Office, External Relations Office, renamed Communications and Public Affairs Office	1 June 2003
Mr Y. TANAKA (Japan)	Junior Professional Officer (P.2), Satellite Activities Office, Deputy Secretary-General's Office	15 June 2003
Mr S. BOJINSKI (Germany)	Junior Professional Officer (P.2); Secretariat of the Global Climate Observing System	1 February 2004

18.3.26 The Council further approved the extensions of appointment of staff beyond the statutory age of retirement initiated by the Secretary-General since its last session, as followed:

<i>Name and nationality</i>	<i>Title, grade and organizational unit</i>	<i>Duration</i>
Mr W. DEGEFU (Ethiopia)	Acting Director (D.2), Resource Management Department and Special Assistant to the Secretary-General	a further 12 months to 31 December 2004
Mr A.R. THOMAS (USA)	Director (D.2), Global Climate Observing System	a further 18 months to 31 December 2004
Mr E.I. SARUKHANIAN (Russian Federation)	Acting Director (D.1), World Weather Watch – Applications Department	a further 3 months to 30 November 2003
Mr D.C. SCHIESSL (Germany)	Director (D.1), World Weather Watch Department	12 months to 31 August 2005
Mr K. ABE (Japan)	Chief (P.5), Tropical Cyclone Programme Division, World Weather Watch – Applications Department	12 months to 31 August 2004 plus a further 12 months to 31 August 2005

18.3.27 The Council noted the nominations and/or promotions made by the Secretary-General since its last session as a result of competition after issuance of vacancy notices, as followed:

<i>Name and nationality</i>	<i>Title, grade and organizational unit</i>	<i>Duration</i>
Mr M. SAHO (Gambia)	Chief (P.5), Fellowships Division, Education and Training Department	1 March 2004
Mr A.A. KORETSKI (Russian Federation)	Senior Planning Officer (P.4), Linguistic Services and Publications Department	1 September 2003

18.3.28 The Council noted the transfers and/or changes initiated by the Secretary-General since its last session, as followed:

<i>Name and nationality</i>	<i>Title, grade and organizational unit</i>	<i>Effective date</i>
Mr W. DEGEFU (Ethiopia)	Designated Acting Director (D.2), Resource Management Department	1 October 2003
Mr R.A. DE GUZMAN (Philippines)	Director, Strategic Planning Office (D.2), transferred to the Office of the Secretary-General	23 January 2004
Mr S. CHACOWRY (Mauritius)	Designated Director (D.1), Cabinet and External Relations	23 January 2004
Mr H.M. DIALLO (Niger)	Designated Acting Director (D.1), Department of Regional Activities and Technical Cooperation for Development	23 January 2004
Mr G. LIZANO VINDAS (Costa Rica)	Designated Special Assistant to the Assistant Secretary-General (D.1)	23 January 2004
Mr D.C. SCHIESSL (Germany)	Designated Director (D.1), World Weather Watch Department	23 January 2004
Ms V.H. GUERRERO (Chile)	Reassigned Chief, Human Resources Development (P.5), Resource Management Department	5 November 2003
Ms KM. CHESTOPALOV (France)	Reassigned Chief, Human Resources Operations (P.5), Resource Management Department	5 November 2003
Mr Y.R. ADEBAYO (Nigeria)	Reassigned Senior Strategic Planning Officer (P.5) and transferred to the Strategic Planning Office, Secretary-General's Office	23 January 2004
Ms C.M. RICHARD-VAN MAELE (Switzerland)	Designated Chief, Communications and Public Affairs Office (P.5), Office of the Director of Cabinet and External Relations	23 January 2004
Mr A.V. KARPOV (Russian Federation)	Designated Chief, Observing System Division (P.5), World Weather Watch Department	1 February 2004
Mr J.-P. KERHERVÉ (France)	Senior Scientific Officer (P.5), transferred to the Information Systems and Services Division, World Weather Watch Department	13 February 2004

Mr D.E. HINSMAN (USA)	Designated Head, 27 April 2004 Space Programme Office (P.5), Office of the Deputy Secretary-General
Mr J.-M. RAINER (France)	Designated Chief, 13 February 2004 Information Systems and Services Division (P.5), World Weather Watch Department
Mr A.K. LEE CHOON (Mauritius)	Designated Chief, 27 April 2004 Finance Division (P.5), Resource Management Department
Mr T. MIZUTANI (Japan)	Designated Chief, 27 April 2004 Budget Office (P.5), Resource Management Department

18.4 FINANCIAL MATTERS (agenda item 18.4)

Case of fraud

18.4.1 The Executive Council took note with appreciation of the information provided by the Chief Internal Audit and Investigation Service (C/IAIS), the Senior Legal Adviser (SLA) and the Secretary-General in connection with the case of fraud. It also took note of the Action Plan developed on the basis of the recommendations of the External Auditors and of C/IAIS. The Council was informed of the studies undertaken, at the initiative of the Secretary-General, by the United Nations Controller and the Joint Inspection Unit on ways of reinforcing financial management and on measures being implemented in the context of the Action Plan. The Council was informed that the United Nations Controller had expressed strong support for the measures and had proposed additional ones, which were being incorporated into the Action Plan. The Council was further informed that, following the agreement of the President of WMO on behalf of the Council, the External Auditor had been invited to perform certain specific additional audit examinations on aspects of financial management.

18.4.2 All Council members had an opportunity to express their views, and those would be taken into account in the evolving Action Plan. The Council highlighted the urgent need to establish appropriate Secretariat processes and procedures within the overall context of a Secretariat quality management system. The Council was of the view that there was a need to focus on improvement especially with regards to financial management of the Secretariat and to give higher priority to forward-looking measures in its overall approach, including in the work of the Internal Auditor.

18.4.3 The Council welcomed the prompt action taken by the Secretary-General and encouraged him to implement, as a matter of urgency, the Action Plan. For that purpose, the Secretary-General should take into account the role of the proposed Audit Committee, and the recommendations of the United Nations Controller, the Joint Inspection Unit and of

the External Auditor as well as those emanating from the present session of the Executive Council. The Audit Committee should also be entrusted with the monitoring of the Action Plan. The Council requested the Secretary-General to keep the Members appropriately informed on the measures being implemented and to report to its fifty-seventh session.

Consideration of the accounts for the biennium 2002-2003

18.4.4 The Council noted the report of the External Auditor on the accounts for the biennium 2002-2003. The Council expressed its deep concern on the issues raised in the report, in particular the audit opinion that the financial statements did not give a true and fair view of the financial position of the organization as of 31 December 2003. The Council appreciated the initial measures launched by the Secretary-General in early 2004 in the context of an Action Plan to respond to the recommendations of the External Auditor. The Council noted that the Action Plan would also cover recommendations emanating from management reviews initiated by the Secretary-General and conducted by the United Nations Controller and the Joint Inspection Unit. The Council commended the Secretary-General for his timely and comprehensive response to a critical situation identified in the context of the external audit for the biennium 2002-2003. The Council noted the intention of the Secretary-General to keep the Action Plan under constant review in order to address emerging issues in a timely manner. The Council urged the Secretary-General to continue his efforts and expressed support for the expeditious implementation of the Action Plan.

18.4.5 Taking into account the recommendations of the Financial Advisory Committee, the Council considered the accounts for the biennium 2002-2003 as a preliminary basis for the preparation of the accounts for the biennium 2004-2005. The Council requested the Secretary-General to review the accounts for 2002-2003 with a view of revising the opening balances for the year 2004, as appropriate. The Council also requested the Secretary-General to prepare interim accounts for the year 2004 for audit by the External Auditor.

18.4.6 Taking into account the recommendations of the Financial Advisory Committee, the Council established an Audit Committee to review the reports of the External Auditors on the financial accounts of the Organization, audit plans and reports of the Internal Auditor submitted by the Secretary-General to the Executive Council. Furthermore, the Council entrusted the Audit Committee to monitor the Secretary-General's responses to the recommendations set by the External and Internal Auditors, including the Action Plan of the Secretary-General as well as the reports of the Joint Inspection Unit and the United Nations Controller, and to make such recommendations to the Executive Council, as it considered appropriate.

18.4.7 The Council expressed its deep appreciation to the President of the *Cour des comptes* of France, whose term of office as External Auditor of WMO would terminate on 30 June 2004, for the long and valuable services he had rendered to the Organization since 1 July 1985.

18.4.8 The Council noted with concern the substantial amounts of outstanding assessed contributions of certain Members and urged the Members to clear their dues at an early date. It decided to keep the matter under review and requested the Secretary-General and the Financial Advisory Committee to report any new developments to its fifty-seventh session.

18.4.9 In that connection, the Council adopted Resolutions 14, 15 and 16 (EC-LVI).

Consideration of the accounts for 2002-2003 for WMO projects financed from UNDP

18.4.10 The Council considered and approved the audited financial statements for the periods ended 31 December 2002 and 31 December 2003 in respect of those UNDP projects and trust funds being administered by WMO. In that respect, the Council adopted Resolution 17 (EC-LVI).

Interim report of the Secretary-General on the financial and budgetary situation of the Organization for the biennium 2004-2005

18.4.11 The Council considered the report of the Secretary-General on the financial and budgetary situation of the Organization for the biennium 2004-2005.

18.4.12 The Council examined the budgetary and programmatic information presented to it and noted with satisfaction that actions were being taken, as necessary, to adjust programme levels, staffing and support activities in order to remain within the approved budget.

Governance mechanism under results-based budgeting

18.4.13 The Council reviewed the document on the governance mechanism under RBB presented by the Secretary-General. It noted that the proposed institutional framework for performance measurement and reporting could be embedded in the existing planning and budgeting process, which would result in coherent programme planning and enhanced accountability.

18.4.14 The Council emphasized that reporting on results achieved through programme implementation was critical in the RBB process, and would enhance its governance role. It stressed the importance of the link between long-term strategic planning and budgeting in the governance mechanism under RBB, and that planning, budgeting, monitoring and evaluation were integral parts of the whole RBB process. It also affirmed that the key performance indicators were an important tool for effective performance measurement.

18.4.15 After discussion, the Council approved the governance mechanism under RBB, by adopting Resolution 18 (EC-LVI).

Review of the WMO programme-support cost arrangement

18.4.16 The Council noted the outcome of the review of the WMO programme-support cost arrangement carried out in accordance with the request of Fourteenth Congress (*Abridged Final Report with Resolutions of the Fourteenth World Meteorological Congress* (WMO-No. 960), general summary paragraph 10.1.14.). It was recalled that the purpose of the cost measurement exercise was to determine appropriate rates of recovery for programme-support costs incurred for the management and implementation of extrabudgetary activities.

18.4.17 The Council noted that the current programme-support cost arrangement was far from covering fully programme-support costs incurred for the management of extrabudgetary activities by the Secretariat. The Council therefore expressed a concern that the regular budget was increasingly subsidizing the management of the extrabudgetary activities.

18.4.18 The Council approved the new programme-support cost policy and adopted Resolution 19 (EC-LVI). It also requested the Secretary-General to inform Members accordingly and to implement the new scheme as of January 2005.

High priority activities for the 2004-2005 biennium

18.4.19 By Resolution 30 (Cg-XIV) — Maximum expenditures for the fourteenth financial period, Congress authorized the Executive Council to incur necessary expenditures additional to the amount of CHF 253 800 000, resulting from any cash surplus arising from the thirteenth financial period, over and above CHF 4 000 000 already included in the amount of CHF 253 800 000. Such a surplus was to be used for fully costed high priority activities listed in Annex 2 to the above resolution as guidance given by Fourteenth Congress, which would be completed within the fourteenth financial period. The Council noted that the proposed high priority activities corresponded to those listed in Annex 2 to Resolution 30 (Cg-XIV) under Priority Group 1 for unmet institutional needs and Priority Group 1 for unmet programme needs.

18.4.20 The Council noted the statement of the Secretary-General that the biennium was concluded with a cash surplus of CHF 10 081 700. During the discussion, the presidents of the technical commissions expressed their disappointment, noting that no resources would be allocated to WMO scientific and technical programmes for the biennium 2004-2005, out of the cash surplus arising from the thirteenth financial period, while they fully understood the urgency for resolving the current problem of financial management. The Council supported their request that resources should be allocated to WMO scientific and technical programmes from the cash surplus, as

soon as such a problem has been resolved. Regarding the allocation of CHF 1 million for the implementation of ERP/VSP, the Secretary-General explained that their main purpose was to reduce the staff requirements in order to stay within the approved budget. Taking into account the previous allocation of CHF 4 000 000 approved by Fourteenth Congress, the Council decided to appropriate CHF 3 493 100 from the cash surplus for high priority activities for the 2004-2005 biennium. The Council took note of the expected results, the performance indicators, the significant external factors and the project activities for the high priority activities to be implemented in 2004-2005. The Council further decided that high priority activities for 2006-2007, funded from the cash surplus, would be submitted in the context of the proposed programme and budget for the biennium 2006-2007 to be considered by its fifty-seventh session, after consideration of the audited interim accounts for 2004. In that regard, the Council agreed with the Secretary-General's proposal and adopted Resolution 20 (EC-LVI).

Scale of assessment of proportional contributions

18.4.21 The Council noted that in accordance with Resolution 36 (Cg-XIV) — Assessment of proportional contributions of Members for the fourteenth financial period, the scales of assessment of proportional contributions of Members for the years 2005 to 2007 had been based on the United Nations scales of assessments adopted by the fifty-eighth United Nations General Assembly in December 2003 and duly adjusted for difference in memberships.

18.4.22 It also noted that the minimum rate of assessment was retained at 0.02 per cent and that corrections had been made to ensure that no Member's rate of assessment would increase to a level which would exceed 200 per cent of the WMO scale for 2003.

18.4.23 The Council adopted Resolution 21 (EC-LVI).

Settlement of long outstanding contributions

18.4.24 The Council noted that some Members, due to the extremely difficult financial situation which their countries were facing, had requested the exemption of the payment of their long outstanding contributions to the Organization.

18.4.25 The Council recalled that it was within the authority of WMO Congress to consider questions related to contributions. It also recalled that similar requests had been considered in that the past and the decision of Congress was not to write-off arrears. It advised the countries concerned to conclude an agreement with the Organization for the settlement of the arrears of contributions over a period of not exceeding 10 years, in accordance with Resolution 35 (Cg-XII) — Settlement of long outstanding contributions, and WMO Financial Regulation 8.8.

18.4.26 The Council noted from the analysis made to see the effect of the repayment agreement that the number of Members in arrears had not evolved significantly over the recent years. In order to alleviate the financial burden of those Members and to enable them to participate fully in the activities of the Organization, one alternative might be to increase the period of the settlement of arrears. The Council therefore requested the Secretary-General to review the issues and make proposals for consideration at its fifty-seventh session.

Supplementary estimates for the Joint Climate Research Fund for the biennium 2004-2005

18.4.27 On the basis of the carry forward of the Fund balance from the previous biennium, the Council approved supplementary estimates for the JCRF for the biennium 2004-2005 as shown in the annex to Resolution 22 (EC-LVI). The supplementary estimates required no additional contribution from WMO and were funded entirely from the currently available resources in the JCRF.

18.5 DESIGNATION OF ACTING MEMBER(S) OF THE EXECUTIVE COUNCIL (agenda item 18.5)

The Executive Council designated Messrs Koichi Nagasaka, Jaser K. Rabadi, Geoffrey Love and David Rogers as acting members of the Executive Council in replacement of Messrs T. Kitade, H. Al-Sha'er, J.W. Zillman and P.D. Ewins, respectively.

18.6 REVIEW OF PANELS AND OTHER BODIES REPORTING TO THE EXECUTIVE COUNCIL (agenda item 18.6)

Following changes in the membership of the Executive Council, the Council decided on the following replacements and changes in the composition of its panels and other bodies:

- (a) **Executive Council Working Group on Long-term Planning**
Mr U Gärtner to replace Mr H. Al-Sha'er
Mr D. Rogers to replace Mr P. Ewins
Mr K. Nagasaka to replace Mr T. Kitade
Mr R. Michellini to replace Mr H.B. Valiente
- (b) **Executive Council Advisory Group of Experts on Technical Cooperation**
Mr R.D.J. Lengoasa to replace Mr A. Ndiaye
- (c) **Executive Council Advisory Group on the Role and Operation of NMHSS**
Mr I. Obrusnik to replace Mr H. Al-Sha'er
Mr D. Rogers to replace Mr P. Ewins
Mr R. Michellini to replace Mr A.C. Vaz de Athayde
Mr G. Love to replace Mr J. W. Zillman
- (d) **Executive Council Advisory Group on Climate and Environment**
Mr A. Divino Moura to replace Mr H.B. Valiente
Mr G. Love to replace Mr J. W. Zillman

- (e) **Selection Committee for the IMO Prize**
Mr J.K. Rabadi to replace Mr P. Korkutis
Mr J. Lumsden to replace Mr Woon Shih Lai
- (f) **Selection Committee for the WMO Research Award for Young Scientists**
Mr R.D.J. Lengoasa to replace Mr A. Ndiaye (chairperson)

18.7 INTERNAL MATTERS OF THE EXECUTIVE COUNCIL (agenda item 18.7)

The Executive Council had extensive discussions on ways to improve further the efficiency and effectiveness of its sessions. Some of the improvements proposed related to documentation, agenda items, period of the Council session, and duration of presentations and interventions. In order to identify areas where the Council might further improve its working methods, it requested its members to provide proposals, as soon as possible, to the Secretary-General who would consolidate these proposals taking also into account those already made during the discussions and consult with the President so that appropriate actions could be taken in preparation for the next session of the Council. In addition, the Council also requested the Secretary-General to undertake a study on the subject and to report to its next session.

19. SCIENTIFIC LECTURES AND DISCUSSIONS (agenda item 19)

19.1 SCIENTIFIC LECTURES AND DISCUSSIONS (agenda item 19.1)

19.1.1 The Executive Council, at its last session, selected the following two specific lecture themes to be delivered at its present session:

- (a) Vision on the use of new observation technologies for meteorology and hydrology in the next decade;
- (b) Progress in reducing uncertainties in seasonal and interannual climate predictions.

19.1.2 The President introduced the two distinguished experts who had been invited to deliver the following lectures:

- (a) Dr Ghassem Asrar, Associate Administrator for Earth Sciences, NASA (United States) on "Pioneering the operational environmental services of the future";
- (b) Dr Tim Palmer (ECMWF) on "Progress towards reliable and useful seasonal and inter-annual climate predictions".

19.1.3 The President thanked Drs Asrar and Palmer for their lectures. The Council requested the Secretary-General to arrange for the appropriate publication of the lectures.

19.2 ARRANGEMENTS FOR SCIENTIFIC LECTURES DURING THE FIFTY-SEVENTH SESSION OF THE EXECUTIVE COUNCIL (agenda item 19.2)

19.2.1 The Executive Council decided that the subjects of the scientific lectures to be presented at its fifty-seventh session should be:

- (a) The role of NMHSs in natural disaster reduction; and
- (b) Climate — A resource for social and economic development;

19.2.2 The Council requested the Secretary-General to make the necessary arrangements, including the selection of lecturers for that purpose.

19.3 ARRANGEMENTS FOR THE ELEVENTH INTERNATIONAL METEOROLOGICAL ORGANIZATION LECTURE (agenda item 19.3)

The Executive Council selected the theme "Polar Meteorology: the role of the Arctic/Antarctic in the global atmospheric environment" for the eleventh IMO Lecture to be presented at Fifteenth Congress. It requested the Secretary-General to draw up a list of scientists who would be invited, in order of preference, to deliver the lecture and to submit the report to its fifty-seventh session.

20. REVIEW OF PREVIOUS RESOLUTIONS OF THE EXECUTIVE COUNCIL (agenda item 20)

In accordance with Rule 27 of its Rules of Procedure, the Executive Council reviewed those of its previous resolutions which were still in force at the time of the fifty-sixth session and adopted Resolution 23 (EC-LVI).

21. DATE AND PLACE OF THE FIFTY-SEVENTH AND FIFTY-EIGHTH SESSIONS OF THE EXECUTIVE COUNCIL (agenda item 21)

21.1 The Executive Council agreed that its fifty-seventh session would be held at the WMO Headquarters in Geneva from 21 June to 1 July 2005.

21.2 The Council also agreed that its fifty-eighth session would be held at the WMO Headquarters in Geneva from 20 to 30 June 2006, subject to any change which might be decided by the Executive Council.

22. CLOSURE OF THE SESSION (agenda item 22)

The fifty-sixth session of the Executive Council closed at 4.55 p.m. on 18 June 2004.

RESOLUTIONS ADOPTED BY THE SESSION

RESOLUTION 1 (EC-LVI)

INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE

THE EXECUTIVE COUNCIL,

NOTING Resolution 8 (Cg-XIV) — Intergovernmental Panel on Climate Change,

RECOGNIZING that the IPCC faces a heavy workload over the next assessment period with preparing the Fourth Assessment Report, the 2006 IPCC Guidelines for National Greenhouse Gas Inventories and two special reports requested by the UNFCCC,

NOTING with appreciation the increased participation of experts from developing countries and from countries with economies in transition in IPCC activities, and the benefits for capacity-building that arise from IPCC activities,

COMMENDS the Panel for the successful completion of two Methodology Reports, and the progress in preparing two Special Reports;

COMMENDS Mr R.K. Pachauri for guiding the scoping process for the Fourth Assessment Report;

REQUESTS the Panel to continue to work closely with UNFCCC and provide scientific, technical and socio-economic advice through the development of Special Reports, Technical Papers and Methodology Reports;

ENCOURAGES the WCP, WCRP and GCOS to work closely with IPCC in developing their work programmes and in enhancing dissemination of information and outreach, and to contribute to the IPCC assessment work;

REQUESTS the Secretary-General, jointly with the Executive Director of UNEP, to maintain financial and organizational support to the IPCC Secretariat, and to assist with the publication and dissemination of IPCC reports;

INVITES WMO Members to ensure effective inputs to the IPCC activities, and make experts available to contribute to the assessment process;

EXPRESSES its appreciation to governments, institutions and organizations who have generously contributed and are contributing to the work of the IPCC and to the IPCC Trust Fund;

URGES all governments and relevant intergovernmental organizations to continue their participation in the IPCC activities and, where possible, to increase their financial support for the IPCC activities through contributions to the WMO/UNEP IPCC Trust Fund.

RESOLUTION 2 (EC-LVI)

INTERCOMMISSION COORDINATION GROUP ON THE FUTURE WMO INFORMATION SYSTEM

THE EXECUTIVE COUNCIL,

NOTING:

- (1) Resolution 25 (Cg-XIV) — Sixth WMO Long-term Plan,
- (2) *Abridged Final Report with Resolutions of the Fourteenth World Meteorological Congress* (WMO-No. 960), general summary paragraphs 3.1.2.7 to 3.1.2.10,
- (3) Report of the 2004 Meeting of the Presidents of Technical Commissions,

CONSIDERING:

- (1) That the Future WMO Information System (FWIS) was an overarching approach to meet information exchange requirements of all WMO Programmes, and would help WMO to achieve avoiding and eliminating data incompatibilities, duplication of effort and undue limitation in the sharing of highly valuable data between various programmes,

- (2) That the FWIS concept developed by CBS was endorsed by Fourteenth Congress,
- (3) That Congress requested CBS to pursue the development of FWIS and all WMO Programmes and technical commissions to participate and contribute actively their own expertise in all phases of this development,
- (4) That it would be necessary to:
 - (a) Share knowledge, resources and commitment and increase communication between the technical commissions and their associated programmes,
 - (b) Strengthen mechanisms for coordinating issues between the technical commissions,
- (5) That a strong, high-level coordination mechanism spanning across the technical commissions was required for achieving this challenging task,

DECIDES:

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| <p>(1) To establish an Intercommission Coordination Group on the Future WMO Information System with the following terms of reference:</p> <p>(a) To coordinate the refinement and consolidation of the FWIS based on the approved concept and then the implementation planning phases;</p> <p>(b) To assess in detail the data exchange and data management requirements of WMO Programmes, at present and for the foreseeable future, which should be met by the FWIS;</p> <p>(c) To advise the technical commissions on the development in data-communications and management functions to be required in the FWIS as regards their respective programmes;</p> <p>(d) To guide the orderly evolution of existing WMO information systems towards FWIS;</p> <p>(e) To address the major issues that had been identified, as listed in the annex to this resolution;</p> | <p>(2) That one representative from each technical commission should serve as members of the Group;</p> <p>(3) That the chairperson may seek advice from, or invite experts as necessary;</p> <p>DESIGNATES Mr G.-R. Hoffmann (Germany) as chairperson of the Group;</p> <p>REQUEST:</p> <p>(1) The presidents of the technical commissions to designate, in accordance with DECIDES (2), an expert to participate in the work of the Group;</p> <p>(2) The presidents of technical commissions to review, at the annual meeting, the outcome of the work of the Group;</p> <p>(3) The president of the Commission for Basic Systems to report on the work of the Group to each session of the Executive Council, taking into account the outcome of the Meetings of the Presidents of Technical Commissions;</p> <p>REQUESTS the Secretary-General to provide the necessary assistance and Secretariat support for the Intercommission Coordination Group on the Future WMO Information System, within the available budgetary resources.</p> |
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ANNEX TO RESOLUTION 2 (EC-LVI)

MAJOR ISSUES TO BE ADDRESSED AND COORDINATED BY THE INTERCOMMISSION COORDINATION GROUP ON THE FUTURE WMO INFORMATION SYSTEM

- (a) Development of a widely available, electronic (on-line) catalogue of meteorological and related data, including links to other national, regional and global catalogues;
- (b) Further development and coordinated implementation of a detailed WMO metadata standard for all programmes;
- (c) Promote the harmonization and consistency of data formats, transmission standards, archiving and distribution mechanisms to support fully interdisciplinary use of data and products (e.g. ensuring that data from observation networks established by one programme can be shared with other programmes);
- (d) Coordination of cross-programme standardized practices for the collection, exchange and electronic archival of data and related metadata, both high-level and detailed, including for stations and instruments (including expanded standard for station index numbering);
- (e) Coordination of flexible, coordinated data-communication practices that evolve in step with the evolution of the Internet and relevant data-communication services;
- (f) Mapping, with respect to information and communications, of the current and future structure and organization of WMO Programme centres to the functional components of FWIS (i.e. NCs, DCPCs and GISCs functions).

RESOLUTION 3 (EC-LVI)

ATMOSPHERIC OZONE MEASUREMENTS

THE EXECUTIVE COUNCIL,

NOTING:

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| <p>(1) The <i>Abridged Final Report with Resolutions of the Seventh World Meteorological Congress</i> (WMO-No. 428), general summary paragraph 3.2.1.3,</p> | <p>(2) The <i>Abridged Final Report with Resolutions of the Twenty-seventh session of the Executive Committee</i> (WMO-No. 417), general summary paragraph 3.3.7.3,</p> <p>(3) Resolution 8 (EC-XXVIII) — Global Ocean Research and Monitoring Project,</p> |
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CONSIDERING:

- (1) The need for quantitative information on total ozone and its vertical distribution for studies of the atmospheric ozone balance, and the value of such information in studies of the general circulation and other meteorological phenomena having various space- and time-scales,
- (2) That carefully made "Umkehr" observations are still useful for determining the vertical distribution of ozone, especially in the upper stratosphere,
- (3) That an integrated global network of total ozone observing stations requires careful interregional and intraregional comparisons of ozone spectrophotometers,
- (4) That reliable trend analyses of the ozone layer as well as satellite validation are mainly based on total ozone data sets gained at stations with long-term observations and data records of high quality,
- (5) That the continuation of observations at many ozone measurement stations is currently endangered, some of them have already closed down,
- (6) The need to coordinate global observations of tropospheric ozone that play an important role in climate radiative forcing and air quality issues,

REQUESTS Members:

- (1) To develop or extend vertical ozone sounding networks, bearing in mind that the spacing of stations should provide for a few dense meridional networks extending over relatively large latitude spans. The observing programmes should be continued for sufficiently long periods to allow climatological investigations;
- (2) To initiate or continue routine programmes for carefully made "Umkehr" observations at stations operating sensitive and well-kept ozone spectrophotometers in suitable climates;
- (3) To establish additional total-ozone measuring stations in data-sparse areas identified as being necessary to complete the global network, and for this purpose to loan any Dobson or Brewer ozone spectrophotometer

in their possession, which is not in use to another Member;

- (4) To cooperate in a more rapid exchange of data on total ozone amounts, particularly by sending data to the World Ozone and Ultraviolet Data Centre in Toronto, Canada, and undertake regular international calibration of currently operating measurement systems for total ozone amounts, as well as to provide support to developing countries in order to participate in such calibrations;
- (5) To make every effort to continue total ozone monitoring with ozone spectrometers, at least at stations with long-term records of high quality data and to be very careful when switching from one type of instruments to another in order to avoid breaks and inhomogeneities in the data sets;
- (6) To maintain consistency in global tropospheric ozone measurements coordinated by GAW through linking observations to primary reference standards, following measurement guidelines and submitting data to GAW World Data Centres;

URGES Members operating satellites to include atmospheric ozone sensors of proven capability aboard future spacecraft, and to maintain continuous ozone measurements for as long as possible, making a selection of vertical ozone profiles and total ozone values available to all interested users;

REQUESTS regional associations to designate and maintain at least one of their total ozone measuring instruments as regional standard for atmospheric ozone observations, and ensure that the observing station concerned is suitably equipped for that purpose;

REQUESTS the president of CAS to keep under continuous review the programme of atmospheric ozone measurements and research and to propose further recommendations as and when necessary for its improvement;

REQUESTS the Secretary-General to bring this resolution to the attention of all concerned and to provide assistance within the limits of available resources in implementing it.

NOTE: This resolution replaces Resolution 11 (EC-XXIX), which is no longer in force.

RESOLUTION 4 (EC-LVI)

AMENDMENTS TO WMO TECHNICAL REGULATIONS (WMO-No. 49), VOLUME II — METEOROLOGICAL SERVICE FOR INTERNATIONAL AIR NAVIGATION

THE EXECUTIVE COUNCIL,

NOTING:

- (1) The adoption on 25 February 2004 by the Council of ICAO of Amendment 73 to Annex 3 to the Convention on International Civil

Aviation, Meteorological Service for International Air Navigation,

- (2) The prescription of 25 November 2004 as the date upon which this Amendment becomes applicable,

CONSIDERING:

- (1) That ICAO Annex 3 and WMO Technical Regulations [C.3.1] should be aligned,
- (2) The need to align WMO Technical Regulations [C.3.3] — Format and preparation of flight documentation, with the amendments to WMO Technical Regulations [C.3.1],

APPROVES the alignment of WMO Technical Regulations [C.3.1] with Amendment 73 to ICAO Annex 3,

REQUESTS the Secretary-General:

- (1) To arrange for the introduction of the amendments to the Technical Regulations [C.3.1] in *Technical Regulations* (WMO-No. 49), Volume II;
- (2) To invite ICAO to replace, on the agreed applicability date, 25 November 2004, the Appendix to ICAO Annex 3 by the amended Appendix on Flight documentation — Model charts and forms, in accordance with the recommendations shown in the annex to this resolution.

ANNEX TO RESOLUTION 4 (EC-LVI)

**LIST OF REMAINING RECOMMENDATIONS FROM THE CONJOINT WMO CAEm/ICAO
METEOROLOGY DIVISIONAL MEETING (MONTREAL, SEPTEMBER 2002)**

Recommendation 1/3	Amendment 73 to Appendix 1 to Annex 3/Technical Regulations [C.3.1] – Depiction of multiple jetstreams and crossing jetstreams
Recommendation 1/5	Amendment 73 to Annex 3/Technical Regulations [C.3.1] – World area forecast system
Recommendation 1/8	Amendment 73 to Annex 3/Technical Regulations [C.3.1] – Templates for messages to be uplinked to, or downlinked from, aircraft in flight
Recommendation 1/14	Amendment 73 to Annex 3/Technical Regulations [C.3.1] – Inclusion of a requirement for information from selected State volcano observatories in Annex 3/Technical Regulations [C.3.1] and the meteorology part of the regional air navigation plan
Recommendation 1/15	Amendment 73 to Annex 3/Technical Regulations [C.3.1] – Maintenance of a 24-hour watch by VAACs
Recommendation 1/16	Amendment 73 to Annex 3/Technical Regulations [C.3.1] – Volcanic ash and tropical cyclone advisories in the BUFR code form
Recommendation 2/1	Amendment 73 to Annex 3/Technical Regulations [C.3.1] – inclusion of updated provisions related to the observing and reporting of meteorological elements
Recommendation 3/1	Amendment 73 to Annex 3/Technical Regulations [C.3.1] – Restructuring of Annex 3

RESOLUTION 5 (EC-LVI)

EXECUTIVE COUNCIL ADVISORY GROUP ON NATURAL DISASTER PREVENTION AND MITIGATION

THE EXECUTIVE COUNCIL,

NOTING:

- (1) Resolution 29 (Cg-XIV) — Natural Disaster Prevention and Mitigation Programme,
- (2) The *Abridged Final Report with Resolutions of the Fourteenth World Meteorological Congress* (WMO-No. 960), general summary paragraphs 7.4.1 to 7.4.21 and 3.4.1.23,
- (3) Resolution 13 (Cg-XIV) — Public Weather Services Programme,
- (4) The Final Report of the Meeting of Experts on Natural Disaster (Geneva, 15-17 March 2004),
- (5) First Announcement of the World Conference on Disaster Reduction (Kobe, Hyogo, Japan, 18-22 January 2005),

CONSIDERING:

- (1) That natural disaster prevention and mitigation is a major concern for human socio-economic activities and environment protection,
- (2) That natural disaster prevention and mitigation activities cover a wide range of programmes of WMO,
- (3) That WMO must play a key role in the International Strategy for Disaster Reduction,
- (4) That there is a need to establish an effective framework for coordination disaster prevention and mitigation within WMO,
- (5) That there is the need for adequate reflection of issues relating to natural disaster prevention and mitigation of hydrometeorological origin in

the World Conference on Disaster Reduction, and follow-up events thereafter,

DECIDES to establish an Executive Council Advisory Group on Natural Disaster Prevention and Mitigation with the terms of reference as given in the annex to this resolution and with the following membership:

A.J. Dania
D. Kandonyo
J.J. Kelly, Jr.
G.B. Love
M. S. Mhita

R. Michellini
K. Nagasaka
I. Obrusnik
Qin Dahe
M. Rabiolo
R. Soriani

DESIGNATES Mr I. Obrusnik as chairperson of the Advisory Group;

REQUESTS the Secretary-General to take the relevant actions to support the activities of this Advisory Group.

ANNEX TO RESOLUTION 5 (EC-LVI)

TERMS OF REFERENCE OF THE EXECUTIVE COUNCIL ADVISORY GROUP ON NATURAL DISASTER PREVENTION AND MITIGATION

- (a) Contribute to the attainment of the WMO vision through provision of appropriate guidance with respect to development and implementation of the Natural Disaster Prevention and Mitigation Programme at the national and international levels;
- (b) Oversee the activities on natural disaster prevention and mitigation from the various relevant WMO Programmes, in particular the activities of the Public Weather Services and the Natural Disaster Prevention and Mitigation Programmes;
- (c) Recommend strategies for resource mobilization from national funding agencies and from international development agencies, for NMHS projects relating to the activities on natural disaster and mitigation of the various WMO Programmes;
- (d) Contribute to the stronger involvement of NMHSs in their national emergency systems, especially with respect to early warning;
- (e) Promote and strengthen the cooperation between the WMO technical commissions, regional bodies, and Members on natural disaster prevention and mitigation issues;
- (f) Recommend suitable WMO outreach activities such as symposia, workshops, technical conferences and seminars which are directly concerned with natural disaster prevention and mitigation;
- (g) Contribute to the development and implementation of the WMO Long-term Plan by providing input, comments and recommendations with regards to the Natural Disaster Prevention and Mitigation Programme;
- (h) Consider any other matters relating to natural disaster prevention and mitigation that the Executive Council may specifically request.

RESOLUTION 6 (EC-LVI)

EXECUTIVE COUNCIL TASK TEAM TO EXPLORE AND ASSESS THE POSSIBLE CHANGES TO THE WMO CONVENTION

THE EXECUTIVE COUNCIL,

CONSIDERING the work already undertaken as well as that which needs to be undertaken in connection with the possible changes to the WMO Convention,

DECIDES to re-establish the Executive Council Task Team to Explore and Assess the Possible Changes to the WMO Convention, with the following terms of reference:

- (a) Review work already undertaken relating to the possible changes to the WMO Convention and General Regulations;
- (b) Explore and assess possible changes to the WMO Convention and General Regulations

with a view to examining the benefits and risks involved, including the possibility of introducing protocols;

- (c) In consultation with the Secretary-General, define a timetable so that specific recommendations and options should be ready by the fifty-seventh session of the Executive Council to allow for sufficient deliberation and communication to Members (who should be able to participate in the process, such as during sessions of regional associations) and so that those proposals that will need a decision of Fifteenth Congress are sufficiently "mature" by the time of the fifty-eighth session of the

- Executive Council, i.e., the Council session before Fifteenth Congress;
- (d) Take into consideration pertinent comments and recommendations of regional associations;
- (e) Report to the fifty-seventh session of the Executive Council on progress made and further Council actions/decisions required;

DECIDES to designate Mr U. Gärtner, as chairperson of the Task Team and the following as members:

M.S. Mhita
K. Nagasaka

RESOLUTION 7 (EC-LVI)

EXECUTIVE COUNCIL ACTION GROUP FOR AN ENHANCED WMO

THE EXECUTIVE COUNCIL,

CONSIDERING the importance and urgency of developing a strategy for action to address the various issues of concern pertaining to the evolving role of WMO, particularly relating to WMO's leadership role and rendering it more responsive, proactive and relevant,

DECIDES to establish an Executive Council Action Group for an Enhanced WMO with the following terms of reference:

- (1) To review relevant material including the desired outcomes and strategies and associated goals contained in the *Sixth WMO Long-term Plan 2004-2011* and the "issues for consideration" collated by the Executive Council Ad Hoc Group on the Evolving Role of WMO (see Annex IX to this report);
- (2) To identify and prioritize opportunities within this biennium and within the current financial period for making WMO more responsive, proactive and relevant, including through changes to its mode of operation; and as appropriate, relevant parallel consideration for NMHSs;
- (3) To specify, for each opportunity, what actions would be needed to take advantage of it, including time scales, involvement of relevant constituent bodies and the Secretariat, and any Executive Council decisions required;
- (4) To recommend and/or arrange for appropriate action to take place as soon as feasible, in close consultation and cooperation with the Secretary-General and presidents of any constituent bodies involved;
- (5) To report to the fifty-seventh session of the Executive Council on the status of implementation of identified actions;
- (6) To provide concrete proposals to the fifty-seventh session of the Executive Council on

those actions which may require further Executive Council's decisions;

- (7) To coordinate with relevant work being carried out by other pertinent bodies;
- (8) To take into account:
 - (a) The challenges facing WMO and NMHSs, within the context of scientific, socio-economic and environmental issues that touch on the welfare of humankind;
 - (b) The critical role of WMO in the United Nations system in the areas of weather, climate and water;
 - (c) The needs of various users/clients that WMO and NMHSs need to serve in the evolving world;
 - (d) The ways to re-enforce effective cooperation of WMO and NMHSs with national and international partners in the delivery of various activities;
 - (e) The political and multilateral issues where there can be increased level of impacts of the various WMO activities;
 - (f) The need for improved communications, advocacy and resource mobilization;

DECIDES to designate Mr J.J. Kelly, Jr. as chairperson of the Group and the following as members:

M.D. Everell
A.M.H. Isa
A.D. Moura
D. Rogers
N. Gordon, president of CAeM
D.G. Rutashobya, president of CHy

DECIDES to review the work and mandate of the Group during the fifty-seventh session of the Executive Council;

REQUESTS the Secretary-General to provide support to the Group and to take appropriate pertinent actions with the objective of rendering WMO to be more responsive, proactive and relevant.

RESOLUTION 8 (EC-LVI)

INTERCOMMISSION TASK TEAM ON QUALITY MANAGEMENT FRAMEWORK

THE EXECUTIVE COUNCIL,

NOTING:

- (1) Resolution 27 (Cg-XIV) — Quality management,
- (2) Paragraphs 3.25 to 3.30 of the *Abridged Final Report with Resolutions of the Fifty-fifth Session of the Executive Council* (WMO-No. 961),
- (3) Report of the 2004 Meeting of the Presidents of Technical Commissions,
- (4) WMO General Regulation 37 concerning the establishment of joint working groups of constituent bodies,

RECOGNIZING the pressing need for coordination and communication among experts of the technical commissions to assist in the early provision of technical guidance, advice, review and assessment, as appropriate, of the WMO QMF,

FURTHER RECOGNIZING that the Public Weather Services Programme would bring important inputs and expertise to the WMO QMF with regard to service delivery,

DECIDES:

- (1) To establish an Intercommission Task Team on Quality Management Framework with the following terms of reference:

- (a) Oversee and coordinate activities and monitor progress of the development of the WMO QMF across the technical commissions;
 - (b) Review and assess the experience of NMSs with quality management with a view to incorporating it in the guidance on the WMO QMF, if appropriate;
 - (c) Coordinate the consolidation and updating of pertinent technical standards and recommended practices, to achieve consistency across the programmes and ensure their suitability as reference in quality management systems;
 - (d) Submit an annual report to the Council;
- (2) That one representative from each technical commission and the Executive Council Focal Point on Quality Management Framework should serve as member of the Team;
 - (3) That the chairperson may seek advice from, or invite, other experts as necessary;

DESIGNATES Mr Chow Kok Kee (Malaysia) as chairperson of the Task Team;

REQUESTS the Secretary-General to take the actions necessary to support the activities of the Task Team.

RESOLUTION 9 (EC-LVI)

GLOBAL EARTH OBSERVATION SYSTEM OF SYSTEMS

THE EXECUTIVE COUNCIL,

NOTING:

- (1) The Declaration from the First Earth Observation Summit held in Washington, D.C. on 31 July 2003 for improved coordination of observing systems towards a comprehensive, coordinated and sustained Earth Observing System or Systems,
- (2) The Communiqué from the Second Earth Observation Summit held in Tokyo, Japan on 25 April 2004 adopting the Framework Document that describes principal benefits of Earth observations to a broad range of user communities and the fundamental elements to be included in the 10-year Implementation Plan for what will henceforth be called a Global Earth Observation System of Systems (GEOSS); and the invitation to the governing bodies of international and regional organizations sponsoring existing Earth observing systems to support the action of the Summit,

RECOGNIZING the significant opportunity for GEOSS to provide societal benefits, capacity-building and sustainable development through improved observations and a better understanding of the Earth system, its atmosphere, ocean, land surface and freshwater, geology, natural resources, ecosystems and natural and human-induced hazards and the vast experience and considerable expertise within WMO,

AWARE of the WMO mandate and conscious of the roles and responsibilities of other intergovernmental organizations with mandates relevant to GEOSS,

CONSIDERING the rapid pace at which the process to define and prepare a 10-year Implementation Plan for GEOSS has progressed,

RECORDS its appreciation to actions and efforts of the original set of GEO countries and participating organizations, in particular the United States, for initiating the ad hoc intergovernmental process that has led to the development of the GEOSS concept;

DECIDES to endorse GEOSS and to support its implementation to the maximum extent possible within WMO's mandate;

URGES Members to become fully involved in the planning and implementation of GEOSS;

FURTHER URGES all participants in the GEO process to commit to the development of robust long-term institutional arrangements that ensure that GEOSS is built effectively on existing systems and achieves strong universal ownership amongst Members, WMO constituent bodies and other Earth-system providing agencies;

STRESSES the importance of assisting the NMHSs of developing countries to participate fully in GEOSS through the strengthening of their observing networks and the enhancement of their provision of services in support of social and economic benefits of their national commitments;

REAFFIRMS the importance of building on the WMO tradition of global cooperation in Earth observations and the free and unrestricted exchange of data, in accordance with WMO Resolutions 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, and 25 (Cg-XIII) — Exchange of hydrological data and products, to support the provision of effective meteorological, hydrological and related services at the national level;

ENCOURAGES the Permanent Representatives of Members to work closely with other Earth observation agencies at the national level to ensure the development of well-coordinated national plans for GEOSS implementation;

REQUESTS relevant WMO constituent bodies to contribute fully to the development and implementation of GEOSS on the basis of their own experience in the implementation and operation of the World Weather Watch and other WMO-sponsored and jointly sponsored observing systems and components relevant to GEOSS;

SPECIFICALLY REQUESTS the technical commissions, as well as the Consultative Meetings on High-level Policy on Satellite Matters, to rapidly evaluate the draft Implementation Plan, to provide advice as necessary to ensure that the existing World Weather Watch Global Observing System, Global Atmosphere Watch, World Hydrological Cycle Observing System, Global Climate Observing System, Global Ocean Observing System, Global Terrestrial Observing System and other related observing systems are developed in a mode that is compatible with the Ten-year Implementation Plan; and, when the Plan is finalized, to provide advice as to how the WMO-coordinated systems should operate within the framework of the Plan;

ECNOURAGES other participating international and intergovernmental organizations that either individually or jointly sponsor observing systems to join WMO in support of GEOSS;

AUTHORIZES the Secretary-General to:

- (a) Confirm strong WMO support for the GEOSS concept;
- (b) Work closely with his counterparts in the other Earth-observing United Nations system agencies and programmes to ensure an effectively coordinated United Nations system role in the implementation of GEOSS;
- (c) Indicate WMO readiness to host the GEOSS Secretariat;

REQUESTS the Secretary-General:

- (a) To keep GEO fully informed of WMO's long-term experience in operational observing and telecommunication systems and service provision and of its capacity to provide effective leadership in the implementation and operation of several key components of GEOSS;
- (b) To keep WMO Members informed of relevant GEOSS activities.

RESOLUTION 10 (EC-LVI)

REPORTS OF THE JOINT INSPECTION UNIT

THE EXECUTIVE COUNCIL,

RECALLING United Nations General Assembly Resolution 54/16 — Joint Inspection Unit, of 1999 regarding a more effective system of follow-up on reports of the Joint Inspection Unit and the WMO procedures of follow-up on Joint Inspection Unit reports approved by the fifty-fourth session of the Executive Council in 2002 (Annex XI in the *Abridged Final Report with Resolution in the Fifty-fourth Session of the Executive Council* (WMO-No. 945)),

NOTING that the following reports of the Joint Inspection Unit have been formally transmitted to WMO:

- (1) Involvement of Civil Society of Organizations other than NGOs and the Private Sector in Technical Cooperation Activities: Experiences and Prospects of the United Nations System (JIU/REP/2002/1),
- (2) The Results Approach in the United Nations: Implementing the United Nations Millennium Declaration (JIU/REP/2002/2),

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| <p>(3) Support Costs Related to Extrabudgetary Activities in Organizations of the United Nations System (JIU/REP/2002/3),</p> <p>(4) Extension of Water-related Technical Cooperation Projects to End-beneficiaries: Bridging the Gap between the Normative and the Operational in the United Nations System (Case studies in two African countries) (JIU/REP/2002/4),</p> <p>(5) Reform of the Administration of Justice in the United Nations System: Options for Higher Recourse Instances (JIU/REP/2002/5),</p> <p>(6) United Nations System Revenue-producing Activities (JIU/REP/2002/6),</p> <p>(7) Management Audit Review of Outsourcing in the United Nations and United Nations Funds and Programmes (JIU/REP/2002/7),</p> <p>(8) Review of Management and Administration in the Food and Agriculture Organization of the United Nations (FAO) (JIU/REP/2002/8),</p> <p>(9) Managing Information in the United Nations System Organizations: Management Information Systems (JIU/REP/2002/9),</p> <p>(10) Evaluation of United Nations System Response in East Timor: Coordination and Effectiveness (JIU/REP/2002/10),</p> <p>(11) Implementation of Multilingualism in the United Nations System (JIU/REP/2002/11),</p> <p>(12) Common and Joint Services of United Nations System Organizations at Vienna (JIU/REP/2002/12),</p> <p>(13) Review of Management and Administration in the United Nations Industrial Development Organization (UNIDO) (JIU/REP/2003/1),</p> | <p>(14) Review of the United Nations Budgetary Process (JIU/REP/2003/2),</p> <p>(15) From the Optical Disk System to the Official Documents System (ODS): Status of Implementation and Evaluation (JIU/REP/2003/3),</p> <p>(16) Achieving the Universal Primary Education Goal of the Millennium Declaration: New challenges for development cooperation (JIU/REP/2003/5),</p> <p>(17) Management review of the Office of the United Nations High Commissioner for Human Rights (JIU/REP/2003/6),</p> <p>(18) Evaluation of the United Nations Volunteers Programme (UNV) (JIU/REP/2003/7),</p> <p>NOTING FURTHER the annual reports on the activities of the Joint Inspection Unit for the period 1 January to 31 December 2001 and 2002,
EXPRESSES its appreciation to the Inspectors for the recommendations they have submitted in their reports;</p> <p>REQUESTS the Secretary-General:</p> <p>(1) To give careful consideration to the implementation, as appropriate, of the recommendations included in the reports mentioned under NOTING which are pertinent to WMO, and to report to the Executive Council under the relevant agenda items;</p> <p>(9) To transmit this resolution to the Secretary-General of the United Nations for transmission to the Economic and Social Council in accordance with established procedures.</p> |
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RESOLUTION 11 (EC-LVI)

INTERNATIONAL POLAR YEAR 2007-2008

THE EXECUTIVE COUNCIL,

NOTING Resolution 34 (Cg-XIV) — Holding of a third International Polar Year in 2007-2008,

NOTING FURTHER that Congress requested the Executive Council to consider the establishment of an ad hoc body to prepare a plan of action and coordinate IPY implementation,

HAVING CONSIDERED with satisfaction the steps taken by WMO and ICSU at the first stage of preparation of the IPY,

RECOGNIZING that although the IPY will address a broad range of scientific issues, the major contribution of WMO to the implementation of IPY will be done to the climate and environmental components through the WMO Programmes, including WWW, AREP, AMP, WCP, WCRP, HWRP,

RECOMMENDS WMO technical commissions concerned to contribute to the activities of IPY within their areas of responsibility;

INVITES ICSU to continue its association with WMO in the preparation and implementation of the IPY as a joint enterprise;

AGREES to establish an IPY Joint Organizing Committee (JOC) with ICSU and other relevant international organizations for planning and coordination of the IPY preparation;

REQUESTS the Secretary-General in consultation with the Executive Director of ICSU to define terms of reference, composition and representation in the JOC;

REQUESTS the Secretary General to make the necessary arrangements and to identify funding to support the IPY planning and implementation process and JOC activities in the WMO Secretariat;

URGES Members to support the IPY planning process, including JOC activities by making experts available for this purpose and contributing to a Trust Fund;

ENCOURAGES Members, intergovernmental and non-governmental organizations to contribute to

the IPY implementation to the maximum extent possible by providing the necessary facilities and logistic support at the national and international levels.

RESOLUTION 12 (EC-LVI)

INTERCOMMISSION TASK GROUP ON THE INTERNATIONAL POLAR YEAR 2007-2008

THE EXECUTIVE COUNCIL,

NOTING:

- (1) Resolution 34 (Cg- XIV) — Holding of a third International Polar Year in 2007-2008,
- (2) Report of the 2004 Meeting of the Presidents of Technical Commissions,
- (3) Resolution II (EC-LVI) — International Polar Year 2007-2008,

CONSIDERING the need to establish a mechanism to support an IPY Joint Organizing Committee (JOC) and to coordinate activities related to the implementation of the International Polar Year in 2007-2008 within WMO, in particular among technical commissions and NMHSs participating in the IPY,

DECIDES:

- (1) To establish an Intercommission Task Group on the International Polar Year 2007-2008 with the following terms of reference:
 - (a) To coordinate WMO activities on preparation and implementation of the IPY 2007-2008 in both polar regions within the areas agreed by the Executive Council;

(b) To promote regional and national projects within these areas as WMO contributions to the IPY;

(c) To facilitate the conduct of activities related to the IPY such as meetings of experts, symposia and conferences, as required;

(d) To maintain close collaboration with ICSU and other relevant international organizations on the preparation and implementation of the IPY according to directives of Congress and the Executive Council;

(10) To appoint Mr Qin Dahe as chairperson of the Intercommission Task Group;

(11) To invite the presidents of technical commissions and the chairperson of the Joint Scientific Committee for WCRP to nominate experts to the Task Group;

REQUESTS the Executive Council Working Group on Antarctic Meteorology to contribute to the work of the Task Group, in particular with regard to IPY implementation in the Antarctic;

REQUESTS FURTHER the chairperson to submit progress reports to the sessions of the Executive Council.

RESOLUTION 13 (EC-LVI)

PUBLICATIONS PROGRAMME

THE EXECUTIVE COUNCIL,

CONSIDERING that the Publications Programme is regularly reviewed by Congress which approves a list of mandatory publications and requests the Executive Council to carry out regular reviews of the Programme,

ADOPTS, in line with the decisions of Congress currently in force:

- (1) Guidelines on the planning, production and distribution of WMO publications, as contained in Annex 1 to this resolution;
- (2) The definition of the purpose and limits of the Publications Fund, as contained in Annex 2 to this resolution;

(3) The scheme for the free distribution of WMO publications, as given in Annex 3 to this resolution, on the understanding that the Secretary-General, at his discretion, may exceed these numbers or include new recipients when it is clearly in the best interest of the Organization to do so;

(4) The categories of regular WMO programme-supporting publications, as given in Annex 4 to this resolution.

NOTE: This resolution replaces Resolution 6 (EC-LII), which is no longer in force.

ANNEX 1 TO RESOLUTION 13 (EC-LVI)

GUIDELINES ON THE PLANNING, PRODUCTION AND DISTRIBUTION OF WMO PUBLICATIONS**1. General**

The publications of the Organization generally fall into two broad categories:

- (a) Mandatory publications, defined by Congress as those which WMO is under an obligation to produce within the given financial period;
- (b) Programme-supporting publications, produced within the series defined by the Executive Council.

2. Planning of WMO publications

(a) Planning and funding of the Publications Programme:

- (i) The programme of producing mandatory publications during a given financial period is defined by the resolution of Congress. Funding is provided by Congress on the basis of the Secretary-General's programme and budget proposals under the Publications Programme;
- (ii) The programme-supporting publications, such as WMO Technical Notes, World Weather Watch Planning Reports, Operational Hydrology Reports, Marine Science Affairs Reports, Special Environmental Reports, the WMO Training Publications, etc. form part of the relevant scientific and technical programmes and their production is planned and funded under those programmes;

(b) Languages

Congress defines the languages in which the mandatory publications shall be issued. Programme-supporting publications are generally issued in the original language only, unless the technical bodies initiating their publication request that they be issued also in other languages. As a general policy, translation of operational and technical publications, and especially the education and training publications, into the official languages of the Organization should be regarded as having a high priority in order to facilitate the transfer of knowledge and proven methodology.

3. Production of WMO publications

(a) Preparation and approval of manuscripts

The preparation of manuscripts of new publications may be initiated by Congress, other WMO bodies, or the Secretariat.

The quality of the manuscripts for mandatory publications is, for the most part, ensured by the constituent bodies. To ensure the high quality of WMO's programme-supporting publications, the Secretary-General should maintain a list of criteria by which they should be judged and arrange to obtain an appraisal of each manuscript from a carefully chosen referee, assisted by advisers, as necessary. The president of a technical commission shall normally act as referee for publications related to the work of the commission concerned. The technical commission itself or its advisory working group (or alternatively, an Executive Council panel) may also make recommendations in this regard;

(b) For new programme-supporting publications, the referee(s) and, in some cases, the Publications Board should consider the following criteria:

- (i) The work should make an original contribution to the literature within WMO's sphere of activity and the information should not be largely already available in easily-accessible published material;
- (ii) The content must be scientifically valid and of wide interest;
- (iii) The text will remain valid and of significant interest to Members and the wider scientific community for a reasonable period of time;
- (iv) The addition of the title would not unduly imbalance the total list of WMO publications toward one aspect of the Organization's activities;
- (v) The information is presented as precisely as practical and the text is complete and accompanied by all the necessary illustrative material in a format easily accessible by the Secretariat;
- (vi) The author has the right to offer the material to WMO for publication and has obtained written permission from the copyright holders to include any material taken from other sources.

(c) Editing and printing

Mandatory and programme-supporting publications are edited by the Linguistic Services and Publications Department (LSP) in consultation with the technical division responsible for their content. The LSP Department also arranges for the page layout, camera-ready copy and

electronic publication preparation, whereas printing and binding and/or preparation for electronic distribution is carried out by the Conference, Printing and Distribution Department (CPD).

The presentation and method of reproduction of the publications, as well as the most economic use of the available publication funds including the revenue from sales of publications, shall be the responsibility of the Secretary-General within the framework established by Congress and taking into account the general guidance given by the Executive Council. A concerted effort will be made to use, as appropriate, recycled, recyclable and other environmentally-sound materials in the production of WMO publications.

In addition to the mandatory and programme-supporting publications, certain scientific and technical publications (such as proceedings of technical conferences, etc.) provided in camera-ready form may be reproduced directly. These publications would be produced in their original language only, with a note indicating that no editing has been done in the Secretariat. This is similar to the procedure for the production of technical documents, which are excluded from the Publications Programme and not offered for sale.

4. Distribution of WMO publications

(a) Catalogue of WMO publications

The Secretariat shall publish, on a regular basis, a catalogue to provide basic information for meteorologists interested in ordering WMO publications. This catalogue may also serve as a reference work for librarians, institutes and scientists in other fields and may be of use for sales promotion. It should be divided into sections showing separately a historic listing and the publications at present available for sale;

(b) Numbering of WMO publications

The mandatory and programme-supporting publications shall receive a WMO publication number and an ISBN (International Standard Book Number, which identifies the publication within the book trade and is coded to indicate the language, edition and WMO number of each publication). In addition, the individual volumes of a series shall receive a serial number. For example:

Technical Note No. 152 (serial number)

WMO-No. 467 (WMO number)

ISBN 92-63-10467-0 (ISBN)

(c) Free distribution

A specified number of each WMO publication shall be made available free of charge to Member countries, officers and members of WMO bodies, participants in meetings, regional training centres, depository libraries, United Nations and its specialized agencies, etc. For this purpose the Executive Council establishes a "List of free distribution of WMO publications" and authorizes the Secretary-General, at his discretion, to exceed this when it is clearly in the best interest of the Organization to do so.

Publications prepared for public information purposes, including Annual Reports and WMO Long-term Plans, shall not normally be sold. They shall receive free distribution according to lists approved from time to time by the Secretary-General in the best interest of promoting the Organization's aims to the widest practical audience;

(d) Pricing of publications

When pricing a publication — other than the WMO *Bulletin* — no account shall be taken of the cost of preparing the manuscript or of the translation and editing. The only costs to be calculated shall be those relating to the actual graphic and layout work, typesetting, printing, cover and binding, multiplied by a factor to cover partially the costs of the copies distributed free of charge. The same price shall be charged for each language version of a given publication.

5. Review of the Publications Programme

(a) The Executive Council should continue to review regularly the status of the Publications Programme taking into account the funds and facilities available, and to review the continuing needs resulting from the introduction of new technology;

(b) The Secretary-General should assist in these reviews by providing sessions of the Executive Council with information on available funds, facilities, sales potentials and any possible limitations.

ANNEX 2 TO RESOLUTION 13 (EC-LVI)

PUBLICATIONS FUND**1. Purpose of the Publications Fund**

The Publications Fund is established to support the implementation of the Publications Programme.

2. Income

- (a) Appropriations made by Congress for mandatory publications under the Publications Programme;
- (b) Appropriations made by Congress for relevant scientific and technical programmes credited to the Fund in the amount estimated for the purpose of producing specified programme-related publications and other printed and visual materials;
- (c) Revenues from the sales of publications and subscriptions;
- (d) Revenues derived from advertisements in the *WMO Bulletin*;
- (e) Voluntary contributions, gifts and donations accepted by the Organization in accordance with the Financial Regulations for the promotion and/or the production of WMO publications.

3. Expenditures

The following expenditures shall be debited to the Fund:

- (a) All costs that are directly incurred in the translation, editing, illustration, design, text processing, layout, printing, electronic publishing and reproduction, sales, promotion and distribution of mandatory publications and associated management and administration costs, for which funds have not been provided in the regular budget;
- (b) Where funds have been transferred from scientific and technical programmes for the purpose, the cost of services for translation, editing, illustration, design, text processing, typesetting, page preparation for programme-supporting publications and other items, when necessary.

4. Management of the Fund

Unless otherwise specified herein, all financial transactions of the Fund shall be subject to the WMO Financial Regulations.

5. Surplus

At the end of each financial period, subject to the approval of Congress, the unobligated cash balance available in the Publications Fund shall be transferred to the credit of the Fund on the first of January of the subsequent biennium. Should it be decided to close the Publications Fund, then the unobligated cash balance will be credited as miscellaneous income to the General Fund.

6. External audit

The Secretary-General shall submit the accounts of the Fund for audit by the External Auditor in the same way as the regular accounts of the Organization.

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ANNEX 3 TO RESOLUTION 13 (EC-LVI)

FREE DISTRIBUTION OF WMO PUBLICATIONS

Mandatory publications	(1) ¹	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
1. Basic documents												
• <i>Basic Documents</i> (WMO-No. 15)	1(+1)	1	1	1					1	1		
• <i>Agreements and Working Arrangements with Other International Organizations</i> (WMO-No. 60)	1	1	1						1	1		
• <i>Technical Regulations</i> (WMO-No. 49)	1	1	1	1				(a)	1			
• Annexes to the <i>Technical Regulations</i> and related regional regulations (<i>WMO Manuals</i> ; see Resolution 22 (Cg-XIV))		1	(b)	(c)	(d)			(a)	1			
2. Operational publications												
• <i>Meteorological Services of the World</i> (WMO-No. 2)		1							1			
• <i>Composition of the WMO</i> (WMO-No. 5)		1	1	1				(a)	1			
• <i>Weather Reporting</i> (Volumes A, B, C1, C2 and D) (WMO-No. 9)		1							1			
• <i>International List of Selected, Supplementary and Auxiliary Ships</i> (WMO-No. 47)		1							1			
• <i>Compendium of Training Facilities for Meteorological and Operational Hydrology</i> (WMO-No. 240)		1	1	1				1	1			
3. Official records												
• Abridged reports with resolutions of Congress	1	1	1	1	1		1		1	1		
• Proceedings of Congress	1	1	1					(a)	1			
• Abridged reports with resolutions of the Executive Council	1	1	1	1	1		1	(a)	1	1		
• Reports of sessions of regional associations	1	1	(e)	1			1	1	1			
• Reports of sessions of technical commissions	1	1	(b)	1	(c)	(c)	1	1	1			
4. <i>WMO Guides</i>		1	(b)	(c)					1	1		
5. <i>International Meteorological Vocabulary</i> (WMO-No. 182) <i>International Glossary of Hydrology</i> ²		1	1						1			
		1	1						1			
6. <i>WMO Annual Reports</i> ³	1(+1)	1	1	1	1			1	1	1		1
7. <i>WMO Bulletin</i>	1(+1)	1	1	1	1			1	1	1	(a)	1
Programme-supporting publications (see Annex 4 to Resolution 13 (EC-LVI))												
1. <i>WMO Long-term Plan</i>	1(+1)	1	1	1				2	1	1		
2. Other programme-supporting publications ³		1	(b)	(c)				2 ⁴	1			

¹ See explanatory note. ² Published jointly with UNESCO. ³ Free distribution of *Annual Reports* and public information material is decided by the Secretary-General. ⁴ WMO Training Publications.

Explanations:

- (1) Governments (Foreign Ministers): Additional copy, indicated in brackets, to Permanent Missions with the United Nations Office in Geneva.
- (2) Permanent Representatives of Members; Meteorological and Hydrometeorological Services (NOTE: Directors who are not Permanent Representatives receive two copies of all publications free of charge); World and Regional Specialized Meteorological Centres.
- (3) Hydrological Advisers to Permanent Representatives of Members.
- (4) Presidents and vice-presidents of technical commissions.
- (5) Members of technical commissions (NOTE: As designated in accordance with General Regulation 182).
- (6) Members of working groups and rapporteurs of technical commissions who are not members of the technical commission concerned.
- (7) Participants at meetings of constituent bodies (provided the publication is not available under another capacity).
- (8) Regional Meteorological Training Centres.
- (9) Depository libraries (one per regional association).
- (10) United Nations and specialized agencies (NOTE: The United Nations Dag Hammarskjöld Library is entitled to one free copy of all WMO publications. Additional reference copies are available on request to other United Nations

documentation services. On an exchange basis, one free copy of publications not specified in this column is available to all United Nations specialized agencies and other international or scientific organizations and institutions).

- (11) Retired WMO staff members.
- (12) United Nations Information Centres and Resident Representatives of UNDP.

Notes:

- (a) Available upon written request, provided the publication is not available under another capacity;
- (b) One copy of those publications related to hydrology;
- (c) One copy of those publications related to the work of each specific technical commission;
- (d) One copy of those publications directly related to the work of the specific working group for chairpersons of working groups and rapporteurs;
- (e) Reports of that regional association to which the Hydrological Adviser belongs.

ANNEX 4 TO RESOLUTION 13 (EC-LVI)

REGULAR WMO PROGRAMME-SUPPORTING PUBLICATIONS

A. Regular series

1. WMO Long-term Plan
2. WWW Planning Reports
3. WWW Status Reports (biennial)
4. Technical Notes
5. Special Environmental Reports
6. Reports on Marine Science Affairs
7. Operational Hydrology Reports
8. WMO Training Publications
9. Voluntary Cooperation Programme Reports

B. Other WMO programme-supporting publications

1. Handbooks (and service information)
2. Climatic atlases
3. Catalogues
4. Bibliographies
5. Proceedings of scientific conferences and symposia
6. IMO lectures, lectures presented at Congress and sessions of the Executive Council
7. Booklets (including those on the subject of World Meteorological Day)
8. Instruments and Observing Methods Reports
9. Casebooks

C. Joint inter-agency publications

1. JCOMM publications
2. Joint WMO/UNESCO publications
3. Joint IAHS/WMO publications
4. Joint WMO/UNEP publications
5. Any other joint publication as may be agreed between the Secretary-General of WMO and the Executive Head of another agency.

This list may be amended by the Secretary-General by the deletion or addition of series at the request of any constituent body.

RESOLUTION 14 (EC-LVI)

CONSIDERATION OF THE ACCOUNTS OF THE WORLD METEOROLOGICAL ORGANIZATION FOR THE BIENNIUM 2002-2003

THE EXECUTIVE COUNCIL,

NOTING Article 15 of the Financial Regulations,
ACKNOWLEDGING receipt of the accounts submitted by the Secretary-General for the biennium 2002-2003,

NOTING with concern the report of the External Auditor on the accounts for the biennium 2002-2003, in particular the audit opinion that the financial statements do not give a true and fair view of the financial position of the Organization as of 31 December 2003,

NOTING with appreciation the initial efforts of the Secretary-General to address the shortcomings identified in the report of the External Auditor through measures developed in the context of an Action Plan,

URGES the Secretary-General to develop further and implement expeditiously the Action Plan and keep the Action Plan under constant review in order to address any emerging issues;

REQUESTS the Secretary-General to transmit the financial statements of the accounts together with his report and the report of the External Auditor thereon to all Members of WMO;

REQUESTS the Secretary-General to review the accounts for 2002-003 with the view to revising the opening balances for the year 2004 as appropriate;

REQUESTS the Secretary-General to prepare interim accounts for the year 2004;

REQUESTS the External Auditor to audit the interim accounts for the year 2004;

DECIDES to consider the interim accounts for the year 2004 and the report of the External Auditor on the interim accounts for the year 2004 at its fifty-seventh session.

RESOLUTION 15 (EC-LVI)

ESTABLISHMENT OF AN AUDIT COMMITTEE

THE EXECUTIVE COUNCIL,

NOTING the recommendations of the External Auditor on the accounts for the biennium 2002-003,

NOTING the terms of reference of the Financial Advisory Committee as outlined in Resolution 29 (Cg-X) — Financial Advisory Committee,

CONVINCED of the urgent need for a review and follow-up mechanism to improve the administrative functioning of the WMO Secretariat,

DECIDES to establish an Audit Committee reporting to the Executive Council with the following terms of reference:

- (a) Review the reports of the External Auditors on the financial accounts of the Organization;
- (b) Review audit plans and reports of the Internal Auditor submitted by the Secretary-General to the Executive Council;
- (c) Monitor the Secretariat's responses to the recommendations set by the External and Internal Auditors as well as the Joint Inspection Unit and the United Nations Controller;

- (d) Make such recommendations to the Executive Council as it considers appropriate;

DECIDES that the Audit Committee meets every four months and keeps members of the Executive Council informed of its work on a regular basis;

DECIDES further that the membership of the Audit Committee be as follows:

U. Gärtner
J.-P. Beysson
J.J. Kelly, Jr.
K. Nagasaka
Qin Dahe
J. Lengoasa

Two financial experts from the United Nations system proposed by the Secretary-General and appointed by the President of WMO;

DECIDES that the chairperson of the Audit Committee will be selected by the members of the Committee;

DECIDES to review the functioning of the Audit Committee at its fifty-seventh session.

RESOLUTION 16 (EC-LVI)

SETTLEMENT OF CONTRIBUTIONS

THE EXECUTIVE COUNCIL,

NOTING with concern the financial difficulties arising from delayed and non-payment of assessed contributions,

URGES the Members still in arrears to clear their dues at an early date.

RESOLUTION 17 (EC-LVI)

CONSIDERATION OF THE ACCOUNTS FOR 2002-2003 — WMO PROJECTS AND TRUST FUNDS FINANCED FROM THE UNITED NATIONS DEVELOPMENT PROGRAMME

THE EXECUTIVE COUNCIL,

NOTING Article 4 of the United Nations Development Programme Financial Regulations and Rules,

CONSIDERING the financial reports of the External Auditor to the Executive Council on the statements showing the status of funds of WMO, as at 31 December 2002 and 31 December 2003, under the United Nations Development Programme,

GIVES FORMAL APPROVAL to the audited financial accounts in respect of those projects and trust

funds administered by WMO and financed by the United Nations Development Programme during the years ended 31 December 2002 and 31 December 2003;

REQUESTS the Secretary-General to transmit certified copies of the financial statements of the accounts, together with the report of the External Auditor thereon, to the Administrator of the United Nations Development Programme.

RESOLUTION 18 (EC-LVI)

GOVERNANCE MECHANISM UNDER RESULTS-BASED BUDGETING

THE EXECUTIVE COUNCIL,

NOTING:

(1) Resolution 31 (Cg-XIV) — Results-based budgeting,

(12) The decision described on this subject in the *Abridged Final Report with Resolutions of the Fourteenth World Meteorological Congress* (WMO-No. 960), general summary paragraph 8.13,

CONSIDERING that:

(1) Results-based budgeting (RBB) is a key instrument for ensuring effective oversight functions, accountability and good governance,

(2) Programme planning, budgeting, monitoring and evaluations are integral parts of the whole RBB process,

(3) Reporting on results-achieved to WMO Members is critical in the RBB process,

(4) This reporting requirement increases the effective involvement of WMO Members

in programme and budget decision-making, and will enhance their governance role,

(5) RBB requires a corporate management information system that processes programmatic and financial data,

(6) The preparation of the guidelines on the WMO RBB process and the development of skills required for RBB are critical for its successful implementation,

ADOPTS the governance mechanism under RBB as set out in annex to this resolution;

REQUESTS the Secretary-General:

(1) To implement RBB taking into account the governance mechanism described in this resolution; and

(2) To submit to its fifty-seventh session a progress report on the implementation of the governance mechanism under RBB.

ANNEX TO RESOLUTION 18 (EC-LVI)

GOVERNANCE MECHANISM UNDER RESULTS-BASED BUDGETING**1. Regulatory framework**

1.1 The regulatory framework for the governance mechanism under results-based budgeting is the Convention, the General Regulations, the LTP and the Financial Regulations of WMO.

2. Preparation of programme and budget proposals

2.1 The preparation of programme and budget proposals shall be closely linked to the LTP.

2.2 The programme and budget proposals for a biennium or a financial period should provide descriptions of expected results and performance indicators, formulated on the basis of the framework and programme elements contained in a corresponding LTP.

2.3 Both attributable staff and programme cost requirements should be shown.

2.4 Requirements for regular budget and extrabudgetary resources should be indicated.

3. Monitoring

- 3.1 Monitoring is a continuing function that should result in regular feedback and early indications of progress or lack thereof in the achievement of expected results. Monitoring tracks the actual performance or situation against what was planned according to the expected results. Monitoring generally involves collecting and analysing data on programme implementation and the achievement of the expected results, and recommending corrective measures.
- 3.2 The monitoring of the implementation of the programme and budget proposals shall take into account the monitoring of the implementation of the LTP.
- 3.3 The Secretary-General shall establish mechanisms for monitoring all the activities implemented by the Secretariat, in terms of delivery of planned outputs and achievement of expected results, based on biennial expected results and the budgets approved by the Executive Council, as well as for reporting to the Executive Council.
- 3.4 The interim report to be submitted to the Executive Council each year should contain not only financial, but also programmatic performance information matching with budgetary information, including information on achievement of results, as required under results-based budgeting.
- 3.5 Upon completion of the biennial budget period, the Secretary-General shall report to the Executive Council on programme and budget performance during that period.
- 3.6 The Executive Council shall consider and submit to Fifteenth Congress a report on the Secretariat performance measured on the basis of the nine Key Performance Indicators for the fourteenth financial period, after consideration by the Executive Council Working Group on Long-term Planning of the performance. Congress shall take into account this report in reviewing programme and budget proposals for the following financial period.

4. Evaluation

- 4.1 The objective of evaluation is:
- (a) To determine as systematically and objectively as possible the relevance, efficiency, effectiveness and impact of the Organization's activities in relation to its objectives; and
 - (b) To enable the Executive Council and the Secretary-General to engage in systematic reflections, with a view to increasing the effectiveness of the programmes of the Organization.
- 4.2 Evaluation shall be internal evaluation, and external evaluation such as in-depth evaluation and thematic evaluation. The Secretary-General shall develop internal and external evaluation systems, and also seek the cooperation of WMO Members in the external evaluation process.
- 4.3 The evaluation of the implementation of the programme and budget proposals shall take into account the evaluation of the implementation of the LTP.
- 4.4 In-depth evaluation shall be conducted to evaluate the implementation of a specific Major Programme (or Programme) over a financial period. Findings of the in-depth evaluation and recommendations of evaluators shall be reported to the Executive Council, as well as to relevant technical commissions and regional associations.
- 4.5 Thematic evaluation shall be conducted to evaluate selected aspects or cross-cutting issues in different types of interventions. The thematic evaluation can involve evaluation of projects or programmes addressing a particular theme that cut across various Major Programmes (or Programmes). The Executive Council shall determine subjects of thematic evaluation. Findings of the thematic evaluation and recommendations of evaluators shall be reported to the Executive Council, as well as to relevant technical commissions and regional associations, as appropriate.
- 4.6 Other types of evaluation may be conducted as required.
- 4.7 The Secretary-General is accountable to Congress and the Executive Council for the achievement of expected results.

RESOLUTION 19 (EC-LVI)

WMO PROGRAMME-SUPPORT COST POLICY

THE EXECUTIVE COUNCIL,

NOTING:

- (1) The decisions of Fourteenth Congress contained in the *Abridged Final Report with Resolutions of the Fourteenth World Meteorological Congress* (WMO-No. 960), general summary paragraph 10.1.14,

- (2) The report of the Joint Inspection Unit on Support Costs Related to Extrabudgetary Activities in Organizations of the United Nations System (JIU/REP/2002/3),

CONSIDERING that:

- (1) The findings of the cost measurement exercise carried out by the Secretariat indicated that less and less donors complied

with the standard programme-support cost rate of 14 per cent for the recovery of such costs incurred for the management of extrabudgetary activities,

- (13) Regular budget resources increasingly supported the management of extrabudgetary activities during the thirteenth financial period (2000-2003),

NOTING that the cost measurement methodology used highlighted the following:

- (1) Programme-support costs are classified under two categories, namely, variable and fixed,
- (2) Variable costs are incremental costs that would not be incurred if the Organization did not administer extrabudgetary funding including the work effort directly affected by transaction volume,
- (3) Fixed costs are a share of the Organization's fixed expenditures for infrastructure attributed to extrabudgetary funding on the basis of the work measurement, and
- (4) Only variable costs should be recovered through the programme-support cost arrangement,

TAKE INTO ACCOUNT that the above cost measurement methodology and the review of the WMO programme-support cost arrangement are in line with the latest outcome of the United Nations system-wide review of the programme-support cost issue;

DECIDES:

- (1) To Establish a programme-support cost recovery rate of 13 per cent for technical cooperation projects, including VCP projects, for which the following flexibility might be granted, even cumulatively where applicable:
 - (a) In the case where the recipient government is the donor and the recipient/donor assumes responsibilities for certain functions which could otherwise be performed by the WMO Secretariat, a reduction in the rate by up to 2 per cent shall be granted, which corresponds to the amount of savings resulting from the assumption of the responsibilities by the recipient government;
 - (b) In the case where the technical cooperation project consists only of the procurement of equipment, supplies or materials, a rate of 9 per cent shall be applied instead of 13 per cent;
 - (c) In the case where the donor accepts simplified reporting with a narrative report describing the use of funds and the results achieved, the reduction in the rate by 1 per cent shall be granted, on the understanding that the financial performance will be reported within the

framework of the statutory biennial closure of accounts;

- (14) To establish a rate of 7 per cent for funds-in-trust which finance those normative activities which supplement regular budget programmes with no component of technical cooperation activities;
- (15) To confirm the 12 per cent rate for support costs for the management of the funds for Junior Professional Officers ;
- (16) To agree that the rates for UNDP projects should be those set by the UNDP Executive Board;

REQUESTS the Secretary-General:

- (1) To take measures to apply the WMO new programme-support cost policy to future agreements with donors for extrabudgetary activities as of January 2005;
- (2) To take measures with a view to compensating for the costs of incremental (variable) services provided by the WMO Secretariat for administering the funds-in-trust for GCOS, IPCC and JCRF, consistent with any agreements in place with WMO's partners in these activities;
- (3) To revise the presentation of the budget and financial statements for GCOS, IPCC and JCRF to include not only the cash income and expenditures in the funds-in-trust, but also the staff and services contributed through the WMO regular budget, including provisions for office space and financial administration, and any similar contributions of staff or resources made by other sponsors;
- (17) To establish appropriate procedures to protect WMO from the currency risk caused by changes in the relationship between the Swiss franc in which programme-support costs are incurred, and other currencies (in particular the United States dollar) in which the programme-support cost income is credited to WMO;
- (18) To ensure that the following charges are included as direct costs when concluding agreements with donors and designing terms of reference for funds-in-trust: (a) telephone and postage costs; (b) staff travel for specific technical cooperation project operations, monitoring and evaluation; and (c) costs of technical services such as project appraisal, technical monitoring and evaluation;
- (19) To monitor the implementation of the new programme-support cost policy during the 2004-2005 biennium; and
- (20) To report to the fifty-eighth session of the Executive Council in 2006 on the progress made in the implementation of this resolution.

RESOLUTION 20 (EC-LVI)

HIGH PRIORITY ACTIVITIES FOR THE 2004-2005 BIENNIUM

THE EXECUTIVE COUNCIL,

NOTING:

- (1) Articles 6.5, 6.6, 6.7 and 7.7 of the Financial Regulations,
 (2) Resolution 30 (Cg-XIV) — Maximum expenditures for the fourteenth financial period,

- (3) Resolution 36 (Cg-XIV) — Assessment of proportional contributions of Members for the fourteenth financial period,

DECIDED to adopt the budget for the high priority activities for the 2004-2005 biennium to be funded from the cash surplus arising from the thirteenth financial period, as given in the annex to this resolution.

ANNEX TO RESOLUTION 20 (EC-LVI)

**BUDGET FOR THE HIGH PRIORITY ACTIVITIES FOR THE 2004-2005 BIENNIUM
 TO BE FUNDED FROM THE CASH SURPLUS ARISING FROM THE THIRTEENTH FINANCIAL PERIOD
 (Swiss francs)**

Revenue		Expenditures	
Cash surplus ⁽¹⁾	3 493 100	1. Policy-making organs	80 000
		4. Linguistic, publication and conference services	200 000
		5. Resource management	2 213 100
		Unallocated staff cost resources to cover partly the cost of the Early Retirement and Voluntary Separation Incentive Programmes	1 000 000
TOTAL	<u>3 493 100</u>	TOTAL	<u>3 493 100</u>

(1) Cash surplus arising from the thirteenth financial period.

RESOLUTION 21 (EC-LVI)

ASSESSMENT OF PROPORTIONAL CONTRIBUTIONS OF MEMBERS FOR THE YEARS 2005-2007

THE EXECUTIVE COUNCIL,

RECALLING Resolution 36 (Cg-XIV) — Assessment of proportional contributions of Members for the fourteenth financial period,

NOTING:

- (1) That the scales of assessment of proportional contributions of Members for the years 2005-2007 have been based on the United Nations scales of assessments adopted by the fifty-eighth session of the United Nations General Assembly in

December 2003 and adjusted for difference in memberships,

- (2) That the minimum rate of assessment was retained at 0.02 per cent and that corrections have been made to ensure that no Member's rate of assessment would increase to a level which would exceed 200 per cent of the WMO scale for 2003,

ADOPTS the scales of assessment of proportional contributions of Members for the years 2005-2007 as presented in the annex to this resolution.

ANNEX TO RESOLUTION 21 (EC-LVI)

**PROPORTIONAL CONTRIBUTIONS OF MEMBERS FOR THE YEARS 2005-2007
(percentage)**

<i>Member</i>	<i>Scale of assessment</i>	<i>Member</i>	<i>Scale of assessment</i>
Afghanistan	0.02	Dominica	0.02
Albania	0.02	Dominican Republic	0.03
Algeria	0.08	Ecuador	0.02
Angola	0.02	Egypt	0.12
Antigua and Barbuda	0.02	El Salvador	0.02
Argentina	0.94	Eritrea	0.02
Armenia	0.02	Estonia	0.02
Australia	1.57	Ethiopia	0.02
Austria	0.85	Fiji	0.02
Azerbaijan	0.02	Finland	0.52
Bahamas	0.02	France	5.93
Bahrain	0.03	French Polynesia	0.02
Bangladesh	0.02	Gabon	0.02
Barbados	0.02	Gambia	0.02
Belarus	0.02	Georgia	0.02
Belgium	1.05	Germany	8.52
Belize	0.02	Ghana	0.02
Benin	0.02	Greece	0.52
Bhutan	0.02	Guatemala	0.03
Bolivia	0.02	Guinea	0.02
Bosnia and Herzegovina	0.02	Guinea-Bissau	0.02
Botswana	0.02	Guyana	0.02
Brazil	1.50	Haiti	0.02
British Caribbean Territories	0.02	Honduras	0.02
Brunei Darussalam	0.03	Hong Kong, China	0.02
Bulgaria	0.02	Hungary	0.12
Burkina Faso	0.02	Iceland	0.03
Burundi	0.02	India	0.41
Cambodia	0.02	Indonesia	0.14
Cameroon	0.02	Iran, Islamic Republic of	0.15
Canada	2.77	Iraq	0.02
Cape Verde	0.02	Ireland	0.34
Central African Republic	0.02	Israel	0.46
Chad	0.02	Italy	4.80
Chile	0.22	Jamaica	0.02
China	2.02	Japan	19.15
Colombia	0.15	Jordan	0.02
Comoros	0.02	Kazakhstan	0.03
Congo	0.02	Kenya	0.02
Cook Islands	0.02	Kuwait	0.16
Costa Rica	0.03	Kyrgyzstan	0.02
Côte d'Ivoire	0.02	Lao People's Democratic Republic	0.02
Croatia	0.04	Latvia	0.02
Cuba	0.04	Lebanon	0.02
Cyprus	0.04	Lesotho	0.02
Czech Republic	0.18	Liberia	0.02
Democratic People's Republic of Korea	0.02	Libyan Arab Jamahiriya	0.13
Democratic Republic of the Congo	0.02	Lithuania	0.02
Denmark	0.71	Luxembourg	0.08
Djibouti	0.02	Macao, China	0.02

<i>Member</i>	<i>Scale of assessment</i>	<i>Member</i>	<i>Scale of assessment</i>
Madagascar	0.02	Seychelles	0.02
Malawi	0.02	Sierra Leone	0.02
Malaysia	0.20	Singapore	0.38
Maldives	0.02	Slovakia	0.05
Mali	0.02	Slovenia	0.08
Malta	0.02	Solomon Islands	0.02
Mauritania	0.02	Somalia	0.02
Mauritius	0.02	South Africa	0.29
Mexico	1.84	Spain	2.48
Micronesia, Federated States of	0.02	Sri Lanka	0.02
Monaco	0.02	Sudan	0.02
Mongolia	0.02	Suriname	0.02
Morocco	0.05	Swaziland	0.02
Mozambique	0.02	Sweden	0.98
Myanmar	0.02	Switzerland	1.18
Namibia	0.02	Syrian Arab Republic	0.04
Nepal	0.02	Tajikistan	0.02
Netherlands	1.66	Thailand	0.21
Netherlands Antilles and Aruba	0.02	The former Yugoslav Republic of Macedonia*	0.02
New Caledonia	0.02	Togo	0.02
New Zealand	0.22	Tonga	0.02
Nicaragua	0.02	Trinidad and Tobago	0.02
Niger	0.02	Tunisia	0.03
Nigeria	0.04	Turkey	0.37
Niue	0.02	Turkmenistan	0.02
Norway	0.67	Uganda	0.02
Oman	0.07	Ukraine	0.04
Pakistan	0.05	United Arab Emirates	0.23
Panama	0.02	United Kingdom of Great Britain and Northern Ireland	6.03
Papua New Guinea	0.02	United Republic of Tanzania	0.02
Paraguay	0.02	United States of America	21.64
Peru	0.09	Uruguay	0.05
Philippines	0.09	Uzbekistan	0.02
Poland	0.45	Vanuatu	0.02
Portugal	0.46	Venezuela	0.17
Qatar	0.06	Viet Nam, Socialist Republic of	0.02
Republic of Kiribati	0.02	Zambia	0.02
Republic of Korea	1.76	Zimbabwe	0.02
Republic of Moldova	0.02		
Republic of Yemen	0.02		
Romania	0.06	Total	100.00
Russian Federation	1.08		
Rwanda	0.02		
Saint Lucia	0.02		
Samoa	0.02		
Sao Tome and Principe	0.02		
Saudi Arabia	0.70		
Senegal	0.02		
Serbia and Montenegro	0.02		

* Following the decision of the United Nations General Assembly on 8 April 1993, the State is being provisionally referred to for all purposes within the Organization as "the Former Yugoslav Republic of Macedonia" pending settlement of differences that have arisen over its name.

RESOLUTION 22 (EC-LVI)

SUPPLEMENTARY ESTIMATES FOR THE JOINT CLIMATE RESEARCH FUND FOR THE BIENNIUM 2004-2005

THE EXECUTIVE COUNCIL,

NOTING:

- (1) Articles 6.6 and 6.7 of the Financial Regulations,
- (2) The *Abridged Final Report with Resolutions of the Fifty-fifth Session of the Executive Council* (WMO-No. 961), general summary paragraph 6.7,

- (3) Resolution 9 (Cg-XIII) — World Climate Research Programme, and the Agreement between WMO, ICSU and IOC on the conduct of the programme,

ADOPTS the supplementary estimate for the biennium 2004-2005 for the WMO/ICSU/IOC Joint Climate Research Fund as given in the annex to this resolution.

ANNEX TO RESOLUTION 22 (EC-LVI)

**SUPPLEMENTARY ESTIMATES FOR THE JOINT CLIMATE RESEARCH FUND
FOR THE BIENNIUM 2004-2005
(CHF'000)**

<i>Revenue</i>		<i>Expenditure</i>	
Reappropriation of carry forward from 2002-2003	300.0	Institutional support to WCRP: Activities of the JSC	
		- COPES planning (Task Force)	60.0
		Climate Modelling Programme	
		- Modelling Panel (COPES)	40.0
		Cooperation/joint activities with global environmental change programmes and climate observation programmes	
		- WCRP 25th anniversary Science Conference (with ESSP, 2006), publications and preparation	60.0
		- Working Group on Observations and Assimilation (WGOA) (COPES)	60.0
		- CEOP coordination	40.0
		- Participation in GEO and EOS activities	40.0
TOTAL	300.0	TOTAL	300.0

Consequent expected results for the fourteenth financial period (2004-2007)

The introduction and development of the new WCRP Coordinated Observation and Prediction of the Earth System (COPES) strategy will provide the framework for the WCRP to tackle new challenges presented by the 'seamless prediction problem'; prediction of the broader climate/Earth system; new and increasing data streams; the growth and availability of computer power; the increasing complexity of models; modern data assimilation techniques; the need to demonstrate the use to society of WCRP-enabled predictions; and the need to interact strongly with other Earth System Science Partnership Programmes and other activities. It will also provide the framework for the JSC to assess progress towards achieving the original WCRP aims, to set objectives in the context of those aims, to strengthen existing and stimulate new scientific activities within WCRP, and to gain increasing recognition for the scientific and societal relevance and importance of WCRP results.

The introduction of a Modelling Panel and a Working Group on Observations and Assimilation (WGOA) are essential to the further development and implementation of the COPES strategy. The prime role of the Modelling Panel is to coordinate and integrate modelling activities across WCRP with the purpose of meeting WCRP objectives, especially in the context of COPES. The prime role of the WGOA is to foster, promote and coordinate synthesis of global observations from the atmosphere, oceans, land and cryosphere, and for the fully-coupled system, through analysis, re-analysis and assimilation activities across WCRP and with other climate-research activities.

The second Global Change Open Science Conference, to be organized by the Earth System Science Partnership (WCRP, IGBP, IHDP and DIVERSITAS) in 2006, will provide an appropriate venue to celebrate the twenty-fifth anniversary of the WCRP, by publicizing widely its achievements and benefits to date, the challenges still to be addressed, and its plans for the future, as proposed by Fourteenth Congress. A further developed WCRP-COPES strategy would be launched more publicly at that venue.

Additional performance indicators 2004-2005

- (a) A task force for the further development of COPES to be established (June, 2004), with a report to JSC-XXVI (March 2005). The report will include proposed milestones and metrics for assessing the progress of COPES;
- (b) A modelling panel and WGOA established (2004), with initial reports to JSC-XXVI (March 2005);
- (c) Significant progress in the planning of a major international conference (the second Earth System Science Partnership Open Science Conference) to be held in 2006, including the planning and publication of WCRP literature related to the twenty-fifth anniversary of WCRP and to COPES (2005);
- (d) Inclusion of WCRP observational requirements and strategy in the GEO 10-year implementation plan (2005).

RESOLUTION 23 (EC-LVI)

REVIEW OF PREVIOUS RESOLUTIONS OF THE EXECUTIVE COUNCIL

THE EXECUTIVE COUNCIL,

NOTING:

- (1) General Regulation 155(9) concerning the review of previous resolutions of the Executive Council,
- (2) Rule 27 of Rules of Procedure of the Executive Council on the same subject,

HAVING EXAMINED its previous resolutions still in force,

DECIDES:

- (1) To keep in force the following resolutions:

EC-X	2
EC-XII	6, 30
EC-XIX	9
EC-XXI	15
EC-XXV	12
EC-XXXIV	13,18
EC-XXXV	18, 21
EC-XXXVI	6
EC-XXXVII	13
EC-XXXIX	7, 17, 24

EC-XL	2, 4
EC-XLI	6
EC-XLII	19
EC-XLIV	14 (except paragraphs under DECIDES), 15, 20
EC-XLV	7, 13, 16
EC-XLVI	12, 19
EC-XLVIII	3, 4, 12
EC-L	12
EC-LI	5, 10, 13, 14
EC-LII	3
EC-LIII	1, 2, 9, 11, 12
EC-LIV	2, 3, 5, 6, 7, 8, 9, 10, 12, 13, 14, 15, 16
EC-LV	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21

- (21) Not to keep in force the other resolutions adopted before its fifty-sixth session.

NOTE: This resolution replaces Resolution 22 (EC-LV) which is no longer in force.

ANNEXES

ANNEX I

Annex to paragraph 2.4 of the general summary

REPORT AND RECOMMENDATIONS OF THE FINANCIAL ADVISORY COMMITTEE

- (a) **Financial matters (including the report of the External Auditor) — Consideration of the accounts for the second biennium (2002-2003) of the thirteenth financial period (2000-2003) General Fund and other funds (EC-LVI/Doc. 18.4(1) and EC-LVI/Doc. 18.4(1), ADD. 1)**

Recommendation 1:

That the Executive Council:

- 1.1 Receive the accounts submitted by the Secretary-General for the biennium 2002-2003;
- 1.2 Take note of the report of the External Auditors on the accounts for the biennium 2002-2003, in particular the audit opinion that the financial statements do not give a true and fair view of the financial position of the organization as of 31 December 2003;
- 1.3 Consider the accounts for the biennium 2002-2003 as a preliminary basis for the preparation of the accounts for the biennium 2004-2005;
- 1.4 Request the Secretary-General to review the accounts for 2002-2003 with a view to revising the opening balances for the year 2004 as appropriate;
- 1.5 Request the Secretary-General to prepare interim accounts for the year 2004;
- 1.6 Request the External Auditors to audit the interim accounts for the year 2004, including the opening balance for 2004, as revised, for consideration by its fifty-seventh session.

Recommendation 2:

That the Executive Council:

- 2.1 Should establish an Audit Committee reporting to the Executive Council with the following terms of reference:
 - (a) Review the reports of the External Auditors on the financial accounts of the Organization;
 - (b) Review audit plans and reports of the Internal Auditor submitted by the Secretary-General to the Executive Council;
 - (c) Monitor the Secretariat's responses to the recommendations set by the External and Internal Auditors;
 - (d) Make such recommendations to the Executive Council as it considers relevant;
- 2.2 Decide that the Audit Committee meets every four months and keeps members of the Executive Council informed of its work on a regular basis;
- 2.3 Decide further that the membership of the Audit Committee be as follows:
 - (a) ...
 - (b) ...
 - (c) ...
 - (d) Two financial experts from the United Nations system proposed by the Secretary-General and appointed by the President of WMO;
- 2.4 Decide to appoint ... as chairperson of the Audit Committee;
- 2.5 Decide to review the functioning of the Audit Committee at its fifty-seventh session.

(b) Financial matters (including the report of the External Auditor) — Consideration of the UNDP project accounts for 2002-2003

WMO projects financed from the United Nations Development Programme (EC-LVI/Doc. 18.4(2) and EC-LVI/Doc. 18.4(2), ADD. 1)

Recommendation 3:

That the Executive Council:

- 3.1 Approve the audited accounts for WMO projects financed from the United Nations Development Programme for the biennium 2002-2003;
- 3.2 Adopt the draft text for inclusion in the general summary of its report, as contained in EC-LVI/Doc. 18.4(2), Appendix A;
- 3.3 Adopt the draft Resolution 18.4/2 (EC-LVI), as contained in EC-LVI/Doc. 18.4(2), Appendix B.

(c) Interim financial report of the Secretary-General**Recommendation 4:**

That the Executive Council urge Members in arrears of contributions to settle their dues as early as possible so that the approved programmes of WMO may be implemented in the time frame and at the level foreseen in the plans.

(d) Consideration of the Secretary-General's proposals for high priority activities for the fourteenth financial period (EC-LVI/Doc. 18.4(6))**Recommendation 5:**

That the Council adopt the draft text for inclusion in the general summary of its report and the draft resolution, as contained in EC-LVI/Doc. 18.4(6) Rev.1, which reflect, among others, the resource distribution by part for the biennium 2004-2005 as indicated in the Annex to Appendix B.

(e) Governance mechanism under results-based budgeting (EC-LVI/Doc. 18.4(4))**Recommendation 6:**

That the Council adopt the draft text for inclusion in the general summary of its report and the draft resolution, as contained in EC-LVI/Doc. 18.4(4).

(f) Review of WMO programme support costs arrangement (EC-LVI/Doc. 18.4(5))**Recommendation 7:**

That the Council adopt the draft text for inclusion in the general summary of its report and the draft resolution, as contained in EC-LVI/Doc. 18.4(5).

(g) Contribution matters: Scales of assessment of proportional contributions and settlement of long outstanding contributions (EC-LVI/Doc. 18.4(7))**Recommendation 8:**

That the Council adopt the draft text for inclusion in the general summary of its report and the draft resolution, as contained in EC-LVI/Doc. 18.4(7).

**HIGH PRIORITY ACTIVITIES TO BE FUNDED BY THE CASH SURPLUS ARISING FROM THE
THIRTEENTH FINANCIAL PERIOD
REVISED SUMMARY OF THE SECRETARY-GENERAL'S PROPOSAL**

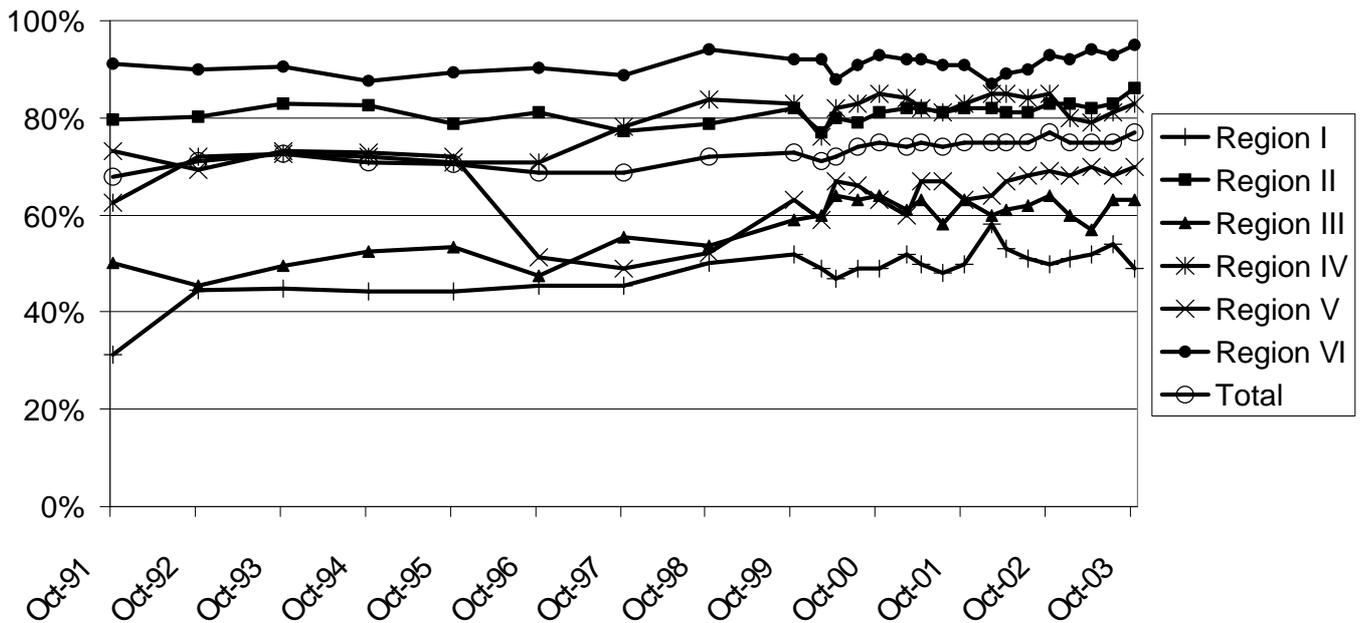
**Summary of estimates of expenditure for 2004-2005
(Swiss francs)**

<i>High priority activity</i>	<i>2004-2005</i>
Part 1. Policy-making organs	80 000
Part 4. Linguistic, publication and conference services	200 000
Part 5. Resource management	2 213 100
Unallocated staff cost resourced to partly cover the cost of the Early Retirement and Voluntary Separation Incentive Programmes	1 000 000
Total	3 493 100

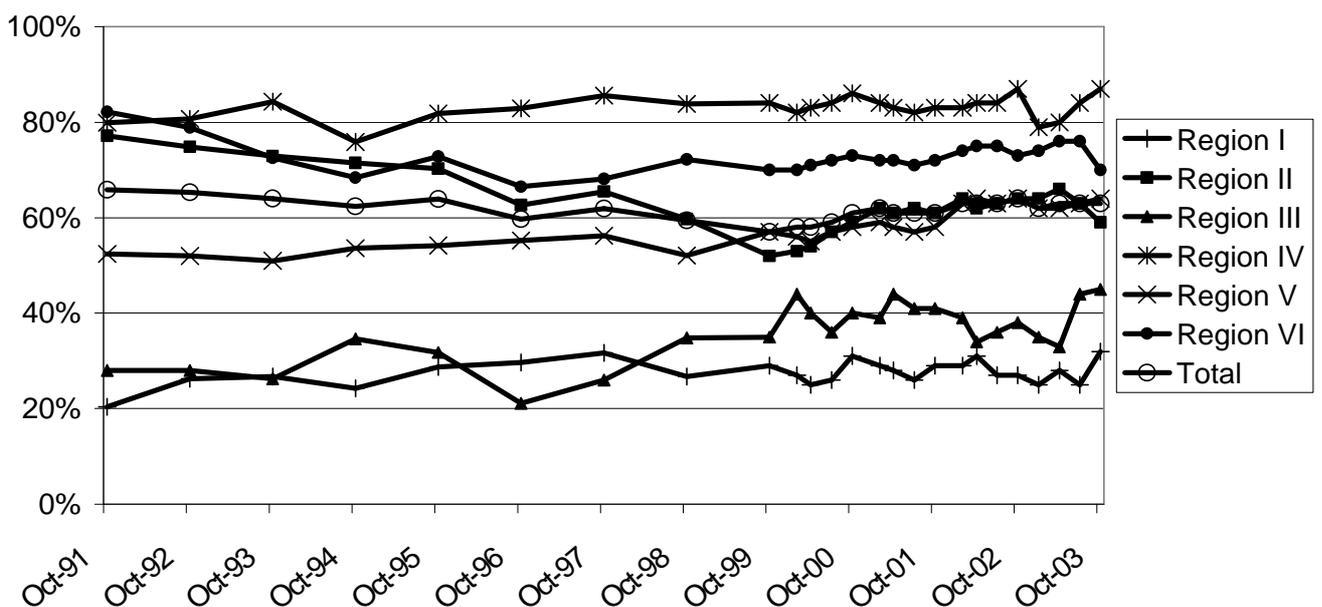
ANNEX II
Annex to paragraph 3.1.8 of the general summary

PERCENTAGE OF SYNOP AND PART A TEMP REPORTS RECEIVED AT MTN CENTRES IN COMPARISON WITH THE NUMBERS OF REPORTS REQUIRED FROM THE RBSN STATIONS

Percentage of SYNOP reports received at MTN centres in comparison with the numbers of reports required from the RBSN stations



Percentage of Parts A of TEMP reports received at MTN centres in comparison with the number of reports required from RBSN stations



ANNEX III

Annex to paragraph 3.2.17 of the general summary

GUIDELINES FOR GRANTING THE PROFESSOR DR VILHO VAISALA AWARD

The Professor Dr Vilho Vaisala Award for an Outstanding Research Paper on Instruments and Methods of Observation**1. Purpose**

The purpose of the Professor Dr Vilho Vaisala Award for an Outstanding Research Paper on Instruments and Methods of Observation is to encourage and stimulate interest in research in the field of instruments and methods of observation in support of WMO Programmes.

2. Criteria for granting awards

The award shall recognize an outstanding paper published in a scientific journal, or a summary of a successfully defended Ph.D. thesis for:

- (a) The significance of its topic;
- (b) The novelty of its ideas and methods;
- (c) The value of its results to WMO programmes.

3. Methods of submission

- (a) The Permanent Representatives of Members with WMO will be invited to submit to the Secretary-General not more than two nominations and the corresponding papers/reports per each award that were published during the 24-month period preceding the year in which the award is made and that have not previously won an international prize; indicating the title of the award for which each submission is being made;
- (b) Papers/reports for each submission shall be in four copies and in a WMO working language (original or translation).

4. Method of selection

- (a) The president of CIMO, in consultation with the vice-president, invites three distinguished scientists in the field of instruments and methods of observation, who would serve as assessors for both awards;
- (b) For each award, each assessor should allot a mark to each paper, which should be in the range 0 (lowest) to 5 (highest) and submit the evaluation to the Secretary-General. The evaluation should be based on the criteria defined above with equal weight being assigned to each of the three criteria mentioned under 2 above;
- (c) The final selection of the award winner, or winners, for each award, is made by the Selection Committee established for this purpose by the Executive Council for a period of four years. The Committee consists of two members and, *ex officio*, the president of CIMO;
- (d) The Executive Council Selection Committee may decide not to recommend an award if the papers/reports submitted are not of a sufficiently high standard.

5. Nature of the award

Each award consists of a diploma, a medal and a sum of US\$ 10 000; the latter could be shared between co-authors. The award is granted on a biennial basis.

The Professor Dr Vilho Vaisala Award for the Development and Implementation of the Instruments and Methods of Observation**1. Purpose**

The purpose of the Professor Dr Vilho Vaisala Award for the Development and Implementation of the Instruments and Methods of Observation is to encourage and stimulate the development and implementation of the instruments and methods of observation in support of WMO Programmes.

2. Criteria for granting awards

The award shall be made for an outstanding paper published in a scientific journal, or a significant technical report, a project report or a summary of a successfully defended Ph.D. or MSc. thesis for:

- (a) The significance of its contribution to the long-term stability and reliability of meteorological and related environmental observations;
- (b) The relevance to the observing networks in developing countries;
- (c) The value of its results to WMO Programmes.

6. Award ceremony

The award ceremony shall normally take place during the conjoint WMO Technical (TECO) Conference on Meteorological and Environmental Instruments and Methods of Observation and the Exhibition of Meteorological Instruments, Equipment and Services (METEOREX).

ANNEX IV

Annex to paragraph 4.1.1 of the general summary

FUTURE DIRECTIONS FOR THE COMMISSION FOR CLIMATOLOGY BY THE PRESIDENT OF CCI, MR YADOWSUN BOODHOO

The president of CCI planned the Commissions' future activities to reinforce its contribution in the socio-economic development of WMO Members, to improve human well-being and consolidate food production. CCI would continue to play a strong role, and to position itself and the WCP for stronger future leadership in climate activities.

It is therefore planned to:

1. Assist in the implementation of the Regional Climate Centers. That would allow those Members with limited resources to benefit from expertise and products from major global and national centers.
2. Improve the use and understanding of climate models and long-range forecasts.
3. Develop and implement a climate watch system, which would serve as an early warning for major climatic events. The Commission would develop guidance and provide direction to WMO Members and the RCCs as they implemented their watch systems.
4. Strengthen its activities in climate data archiving and management through improved standards, guidance and new system implementations.
5. Develop and issue a series of guidance documents on:
 - (a) Climate change monitoring;
 - (b) Climate variability monitoring;
 - (c) Metadata and homogeneity;
 - (d) Human health;
 - (e) Urban and building climatology.
6. Develop satellite and in situ requirements for operational climate monitoring and applications.
7. Update technical documents and notes that had been identified as requiring revision or replacement. Those were:
 - (a) *Review of Urban Climatology 1968-1973* (WMO-No. 383), Technical Note No. 134; *Urban Climatology and its Relevance to Urban Design* (WMO-No. 438), Technical Note No. 149; *Application of Building Climatology to the Problems of Housing and Building for Human Settlements* (WMO-No. 441), Technical Note No. 150; *Guidance Material on the Calculation of Climatic Parameters used for Building Purposes* (WMO-No. 665), Technical Note No. 187;
 - (b) *Meteorological Aspects of the Utilization of Solar Radiation as an Energy Source* (WMO-No. 557), Technical Note No. 172; *Meteorological Aspects of the Utilization of Wind as an Energy Source* (WMO-No. 575, Technical Note No. 175);
 - (c) *Economic Benefits of Climatological Services* (WMO-No. 424), Technical Note No. 145;
 - (d) *Calculation of Monthly and Annual 30-year Standard Normals* (WMO/TD-No 341), WCDP No. 10;
 - (e) The WMO publication on the number of thunderstorm days.
8. Lead an effort to establish an internationally acceptable 'continuous scale' ENSO index. CCI is investigating this through collaboration with CLIVAR and other international organizations.

The president reminded the Executive Council that the Commission was organizing a technical conference on the climate as a resource prior to its next session in late 2005.

ANNEX V

Annex to paragraph 9.18 of the general summary

TERMS OF REFERENCE OF THE EXECUTIVE COUNCIL ADVISORY GROUP OF EXPERTS ON TECHNICAL COOPERATION

Proposed amendments

- (a) To advise on policy regarding all technical cooperation matters, including VCP, the level of funding and implementation of technical cooperation, mobilization of resources, and the overall structure and execution of the Programme;

- (b) To advise on current trends regarding priorities of external funding sources, potential funding organizations and methods of access to funding;
- (c) To advise on new opportunities for activities in technical cooperation, including new approaches and new sources of external funding, and contribute to resource mobilization efforts;
- (d) Concerning the VCP:
 - (i) To advise on further enhancement of the management and efficiency of the VCP; and
 - (ii) To identify and advise on requirements that could be met with VCP support, including the VCP(F);
- (e) To advise on the development and implementation of the WMO programme for the LDCs, to monitor the progress made and to assist in the mobilization of resources for the NMHSs of the LDCs;
- (f) To promote technical cooperation activities in the countries and the regions in close consultation with regional economic and geopolitical groupings; and
- (g) To advise on the performance of technical cooperation activities in support of other WMO Programmes, in particular the WMO Natural Disaster Prevention and Mitigation Programme.

ANNEX VI

Annex to paragraph 9.20 of the general summary

PROPOSED AMENDMENTS TO THE RULES OF THE WMO VCP (adopted by EC-XXXV and amended by EC-XLVIII and EC-L)

Amendments (underlined) are proposed under the following paragraphs of the Rules of the WMO VCP:

Formulation of proposed projects

12. Proposed projects in the fields of cooperation given in paragraph 7* shall be based on official requests received from Members. Each request for equipment and services will specify the following details:

- (a) Purpose and description of the project;
- (b) Reason why other sources of support cannot be expected;
- (c) Overall goal(s) (explanation of how the project fits into the implementation of the WMO Programme activities given in paragraph 7 *within the framework of the ongoing Long-term Plan);
- (d) Expected outcomes (global, regional or national benefits to be expected from the project);
- (e) Outline of a development plan of the Meteorological or Hydrological Service, including related procurement plans from other sources and information on the existing facilities and expertise;
- (f) Nature and scope of national contribution to the project, for continued operation;
- (g) Nature and scope of VCP assistance requested, with budget proposal;
- (h) Estimated duration to complete the project including training, if any;
- (i) Project partnerships, if any;

Details requested in sub-paragraph (e) will include information on facilities related to the project already available. Details requested in sub-paragraph (f) will include budget support planned for spare parts and consumables after the initial operation and information on particular problems to be expected with customs clearance or reimbursement of taxes by the Meteorological or Hydrological Service to the government for countries where applicable.

The Secretary-General may prepare VCP requests on behalf of Groups of Members.

Procedures for implementation of projects

20. The following principles shall be incorporated in the agreements between WMO and the Members being provided with cash, equipment or services under the VCP:

...

- (g) The agreement shall specify that after implementation of the project, a report will be drawn up and signed by both cooperating parties stating that the equipment is operational, the project completed and the operating Member assumes responsibility for continued operation of the equipment from national resources. The report should include summary of outcomes; assessment of the project; unforeseen consequences; and follow-up activities or projects for sustainability. The agreement shall also specify the arrangements for periodic reporting by the Member concerned to the Secretary-General on the ongoing effectiveness of the project; the period for submitting reports will depend on the types of equipment provided.

Paragraph 7 refers to the fields of cooperation covered by the VCP, viz., the implementation of the WWW; the granting of short-term and long-term fellowships; etc.

ANNEX VII
Annex to paragraph 9.22 of the general summary

VCP(F) STATUS AND PROPOSALS FOR ALLOCATIONS IN 2004
(United States dollars)

as of 31/12/03

Currently active projects and new proposed projects	Allocations approved by EC 1968-2001	Expenditure in previous years 1968-2001	Allocations and adjustments approved by 2002-2003	Balance after 2002-2003 allocations (01/01/02)	Expenditure and obligations 2002-2003 (excluding admin. costs)	Balance (31/12/03)	Allocations and adjustment for approval by EC-LVI for 2004	Balance after 2004 allocations
1 VCP spares/shipping of equipment in good working condition	583 750	538 123	10 000	55 627	9 393	46 234	-10 000	36 234
2 Expert services	1 339 300	1 283 640	0	55 660	44 933	10 727	20 000	30 727
3 Short-term fellowships	2 397 200	2 419 267	220 000	197 933	184 742	13 191	90 000	103 191
3.1 Group training activities	20 000	14 845	20 000	25 155	3 170	21 985	10 000	31 985
4 TCDC activities	453 285	445 641	45 000	52 644	47 408	5 236	20 000	25 236
5 Improvement of GTS (general)	72 841	20 769	-10 000	42 072		42 072		42 072
5.1 Improvement of GTS Caribbean	139 020	89 961	-30 000	19 059		19 059		19 059
5.2 Improvement of GTS Asia/Pacific	169 900	109 290	-20 000	40 610	10 712	29 898		29 898
5.3 Improvement of GTS Africa	619 995	606 072	30 000	43 923	9 719	34 204		34 204
5.4 Improvement of GTS South America	367 900	339 039	-10 000	18 861	1 441	17 420		17 420
5.5 Improvement of GTS South-East RA VI	196 750	171 781	0	24 969	13 765	11 204	10 000	21 204
5.6 Improvement of GTS central and eastern Europe/Newly Independent States	61 213	31 994		29 219	6 410	22 809		22 809
6 Improvement of observing system of GOS and GCOS (general)	434 729	429 912	90 000	94 817	79 549	15 268	40 000	55 268
6.1 Upper-air stations in central and eastern Europe/Newly Independent States	382 000	367 482	40 000	54 518	22 550	31 968	20 000	51 968
7 Improvement of GDPFS	120 000	113 158	20 000	26 842	3 339	23 503		23 503
8 Agricultural meteorology activities	65 000	54 063		10 937		10 937		10 937
9 Support to CDMS and climatological activities	143 500	112 829	0	30 671	1 849	28 822	10 000	38 822
10 Mitigation of natural disasters	80 000	49 047	0	30 953	1 800	29 153	-10 000	19 153
10.1 Emergency disaster assistance	80 000	37 724		42 276	4 415	37 861		37 861
11 ASMC	101 000	67 569	-20 000	13 431		13 431	-5 000	8 431
12 ACMAD	180 000	165 016	30 000	44 984	41 479	3 505	20 000	23 505
13 EAMAC	60 000	59 764	10 000	10 236	1 853	8 383		8 383
14 Operational hydrology activities	145 000	135 229	30 000	39 771	22 187	17 584	10 000	27 584
15 Improvement of satellite reception	10 000	1 681	10 000	18 319	8 754	9 565	10 000	19 565
16 Internet capabilities	60 000	19 160	-5 000	35 840		35 840	5 000	40 840
17 Year 2000 problem (closed)	40 000	34 440	-5,560	0		0		0
18 Reserve	10 332	4 764	-4 439	1 129		1 129		1 129
Transfer to LDC TF as agreed by Cg-XIV			20 000	20 000	20 000	0		0
TOTAL	8 332 715	7 722 260	470 001	1 080 456	539 468	540 988	240 000	780 988

ANNEX VIII

Annex to paragraph 11.2 of the general summary**IMPLEMENTATION PLAN****1. Introduction**

The WMO Sixth Long-term Plan approved during the Fourteenth World Meteorological Congress contains a description of the objectives, the general activities to develop in the next financial period and the expected results of the new major programme on Natural Disaster Prevention and Mitigation (DPM). The Implementation Plan, based on the Sixth Long-term Plan, contains strategic priorities and a description of how the objectives will be attained, namely, the establishment of a WMO integrated plan to organize and coordinate the activities of the different WMO Programmes contributing to natural disaster prevention and mitigation. It acknowledges and builds upon the internationally-recognized areas of strength within WMO, specifically scientific excellence, innovative technological development, consistent high-quality data collection, continuous and effective forecast and warning services and responsiveness to community needs.

The purpose of this cross-cutting programme is to ensure integration of relevant activities being carried out under the various WMO Programmes in the area of natural disaster prevention and mitigation, and to provide the effective coordination of the pertinent WMO activities with related activities of international, regional and national organizations involved, including civil defense organizations. The programme should also provide scientific and technical support to the WMO actions in response to disaster situations. The Programme's activities should place an emphasis on pre-disaster preparedness and be based on the activities within a number of WMO Programmes, such as the Public Weather Services (PWS) and other WMO scientific and technical programmes that concerned mitigation of, and preparedness for, natural disasters of meteorological or hydrological origin like the World Weather Watch Programme (WWW), the Tropical Cyclone Programme (TCP), the World Climate Programme (WCP), the World Climate Research Programme (WCRP) and the Hydrology and Water Resources Programme (HWR).

The programme will serve as a vehicle for making essential input to the implementation of the WMO Strategy 1 — enabling the delivery of increasingly accurate and reliable warnings of severe events, especially through coordinating WMO actions towards improving mechanisms and communication for the delivery, use and evaluation of warnings, provision of prompt advice and assistance to Members; and enhancing effective international cooperation and collaboration.

The most urgent tasks in the area of natural disaster prevention and mitigation are, at this stage, to develop and initiate the programme and the preparation for the World Conference on Disaster Reduction, to be held in Kobe, Hyogo, Japan, 18-22 January 2005. For this activity, it is necessary to ensure close collaboration between WMO and the Secretariat of the International Strategy for Disaster Reduction (ISDR) within the framework of the Strategy. Due to the resources available and to the fact that the programme is in the first stage of its development, the different activities proposed in this document needed prioritization. The criteria for prioritization are based on three types of measures: basic, urgent and critical.

Based on those criteria, three actions will be initiated in the first half of 2004: establishment of the network of experts, development of promotional and informational materials including a Website and the establishment of a process to enhance the crosscutting coordination among the Secretariat.

2. The vision

The vision for the Natural Disaster Prevention and Mitigation Programme is that WMO and NMHSs will be recognized, now and in the future, internationally and nationally respectively, as the single, ultimate authoritative source for early warnings of, and information on, hydrometeorological phenomena and climate assessment for natural disaster prevention and mitigation. Furthermore, NMHSs will be recognized as a major component of the national infrastructure development in support of disaster risk reduction and emergency management.

3. Overall objectives

The overall objectives of the Natural Disaster Prevention and Mitigation Programme are:

- (a) To develop an effective and efficient mechanism to provide, in an integrated fashion, the WMO response to the requirements and needs of Members and the international community concerning natural disaster reduction in light of related developments;
- (b) To encourage and assist Members in developing/enhancing NMHSs contributions to national disaster preparedness programmes in a more integrated manner, especially in coordination with national civil defense/disaster coordination offices;
- (c) To ensure that activities and results of relevant WMO Programmes are fully used in the process of WMO's participation in ISDR;

- (d) To enhance WMO's role and recognition as one of the leading international organizations dealing with disaster reduction, in particular through active participation in high-level global forums and related activities.

4. The strategy

The implementation plan, aimed at attending the overall objectives set out in the Sixth Long-term Plan, is based on four strategies:

- (a) An efficient inter-programme coordination. This is to be achieved by the preparation of an integrated plan of activities, including all the relevant activities from the different WMO Programmes contributing to the area of natural disaster prevention and mitigation;
- (b) To enhance NMHSs contribution to disaster risk reduction;
- (c) Coordination of WMO activities with other international organizations;
- (d) To enhance the image of WMO and the NMHSs.

The Secretary-General has set up an internal steering committee in connection with the programme. For the purpose of this implementation plan, the term "Programme Team" refers to officers that may be designated by the Secretary-General to carry out work needed to execute the plan.

5. The activities

The implementation activities will include:

5.1 Strengthening the coordination of relevant activities and projects within the WMO scientific and technical programmes and making fuller use of pertinent achievements made within these programmes

The Natural Disaster Prevention and Mitigation Programme is a cross-cutting programme within the technical and scientific programmes in WMO. Strong participation from all programmes is expected. The Steering Committee will coordinate appropriate participation from all the relevant programmes in the various activities of the DPM. It is recognized that this programme is also cross-cutting within the wider disaster management community at the national and international levels. It is therefore expected that many activities will be conducted in support of and/or in partnership with other national and international organizations.

In order to establish the coordination mechanisms for integrating disaster risk management activities within the WMO Programmes, a project supporting the WMO activities in the area of natural disaster risk reduction, entitled "Disaster Risk Management of Hazards of Hydrometeorological Origin", will be initiated and conducted by the Programme Team. The project is expected to apply internationally established disaster risk management principles and standards.

A set of guidelines for disaster risk management for hazards of hydrometeorological origin will be produced to assist NMHSs. The guidelines will be supported with examples from a series of case studies of a number of natural disasters of hydrometeorological origin identified by NMHSs or by the regional expert groups (see below).

This project will include activities planned by different programmes already approved in the Sixth Long-term Plan. In the project preparation phase, synergies and gaps within these existing programme activities will be identified, built on and addressed as required. The activities of this project should cover all the different areas of the framework to guide and monitor disaster risk reduction.

The Programme Team will prepare a first draft of the plan by the end of July 2004. The Steering Committee will adopt the plan and will evaluate the results and review the plan annually. The Programme Team will be responsible for the implementation of the plan. To facilitate the evaluation and review process a centralized internal mechanism for gathering and collating all relevant information related to natural disaster prevention and mitigation needs to be established. The Programme Team will work out on this mechanism by July 2004.

Expected outputs

The expected outputs of these activities will be guidelines on natural disaster risk management. Summary documents will be prepared as an additional output targeted at NMHSs and policy makers at the national and international levels. Biannual reports on the activities and the case studies will be published and relevant information will be included in the Web site.

5.2 Liaison with appropriate proper public information activities to ensure that WMO's role in, and contribution to, international efforts to reduce disasters is more fully recognized

Promoting visibility

A comprehensive promotional plan to enhance the visibility of WMO and NMHSs at the national, regional and international levels in the area of natural disaster prevention and mitigation will be prepared with the Communication and Public Affairs Office (CPA) and Public Weather Services (PWS) Programme. This plan, that will be submitted to the Steering Committee in the last quarter of 2004, will be evaluated and updated

annually by the Steering Committee based on the results reflected in an annual report. This plan will be part of the WMO integrated plan on natural disaster prevention and mitigation.

DPM Web site

The DPM and the relevant activities of various WMO Programmes together with significant contributions from Members in the area of natural disaster prevention and mitigation need to be well disseminated. Therefore, there is an urgent need for the development of a DPM Web site that can be accessed via WMO's Web site.

The content of the Web site is critical to WMO's ability to establish visibility and provide key information about its relevance in this area. Therefore, the content must be carefully chosen to ensure that sufficient information becomes available at different stages of the development of the programme. Initially, the content should include information such as an explanation of the DPM (derived from Sixth LTP), WMO's strategic priorities and other basic information. The Web site and its content will be updated and improved throughout all stages of the programme. Furthermore, important links to the existing WMO Web site on severe weather and other relevant severe-weather Web sites operated by Members or groups of Members are to be identified and provided. Over time, a dynamic version of the Web site will be developed (subject to available resources) whereby WMO Members collectively will be able to communicate to the international community information related to the impacts of hydrometeorological phenomenon in real time.

It is expected that the Steering Committee will provide guidance on the content of the DPM Web site. Links to different relevant institutions should be created. A list of the network of the focal points (see below) will also be included. Contributions from the group of regional experts (see below) are also expected.

The initial version of the Web site should be ready by July 2004. It will be revised and improved on an ongoing basis, subject to guidance from the Executive Council.

Other publicity material

Other publicity material such as a pamphlet and a brochure for promoting the DPM prior to the World Conference on Disaster Reduction should also be prepared.

Expected outputs

The expected outputs are: the promotion plan and the results of its implementation reflected in the annual reports; the inclusion of adequate information on the natural disaster prevention and mitigation activities of WMO on the WMO Web page in the area of the DPM; and the publicity material prepared.

5.3 Ensuring the provision of expert advice and other appropriate guidance on the issues relating to natural disaster prevention and mitigation, including risk assessment, which cross-cut WMO Programmes and activities of the WMO technical commissions

Regional expert groups

Groups of regional experts need to be established. These groups should consider natural disaster prevention and mitigation problems within the context of specific regional characteristics and needs and make recommendations as well as contribute to the preparation of appropriate and targeted regional plans of action. Regional experts should be nominated by Permanent Representatives. From this group of nominees, regional association presidents should then select a team of approximately five experts with a range of specialist skills to contribute. Ideally, this would include experts from both the physical and social sciences such as meteorologists, hydrologists, climatologists, public policy experts and sociologists with socio-economic analysis background.

These regional expert teams would also be responsible for identifying, evaluating and exchanging information on current best practice policy and activities relating to natural disaster prevention and mitigation; proposing and reviewing regional contingency plans in case of emergency and disaster; the establishment of adequate mechanisms of regional discussion namely through the use of the Internet; and proposing regional plans to assist Members to develop or enhance natural disaster prevention and mitigation measures. It is also expected that they will participate in the case studies (see activity 5.1). These teams will be expected to communicate on a regular basis via correspondence (e.g., using the Internet). They should meet when required according with adequate resources available.

The regional expert groups will be established by no later than the last quarter of 2004. The activities to be implemented will be part of the WMO integrated plan on natural disaster prevention and mitigation. Regional experts groups should articulate with regional associations and regional programmes. It is expected that they will form linkages with other existing groups.

It is acknowledged that the effective functioning of these groups will be dependent on their acquiring adequate resources.

Expert meetings

It is proposed that regional meetings of experts should be held, three in each biennium of this financial period. Nevertheless, through the integrated plan for WMO's activities in natural disaster prevention and mitigation, the

relevant planned meetings of the different programmes will also be used to obtain expert advice and guidance. The Programme Team will prepare a first draft of the list of meetings as part of the integrated plan by the end of July 2004.

Coordination with technical commissions and regional associations

Advice is also needed from the technical commissions and the regional associations to ensure an adequate coordination of the programme with these bodies and to guide the programme activities and the integrated plan. Inputs are expected from their meetings and from the annual Meeting of the Presidents of Technical Commissions. Contributions are also expected from working groups with expertise in their relevant areas of work.

Expected outputs

The expected outputs of these activities will include improvements to the WMO integrated plan on natural disaster prevention and mitigation. The results will be reflected in the biannual reports on the plan and the establishment of groups of regional experts, the establishment of mechanisms of regional discussion and the results of their work including best practices will be identified.

5.4 Continuous update of information on the integrated activities of WMO in the area of natural disaster prevention and mitigation and provision of this information to Members

Network of focal points

Natural disasters affect all countries. However, due to their different physical and socio-economic characteristics their vulnerability and natural disaster prevention and mitigation needs and interests are different. The NMHSs need to play a very important natural disaster prevention and mitigation role at the national and regional levels. It is essential to ensure that all Members receive the information available in the Secretariat or from other Members in addition to the information available on the Web site. This should be achieved in a proactive way based on subregional and regional networks that will facilitate the exchange of information, the analysis of common problems and the exchange of solutions and best practices, etc. In this connection, each Member should identify a focal point. Ideally, this person should be located within the NMHS.

Collectively, these officers will form regional and subregional networks of focal points. Focal points should also disseminate the relevant information and promote the development of activities for natural disaster prevention and mitigation at the national level. This network will be established in the second half of 2004. Letters to the Permanent Representatives asking for the nomination of focal points should be prepared immediately after the adoption of the implementation plan by the Executive Council.

The groups should establish means of communication at the subregional and regional levels. The Programme Team should establish an internal mechanism for organizing and coordinating means of communication. This network should articulate at the regional level with the regional associations and regional programmes.

Mechanism for dissemination of relevant information

To establish a proactive mechanism for the dissemination of relevant information on natural disaster prevention and mitigation through the network of focal points, the Programme Team should submit a draft proposal to the national focal points and to the Steering Committee. An operative document will be prepared accommodating the recommendations from the different discussions in the second half of 2004.

The mechanism should be evaluated and reviewed by the focal points and, annually, by the Steering Committee.

Expected outputs

The expected outputs from these activities will be the establishment of the focal points network, the mechanism for dissemination of the relevant information and biannual reports on their activities.

5.5 Assist Members in related capacity-building efforts, including in areas of project development and human resources enhancement

Capacity-building activities

The regional plans of action proposed by the regional experts will assist Members to build capacity in their natural disaster prevention and mitigation activities at the national and regional levels. Knowledge management, regional training events, workshops and seminars are already planned as part of the activities of the different WMO Programmes in the area of natural disaster prevention and mitigation. The Programme Team will do the analysis of these events looking for synergies and identifying gaps. The necessary events will be planned with the advice of the regional expert groups whenever the gaps could not be covered by the adjustment of some of the already planned actions. The planned events will be part of the WMO integrated plan on natural disaster prevention and mitigation to be prepared by the Programme Team and will be reviewed annually.

Expected outputs

The expected outputs of these activities are the training events and the number of trainees, workshops and seminars held in the various regions that will be reflected in an annual report.

5.6 Preparation of integrated planning and reporting documents concerning WMO's activities in natural disaster prevention and mitigation

The Programme Team will analyse the activities developed by the different Programmes in the area of natural disaster prevention and mitigation and report on them to the Steering Committee. The Team will identify synergies and gaps within the various activities and, where applicable propose integrated actions to the Steering Committee.

Expected outputs

The integrated actions and the results of the activities of the different programmes will be reflected in an annual report.

5.7 Ensuring prompt and adequate response to the requirements related to the WMO participation in the ISDR and in other international and regional initiatives**Strategy for cooperation with other international organizations**

There are many international organizations working in the area of natural disaster prevention and mitigation. WMO already has well established cooperative links with many of these as a member of the Inter-agency Task Force on Disaster Reduction under the umbrella of ISDR; member of the ProVention Consortium and special supporting organization of the International Consortium on Landslides (ICL) and through other ad hoc schemes of cooperation. However, in order to enhance its role in ISDR and other international and regional initiatives WMO should identify the added value for the organization and for natural disaster prevention and mitigation that can be expected by its participation in those organizations and on specific bilateral or multilateral partnerships with other organizations such as UNDP, WHO, IFRC and OCHA.

It is critical that strategic partnerships and collaborations are established in a focused and prioritized way based on key factors, such as proactive evaluation of other organization's activities, identification of mutual benefits of the collaboration and evaluation of their commitment to such collaboration. The Programme Team in the last quarter of 2004 should submit to the Steering Committee a proposal on WMO's strategy for international cooperation in the area of natural disaster prevention and mitigation. The establishment of cooperation mechanisms with regional organizations and regional offices of international organizations is also needed to ensure a more adequate response at the regional and national levels.

Cooperation with the other international organizations

Based on the strategic proposal for partnerships, actions will be taken to strengthen or develop strategic collaborations with target organizations, on a bilateral or a multilateral basis depending on the circumstances. This will be accomplished alongside the establishment of organizational mechanisms that would facilitate effective ongoing collaboration with the target partners. A mechanism for continuous evaluation and review will also be prepared with partners. The Programme Team will be responsible for the implementation of the adopted plans. Evaluation of WMO activities and a review of the plans should be accomplished by the Steering Committee based on the reports of the Programme Team.

Expected outputs

The expected outputs of these activities will be the strategic document, including the work plans for collaboration activities with the different international, regional and national organizations, and the results of the implementation of the plans reflected in the biannual reports.

5.8 Establishment of a natural disaster information system

A WMO natural disaster information system will be established to enable WMO and its Members collectively to provide information effectively on the magnitude and characteristics of hydrometeorological phenomena giving rise to disasters to the media and the international community.

The details of such an information system will be designed carefully to ensure timely availability of relevant information to all target users. For example, this information system may be built based on reports of NMHSs on weather systems having an impact on their economy and society and on information available in relevant databases. A comprehensive study should be conducted to develop recommendations on the scope and the specifications (e.g., type of information, distribution, accessibility, etc.) to ensure that the system meets the needs of Members and target users. The details on the scope and the specifications of the information system could be defined with the input of an expert meeting.

Expected outputs

The expected outputs of these activities will be the results of the comprehensive study, an operational natural disaster information system and the reports of the activities in this field.

5.9 Establishment of an inventory of relevant best practices

A WMO inventory on natural disaster prevention and mitigation best practices will be established to ensure effective and adequate information to the Members and to the different WMO Programmes on the relevant best practices in disaster prevention and mitigation related to weather, water and climate. The inventory will be based on the model of the Hydrological Operational Multipurpose System (HOMS). It should include multiple components such as wording warnings in understandable language and post impact assessment processes.

The inventory will be built based on the information provided by Members on their best practices in all areas of the framework to guide and monitor disaster risk reduction. The information from Members will be provided at the regional level through the network of focal points supported by the regional experts groups.

It is acknowledged that this is a dynamic inventory and that there is a need to include the output of new predictive technologies, science and methodologies as they emerge. It is further acknowledged that there is a need to include a mechanism for assisting the transfer of knowledge and information to developing countries.

Expected outputs

The expected outputs of these activities will be the operational inventory on best practices and the reports of the activities in this field.

5.10 Emergency and disaster response activities

The Secretary-General has established the Emergency and Disaster Response Group (EDRG) within the WMO Secretariat, to assist, among other things, in the rehabilitation of meteorological and hydrological infrastructures in Member countries following a disaster. EDRG, according to the situation, can assemble an Emergency and Disaster Response Team (EDRT), and as appropriate, activate an Emergency Assistance Response Team (EART). The EART should provide assistance to NMHSs to ensure their continued ability to operate effectively during and after an emergency or disaster. The EDRT tasks include, among other things, establishing contact with relevant agencies and authorities within the United Nations system; arranging for the preparation of bulletins for distribution through NHMSs, regional centers and other international organizations; media interactions; and arranging briefing sessions for Geneva-based missions.

The Programme needs to play a significant role in the emergency and disaster response activities, which are important to strengthen the visibility of WMO. It is acknowledged that the cooperation of regional associations should contribute to improve these activities. Support for the inclusion of NMHSs representatives on UN/OCHA assessment teams to support weather service activities and needs is recommended

The activities of the EDRG will be discussed with the regional expert groups during regional meetings.

Expected outputs

The enhancement of the activities of EDRG and its activities will be included in annual reports on this activity.

Expected results from the implemented activities

It is expected that these implementation activities will lead to:

- (a) Enhance coordination of WMO activities and projects related to natural disaster prevention and mitigation;
- (b) Improve provision to Members of consolidated advice, guidance and information on the issues relating to disaster reduction;
- (c) Enhance WMO's role in disaster reduction visibility and recognition of this role at the international level including through ISDR.

ANNEX IX

Annex to paragraph 13.1.4 of the general summary

EVOLVING ROLE OF WMO

		<i>Importance</i>		
		<i>HIGH</i>	<i>Medium</i>	<i>Low</i>
<i>Feasibility</i>	<i>High</i>	<p>Redefine WMO's ambit to cover Earth System Science</p> <p>Increase general responsiveness of WMO</p> <p>Improve the "mode and operation" of WMO</p> <p>Develop strategic alliances within the United Nations System in the areas of weather, climate and hydrology</p> <p>Promote active partnership in the areas of hydrology, atmospheric chemistry, desertification, and disaster reduction through JCOMM-like initiatives</p> <p>Take stronger and more feasible measures for the involvement of private sector, academia and NGOs in the work of the Organization</p> <p>Increase transparency of EC</p> <p>Have more free discussion time on emerging issues in EC</p> <p>Optimize Secretariat support to the work of the technical commissions and regional associations</p> <p>Take re-engineering measures at the WMO Secretariat to cope with globalization and other challenges such as GEO initiative to ensure key role of WMO within geosciences</p> <p>Give more attention to capacity-building activities, particularly enhancing infrastructural facilities of the least developed countries</p> <p>Fully exploit ICT</p> <p>Raise profile of, and resourcing of, core scientific and technical programmes</p> <p>Take a lead on GEO</p> <p>Enhance WMO's visibility through ministerial level summits and conferences</p>	<p>Further encourage cross-commission teams (e.g., FWIS)</p> <p>Introduce a method of giving Congress more information on candidates for EC (e.g., specialization)</p> <p>Involve an umbrella private sector association as observer in work of WMO</p>	

		<i>Importance</i>		
		<i>High</i>	<i>Medium</i>	<i>Low</i>
<i>Feasibility</i>	<i>Medium</i>	<p>Establish clear priorities</p> <p>Retrieve important role of WMO in global activities for Implementation Plan of the World Summit on Sustainable Development</p> <p>Amend WMO Convention</p> <p>Amend WMO's Convention to include the wider ambit</p> <p>Incorporate free exchange in the Convention</p> <p>Establish provision for Protocols</p> <p>Reduce EC agenda</p> <p>Agree on mechanism for bringing additional remit under the WMO umbrella (e.g., seismology)</p> <p>Review EC subsidiary bodies, provide for "sunset clause"</p> <p>Take a lead on climate</p> <p>Avert politicization of WMO</p> <p>Strengthen the role and operation of NMHSs to achieve stronger position at the national level</p> <p>Raise profile of hydrology within WMO</p> <p>Introduce a quality management system into WMO</p> <p>Add hydrology position to EC</p>	<p>Focus regional association activities and resources on regional matters</p> <p>Define more clearly programme of work of regional associations, including during intersessional period</p> <p>Incorporate Geneva Declaration in Convention</p> <p>Create a new Technical Commission for Public Weather Service or for Applications</p> <p>Make due changes in the name of the Organization to represent better its mandate within geosciences activities</p> <p>Establish a "home" for seismology</p>	<p>Exclude positions of WMO Presidents and Vice-presidents from being part of regional representation in EC</p> <p>Partial election of EC members directly by Regions</p>
	<i>Low</i>	<p>Top-level restructuring of the technical commissions</p> <p>Reduction in number of permanent constituent bodies of WMO, making better use of timebound working groups with specific tasks</p>	<p>Re-regionalizing regional associations</p>	

APPENDIX A

LIST OF PERSONS ATTENDING THE SESSION

A. Members of the Executive Council

A.I. Bedritsky	President
A.M. Noorian	First Vice-President
T.W. Sutherland	Second Vice-President
M.A. Rabiolo	Third Vice-President
M.S. Mhita	President RA I
A. Majeed. H. Isa	Acting President RA II
R. Michelini	Acting President RA III
A.J. Dania	President RA IV
Woon Shih Lai	President RA V
D. Keuerleber-Burk	Acting President RA VI

M.L. Bah	Member
J.-P. Beysson	Member
Q.Z. Chaudhry	Member
Chow Kok Kee	Member
M. Couchoud Gregori (Ms)	Member
Qin Dahe	Member
M. D. Everell	Member
P.D. Ewins (8-16/6)	Member
U. Gärtner	Member
B. Kassahun	Member
J.J. Kelly, Jr.	Member
J. Lengoasa	Member
G.B. Love (8-18/6)	Acting Member
J. Lumsden	Member
F.P. Mote	Member
A.D. Moura	Acting Member
J.R. Mukabana	Member
K. Nagasaka	Acting Member
A. Ndiaye	Member
I. Obrusnik	Acting Member
H. Oliva	Member
J.K. Rabadi	Acting Member
D. Rogers (17-18/6)	Acting Member
B.T. Sekoli	Member
R. Sorani	Member
S.K. Srivastav	Member
E. Zárate	Member
J. Zillman (8/6 a.m.)	Member

B. Alternates and advisers

A.V. Frolov	Alternate to A.I. Bedritsky
V.O. Bakumov	Adviser to A.I. Bedritsky
V.P. Meleshko	Adviser to A.I. Bedritsky
M.V. Petrova (Ms)	Adviser to A.I. Bedritsky (part-time)
V.A. Trenin	Adviser to A.I. Bedritsky (part-time)
Z.D. Kopaliani	Adviser to A.I. Bedritsky (part-time)
A.A. Lyakhov	Adviser to A.I. Bedritsky (part-time)
I.V. Shapovalov	Adviser to A.I. Bedritsky (part-time)
A. Pirogov	Adviser to A.I. Bedritsky (part-time)

A. Pankin	Adviser to A.I. Bedritsky (part-time)
N.V. Lozinsky	Adviser to A.I. Bedritsky (part-time)
N. Sikachev	Adviser to A.I. Bedritsky (part-time)
M. Kochetkov	Adviser to A.I. Bedritsky (part-time)
M.R. Amirsefat	Alternate to A.M. Noorian
P. Pourkiani	Adviser to A.M. Noorian
R. Mahmoodzadeh	Adviser to A.M. Noorian
F. Sambula	Adviser to T. Sutherland
F.P. Requena	Alternate to M.A. Rabiolo
P. Tibaijuka	Adviser to M.S. Mhita
Lam Chiu-Ying	Alternate to A.M.H. Isa
A. Tarrar Moh'd	Adviser to A.M.H. Isa
S. Bukhari	Adviser to A.M.H. Isa
C. Fuller	Adviser to A.J. Dania
A. Ngari	Adviser to Woon Shih Lai
R. Prasad	Adviser to Woon Shih Lai
M. Jónsson	Adviser to D. Keuerleber-Burk
A. Rubli	Adviser to D. Keuerleber-Burk
P. Garnier	Adviser to D. Keuerleber-Burk (part-time)
M.H. Doss	Alternate to M.M. Arafa
A.H. Ibrahim	Adviser to M.M. Arafa
M. Elewa	Adviser to M.M. Arafa
F. Duvernet	Alternate to J.-P. Beysson
O. Martin	Adviser to J.-P. Beysson
Low Kong Chiew	Adviser to Chow Kok Kee
J. Segovia	Alternate to M. Couchoud Gregori
M. Gómez	Adviser to M. Couchoud Gregori
Yu Jixin (8/6)	Alternate to Qin Dahe
Zheng Guoguang (9-18/6)	Alternate to Qin Dahe
Zhao Yangling	Adviser to Qin Dahe
Guo Yaxi (Ms)	Adviser to Qin Dahe
Shen Xiaonong	Adviser to Qin Dahe (part-time)
Zhang Jianyun	Adviser to Qin Dahe (part-time)
Shi Peiliang	Adviser to Qin Dahe (part-time)
Zheng Jiangping	Adviser to Qin Dahe (part-time)
Xia Guozhong	Adviser to Qin Dahe (part-time)
Zhang Wenjian	Adviser to Qin Dahe (part-time)
Chen Zhenlin	Adviser to Qin Dahe (part-time)
Li Dongyan	Adviser to Qin Dahe (part-time)

C.B. Barrett	Regional Association IV
R. Raj	Regional Association V
J. Kubát	Regional Association VI

E. Invited experts

J. P. Bonin
M-C Dumesnil (Ms)
S. Irwin
F. Logerot
G. Miller
R. Pachauri

F. Lecturers

G. Asrar
C.C. Lautenbacher
T. Palmer

G. Representatives of international organizations

H. Molin-Valdés (Ms)	United Nations International Strategy for Disaster Reduction (ISDR)
P. Basabe Y. Ono	
A. Levintanus	United Nations Environment Programme (UNEP)
A. Fischer B. Lee (Ms)	Intergovernmental Oceanographic Commission (IOC)
A. Kignaman-Soro I. Also	African Centre of Meteorological Applications for Development (ACMAD)
B. Dieterink B. Sumner C. Charstone (Ms)	Association of Hydrometeorological Equipment Industry (HMEI)

A.V. Serrão	Agency of the Portuguese-speaking Countries and Territory of Macao in the Area of Climate and related Environmental Issues (CRIA)
M. Sissako	Agency for Air Navigation Safety in Africa and Madagascar (ASECNA)
V. Wege Nzomwita	African Union (AU)
T. Sutherland	Caribbean Meteorological Organization (CMO)
J.-P. Chalon	European Meteorological Services Network (EUMETNET)
T. Mohr	European Organization for the Exploitation of Meteorological Satellites (EUMETSAT)
E. Oriol-Pibernat (Ms)	European Space Agency (ESA)
B. Giles J. Teather T. Molina	International Association of Broadcast Meteorology (IABM)
I. Oliounine	International Ocean Institute (IOI)
M. Poirey (Ms)	International Organization of the Francophonie (OIF)
R. List	International Union of Geodesy and Geophysics (IUGG)
Mahmoud El Sayed	League of Arab States (LAS)

APPENDIX B

LIST OF ABBREVIATIONS

ACMAD	African Centre of Meteorological Applications for Development
ACSYS	Arctic Climate System Study
ADM	Alternative Dissemination Method
AGRHYMET	Regional Training Centre for Agrometeorology and Operational Hydrology and their Applications
AMDAR	Aircraft Meteorological Delay Relay
AMMA	African Monsoon Multidisciplinary Analysis
AMP	Applications of Meteorology Programme
ANSEP	Air Navigation Services Economics Panel
AOPC	Atmospheric Observation Panel for Climate
AR4	Fourth Assessment Report
AREP	Aviation Report
AREP	Atmospheric Research and Environment Programme
ASAP	Automated Shipboard Aerological Programme
ASECNA	Agency for Air Navigation Safety in Africa and Madagascar
ATCM	Antarctic Treaty Consultative Meeting
AWG	Advisory Working Group
AWS	Automatic Weather Station
BIPM	International Bureau of Weights and Measures
BIP-MT	Basic Instrument Package for Meteorological Technicians
CAL	Computer-assisted Learning
CAeM	Commission for Aeronautical Meteorology
CAGM	Commission for Agricultural Meteorology
CAPMON	Canadian Air and Precipitation Monitoring Network
CAS	Commission for Atmospheric Sciences
CBD	Convention on Biological Diversity
CBS	Commission for Basic Systems
CCI	Commission for Climatology
CDMS	Climate Database Management System
CEOP	Coordinated Enhanced Observing Period
CGMS	Coordination Group for Meteorological Satellites
CHy	Commission for Hydrology
C/IAIS	Chief, Internal Audit and Investigation Office
CILSS	Permanent Inter-State Committee for Drought Control in the Sahel
CIMO	Commission for Instruments and Methods of Observation
CiC	Climate and Cryosphere
CLICOM	Climate Computing
CLIPS	Climate Information and Prediction Services
CLIVAR	Climate Variability and Predictability
CLS	Conferences and Language Services Department
CMA	China Meteorological Administration
CMDL	Climate Monitoring and Diagnostic Laboratory
CNES	National Centre for Space Studies
COP	Conference of the Parties
COPES	Coordinated Observation and Prediction of the Earth System
COSNA	Composite Observing System for the North Atlantic
COST	European Cooperation in the Field of Scientific and Technical Research
CPD	Conferences, Printing and Documentation Department
DARE	Data Rescue
DCPC	Data Collection or Product Centre

DIVERSITAS	International Programme of Biodiversity Science
DMC	Drought Monitoring Centre
DNA	Designated National Agency
DPFS	Data-processing and Forecasting System
DPM	Natural Disaster Prevention and Mitigation
<i>DWD</i>	<i>Deutscher Wetterdienst</i>
EAMAC	African School of Meteorology and Civil Aviation
EANET	Acid Deposition Monitoring Network in East Asia
EART	Emergency Assistance Response Team
EC	Executive Council
ECMWF	European Centre for Medium-Range Weather Forecasts
EDRG	Emergency and Disaster Response Group
EMEP	Cooperative Programme for the Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe
EMWIN	Emergency Managers Weather Information Network
ENSO	<i>El Niño</i> /Southern Oscillation
EOS	Earth Observation System
EPS	Ensemble Prediction System
ERP	Early Retirement Programme
ESA	European Space Agency
ESSP	Earth System Science Partnership
ETR	Education and Training
ETRP	Education and Training Programme
EUCOS	European Composite Observing System
EUMETNET	European Meteorological Network
EUMETSAT	European Organization for the Exploitation of Meteorological Satellites
EUROCONTROL	European Organization for the Safety of Air Navigation
5LTP	Fifth WMO Long-term Plan
FAO	Food and Agriculture Organization of the United Nations
FARO	Forum of Arctic Research Operators
FDP	Forecast Demonstration Project
FWIS	Future WMO Information System
GARP	Global Atmospheric Research Programme
GAW	Global Atmosphere Watch
GCM	General Circulation Model
GCOS	Global Climate Observing System
GDPFS	Global Data-processing and Forecasting Systems
GECR	Global Environment Change Research
GEF	Global Environment Facility
GEO	Global Earth Observations
GEOSS	Global Earth Observation System of Systems
GESAMP	Group of Experts on the Scientific Aspects of Marine Environmental Pollution
GEWEX	Global Energy and Water Cycle Experiment
GISC	Global Information System Centre
GLOSS	Global Sea-Level Observing System
GMA	Global Reporting and Assessment of the State of the Marine Environment
GMDSS	Global Maritime Distress and Safety System
GMS	Global Marine Assessment
GODAE	Global Ocean Data Assimilation Experiment
GOES	Geostationary Operational Environmental Satellites
GOOS	Global Ocean Observing System
GOS	Global Observing System
GPCC	Global Producing Centre
GRDC	Global Runoff Data Centre
GSN	GCOS Surface Network
GTN-H	Global Terrestrial Network — Hydrology
GTOS	Global Terrestrial Observing System
GTS	Global Telecommunication System

GUAN	GCOS Upper-air Network
GURME	GAW Urban Research Meteorology and Environment
HHWS	Health/Health Warning System
HMEI	Association of Hydrometeorological Equipment Industry
HOMS	Hydrological Operational Multipurpose System
HRMS	Human Resources Management Strategy
HWR	Hydrology and Water Resources
HWRP	Hydrology and Water Resources Programme
HYCOS	Hydrological Cycle Observing System
HYMES-TRACECA	Hydrometeorological Safety of TRACECA
IABP	International Arctic Buoy Programme
IAEA	International Atomic Energy Agency
IASC	International Arctic Science Committee
ICAO	International Civil Aviation Organization
ICL	International Consortium on Landslides
ICPAC	IGAD Climate Prediction and Applications Centre
ICSU	International Council for Science
ICT	Information and Communication Technology
ICTT	Intercommission Task Team
IFRC	International Federation of the Red Cross and Red Crescent Societies
IGAC	International Global Atmospheric Chemistry Programme
IGACO	Integrated Global Atmospheric Chemistry Observations
IGAD	Intergovernmental Authority on Development
IGAD-HYCOS	Intergovernmental Authority on Development-Hydrological Cycle Observing System
IGBP	International Geosphere-Biosphere Programme
IGOS	Integrated Global Observing Strategy
IGRAC	International Groundwater Resources Assessment Centre
IHDP	International Human Dimensions Programme
IMD	India Meteorological Department
IMO	International Meteorological Organization
IMOP	Instruments and Methods of Observation Programme
IMTN	Improved Main Telecommunication Network
IOC	Intergovernmental Oceanographic Commission
IOM	Instruments and Observing Methods
IOS	Integrated Observing Systems
IPA	Information and Public Affairs
IPAB	International Programme for Antarctic Buoys
IPCC	Intergovernmental Panel on Climate Change
IPY	International Polar Year
IRI	International Research Institute for Climate Prediction
ISC	International Seismological Centre
ISCS	International Satellite Communications System
ISDR	International Strategy for Disaster Reduction
IT	Information Technology
ITU	International Telecommunication Union
ITU-R	ITU Radiocommunication Sector
IUCN	World Conservation Union
IUGG	International Union of Geodesy and Geophysics
JCOMM	Joint WMO/IOC Technical Commission for Oceanography and Marine Meteorology
JCOMMOPS	JCOMM In Situ Observing Platform Support Centre
JCRP	Joint Climate Research Fund
JIU	Joint Inspection Unit
JMA	Japan Meteorological Agency
JOC	Joint Organizing Committee
JSC	Joint Scientific Committee
KMA	Korea Meteorological Administration

LDC	Least Developed Country
LSP	Linguistic Services and Publications Department
MAP	Mesocale Alpine Programme
MEDSEEME-PEP	Mediterranean South-Eastern Europe-Middle East —Precipitation Enhancement Project
METEOREX	Exhibition of Meteorological Instruments, Equipment and Services
MPERSS	Marine Pollution Emergency Response Support System
MSG	METEOSAT Second Generation
MTN	Main Telecommunication Network
NADP	National Atmospheric Deposition Program
NASA	National Aeronautics and Space Administration
NASDA	National Space Development Agency
NC	National Centre
NCDC	National Climatic Data Center
NEPAD	New Partnership for Africa's Development
NHS	National Hydrological Service
NMC	National Meteorological Centre
NMHS	National Meteorological and Hydrological Service
NMS	National Meteorological or Hydrometeorological Service
NOAA	National Oceanic and Atmospheric Administration
NWP	Numerical Weather Prediction
OOPC	Ocean Observations Panel for Climate
OPAG	Open Programme Area Group
OSPAR	Convention for the Protection of the Marine Environment of the North-East Atlantic
PDS	Publication and Distribution Services Department
PRF	Pulse Repetition Frequency
PUMA	Preparation for the Use of Meteosat Second Generation in Africa
PWS	Public Weather Services
QMF	Quality Management Framework
QMS	Quality Management System
QPF	Quantitative Precipitation Forecasting
RAMSAR	Convention on Wetlands
RANET	Radio and Internet
RBB	Results-based Budgeting
RBCN	Regional Basic Climatological Network
RBSN	Regional Basic Synoptic Network
RCC	Regional Climate Centre
RCOF	Regional Climate Outlook Forum
R&D	Research and Development
RI	Rainfall Intensity
RIC	Regional Instrument Centre
RMDCN	Regional Meteorological Data Communication Network
RMTC	Regional Meteorological Training Centre
RMTN	Regional Meteorological Telecommunication Network
ROSHYDROMET	Russian Federal Service for Hydrometeorology and Environmental Monitoring
RSMC	Regional Specialized Meteorological Centre
RTH	Regional Telecommunication Hub
7LTP	Seventh WMO Long-term Plan
6LTP	Sixth WMO Long-term Plan
SADC	Southern African Development Community
SADIS	Satellite Distribution System for Information Relating to Air Navigation
SBSTA	Subsidiary Body for Scientific and Technological Advice
SCAR	Scientific Committee on Antarctic Research
SIDS	Small Island Developing States

SIGWX	Significant Weather
SPARC	Stratospheric Processes and their Role in Climate
SWIC	Severe Weather Information Centre
TCDC	Technical Cooperation among Developing Countries
TCO	Technical Cooperation
TCP	Tropical Cyclone Programme
TCP/IP	Transmission Control Protocol/Internet Protocol
TDCF	Table-driven Code Forms
TECO	Technical Conference
THORPEX	Observing System Research and Predictability Experiment
TOPC	Terrestrial Observation Panel for Climate
TRACECA	Transport Corridor Europe-Caucasus-Asia
UNCCD	United Nations Convention to Combat Desertification
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate Change
UN/OCHA	United Nations Office for the Coordination of Humanitarian Affairs
UPU	Universal Postal Union
VCP	Voluntary Cooperation Programme
VCP(ES)	Voluntary Cooperation Equipment and Services
VCP(F)	Voluntary Cooperation Fund
VOS	Voluntary Observing Ship
VSAT	Very Small Aperture Terminal
VSP	Voluntary Separation Programme
WAFS	World Area Forecast System
WAMIS	World Agrometeorological Information System
WCASP	World Climate Applications and Services Programme
WCIRP	World Climate Impact Assessment and Response Strategies Programme
WCP	World Climate Programme
WCRP	World Climate Research Programme
WGNE	World Group on Numerical Experimentation
WGOA	Working Group on Observations and Assimilation
WHO	World Health Organization
WHYCOS	World Hydrological Cycle Observing System
WMD	World Meteorological Day
WMO	World Meteorological Organization
WOCE	World Ocean Circulation Experiment
WSIS	World Summit on Information System
WSSD	World Summit on Sustainable Development
WWIS	World Weather Information Service
WWRP	World Weather Research Programme
WWW	World Weather Watch
XML	Extensible Mark-up Language