WORLD METEOROLOGICAL ORGANIZATION

INFORMAL PLANNING MEETING ON THE VOLUNTARY CO-OPERATION PROGRAMME (VCP) AND RELATED TECHNICAL CO-OPERATION ACTIVITIES

Pretoria, South Africa, 10 to 12 March 2008

FINAL REPORT

SUMMARY OF AGREED ACTIONS

The meeting considered the various points raised during the discussions and agreed on the following priority actions:

- The IPM should consider the 3rd World Climate Conference (WCC3) a significant priority and support WMO's efforts in terms of organization and mobilizing resources for the Conference.

- IPM requested the Secretariat to develop an example of the country profile database for one or a few countries to help refine the fields that would be deemed useful and to expose current levels of information (see paragraph 45). IPM agreed to form a Task Team to help develop the requirement specification for the database. Canada, USA and Spain volunteered to engage in the Task Team with the Chair of IPM.

- The IPM Members should actively assist the EC Working Group on Capacity Building (EC-CB) in focusing and carrying out their activities in the coming year.

- Resource Mobilization Office is requested to bring to the attention of the EC Working Group on Capacity Building the concerns of donor Members regarding:

    - Need for increased effort in Branding and Marketing of WMO and VCP;

    - Need for strengthening Regional Office and Regional Mechanisms;

    - Requesting RMTCs to accredit e-learning courses in management skills for met. services;

    - Requesting emphasis on promoting a select number of projects that clearly demonstrate the Socio-economic benefits of weather, water and climate services in a "whole system" development context which recognise the roles of NMHSs and WMO in enabling and delivering these services.

- WMO should consider approaching Private Foundations as potential investment partners and explore the potential for engagement with the Private Sector. IPM Members will assist with these missions as relevant.

- IPM proposed that Donor Meetings by region might be a tool to develop integrated projects but noted that significant preparation and engagement is required to achieve the participant of the target agencies. IPM also recognized other opportunities for Resource Mobilization that need to be fully investigated such as the Global Facility for Disaster Risk Reduction.

- IPM supported the proposal for a Ministerial Meeting for Africa and suggested to engage the donor community as well as the Ministers. In the event of this not being a possibility then IPM and WMO should consider ensuring that all Ministers from developing countries are given effective briefings from their NMHS for their participation in WCC3. If necessary, support for Ministers from LDCs to participate in WCC3 should be considered by IPM and WMO.

- IPM requested WMO to provide a road map for the roll out of WIS and WIGOS and guidelines as to what will be required at the national level for each of these systems to be accomplished.

- IPM Members (led by Russia) will consider holding a side session on Technical Co-operation at TECO-2008 and METEOREX-2008, 27–29 November 2008 in St Petersburg.

- Regarding the VCP Process:

    - Regional Offices should be aware of the overall regional strengths and weakness to enable them to filter requests to donors and analyse requests in a whole system context so that coherent integrated solutions are proposed to donors.

    - Equipment requests must be framed in the context of WIS – WIGOS and core services and systems (dedicated to this) cf. GEOSS

    - IPM could be considered as a resource group to further define Regional Office Roles.

    - The VCP should incorporate a coordination role between donors (including IPM Members) for large scale regional / sub-regional cooperation programmes.

- IPM noted the necessity WMO to be fully engaged in the discussions and implementation of the “UN delivering as one” process.

- These actions should be considered in the context of the Conceptual Framework below at Table 1.

Table 1

<table>
<tr><td colspan="2">Conceptual Framework

PRIORITY AREAS</td></tr>
<tr><td>Policy Areas</td><td>• Consistent WMO 3-5-11
• Needs of Least Developed Countries, SIDS & LLDCs
• National Commitment
• Regional Focus (Regional Strategic Plans – development and implementation)
• End to End delivery focus</td></tr>
<tr><td></td><td></td></tr>
<tr><td>Basic Systems Development</td><td>• Basic Systems
o Observations
o Communications
o Analysis / Forecasts
o Applications and Products
o Dissemination
▪ Public
▪ Decisions Makers</td></tr>
<tr><td>Global Concerns</td><td>• Disaster Risk Reduction and Early Warning System
• Climate Change Adaptation
• Water Management
o Availability
o Flash Floods
o IWRM</td></tr>
<tr><td></td><td></td></tr>
<tr><td>Model</td><td>• Regional Analytic Studies / Diagnostics (using VCP)
• Project Development
• WMO Coordinated Donor Meetings
• Component Implementation by individual donors
• Emergency Alert and Response Team
• Finance management modalities (through WMO etc?)</td></tr>
<tr><td colspan="2">Cross-Cutting

• Country Profiles
• Regional and Cross-Programme Coordination and Strategic Planning assistance
• Advocacy
• Education and Training
• Resourcing
• Observing and Communications Systems Sustainability – Spares and maintenance</td></tr>
</table>

GENERAL SUMMARY OF THE WORK OF THE MEETING

1. OPENING OF THE MEETING *(Agenda item 1)*

1. The 2008 Informal Planning Meeting (IPM) on the Voluntary Co-operation Programme (VCP) and related Technical Co-operation Programmes was held in Pretoria, South Africa from 10 to 13 March 2008. The meeting was attended by the representatives of the following WMO Members: Canada; China; Egypt; Finland; France; Germany; Japan; Kenya; Republic of Korea; Russian Federation; South Africa; Spain; UK and USA, The List of participants can be found in **Annex I**. Agenda agreed is given in **Annex II.**

2. The Chair noted that major changes are occurring in WMO in terms of structure, functions and individuals, including in Technical Cooperation and the VCP. This is an opportunity to consider what we are doing and how we operate, and how to move ahead and achieve progress. He stated that he anticipated an exciting meeting and reiterated the informal nature of the meeting in terms of open and frank discussions.

3. Ms S. Bokwe, the representative of the Permanent Representative of South Africa with WMO (Dr L. Makuleni, Director SAWS) welcomed the participants, stating that SAWS are extremely excited and honoured to welcome all to Pretoria and to the National Weather Service, noting that this meeting occurs at a time when the global meteorological community, particularly in developing countries, such as in her own region, RA I, which has the largest number of least developed countries, are experiencing severe challenges. These challenges range from simple meteorological equipment, data communications, and weather observations to capacity building. These challenges all occur against the background of sustainable development and climate change. She stated that our Governments require us to prove our worth through tangible contributions towards socio-economic development. However, the lack of basic infrastructure and skilled personnel prevents us from showing the excellent work and potential benefits we have for Agriculture, Health, Water Resource Management, Transport and many other areas.

4. She noted that global weather and climate phenomena extend beyond political boundaries. The quality and development of meteorology depends on our cooperation and assistance to one another. It is for this reason she stated her confidence that the meeting would be successful and hopefully lead to an era of even greater cooperation and assistance programmes between NMHSs. She urged the fellow delegates to pay particular attention to the areas of weakness in our global programmes - particularly the plight of NMHSs in developing countries.

5. Mr Robert Masters, Director, Development and Regional Activities, WMO expressed appreciation to Dr L. Makuleni, Permanent Representative of South Africa with WMO, and to the Government of South Africa for hosting this IPM and also thanked Dr Makuleni and her staff for the support and efforts that have gone into preparations for the meeting and the hospitality accorded to the participants.

7. He stressed the importance of the VCP process as a critical component of the WMO programme of activities and acknowledged that due to the generous support to Technical Cooperation activities in 2007 by VCP donor Members a great deal had been accomplished and assistance has been provided to the NMHSs of many developing and least developed countries.

8. He expressed his hope and intention to increase in 2008 the number of countries and projects supported through VCP activities, and in particular through utilization of the Trust Fund. As reinforced by the IPCC 4th Assessment Report (AR4), the developing countries who are recipients of this support are not only the most vulnerable to the impending impacts of climate variability and climate change and associated disasters and extreme events, but are also the least resilient in terms of capacity to adapt to such changes. Therefore the need for external support and financial assistance to these countries is likely to increase rather than decrease in the years ahead.

9. The VCP as it currently stands cannot hope to address all these needs, the nature of the VCP being such that it tends to be focused towards small-scale projects addressing pressing and immediate needs, emergency assistance and post conflict and post disaster response packages. Therefore, with the anticipation that the number of requests from these most vulnerable countries would increase in the future, and in view of the limited resources available, there is a clear need for a strategic approach to meeting this challenge that would concentrate the VCP support on priority areas as defined in the strategic plans developed by Regional Associations (and NMHS) to resolve increasing major gaps concerning observing and telecommunication facilities and service delivery capabilities.

10. The DRA, through the WMO Regional Offices and the Resource Mobilization Office (RMO) plans to strengthen the VCP (Trust Fund) and VCP Coordinated support processes to hopefully bring new partners to the table. Mr Masters noted the challenge to find alignment between the valuable contributions of VCP supported actions under the current system, and the need to address the development of NMHSs in the developing world in a more strategic and thereby hopefully sustainable manner. This is one of the major issues that the DRA, the Regional Offices and in particular the RMO has to address, in association with the IPM partners around the table: the strategic development of NMHSs through large scale, regional projects and programmes of activity, mobilizing resources for action at the regional scale through development of major bilateral and multilateral partnerships, and harnessing support through both national and international processes for and in seeking investment at this scale.

11. He brought to the attention of the meeting the fact that there were several major events coming up that were of great relevance, the ISDR 2nd Global Platform for Disaster Risk Reduction, the 3rd World Climate Conference and the Copenhagen Meeting of the UNFCC. He urged that we should consider how we can assist the NMHSs to better participate in these processes.

12. The meeting acknowledged and commended the years of commitment and work of the previous VCP Programme Coordinator Dr Tokiyoshi Toya and expressed their deep appreciation to him for his hard work and commitment to the Programme.

2. ORGANIZATION OF THE MEETING

13. The Agenda as adopted is at **Annex II**.

3. WMO SECRETARIAT RESTRUCTURE *(Agenda item 3)*

14. WMO (R. Masters) made a presentation on the recently completed WMO restructure. The restructure aligns the WMO Technical Programmes with the Strategic Thrusts, Expected Results and Deliverable of the WMO Strategic Plan.

15. The meeting queried how the Scientific and Technical Programmes (STPs) and their related Technical Commissions would be affected by the WMO restructure and potential problems of alignment with the Expected Results and Deliverables. There was some concern that the speed of the restructuring process did not allow sufficient time for consultation with Members and the Commissions. Mr Masters noted WMO programme activities still exist and that the new structure was designed to improve the ability measure progress toward programme goals.

16. Participants queried how the new system would function in terms of direct line authority versus responsibility for delivery on Strategic Thrusts (ST) as some ST are the responsibility of several Directors, i.e., can it actually work? There was also concern about the impact on Volunteerism in the WMO. Mr Masters responded that each Expected Result has one Director with primary responsibility, but agreed a high level of coordination would be needed to ensure success.

17. Participants noted with approval the positive move to absorb the ETR into the DRA Department, as the disjuncture between ETR and the training activities of other Programmes and Regional Offices was always a concern to the IPM.

4. REPORT OF THE VCP 2007 *(Agenda item 4)*

18. The Chair introduced the report of the Ad hoc Informal Planning Meeting on the VCP and related Technical Cooperation Programmes which took place in Geneva on 8 and 12 May 2007. It had been decided by e-mail consultation not to hold a full IPM in 2007 because of the lack of Secretariat support, and the expectation that the new staff responsible for resource mobilization and VCP would be in place later that year. Therefore, two short sessions were organized in the margins of Cg-XV.

19. The meeting reviewed the Members' contributions to the VCP(F) and VCP(ES) in 2007 (**Annex III**). The meeting noted that in 2007, Members' contributions to the WMO Voluntary Co-operation Programme in terms of VCP(ES) and VCP(F) amounted to some **US $6,027,941**.

20. The meeting also noted that in 2007, VCP(F) expenditure for approved projects amounted to **US $317,791** (**Annex III**). The funds were used mainly for expert services, short-term fellowships, TCDC activities, and high priority programmes, in particular for support to: upper-air and surface observing stations, improvement of GTS, short-term fellowships, support to CDMS and climatological activities, operational hydrology activities, Internet capabilities, support to ACMAD and EAMAC, emergency assistance activities, in accordance with the VCP(F) guidelines.

21. In respect of VCP Coordinated activities, the meeting noted that 28 project requests were circulated in 2007 with thirteen receiving support. Projects covered strengthening surface observing stations, strengthening upper-air observing stations, strengthening communications systems, and satellite receiving system and GAW activities. Full details of projects supported can be found at **Annex III**. The support received for these projects grouped by fields of cooperation during the period 1988-2006, and in 2007 is given in **Annex III** also. On average 48% of the VCP projects circulated received support:

5. REPORTED BILATERAL TECHNICAL COOPERATION ACTIVITIES IN 2007 AND PERSPECTIVES ON POTENTIAL CONTRIBUTIONS TO THE VCP FOR 2008

22. The meeting was informed of the bilateral activities in 2007 and of plans of donor Members to support VCP projects in 2008 and beyond. The detailed report is found at **Annex IV.**

23. Canada confirmed its commitment to Technical Cooperation but pointed out that Environment Canada has no direct mandate for overseas technical assistance and so must obtain finances for these activities from other Canadian Government agencies. The Canadian Government is increasingly interested in Climate Observations and Predictions so it is likely that more opportunities for support may arise. There is a focus on building bridges to the international activities of other Departments as the Meteorological Community is seen as advanced in this field with a lot to offer. There will be a solid focus on the Americas (Latin, Central and Caribbean) as Canada Foreign Affairs has established a new Secretariat for this purpose. There is also a partnership with the Department of Foreign Affairs and International Trade Canada to provide support for the implementation of the Central American and Caribbean Regional GCOS network.

25. Canada suggested that WMO and IPM could explore improved connections with the private sector through our representation at the WMO "Technical Conference on Meteorological and Environmental Instruments and Methods of Observation" (TECO-2008) and the "Exhibition of Meteorological Instruments, Related Equipment, and Services" (METEOREX-2008) from 27 to 29 November 2008, in St Petersburg, Russian Federation. The Association of Hydro-Meteorological Equipment Industry (HMEI) might help in this regard.

26. China continued to support the Study Tour (3-13 September 2007) and also Training and Fellowships including the International Training Course on Satellite and Radar Meteorology; Training Seminar on Management for Meteorological Officials in Asian and African Countries; International Training Courses on Weather Modification, Severe Convective Storm Nowcasting, Meteorological Disasters Forecast, Prevention and Mitigation, Agro-meteorological Services for Sustainable Agriculture. Donation of instruments included seven sets of FengyunCAST receiving systems for satellite imagery donated to the Democratic People's Republic of Korea, Viet Nam, Tajikistan, Kyrgyzstan, Lao People's Democratic Republic, Myanmar, and Sri Lanka and four sets to Malaysia, Nepal, Philippines and Uzbekistan.

27. Egypt noted that African NMHSs face two fundamental problems, capacity building and telecommunications. The Egyptian Meteorological Authority contributes to the first problem of capacity building through the RTC in Cairo by waiving fees for 120 candidates per year and seeks the support of the VCP programme to cover the other costing of trainees.

28. For the second problem, EMA contributed by developing RTH Cairo by upgrading the international telecommunications links between Cairo and Moscow, New Delhi, Algeria, Jeddah, to work with a speed of 64KB per second, and now makes contact with the NMHSs in Kenya and Libya to upgrade the Cairo-Nairobi link and the Cairo-Tripoli link.

29. France is involved in a range of multilateral and bilateral projects. Météo-France works through their Foreign Affairs (FA) and contributes to FA policy. There is a strong MDG focus in the FA Development Policy. The National Programme on Climate Change is now gaining more political importance and is impacting on FA policies. This has a focus on energy and climate and climate risk assessment. France's geographical priorities are Africa, Pacific, Caribbean, linked to EU ACP Policy and Programmes.

30. Finland emphasizes large-scale integrated projects of a regional nature with some bilateral focus rather than responding to calls for limited scale to VCP projects. FMI has no specific budget for Technical Cooperation but works closely with Foreign Affairs of Finland. The Finnish Development Policy has a focus on Meteorological and related areas. Finland is active in several regions. FMI is currently awaiting decisions from FA on the next project cycle. The outlook is positive for several large multi-country investments which could result in some major projects in the near future.

31. Germany continued to provide assistance in education and training and fellowships, mostly on a bilateral basis, and especially for short-term fellowships on a cost-sharing basis in the field of research and development. Twenty-four countries are being supported in their operational use of the Deutscher Wetterdienst NWP model by special provision of boundary data. Germany continues to support for example the WMO RA VI Regional Dobson Calibration Centre and the GAW Training and Education Centre, both at Hohenpeißenberg and bore again the expenses for the GAWTEC training courses. Germany contributed €10,000 in 2007 to GCOS through the GCOS Cooperation Mechanism which is intended for the acquisition of an anemometer for the mountain station Bjelasnica in Bosnia-Herzegovina. In 2008, Germany plans to contribute an additional €10,000 to GCOS through the GCOS Cooperation Mechanism.

32. Japan continued to support the improvement and enhancement of meteorological and hydrological services of NMHSs, particularly in developing countries through the VCP and related activities including training/fellowship, in-kind contributions by private companies in Japan, and bilateral cooperation under the Official Development Assistance scheme. There is likely to be a reduction in support to VCP(F) in 2008.

33. South Korea focuses on projects of mutual benefit to both the donor and recipient countries, in particular the Implementation of International Strategies and Conventions (MDG, etc.) with a strong focus on economic benefits; Climate Data Rescue (in the context of planning for renewable energy projects such as wind and solar power). There will also be a focus on Risk Reduction

through improved forecasting (Mongolia) and seeking private sector support for provision of computer hardware. In 2008, the South Korea contribution to the VCP is expected to increase.

34. Russian Federation will continue to support the Russian-speaking countries and provide training through RTC on the same, or an increased level. Only 20% of capacity of the RTC is utilized so more could be achieved if WMO Fellowships are increased. Additionally, Russia has good experience with the World Bank for upgrading the NMHSs. The World Bank now understands the needs of NMHSs and is ready to assist in other countries on these issues. Participants appreciated Russia's offer and agreed that World Bank case studies of the NMHSs should be distributed to encourage PRs and Members to allocate World Bank funds (loans and grants) to NMHS' needs.

35. Spain will continue the regional cooperation project in North and West Africa during 2008 based on the Las Palmas Action Plan. There will be a major focus on Maritime Meteorology in this context. Spain will reinstate its contribution to the WMO Trust Fund in support of the operations and administration of ACMAD which was not implemented in 2007.

36. For South Africa, the lack of weather observations in RA I remain a serious problem and a hindrance to meteorological development. The Meteorological Association of Southern Africa (MASA) has been formulated for a number of years to promote cooperation between regional NMHSs in observations, data communications and capacity building - but with limited progress. SAWS is now trying to build the strength of this alliance and to support and connect with other agencies (SADC, etc.).

37. The United Kingdom will continue it's commitment to the targets outlined although funding from the UK Public Weather Service is expected to be less than during 2008. Focus will be on Observations, Applications, IT, Coms, Service Delivery, HR Development and DRR and will be mostly bilateral. Because UK Met Service has its own Technical Cooperation budget, it has difficulty accessing other funding sources such as DFID. As DFID focus on Good Governance they provide direct budgetary support to LDCs so UK Met focus will be on equipping people in country to prepare proposals in countries to access these funds. The 'Management by e-learning' training course is focused on the above and will be delivered to the first set of students during the first half of the year. The UK aims to evaluate and improve this course with a view to delivering another run by the end of the year.

38. For the United States of America, VCP Funds come from the State Department which NOAA manages on behalf of the State for US Meteorological Communities so they must reflect the priorities of these communities when identifying projects. The main focus is on promoting development of end-to-end systems and building partnerships to leverage additional funds. For NOAA, water issues are increasingly a driving factor. An MOU has been developed with the Hydrological Research Centre (HRC) for development of a Global Flood Modelling System with private sector support. As HRC is non-profit making, they will also be approaching foundations but as yet are not having a great deal of success. There is a plan to build an Operational Concept for end-to-end Early Warning System (similar to Indian Ocean Tsunami Warning System) – multi-hazard approach. The Tools and Training can be applied to other countries.

39. The Chair noted that few IPM Members have funds under their direct control for VCP and that training seems to be an area most supported through IPM NMHS' direct budgets (fee waivers, etc.). He also noted that growing interest of the World Bank in Climate and Meteorological issues offers an opportunity that could be explored further. The meeting learned from the WMO Resource Mobilisation Office of links to the bank with work in SE Europe, Caucasus Region, Caribbean and Central America and the Global Facility for Disaster Risk Reduction. This is a new development and seems to offer a real opportunity which should be further explored. JMA stated that they have been approached by World Bank for assistance with Risk Assessment and have stressed to the Bank that climate modelling can only be done with a full GCOS system in place. The USA noted the agreement recently signed with the World Bank with an initial focus on flash flood management in South America.

40. Russia pointed out that this focus of the bank has the possibility to raise the profile of the NMHS as until now meteorological issues have not been a priority for the World Bank. This is a new development and as the World Bank is a powerful authority at national levels it raises the visibility of NMHSs in countries if the bank is interested in the sector.

41. USA proposed that we should also pursue Foundations as partners. It recalled that IPM previously considered establishing a team to approach the World Bank and Foundations for support on Meteorological and Climate issues.

6. WMO COUNTRY PROFILE DATABASE

42. WMO (Rob Masters) made a presentation on the proposed WMO Country Data Base (CDB). A concrete way of gathering and maintaining current knowledge of the status of the NMHS and related matters in Member countries would be to set up a dedicated country profile database. At the moment there is no systematic way of collecting information on member countries. He noted that several of the WMO departments have their own registers or data bases of sorts for country related information, but it is very difficult to get an overall picture of the country status and of WMO ongoing and past activities in the countries. He also noted that the Department does not have the resources at presence to fund this activity but that a range of options need to be looked at including direct assistance from the Members.

43. Participants queried if the CDB would be freely accessible as in the past there have been occasions when access to information from WMO surveys has been denied on the grounds of confidentiality.

44. The Meeting considered that clear objectives and outcomes need to be defined and that the CDB must be useful outside the WMO family to assist WMO community to engage other partners in work we are doing. The CDB might be valuable to all Members and not just the VCP donors

45. It was suggested that a review of what information and systems are already in place in WMO be undertaken to prevent duplication and that it might be useful to compile a summary of all the information for a few countries as a pilot. Participants considered that the current concept might be too theoretical and that an example is needed to demonstrate how this information might be used. Options that range from a fully integrated relational data base to a one-page summary profile for each country hosted on WMO server with hyperlinks to available documents need to be considered in light of funding constraints and real user needs. .It was suggested that WMO should consider the use of Free and Open Source Software (FOS), as there are many such applications currently available.

46. IPM agreed to form a Task Team to assist the Secretariat further develop the CPDB concept. Canada, Spain and the USA and volunteered to engage in the Task Team, with the Chair of IPM.

7. OUTLOOK OF VCP 2008/09 - MAJOR DEVELOPMENTS, PRIORITIES AND OPPORTUNITIES *(Agenda Item 5)*

47. WMO (R. Masters) provided an overview of the structure and function of the Development and Regional Activities Department and the focus, priorities and challenges for the coming years.

48. Participants considered that absorption of ETR into DRA is a positive move. The proposed focus on development of Regional Strategic Plans is very welcome and also the strengthening the Regional Office mechanism.

49. WMO (F. Villalpando) made a presentation on priorities for 2008 as expressed by WMO Scientific and Technical Programmes (**Annex V**).

50. Concern was expressed at the broad scope of some of the STP priorities and the lack of costing and clarity in the requests. IPM considered that the requests should be better filtered before presentation to IPM in the context of IPM demonstrated priorities and recent financing focus.

51. There was also concern expressed that the request from the Observations Department was virtually unchanged over the past three years, that it was clearly beyond the funding scope of the VCP, and did not reflect advances in available technology. Also that the WWW did not mention GTS, a very important issue and one which is the focus of many requests, nor installation of workstations to support the software applications.

52. The IPM also considered that it would like to see better integration between the WWW and Climate Applications so that WWW data feeds directly into Climatology applications while it would also be beneficial to see more leverage across programmes so that training is more multi-dimensional and not just focused on one thematic or technical area.

53. The meeting supported the proposal for a Ministerial Meeting for Africa, noting possible links to WCC3, and suggested engaging the donor community in the meeting. IPM noted the difficulty in launching such efforts given the array of Ministers' portfolios and the high level of effort required. The meeting suggested that Members and WMO should consider ensuring that all Ministers from developing countries are given effective briefings from their NMHS for their participation in WCC3. If necessary, support for Ministers from LDCs to participate in WCC3 should be considered by IPM and WMO.

54. France, in the context of the UN systems intention to better integrate delivery at the country level by UN Organizations, under the "Delivering as One UN" process noted that there may be some benefit to WMO through participation in this effort, to access programmes supported by donors.

8. PRIORITY AREAS FOR VCP FOR 2008/09

55. The meeting discussed priorities areas for VCP for 2008 and considered the following matters:

Overcome barriers to data sharing

- The issue of getting maximum value out of observing systems was raised considering the cost of upper-air observations are significant but old codes are still in use so we are not actually capturing the full real time data set that is possible.

- Telecommunications is seen as a major issue and it was suggested that perhaps we should promote IP-VPN to overcome this and bypass the uptake of old technology in NMHS communications systems upgrades. However, it was acknowledged that internet connections are obviously a problem in many countries as is managing and maintaining the connection.

- Table Driven Codes (GRIB & BUFR) generate issues in terms of inter-operability of environmental data and regarding the metadata. As per INSPIRE in EU, XML schemas offer opportunities for developing countries so they would not need to buy specific meteorological work stations as GRIB data will be accessible with Web Browsers. The implication is of course that the communication systems would need to be in place.

- Basic systems are still an issue for many. Modernization must be considered in its entirety and not with piecemeal purchases and for replacement of equipment.

Training

- The Issue is not just technical capacity but also management capability. The training focus needs to address this.

- Key areas include: Service Delivery; Technical training (WIS and Internet); Professional Training and development (WMO 258 and NWP); Management training (QMS and ISO 9000 (especially aviation); Project development and management, Team Building and Marketing.

56. Egypt considered that WMO 258 needs to be available in all six languages of WMO. IPM noted this issue would have to be brought to Cg XVI

57. Several Members expressed concern regarding the lack of clarity surrounding the WIS / WIGOS and requested WMO provide clear guidance with respect to what it will take to implement WIS at national levels over a five-year period and suggested that there is a need to demonstrate the utility of WIS by some Demonstration Projects at National Level.

9. PERSPECTIVES ON VCP PROCESS AND SUGGESTIONS FOR ENHANCING THE PROGRAMME

58. The meeting participants provided perspectives on their experience and issues related to the VCP process and provided advice for measures for actions to enhance and/or improve the process.

59. IPM considers that VCP requests for equipment and services are still too disembodied, i.e., no stated connectivity to deliverable and impacts. Members requested that proposals present a more integrated and holistic perspective on needs. Equipment requests should be framed in the context of WIS / WIGOS and core services and systems. Regional Offices should filter requests to donors and analyse and improve requests so that coherent solutions are proposed to donors.

60. Participants also suggested that increased donor coordination and integration is needed as delivering on development of end-to-end systems will require multiple donor support. The VCP office could assist with more integrated requests from VCP recipients and also donor coordination. The VCP could be reviewed in order to reflect this coordination role.

61. A key issue to be considered is that of defining the collaboration model for IPM as a group in terms of collaboration in supporting programmes and projects. WMO-DRA could, with donor assistance, construct larger-scale projects that would combine donor inputs to design programmes for integrated support as is currently being done for S.E. Europe and West and North Africa.

62. Noting France's earlier suggestion, it was proposed that a side session on Technical Cooperation at the WMO "Technical Conference on Meteorological and Environmental Instruments and Methods of Observation" (TECO-2008) and the "Exhibition of Meteorological Instruments, Related Equipment, and Services" (METEOREX-2008) from 27 to 29 November 2008, in St Petersburg, Russian Federation as an opportunity to bridge the gap between NMHS and equipment suppliers. Russia supported this proposal as some 60 manufacturers will participate to St. Petersburg and considered that the priority should be instruments and equipment. He proposed to discuss with Russian manufacturers on possible contributions.

63. In considering the list of outstanding projects that have not been supported, it was noted that it is impossible to see how these requests fit into a specific development plan or what is already in place in the NMHS as most of these outstanding projects are not contextualized. Supporting these as they stand would reinforce a way of providing equipment that we do not want to reinforce. IPM has been asking for a review of the proposal and project support for years. Proposals should identify the function of the equipment and the wider context in which it is

requested and also ensure reporting on implementation by the PRs. Regional Offices should filter the proposals to address this issue. Keeping requests open for five years does not make sense.

65. IPM considered the role of the Regional Office to be a key role and suggested that requests should be aligned with WMO expected results using ROs as a filter. Requests should be framed in terms of the goals, objectives, inputs and outputs (log frame) as many requests ask for equipment without supporting context. Fully developed Regional Strategic Plans are needed to assist in refining this process.

66. Korea indicated that they had funds available to support North Korea but were having difficulty initiating dialogue and requested WMO support in this matter.

67. The meeting suggested that WMO-VCP should make a concerted effort to approach Official Development Assistance organizations and inform them of WMO activities.

10. RESOURCE MOBILIZATION - CHALLENGES AND OPPORTUNITIES

68. WMO Director for Resource Mobilization provided an overview of the RM Mission Statement and Strategy 2008-2011 (**Annex VI** and invited meeting participants to provide comment on stated priorities and proposed activities.

69. In line with the WMO Strategic Plan, in particular Expected Results 7 and 9, the RMO will support NMHS and WMO Scientific and Technical Programmes to enhance the level of in-country and external support and funding to programmes and projects aimed at development of NMHS to reach the levels and range of services needed to support the protection of life, property and environment and ensure the security of food production, energy and water resources, with particular emphasis on the developing countries, LDCs and SIDS and in keeping with the Regional Strategic Plans and Strategic Development Plans.

70. The meeting welcomed the establishment of the RMO and commended the RMO on the proposed approach and strategy, noting that it was a significant challenge and one that could not be achieved by the RMO with the resources at hand and pledged the full support of the IPM.

71. The meeting noted that, to enhance the level of in-country and external support to NMHS it is imperative to advocate strongly on the importance of the NMHS and their products and services in support of the national development process. This will require demonstrating the value and contribution of WMO Scientific and Technical Programmes and NMHS products and services to the reduction of poverty overall and to a wide range of key sectors including agriculture, health, energy, water, transport disaster risk reduction and early warning systems and adaptation to climate change. In line with the Madrid Action Plan, it will be critical to demonstrate the real socio-economic value of investments in, and of the contribution of WMO / NMHSs to the national development agenda.

72. In the current financing environment it is critical that the wider national and regional socio-economic development context is taken into account such as the contribution of activities to achievement of MDGs, National Development Plans and Action Plans of LDCs and SIDs.

73. Significant in-country financing opportunities could exist through the national budgeting processes, Overseas Missions and Embassies, the UN “One UN” country funds, GEF and other mechanisms. RM will need a focus on assisting NMHS to avail of these in-country financing opportunities through training seminars and direct support.

74. One of the most significant challenges will be to find an alignment between the stated priorities of the donors and the priorities identified within Regional Strategies and national plans.

Regional Matters

Severe Weather Forecasting Demonstration Project (SAWS)

75. Members complimented SAWS on the progress and outcomes of the SWFDP and considered this to be an excellent example of the way forward for this and other regions and suggested that lessons and experiences of the project be captured for the benefit of others. IPM also noted that it was no longer a "demonstration" but should be considered an operational project.

76. SAWS noted that WMO (P. Chen) had played a major role in the success of the project and that the report to be presented to the SWFDP Steering Committee next week in Geneva will capture these elements and also pointed out that each region will have different needs so it is not a matter of simple duplication. Additional work for SAWS included web site development and some additional pressure on forecasters, but as it was an operational project the overall additional effort burden was limited. Products from Global Centres that were utilized were standard products. This is why uptake was fast and it became operational quickly. The RC provided advice to NMHS in terms of impending events but the potential impact of forecast events was considered at the National Level and warnings issued as appropriate.

77. France indicated that they have plans for a pan-continental project on DRR and will be looking for pilot projects and would provide information to SAWS regarding this. France queried the benefit to SAWS which was reported as building up forecaster confidence and also strengthening the role of the RSMC and through this project the role of the RSMC has been much better defined.

Quality Management Systems for Aeronautical Meteorological in the EAC Region.

78. The RMO briefed the meeting on the proposal of the EAC for establishment of Quality Management Systems for Aeronautical Meteorology in the EAC Region (Tanzania, Kenya, Uganda, Rwanda, Burundi) as the EAC representative was unable to attend the meeting**.**

11. MAJOR COOPERATION PROGRAMMES

Full details can be found at **Annex VII.**

79. Spain provided an overview of their bi-lateral cooperation programmes in West and North Africa and the Ibero-American Countries. The Africa programme is based on the Las Palmas Action Plan (2007). Funds are managed through the WMO and WMO is supporting the programme implementation.

80. Difficulties were cited in terms of a lack of knowledge available to Spain about Africa country requirements and that country profiles would have been very useful. A Regional Situation Analysis will be undertaken in the near future in association with WMO to identify the status and needs at the country level.

81. Finland reported on their Programmes of Cooperation currently under development and consideration by Foreign Affairs of Finland including for the Pacific Islands Region, the SADC Region, a Needs Analysis for the Andean Region and also activities in Nepal. The need for a focus on end-to-end systems rather than "shopping lists" for equipment was stressed and also the need to address critical areas such as DRR and Climate Change in the process.

82. France provided an overview of proposed project for Africa for modernization of NMHS via an integrated development platform, a concept developed with WMO following the side meetings at Congress (17 May) with donors and RA I Members. France is committing 2M€ to the project and requested WMO to organize a meeting with potential donor partners and with regional representatives to progress this.

83. Egypt outlined some cooperation projects that are already active. EMA cooperates with:

- Government of France to implement a project to modernize EMA with a budget of 5M€
- German Government and Czech Republic in the field of ozone measurements
- Danish Government to implement the project of Wind Atlas of Egypt
- European Organization for the Exploitation of Meteorological Satellite (EUMETSAT) for use of METEOSAT data by EMA
- Abdus Salam International Centre (ISTP) for Theoretical Physics to exchange the experience between EMA and ICTP, especially in the scientific research field.

84. The UK representative presented a brief overview of the 'Management by e-learning methods' training course, the latest package to be developed and delivered using the www.met-elearning.org/moodle website. An introduction to the history of the site was given along with a discussion of the need for Management training, particularly within the LDCs. The aims and objectives of the course are *'To improve the understanding and use of management skills and techniques by middle level staff in NMHSs of developing countries, especially the LDCs, with a focus on building projects for development funding'.* The course aims to equip participants with the 'soft' skills necessary to lead and manage teams, along with the 'hard' technical skills required to submit effective and successful project proposals. Sixty applications were received on-line in one month in the first call for participants.

85. Participation from donors was encouraged, particularly in the area of translating the course material into other languages. Use of the 'met-e-learning' website by other Members and the Secretariat was also discussed, and technical assistance to facilitate this was offered by the UK.

86. The USA is looking at the possibility of Formal Certification for on-line learning systems and queried if such courses could be endorsed by e-learning programmes through the WMO.

87. USA requested the IPM be kept informed (by WMO) of the progress of these activities

12. WRAP UP SESSION - WHERE DO WE GO FROM HERE AS IPM?

88. The meeting considered the various points raised during the preceding discussions and agreed on the following priority actions:

- The IPM should consider the WCC3 a significant priority and support WMO's efforts in terms of organization and mobilizing resources for the Conference.

- IPM requested the Secretariat to develop an example of the country profile database for one or a few countries to help refine the fields that would be deemed useful and to expose current levels of information (see paragraph 45). IPM agreed to form a Task Team to help develop the requirement specification for the database. Canada, USA and Spain volunteered to engage in the Task Team with the Chair of IPM.

- The IPM Members should actively assist the EC Working Group on Capacity Building (EC-CB) in focusing and carrying out their activities in the coming year.

- Resource Mobilization Office to bring to the attention of the EC Working Group on Capacity Building concerns of donor Members regarding:

    - Need for increased effort in Branding and Marketing of WMO and VCP;

    - Need for strengthening Regional Office and Regional Mechanisms;

    - Requesting RMTCs to accredit e-learning courses in management skills for met. services;

- Opportunities for promoting a select number of projects that demonstrate Socio-economic benefits of weather, water and climate services in a "whole system" development context which recognize the roles of NMHSs and WMO in enabling and delivering these services.

- WMO to consider approaching Private Foundations as potential investment partners and explore the potential for engagement with the private sector. IPM Members will assist with these missions as relevant.

- IPM proposed that donor meetings by region might be a tool to develop integrated projects but noted that significant preparation and engagement is required to achieve the participation of the target agencies. IPM also recognized other opportunities for Resource Mobilization that need to be fully investigated such as the Global Facility for Disaster Risk Reduction.

- IPM supported the proposal for a Ministerial Meeting for Africa and suggested to engage the donor community as well as the Ministers. In the event of this not being a possibility then IPM and WMO should consider ensuring that all Ministers from developing countries are given effective briefings from their NMHS for their participation in WCC3. If necessary, support for Ministers from LDCs to participate in WCC3 should be considered by IPM and WMO.

- IPM requested WMO to provide a road map for the roll out of WIS and WIGOS and guidelines as to what will be required at the national level for each of these systems to be accomplished.

- IPM Members (led by Russia) will consider holding a side session on Technical Cooperation at TECO-2008 and METEOREX-2008, 27–29 November 2008 in St Petersburg.

- Regarding the VCP Process:

  - Regional Offices should be aware of the overall regional strengths and weakness to enable them to work within the Region to analyse and filter requests to donors in a whole system context so that coherent integrated solutions are proposed to donors;

  - Equipment requests must be framed in the context of WIS – WIGOS and core services and systems cf. GEOSS;

  - IPM should agree to serve as a resource group to assist the Secretariat define Regional Office Roles;

  - The VCP should incorporate a coordination role between donors (including IPM Members) for large-scale regional / sub-regional cooperation programmes.

- IPM noted the necessity of being fully engaged in the discussion of "UN delivering as one".

- These actions should be considered in the context of the Conceptual Framework below at Table 1.

Table 1

<table>
<tr><td colspan="2">Conceptual Framework

PRIORITY AREAS</td></tr>
<tr><td>Policy Areas</td><td>• Consistent WMO 3-5-11
• Needs of Least Developed Countries, SIDS & LLDCs
• National Commitment
• Regional Focus (Regional Strategic Plans – development and implementation)
• End to End delivery focus</td></tr>
<tr><td></td><td></td></tr>
<tr><td>Basic SystemsMission</td><td>• Basic Systems
o Observations
o Communications
o Analysis / Forecasts
o Applications and Products
o Dissemination
▪ Public
▪ Decisions Makers</td></tr>
<tr><td>Global Concerns</td><td>• Disaster Risk Reduction and Early Warning System
• Climate Change Adaptation
• Water Management
o Availability
o Flash Floods
o IWRM</td></tr>
<tr><td></td><td></td></tr>
<tr><td>Model</td><td>• Regional Analytic Studies / Diagnostics (using VCP)
• Project Development
• WMO Coordinated Donor Meetings
• Component Implementation by individual donors
• Emergency Alert and Response Team
• Finance management modalities (through WMO etc?)</td></tr>
<tr><td colspan="2">Cross-Cutting

• Country Profiles
• Regional and Cross-Programme Coordination and Strategic Planning assistance
• Advocacy
• Education and Training
• Resourcing
• Observing and Communications Systems Sustainability – Spares and maintenance</td></tr>
</table>

13. PREPARATION FOR THE NEXT MEETING

Election of the Chair:

89. Mr. Stephen Palmer of the UK was retained as Chair by unanimous vote.

Next meeting:

90. The decision on the date and place of the next meeting was held over for further discussions out of session due to issues relating to funding and the need to consider holding a meeting of the EC Working Group on Capacity Building in association with IPM 2009, noting that Korea has been offering to host the meeting since 2006 and reiterated their desire to do so in 2009. China brought to the attention of the meeting its desire to host the meeting in 2010.

VCP Theme for 2008

91. The issue of defining a “Theme” for the VCP for the coming year was discussed. The meeting agreed that national, regional and WMO strategic priorities should be used to focus VCP activities rather than themes.

14. CLOSURE OF THE MEETING

92. The Chairman expressed appreciation on behalf of all participants to the staff of the South African Weather Service for the excellent hospitality and facilities which were made available in support of the meeting.

93. The Meeting closed at 13h00 on Wednesday, 12 March 2008.

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ANNEX I

LIST OF PARTICIPANTS

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ANNEX II

WORLD METEOROLOGICAL ORGANIZATION

INFORMAL PLANNING MEETING ON THE VOLUNTARY CO-OPERATION PROGRAMME AND RELATED TECHNICAL CO-OPERATION ACTIVITIES

Pretoria, 10-12 March 2008

AGENDA

1. OPENING OF THE MEETING

Speakers: Dr. L. Makuleni, PR of South Africa with WMO AND Host of the IPM
Dr. S Palmer, Chair IPM
Mr. R. Masters, Director, Development and Regional Activities, WMO

2. ORGANIZATION OF THE MEETING
- 2.1 Adoption of the agenda
- 2.2 Working arrangements

3. REPORT OF THE VCP 2007
- 3.1 Report of IPM 2006
- 3.2 VCP and VCP Coordinated and WMO Related Technical Cooperation Activities
- 3.3 Reported Bi-lateral Technical Cooperation Activities 2007

4. OUTLOOK OF VCP 2008 / 09
MAJOR DEVELOPMENTS, PRIORITIES AND OPPORTUNITIES
- 4.1 WMO Perspective
- 4.2 Donor Perspective including potential contributions to VCP and bi-lateral activities.
- 4.3 Outstanding Requests
- 4.4 Discussion and agreement on priority areas for VCP for 2008/09

5. VCP PROCESS

5.1 Round Table Discussion:
Perspectives on VCP process and suggestions for enhancing the program.

6. RESOURCE MOBILIZATION - CHALLENGES AND OPPORTUNITIES
- 6.1 Resource Mobilization Office: Mission Statement and Strategy
- 6.2 Round Table Discussion - Challenges and Opportunities

7. REGIONAL PERSPECTIVE
- 7.1 Severe Weather Forecasting Demonstration Project to SADC Region (SAWS)
- 7.2 Proposal ISO Certified Quality Management Systems (EAC) (TBC)

8. MAJOR COOPERATION PROGRAMMES
- 8.1 Programme of Cooperation for Ibero-American Countries
- 8.2 Programme of Cooperation for West and North African Countries
- 8.3 Programme of Cooperation for Pacific Islands Region
- 8.4 Programme of Cooperation in SE Europe
- 8.5 Programme of Cooperation in SADC Region

9. INTERACTION WITH INTERNATIONAL ADVISERS MEETING

10. PREPARATION FOR THE NEXT MEETING
11. ANY OTHER BUSINESS

ANNEX III

VOLUNTARY COOPERATION PROGRAMME

ACTIVITIES 2007

TRUST FUND VCP (F)
COORDINATED ACTIVITIES VCP (ES)

1. Members Contributions to WMO Voluntary Cooperation Programme

1.1 The Members' contributions to the WMO Voluntary Co-operation Programme in 2007 as shown In Table 1, in terms of VCP(ES) and VCP(F) amounted to some **6,027,941 USD**.

In 2007, eleven Members made cash contributions to the VCP Fund (VCP(F)), amounting to approximately **317,791 USD** while **5,710,150 USD** was provided in support of VCP Coordinated Projects.

Table 1

Members' contributions to the WMO Voluntary Co-operation Programme in 2007
(US $)

Donor Member	VCP(F)	VCP(ES)* Equipment and Services through WMO	Total Contribution
Australia	50,000	238,350	288,350
China	10,000		10,000
Germany		14,800	14,800
Ireland	7,500		7,500
Italy		160,000	160,000
Japan	178,000	17,000	195,000
Kenya	9,792		9,792
Maldives	1,000		1,000
Mauritius	1,000		1,000
Norway	50,000		50,000
Pakistan	499		499
Republic of Korea	10,000	100,000	110,000
Russian Federation			0
Spain		4,931,000	4,931,000
UK		19,000	19,000
USA		230,000	230,0000
Total	**317,791**	**5,701,150**	**6,027,941**

Table 2: VCP(F) income and expenditure 2000-2007 (USD)

		2000-2005			2006-2007					2000-2007		
Project No.	**Project name**	**Income**	**Expend**	**Balance**	**Income 06-07**	**Expenditure**			**Balance**	**Income**	**Expend**	**Balance**
						2006	**2007**	**Total 2006-2007**				
0 NS		**1,556,108**	**147,784**	**1,408,324**	**540,304**			**12,548**	**527,756**	**2,096,412**	**160,332**	**1,936,080**
71000	VCP(F)	-	31,127	(31,127)					-	-	31,127	(31,127)
2801	VCP spares/shipping of equipment	-	39,214	(39,214)		1,480	170	1,650	(1,650)	-	40,864	(40,864)
2802	Expert services	1,680	93,048	(91,368)			14,013	14,013	(14,013)	1,680	107,061	(105,381)
2803	Short-term fellowships	11,721	437,344	(425,623)	20,000	40,954	45,339	86,293	(66,293)	31,721	523,637	(491,916)
71035	Group Training Activities	370	22,610	(22,240)			-		-	370	22,610	(22,240)
2805	TCDC activities	3,306	149,924	(146,618)		14,852	4,462	19,314	(19,314)	3,306	169,238	(165,932)
2806	Improvement of GTS	-	9,075	(9,075)			59,316	59,316	(59,316)	-	68,391	(68,391)
71052	Improvement of GTS Asia/Pacific	3,000	28,420	(25,420)			-		-	3,000	28,420	(25,420)
2807	Improvement of GTS Africa	-	79,037	(79,037)			79	79	(79)	-	79,116	(79,116)
71054	Improvement of GTS South America	-	7,303	(7,303)			-		-	-	7,303	(7,303)
71055	Improvement of GTS South-East RA VI	-	23,765	(23,765)			-		-	-	23,765	(23,765)
71056	Improvement of GTS Central & Eastern Euro	22,000	9,386	12,614			-		-	22,000	9,386	12,614
2810	Improvement of upper-air observ. Subsyst.	-	266,734	(266,734)			22,643	22,643	(22,643)	-	289,377	(289,377)
2811	Upper-air stations in Central & East. Eur	-	83,089	(83,089)		5,846	7,230	13,076	(13,076)	-	96,165	(96,165)
2812	Improvement of GDPS	-	33,741	(33,741)		4,065	-	4,065	(4,065)	-	37,806	(37,806)
71080	Agricultural meteorology activities	-	12,786	(12,786)			-		-	-	12,786	(12,786)
71090	Support to CLICOM & climatological activi	-	54,288	(54,288)			-		-	-	54,288	(54,288)

Table 2: VCP(F) income and expenditure 2000-2007 (USD)												
		2000-2005			2006-2007					2000-2007		
2814	Mitigation of natural disasters	-	6,826	(6,826)		2,810	-	2,810	(2,810)	-	9,636	(9,636)
2815	Emergency disaster assistance	-	48,885	(48,885)		13,328	101,553	114,881	(114,881)	-	163,766	(163,766)
2819	ACMAD	-	100,979	(100,979)		6,427	-	6,427	(6,427)	-	107,406	(107,406)
2818	EAMAC	-	33,992	(33,992)		8,705	(585)	8,120	(8,120)	-	42,112	(42,112)
2816	Operational hydrology activities	-	85,161	(85,161)			79	79	(79)	-	85,240	(85,240)
71150	Improvement of satellite reception	-	9,702	(9,702)			-		-	-	9,702	(9,702)
71160	Internet capabilities	-	30,733	(30,733)			-		-	-	30,733	(30,733)
71170	Year 2000 problem	-	22,250	(22,250)			-		-	-	22,250	(22,250)
71254	Australia Support to Tonga	10,000	793	9,207			-		-	10,000	793	9,207
0145	Long-term fellowships	-	7,794	(7,794)			1,682	1,682	(1,682)	-	9,476	(9,476)
2823	Support to LDCs			-			50,000	50,000	(50,000)	-	50,000	(50,000)
2831	Training activities by ETR			-	(20,000)		1,229	1,229	(21,229)	(20,000)	1,229	(21,229)
	Reserve						-					
	Total	1,608,185	1,875,790	(267,605)	540,304	98,467	307,210	418,225	122,079	2,148,489	2,294,015	(145,526)

Note: Fund started the year 2000 with a balance of USD 1,026,457: **Balance at 31 Dec 2007 1,028,060.00**

2. WMO Voluntary Cooperation Programme (VCP) activities in 2007

2.1 Utilization of the Voluntary Cooperation Fund (VCP(F))

In 2007 the expenditure for approved projects amounted to USD 307,210 (Table 2 above). The funds were used mainly for expert services, short-term fellowships, TCDC activities, and high priority programmes, in particular for support to:

Upperair and surface observing stations, improvement of GTS, short-term fellowships, support to CDMS and climatological activities, operational hydrology activities, Internet capabilities, support to ACMAD and EAMAC, emergency assistance activities, in accordance with the VCP(F) guidelines.

Short-term fellowships, improvements to GTS (Phillipines, Cambodia, Lao Democratic Peoples Republic, and contributions to the LDC Fund and Emergency Assistance Fund (EAF) accounted for the bulk of the expenditure. Expert Services were provided In support of Vietnam and Uzbekistan and Emergency Assistance was provided to Cook Islands through the VCP(F) and the EAF In the wake of the series of cyclones that hit there In early 2007.

The financial status of the VCP(F) including expenditures projects for the period 2000 to 2007 are provided in Table 2 above.

2.2 VCP Coordinated Activities

Country Requests Supported

In total 25 project requests were circulated in 2007. Thirteen countries received support under VCP projects for equipment and services: One project was aimed at strengthening surface observing stations, two at strengthening upper-air observing stations, two at strengthening communications systems, two focused on Meteorological applications activities and six were related to satellite receiving system and GAW activities (Table 3).

In 2007, six donor Members and one private company offered equipment, expert services within the framework of the VCP Equipment and Services Programme (VCP(ES).

- UNITED KINGDOM supported BOSNIA AND HERZEGOVINA (TE/2/3/1) for the establishment of GTS connection with RTH Sofia and MONTENEGRO (TE/5/3/1) for the provision of Internet connection with GTS.

- CANADA supported BAHAMAS (MM/2/2/1) for the provision of a buoy and associated equipment.

- UNITED KINGDOM offered to support ARMENIA (OB/1/2/5) by providing 400 sets of GPS radiosondes and SEYCHELLES (OB/1/3/2) with the provision of a hydrogen generator for upper-air observations.

- The USA has offered to partially support MALDIVES (OB/1/2/4) by providing 200 GPS radiosondes under funding from the US Climate Change Research Initiative for the enhancement of global climate atmosphere observing systems.

- RUSSIAN FEDERATION offered support to KYRGYZSTAN (OB/3/1/2 (Revised)) by providing an ALISA HRPT receiving station.

- AUSTRALIA supported KIRIBATI (OB/2/2/2) for the restoration of surface observing network to enable weather reports to be made for the public and specialized users;

although funding was provided by Australia, the execution of the is being carried out by MetService of New Zealand.

- CHINA offered to support DEMOCRATIC PEOPLE'S REPUBLIC OF KOREA, KYRGYZSTAN, LAO PEOPLE'S DEMOCRATIC REPUBLIC, MYANMAR, SRI LANKA, TAJIKISTAN and VIET NAM (all OB/3/3/1) by providing a FengYunCast receiving system to each country.

- VCP project SRI LANKA OB/1/2/8 has received support from Meisei Electric Co., Ltd, Japan; TOTEX Corporation, Japan; and JAPAN with the provision of a GPS upper-air observing system; 150 pieces of 600g meteorological balloons; and 60 GPS radiosondes. Additional 60 GPS radiosondes will be provided with the VCP(F).

- UK has offered to support TOGO (PWS/1/1/2) for the upgrading of the media weather presentation system.

Table 3

Statistics related to the support

received for VCP projects circulated amongst donors

during the period 1988-2006 and in 2007

(VCP requests related to fellowships excluded)

Fields of co-operation	Number supported during 1988-2006	Total circulated during 1988-2006	Percentage supported during 1988-2006	Number supported in 2007	Total circulated in 2007	Percentage supported during 1988-2007
Surface observing stations	88	184	48%	1	1	48%
Upper-air observing stations	183	337	54%	2	3	54%
Satellite receiving stations	49	116	42%	6	7	45%
Weather radar stations	4	19	21%	0	1	20%
Telecommunication systems	183	345	53%	2	3	53%
Data processing systems	42	99	42%	0	2	42%
Maintenance workshops	6	23	26%	0	1	25%
Research and training centre activities	6	25	24%	0	0	24%
CDMS and climatological activities	88	174	51%	0	4	49%
Hydrological activities	29	87	33%	0	0	33%
GAW and environment protection activities	4	58	7%	0	0	7%
Meteorological applications activities	98	170	58%	2	3	58%
Total	780	1637	48%	13	25	48%

2.3 Related Technical Cooperation Activities through WMO Technical Programmes

2.3.1 WMO Programmes for the LDCs

The following Members made financial contributions towards the organization of the WMO Coordination and Capacity Building Workshop for LDCs in Africa that was held in Entebbe, Uganda from 10 – 12 September 2007:

(i) Finland – CHF 50,000 (Trust Fund)
(ii) France - € 3,000 (VCP)
(iii) Spain – € 50,000 (Trust Fund)
(iv) United Kingdom - GBP 10,000 (VCP)

The workshop was organized in two parts with the aim of promoting a better understanding of the contribution of weather-, climate- and water-related services to the socio-economic development of the LDCs, and enhancing the capacity of Senior Managers of NMHSs of LDCs in leadership, management, planning, project development, communication and marketing. The workshop was attended by National Focal Points of LDCs from relevant Government Ministries and the Heads of NMHSs from African LDCs.

Arising from the recommendations of the Entebbe workshop, the UK Met Office has developed the "management by e-learning" Training Course which is being implemented under the UK VCP since 25 February 2008. The training course was developed to improve the understanding and use of management skills and techniques by middle level staff in developing countries, including LDCs, with particular focus on project development and resource mobilization.

2.3.2 GCOS

In 2007 GCOS upgraded the GCOS Upper Air Network (GUAN) station in Lima, Peru using funds provided by Spain. This station had been silent for a long time. The upgrade was accompanied by a technical mission that also was able to restart three other upper air stations and provide training to the staff there.

A contract for a Technical Support Project (TSP) for the Americas will soon be awarded. This will be the fourth TSP that GCOS has established. Funding for the TSP is being provided by the United States and Canada.

A GUAN Upper Air Observing workshop was held in Windhoek, Namibia in 2007 to focus on correct observing techniques, including hydrogen generator safety. All GUAN stations in Africa were represented and 5 vendors participated. The workshop was organized by the World Weather Watch (WWW) and GCOS, and the instructors were provided by the UK Met Office (UKMO). Funding for the workshop was provided by the Dutch meteorological institute, KNMI.

Hydrogen generators are being provided to the Seychelles, Niger, and the Cote d'Ivoire. These units will replace aging and inoperative units and are being funded by KNMI and the UKMO.

The observatory at Bjelasnica, Bosnia and Herzegovina, a GSN station, was refurbished in 2007. In the previous year the exterior of this historic observatory was repaired, and this year the interior was renovated. Replacement observing equipment has been ordered. The repair of the facility was funded by the United States, and the replacement equipment is funded by Germany.

The observing instruments at the GSN station in Tbilisi, Georgia are being replaced. This is being funded by the United States.

Support was provided to several GUAN stations that experienced equipment failures. Replacement parts were provided to Mauritius, Gan, Dar es Salaam, and Windhoek stations.

2.3.3 Tropical Cyclone Programme

Upgrade of the telecommunication facilities in Cambodia and Lao PDR has been an urgent problem in the ESCAP/WMO Typhoon Committee region to strengthen both domestic and regional early warning systems for typhoons. During 2007, remarkable developments were marked in telecommunication in the two countries through the VCP projects which established broadband Internet connections to share weather data as well as to retrieve required data for weather forecasts and warnings via GTS.

During 2006 - 2007, a number of workshops and training courses were organized for capacity building under the Tropical Cyclone Programme (TCP) as part of the regional technical cooperation activities. They included RA IV Workshop on Hurricane Forecasting and Warning (Miami, 6 - 18 March 2006 & 16-28 April 2007); Seventh Southern Hemisphere Training Course on Tropical Cyclones (Melbourne, 10 - 21 September 2007); Fourth Regional Workshop on Storm Surge and Wave Forecasting (Manila, 11 - 15 September 2006); RA I Tropical Cyclone Training Course (La Reunion, 23 October – 4 November 2006).

With a view to transferring practical techniques to operational forecasters, attachment training was organized during the cyclone season at RSMC Tokyo-Typhoon Center (19 - 28 July in 2006 & 18 – 27 July 2007), RSMC Miami-Hurricane Center (June to November in 2006 and 2007), RSMC New Delhi (29 January – 9 February 2007) and RSMC Nadi (3 - 13 December 2007). Also, storm surge forecasters were attached to the Indian Institute of Technology (IIT) in Kharagpur (7 – 18 August in 2006) and to IIT Delhi (20 August – 2 September 2007).

2.3.4 Climate Data Rescue activities (Preservation of climatological paper records and Database Management Systems (CDMSs)

Installations of the CDMSs continue through the WMO Voluntary Cooperation mainly in Developing and Least developed countries.

The UK-VCP has supported four training workshops on the Climsoft software in:

- Port of Spain, Trinidad, 15 May-2 June 2006 for Anguilla, Bahamas, Belize, British Virgin Islands, Cayman Islands, Dominica, Grenada, Montserrat, Netherlands Antilles and Aruba, St. Kitts & Nevis, Saint Lucia, St. Vincent and the Grenadines, and Turks & Caicos.

- Rwanda 18 September – 6 October 2006, Kigali, Rwanda for the following countries : Angola, Burundi, Comoros, Malawi, Rwanda, Seychelles, Swaziland, Tanzania, Uganda, Zambia

- Brazzaville, Congo from 2 to 20 April 2007 Congo, Cameroon, Gabon, DR of Congo, Central Africa, Guinea, Zimbabwe, Angola, and Sao Tome & Principe

- Hanoi, Vietnam from 12 November to 7 December 2007 for countries in South East Asia (Bhutan, Cambodia, Fiji, Laos, Maldives, Myanmar, Nepal, Sri Lanka, Thailand, Democratic Republic of Timor Leste (East Timor) and the Socialist Republic of Viet Nam).

The training workshops in Congo and Vietnam were followed back-to-back by a one week seminar on Climate Data Homogenization and Climate Change Indices (see below).

The Data rescue project launched by Australia in five countries in the Pacific still continues.

2.3.5 Data Management Applications

Installations of Modern Climate Data Management Systems continued through the WMO Voluntary Cooperation mainly in Developing and Least developed countries.

In 2007, the UK-VCP supported four training workshops on the CLIMSOFT software in:

- Brazzaville, Congo from 2 to 20 April 2007 Congo, Cameroon, Gabon, DR of Congo, Central Africa, Guinea, Zimbabwe, Angola, and Sao Tome & Principe

- Hanoi, Viet Nam from 12 November to 7 December 2007 for countries in South East Asia (Bhutan, Cambodia, Fiji, Laos, Maldives, Myanmar, Nepal, Sri Lanka, Thailand, Democratic Republic of Timor Leste (East Timor) and the Socialist Republic of Viet Nam).

The training workshops in Congo and Viet Nam were followed back-to-back by a one-week seminar on Climate Data Homogenization and Climate Change Indices.

The participation of the Republic of Timor Leste was entirely supported by the Bureau of Meteorology of Australia (Travel, DSA and laptop).

2.4 Education and Training Fellowship Activities

The Regular Budget, or combination of Regular Budget and VCP, is responsible for the majority of the long term fellowships whilst VCP contributes more than half of the short term fellowships. The RB/VCP cost–sharing arrangement takes into account the use of Regular Budget funds to complement the stipend, insurance and book allowance, and in some cases air-ticket of those fellows studying mainly in the Russian Federation and to a limited extent, Australia, India, Iran, Nigeria, and Philippines. Two familiarization visits on the management of meteorological services were organized for newly appointed directors of Meteorological Services.

The overall statistics for 2007 fellowships (in person x months) is shown in Table 2.4(1)

Table 2.4 (1) Number of person x months of fellows studying in 2007

	Num. Fellows	UNDP	VCP	Trust Fund	Regular Budget (RB)	RB/VCP	Total
Long Term > 6 months	78	17.8	27.7	40.3	278.2	201.9	565.9
Short term 1 month < and < 6 months	41		64.2		48.4	5.9	118.6
Very short term < 1 month	25		0.9		11.2		12.1
Total	**144**	**17.8**	**92.9**	**40.3**	**337.8**	**207.8**	**696.5**

The highest number of requests for fellowships in 2007 was received from Region I (Africa), followed by Region II (Asia), see Table 2 below. A similar pattern was observed in previous years. This could be due to the combination of several factors: the total number of WMO Member countries in these two Regions; the level of development of their NMHSs, and; the economic conditions of these Member countries, most of which are categorized as least developed countries (LDCs). The LDC status is one of the main filters for the selection and award of fellowships. The following tables depict the demand and awarding of fellowships over the last four years (based on the starting date of the fellowship request). These tables only count fellows starting in each year, thus the 2007 figures in Tables 2.4(2) and 2.4(3) are less than in Table 2.4(1) which includes fellows continuing from the previous year.

Members from the Regions are encouraged to take advantage of the WMO Education and Training Fellowship opportunities for the development of human resources and capacity building of their NHMSs through the circular letter on fellowships that is sent by the Secretary General every year. This message is reinforced by communication through Regional Association Sessions and Technical Commissions as and when required.

Table 1. 4 (2) Number of fellowship requests and awards for the last four years by region

	2004		2005		2006		2007		
	Requests	**Awarded**	Requests	**Awarded**	Requests	**Awarded**	Requests	**Awarded**	**Total Awards**
I	64	**61**	33	**26**	80	**34**	90	**28**	**149**
II	20	**20**	14	**14**	32	**25**	45	**39**	**98**
III	16	**16**	14	**14**	10	**8**	10	**7**	**45**
IV	14	**14**	13	**11**	13	**11**	11	**6**	**42**
V	5	**5**	6	**4**	4		12	**8**	**17**
VI	8	**8**	6	**5**	8	**3**	4	**3**	**19**
	127	**124**	88	**74**	147	**81**	172	**91**	**370**

Table 2.3 (3). Awarded fellows by length of study

	2004		**2005**		**2006**		**2007**	**Total**
Long term	51		23		31		29	134
Short Term	20		34		21		36	111
Very Short	53		17		29		26	125
Total	**124**		**74**		**81**		**91**	**370**

Due to the market economy measures implemented in most of the countries hosting training institutions the cost of fellowships is rising. At the same time the amount of funds available through Regular Budget, VCP, Trust Funds, and UNDP is static or, in fact decreasing in real terms, the requirement for fellowships, in particular the new demands from LDCs and countries with economies in transition is increasing. In order to maximize the benefit from limited resources, Members are requested to develop and implement tripartite fellowship schemes where a donor Member agrees to support a trainee from a recipient country for study in a relevant RTC, rather than only supporting fellows going to the donor Member's country.

VCP Allocation for 2007 and requirement for 2008

The VCP (F) annual allocation for short-term, very short-term fellowships and group training activities of US$ 100,000 in 2007 has contributed in meeting some of the requests of developing Member countries, especially LDCs. However, there are still many urgent needs to be met from these countries, especially those affected by natural disasters and civil strife such as Afghanistan, Democratic Republic of Congo (DRC), Iraq, Liberia, Rwanda and Sierra Leone. Approximately CHF 810,000 of funds from the Regular Budget have been allocated for Fellowships in 2008. Of this some CHF 230,000 has already been approved for Fellowships from the FELCOM XIII meeting in November 2007.

WMO would like to reiterate its appreciation to VCP donor Members for their generous contributions and appeal to them to further increase their contributions to the fellowships programme in order to meet the increasing demand from developing countries.

Improvements in the Education and Training Fellowship Programme

During 2007, following recent recommendations of internal and external auditors, improvement has been made to the fellowship award documentation, the Fellowship Nomination Form and working rules of FELCOM. These actions included reviewing and formally documenting the complete process for applying for and the processing of fellowships within the Secretariat. This has led to increased transparency in the award and monitoring of fellowships. The documented process is described in the new Manual on Policies and Procedures for WMO Fellowships. The Manual was posted on the WMO website and widely distributed to NMHSs of Members countries. The data in Tables 1, 2 and 3 above were extracted from the Fellman Plus database. Work is continuing on

improving the underlying data quality and linking this data with other databases, such as those from the 2006 ETR Questionnaire on Training Needs and various data bases held by other departments on their training activities to build a more comprehensive picture of training activities and training needs.

A standing Training Management Team (TMT) for the cross-Programmes coordination of all WMO-assisted training events was established in the Secretariat within the framework of matrix management. The main objective of this TMT is to improve the efficiency and effectiveness of the WMO training, through better interdepartmental collaboration and through enhanced partnership with relevant institutions at national, regional and international level. Cross departmental coordination will give Departments the opportunity to leverage their training programme funds to provide more opportunities for individuals than would otherwise be possible. The TMT is due to meet in April for the first time under the new D/ETR.

Previous meetings of the TMT agreed that an enhanced partnership with educational institutions world-wide would facilitate the carrying out of cost-effective training, giving due consideration to the required teaching subjects, levels and language, on the one side; and to the availability of facilities, training materials and expertise, as well as to the involved costs, on the other side. The development of a comprehensive database for all WMO training activities is one of the initial objectives of the TMT and the beginnings of this are reflected above.

2.5 2007 Informal Planning Meeting on the VCP and related technical cooperation

The ad hoc 2007 Informal Planning Meeting (IPM) on the Voluntary Co-operation Programme (VCP) and related Technical Co-operation Programmes was held during Cg-XV at the Centre International de Conférences Genève (CICG) in Geneva as two side meetings on 8 and 12 May 2007. The meeting was attended by the representatives of the following WMO Members: Australia; Canada; Brazil; China; Finland; France; Germany; Hong Kong, China; India; Islamic Republic of Iran; Japan; Kenya; New Zealand; Pakistan; Republic of Korea; Russian Federation; South Africa; Spain; Switzerland; UK and USA, as well as Mr T. Sutherland, Chairman of the EC Advisory Group of Experts on Technical Co-operation and WMO Secretariat staff.

The meeting welcomed the further development of innovative approaches for the mobilization of resources with the creation of the Resource Mobilization Office (RMO) within the DCR Department, and the integration of Regional Offices and WMO Offices in the Region into the resource mobilization and advocacy processes of the whole WMO. The meeting was informed that the approach is to build relationships with regional political and economic groupings and to co-ordinate both within WMO and across the UN organizations and development partners (e.g. World Bank, European Commission), with an emphasis on developing regional scale projects. The aim is to work with partners to develop and execute multi-country, multi-year projects and also aiming to build long-term relationships between developed and developing country NMHSs. In this connection, the meeting noted that a new Director of RMO would assume the duties including resource mobilization and VCP coordination in mid-August 2007 and agreed that this agenda item should be discussed further with the new Director in future meetings, especially IPM (2008).

2.6 Members Related Technical Cooperation Activities

See Annex IV to this report – Reported Technical Cooperation Activities by Bilateral and other Mechanisms for a full inventory of members bi-lateral cooperation activities.

2.7 Management of the Voluntary Cooperation Programme

Various efforts by the WMO Secretariat continued to be made to enhance the visibility of TCO and VCP Programmes, and to ensure the cost-effective and efficient management of the VCP Programme and the timely distribution of the relevant information to Members as well as the

general public. The VCP project proposals in 2007 have been formulated by the VCP Office in line with the revised VCP request form.

The VCP is now managed through the newly established Resource Mobilization Office in the Development and Regional Activities Department. It is intended that the WMO Regional Offices will play a more active role in VCP project definition and assessment and evaluation and assist countries with project implementation as required.

3. Total Support to Technical Cooperation Activities

Based on WMO VCP records and data provided by Members' at 28 February 2008, total Member support to Technical Cooperation activities in 2007 amounted to **16,900,516 USD** (Table 4). Full details can be found in Annex IV

Table 4

Total Members' contributions to
WMO Voluntary Co-operation Programme and Related Activities in 2007
(US $)

Donor Member	VCP(F)	VCP(ES)* Equipment and Services through WMO	Donor Reported Contributions At 28 Feb 2008	Total
Argentina			23,600	23600
Australia	50,000	238,350	393,900	682250
Canada			550,000	550000
China	10,000		0	10000
France			2,005,111	2,005,111
Germany		14,800	578,800	592,600
Ireland	7,500		0	7500
Italy		160,000	0	160000
Japan	178,000	17,000	250,000	445000
Kenya	9,792		0	9792
Maldives	1,000		0	1000
Mauritius	1,000		0	1000
Norway	50,000		0	50000
Pakistan	499		0	499
New Zealand			1,436,560	1436560
Republic of Korea	10,000	100,000	1,236,919	1346919
Spain		4,931,000	1,164,000	6095000
Switzerland			0	0
UK		19,000	1,583,685	1602685
USA		230000	1,651,000	1,881,800
				0
Total	**317,791**	**5,710,150**	**10,873,575**	**16,900,516**

ANNEX IV

WORLD METEOROLOGICAL ORGANIZATION

INFORMAL PLANNING MEETING ON THE VOLUNTARY CO-OPERATION PROGRAMME AND RELATED TECHNICAL CO-OPERATION ACTIVITIES

Pretoria, 10-12 March 2008

Technical Cooperation Activities of Members Including through Bilateral and other Mechanisms for 2007 and Contributions and Activities Envisaged for 2008

Summary of Member Contributions

The Members' contributions to the WMO Voluntary Co-operation Programme in 2007 as shown In Table 1, in terms of VCP(ES) and VCP(F) amounted to some **6,207,941 USD**.

In 2007, eleven Members made cash contributions to the VCP Fund (VCP(F)), amounting to approximately **317,791 USD** while **5,7101,150 USD** was provided in support of VCP Coordinated Projects.

Table 1

Members' contributions to
the WMO Voluntary Co-operation Programme in 2007
(US $)

Donor Member	VCP(F)	VCP(ES) Equipment and Services through WMO	Total Contribution
Australia	50,000	238,350	288,350
China	10,000		10,000
Germany		14,800	14,800
Ireland	7,500		7,500
Italy		160,000	160,000
Japan	178,000	17,000	195,000
Kenya	9,792		9,792
Maldives	1,000		1,000
Mauritius	1,000		1,000
Norway	50,000		50,000
Pakistan	499		499
Republic of Korea	10,000	100,000	110,000
Russian Federation			0
Spain		4,931,000	4,931,000
UK		19,000	19,000
USA		230,000	230,000
Total	317,791	5,710,150	6,207,941

The Members' contributions to Technical Cooperation Programmes through Bi-lateral and other means in 2007 as shown In Table 2, amounted to **10,873,675 USD**

Table 2

Members' Reported contributions to Technical Co-operation by bilateral and other arrangements in 2007

(US $)

Donor Member	Equipment and Services by bilateral arrangements	Training/ Fellowships	Total Contribution (US$)
Argentina	16,800	6,800	23,600
Australia	300,000	93,900	393,900
Canada	550,000		550,000
France	239,089	1,766,022	2,005,111
Germany	349,900	228,900	578,900
Hong Kong, China			0
Japan		250,000	250,000
Kenya			0
New Zealand	1,263,196	173,364	1,436,560
Republic of Korea	1,000,000	236,919	1,236,919
Russian Federation			0
Spain	721,000	443,000	1,164,000
UK	1,390,704	192,981	1,583,685
USA	451,000	1200000	1,651,000
Total	**6,281,689**	**4,591,886**	**10,873,675**

Total Members' contributions to the VCP and Technical Cooperation Activities

Table 3 ***2004 – 2007* (US $)**

2007					%	2006	%	2005	%	2004	%
Donor	**VCP(F)**	**ES**	**Reported**	**Total**							
Argentina			23,600	23,600	0.14		0	8300	0.08	12,200	0.14
Australia	50,000	238,350	393,900	682,250	4.17	560,000	5.33	482400	4.73	370,250	4.31
Canada			550,000	550,000	3.364	600,000	5.71	868000	8.51	385,000	4.49
Chile				0	0	0	0	29320	0.28	5,000	0.058
China	10,000			10,000	0.061	812,110	7.73	471265	4.62	457,170	5.33
Finland				0	0	1,488,947	14.17	875000	8.58	403,000	4.7
France			2,005,111	2,005,111	11.86	2,183,098	20.78	1,177369	11.55	908,100	10.59
Germany		14,800	577,800	592,600	3.62	716,800		395,900	3.88	237,200	2.76
Hong Kong, China				0	0	29,000	0.27	55,000	0.53	48,000	0.55
Ireland	7,500			7,500	0.045	8,270	0.078	7,692	0.07	8,621	0.1
Itay		160,000		160,000	0.97	0	0		0		0
Japan	178,000	17,000	250,000	445,000	2.72191	428,000	4.07	477,000	4.68	415,000	4.84
Kenya	9,792			9,792	0.059894418	249,251	2.37	152,946	1.5		0
Maldives	1,000			1,000	0.006116668	1,000	0	1,250	0.012	1,316	0.015
Mauritius	1,000			1,000	0.006116668	2,171	0.02		0		0
Myanmar				0	0		0	500	0.01		0
New Zealand			1,436,560	1,436,560	8.786961269	0	0	199,091	1.95	263,029	3.06
Norway	50,000			50,000	0.305833424	0	0	81,833	0.8		0
Pakistan	499			499	0.003052218	10,000	0.09	1,022	0.01	534	0
Philippines				0	0	4,673	0.04	6,125	0.06	420	0
Republic of Korea	10,000	100,000	1,236,919	1,346,919	8.23865699	202,412	1.92	143,000	1.4	156,200	1.82
Russian Federation				0	0	105,769	1	72,780	0.71	210,000	2.44
South Africa				0	0	0	0	5,500	0.053	13,598	0.15
Spain		4,931,000	1,164,000	6,095,000	37.28109437	1,775,662	16.9	783,638	7.69	550,815	6.42
Switzerland				0	0	0	0	120,000	1.17	542,300	6.32
UK		19,000	1,583,685	1,602,685	9.80309282	163,291	1.55	1,791,000	17.57	1,585,232	18.49
USA		230,000	1,651,000	1,88,1000	11.50545341	1,881,000	17.9	1,984,000	19.47	2,000,000	23.32
Total	**317,791**	**7,146,710**	**9,436,015**	**16,900,516**		**11,221,454**		**10,189,931**		**8,572,985**	

Argentina

In April 2007, the National Meteorological Service (NMS) underwent a change and reorganization. Therefore, Argentine contributions to the VCP were lower on account of general financial reductions.

In this respect, Argentina continued its activities as a donor to the Spanish-speaking countries of Regions III and IV (cost estimate at US $11,800).

In April 2007, the following co-operation activities were carried out:

- The SMN organized a Meeting on Numerical Weather Training Workshop on Advanced Forecasting Techniques for SMN and RA III. This Workshop was very important for SMN participants, other Organizations and RA III experts.

- Internships and short- and medium-term courses at RMTC Buenos Aires; (sixteen) participants from other countries of RA III attended the following courses in Buenos Aires (cost estimate at US $6, 800):

1. Maintenance of Meteorological Instruments (four months);
2. Analysis and Interpretation of Satellite imagery and Radar 4 (six week);
3. Aeronautical meteorological Seminary (half month);
4. Climatology Course and Training (half year each /course / training);
5. Training Forecasting Techniques in advances on weather forecast in South America.

- Granting to certain Members of RA III password-protected access to value-added products developed by RSMC Buenos Aires, which were published on the restricted-access Internet site of the National Meteorological Service (SMN). Through RMTC Buenos Aires, NMS offers the possibility of designing courses intended to be converted into the interactive system using multimedia, as long as SMN could count on the supportive action of specialists in computing sciences and could receive some training in the design of such courses. Throughout, the Internet site of NMS has included several value-added products from the Regional Specialized Meteorological Centre (RSMC) Buenos Aires. This information may be accessed using a password and an account. Accounts have been provided to several Members of RA III upon request.

- Standard calibration and repair of other Members meteorological instruments by Regional Instrument Centre (RIC) in Buenos Aires. The cost of repairs is estimated at US $5000.
- In May 2007, under VCP project OB /1/2/3, the National Weather Service received 200 balloons - radiosondes for Upper-air station Comodoro Rivadavia.
- In December 2007 through the VCP(F), the National Weather Service received 400 TOTEX balloons (TA 500).

In 2008, the contributions are hopefully expected to be increased. New activities are also being organized that have already attracted the attention of other Members, particularly Long Distance Courses, Seminars and others, as follows:

- Argentina is considering an Argentine expert mission to other RA III NMHSs;
- An expert in meteorological satellite for three days to one of the associated NMCs;
- An expert in meteorological instruments for two weeks to one of the associated NMCs.

Australia

In 2007, Australia's total VCP contribution was US $682,250, of which US $50,000 was for VCP(F) and US $48,150 was for VCP(ES) Project OB/2/2/2: "Restoration of surface observing network in Kiribati".

Australia focussed particular attention on the following VCP projects which were relevant to the VCP theme for 2007 "Realizing social and economic benefits through technical cooperation with NMHSs":

- Restoration of surface observing network in Kiribati, to enable weather reports to be made for the public and specialized users; although funding was provided by Australia, the execution of the project would be carried out by MetService of New Zealand;
- Secondment of an Australian meteorologist to RSMC Nadi to assist with tropical cyclone, public and aviation forecasting in Fiji;
- Implementation of a Phase II AusAID-funded Project "Enhanced applications of climate prediction in Pacific Island Countries", which helps to strengthen climate information and prediction services in the Pacific;
- Assessment of capacity in Tonga to receive and respond to tsunami warnings, 29 May – 1 June 2007.

A breakdown of bilateral/multilateral contributions to technical cooperation and training is as follows:

- AusAID-funded project (Phase II) on climate prediction for the Pacific: US $100,000;
- AusAID RANET-III Project, including a RANET Training Course in Melbourne, 12 – 23 November 2007, co-sponsored by US-NOAA: US $100,000;
- AusAID-funded secondment of Australian meteorologist to RSMC Nadi to help relieve acute staff shortage in RSMC: US $50,000;
- AusAID-funded assessment of capacity to receive and respond to tsunami warnings, Tonga, 29 May – 1 June 2007: US $50,000;
- Support to GCOS, APN, GEO, DBCP, AMDAR and IPCC: US $190,200;
- Graduate Diploma in Meteorology Training Course for six overseas students from Fiji, Solomon Islands and Sri Lanka; contribution to a JCOMM storm surge workshop in Seoul; provision of publications; training assistance to Timor-Leste in Climsoft, support to SPREP/WMO meetings: US $93,900.

2008 will be the 100th Anniversary of the Australian Bureau of Meteorology. Because one of the functions of the Bureau is international cooperation as defined in the Meteorology Act, 2008, it will also mark 100 years of international cooperation by the Bureau.

As for the outlook on VCP contributions for 2008/09, because several AusAID projects will be coming to an end, there may be an initial reduction in the Australian contribution to technical cooperation under VCP. However efforts will be made to mobilize new resources.

Canada

In 2007, Canada continued its ODA response to the Millennium Development Goals and the G8 Plan of Action for Sustainable Development. Canada's NMHS was active in organizing the World Climate Conference-3 (WCC-3) which has as its theme "Climate Prediction for Decision Making: Focusing on Seasonal to Inter-annual Timescales" on further developing the Global Cryosphere Watch initiative. Organizationally, we placed emphasis on how to build synergies with Capacity Building activities undertaken by the Group on Earth Observations leading into the Ministerial Summit of 30 November in Cape Town. Canada hopes to cultivate real progress on the implementation of the Global Earth Observation Systems of Systems with emphasis on networks and systems related to weather, climate and water. Although we had hoped to seek better harmonization of the various capacity building activities conducted by International Organizations, there continues to be much work to be done here. With contributions of a Waverider buoy to Bahamas and continued support to the Agrhymet Regional Centre, a specialized technical

institution of CILSS (Permanent Interstate Committee for Drought Control in the Sahel), total disbursements for 2007 were approximately US $550,000, slightly above our forecast.

For 2008, Canada will continue its contribution to various Trust Funds that help support scientific and technical capacity building activities. There will be concentrated efforts on improved understanding of polar influences on Earth's climate through our significant contribution to the Third International Polar Year. This will include a workshop on Sustaining Arctic Observing Networks in April as a regional response to the Global Cryosphere Watch. Our continuing work on Disaster Risk Reduction will investigate how best to act upon the Madrid Action Plan and to integrate these actions into the WMO Operating Plan. A Forest Fire Early Warning Workshop is planned with our partners in GOFC – GOLD. Furthermore, we have partnered with the Department of Foreign Affairs and International Trade Canada to provide support for the implementation of the Central American and Caribbean Regional GCOS network.

Canada would like to see progress on joint efforts between WMO and GEO on capacity building activities advanced through our discussions on the roles of the Regional and Technical Cooperation Programmes and the Cross cutting programme on Least Developed Countries during Congress XV. We must consider impacts, both positive and negative, that might ensue from a re-organization of the WMO. Canada would like to explore improved connections with the private sector through our representation at the WMO "Technical Conference on Meteorological and Environmental Instruments and Methods of Observation" (TECO-2008) and the "Exhibition of Meteorological Instruments, Related Equipment, and Services" (METEOREX-2008) from 27 to 29 November 2008, in St Petersburg, Russian Federation. The Association of Hydro-Meteorological Equipment Industry (HMEI) might help in this regard. Total disbursements for 2008 are expected to be approximately US $550,000.

Chile

In 2007, Chile assisted INAMHI of Ecuador in providing training of eight professionals on numerical weather prediction models and interpretation of meteorological satellite images. Also provided was on-the-job training for two professionals of the NMS of Paraguay on WAFS system and meteorological databases.

In 2008, Chile will continue to offer assistance on training to other NMSs of RA III that may require this support.

France

In 2007, France contributed €1,373,358 to VCP-Equipment and Services by bilateral agreements and to VCP-Training and Fellowships through bilateral agreements.

Equipment and services through bilateral agreements:

Expert services:

In 2007, 17 experts from Météo-France carried out technical assistance missions in several countries including Algeria, Bulgaria, Morocco, and Tunisia for an estimated cost of €163,760.

Training and fellowships:

In 2007, Météo-France welcomed about 149 trainees and scientists, in particular as part of the project ALADIN, from countries such as Algeria, Bulgaria, Czech Republic, Croatia, Estonia, Georgia, Latvia, Lithuania, Morocco, Romania and Tunisia, for an estimated cost of €1,209,598.

In 2008, France will maintain its contribution to VCP-Equipment and Services by bilateral agreements and to VCP-Training and Fellowships as at the same level as in 2007. France also

mobilized significant resources for the follow-up and the launching of other technical cooperation operations, in particular:

Support to training activities in RA V:
In 2007, a training course on marine meteorology was organized in French Polynesia from 7 to 12 0ctober with the support of WMO and PROE. The course, co-financed by the French Ministry of Foreign Affairs through AFD and Météo-France for an amount of €146,000 was followed by fifteen forecasters from Region V.

In 2008, a similar training course will be organized in New Caledonia on aeronautical meteorology.

WHYCOS:
In 2007, the IRD continued providing support for the implementation of the WHYCOS programme and of its regional components, in particular:

- CARIB-HYCOS: funds from the General and Regional Councils of "La Martinique" and from the FEDER-La Martinique were confirmed and an agreement was signed in June 2007 between the IRD - Martinique, as the Executing Agency, and WMO, as Supervising Agency, making it possible for the project to start in 2008.
- Niger-HYCOS: The French Development Agency (AFD) is supporting the project for an amount of €3,000,000. In 2007, IRD, who provides technical assistance to the Niger Basin Authority (NBA), the Executive Agency of the project, installed the data management software HYDROMET in the Project Regional Centre and in the participating countries. IRD also conducted four training courses on the use of the software.
- Mekong-HYCOS: This project is supported by the AFD and the FFEM (French Fund for the Global Environment) for an amount of €3M, with the technical assistance of the IRD.

- **Support to WMO activities and programmes through trusts funds**:

In 2007, France provided a financial support of €48,000 to several conferences and seminars such as the regional seminar of RA I on the African NMSs, Media and development, the Madrid Conference on the socio-economic profits of the NHMSs, etc. It also contributed to the panel AMDAR, and to the IPCC and THORPEX Trust Funds for an amount of €23,000, €432,000 and €30,000 respectively.

In 2008, Météo-France will continue to finance these Trust Funds as at the same level as 2007. Concerning the THORPEX Trust Fund, an additional contribution of €45,000 was brought in December 2007 in order to support the AMMA activities and the THORPEX activities which contribute to the implementation of the THORPEX plan in Africa.

This action will contribute to the objectives of several other actions and projects described below, which aim at the strengthening of the capacity building of the African meteorological services, the enhancement of their observation networks and the reduction of the impacts of climate change in Africa :

- **Support to the ACMAD Centre and to AMMA**:

In 2007, France continued mobilizing significant resources for the ACMAD Centre and for capacity building of the NMSs under the AMMA project. It includes a financial contribution from the French Ministry for Foreign Affairs of €225,000 covering the salary of the technical assistant and the implementation of the 2007 working plan and a support from Météo-France to the PRESAO forum. Météo-France also financed an increase of the RETIM Africa bandwidth in order to allow the African forecasters to benefit from the AMMA experiment in putting at their disposal a new set of relevant forecast products from the Arpege model. The cost of this operation amounts to approximately €20,000 per year.

- **RIPIECSA programme:**

In 2007, the kick off meeting of the RIPIECSA programme took place in Bamako. This programme, of a three-year duration, the objective of which is to allow the emergence of expertise and of excellence centres in West Africa on climate change, is financed for an amount of €3.5M by a priority Solidarity Fund (FSP) of the Ministry for Foreign Affairs. Following a call for a proposal launched in spring 2007 concerning the climatic aspects: "strategies to reinforce and consolidate the network of observation, rescue of historical data and comprehension of variability on various time scales and space", several targeted projects contributing to the reinforcement of the equipment set up under AMMA and to the requirements in observation networks of THORPEX Africa were selected such as:

- The project “Impact of data and definition of a network of observation over West Africa (€24,000);
- The project "measures by radiosounding in Guinea Conakry - rehabilitation of the radiosounding station and digitisation of the historical data" (€60,000)

- **Project: "Vigilance of the African countries to meet climate change":**

In 2008, the FFEM should also give its agreement for a financial €2M contribution to a project entitled "Vigilance of the African countries to meet climate change – contribution to the programme GCOS/ClimDev Africa.

This project, the total cost of which is estimated at €6M, should last three years and will contribute significantly to the ClimDev-AFRICA programme. It is expected that several regional and international partners will take part in this project. A major part of the budget of the FFEM will be devoted to the carrying out of detailed mapping of the vulnerability indexes related to climate change for each country and to the strengthening of the systems of warning and of plans of prevention of the risks which should benefit directly the African meteorological services. The French scientific and technical partners will be in particular IRD, Météo-France and the CIRAD. Many projects financed by the FSP RIPIECSA will also be partners of this project.

- **Support to adaptation to climate change in West Africa in Agriculture and Water Resources** (total cost of the project, €3M, FFEM contribution: €1.2M).

This project, submitted to the Steering Committee of the FFEM in March 2007, was accepted at the stage of the identification for an amount of €1.2M. The recruitment of a consultant in charge of preparing the presentation report to be submitted to the Steering Committee in July 2008 has been initiated allowing the project to start in autumn 2008. The objective of this project is to develop, both for the national and regional institutions and for the donors, a strategic framework to address the adaptation to climate change. It will include a component of capacity building which could lead to an improvement of climate observations networks.

- **Strengthening of the national capacities of the countries of the Indian Ocean Commission** (Comoros Islands, La Reunion, Madagascar, Seychelles) as regards adaptation to climate change (total cost of the project €3M, FFEM contribution: €1M).

This project, submitted to the Steering Committee of the FFEM in March 2007 was accepted definitively for an amount of €1M. The recruitment of a Technical Assistant to the IOC is underway (January 2008) and the project, the purpose of which is to establish a regional cooperation between the IOC Members as regards adaptation to climate change is planned to start in April 2008

Germany

In 2007, Germany continued to provide assistance in education and training and fellowships, mostly on a bilateral basis, and especially for short-term fellowships on a cost-sharing basis in the field of research and development.

Also with regard to training, Germany continued its efforts in support of WMO-sponsored training courses. In 2007 the International seminar for participants from central and eastern European countries on the Design, Products and Operational Use of the NWP Model-chain of RSMC Offenbach again took place. Additionally to support national meteorological services of developing countries in the introduction of regional numerical weather prediction, Deutscher Wetterdienst offered again a two-week Regional NWP Training Workshop and a second HRM workshop was carried out in April 2007 in Hanoi/Viet Nam.

Meanwhile, 24 countries are being supported in their operational use of the DWD NWP model by special provision of boundary data.

For all seminars held at the meteorological Training and Conference-Centre of the DWD, accommodation expenses are reduced for participants from countries with economy in transition.

In connection with the tasks to which it is committed within the framework of WMO, Germany continues to support for example the WMO RA VI Regional Dobson Calibration Centre and the GAW Training and Education Centre, both at Hohenpeißenberg and bore again the expenses for the GAWTEC training courses.

Additionally, Germany supported also in 2007 a three year research project at the Hanoi National University and the Viet Nam Meteorological Department Service with travel expenses.

Within the framework of the closing of a meteorological library of the DWD department Research and Development technical books and magazines were given to the university to Akure/Nigeria. To support the weather service of Benin, an on-site survey and consulting took place by employees of the DWD and the University of Cologne.

Further, Germany supported the Focal Point of the United Nations Framework Convention on Climate Change (Permanent Representative of Mali with WMO) for preparation and distribution of climate data of Mali.

For the first time Germany was able to contribute an amount of €10,000 to GCOS through the GCOS Cooperation Mechanism which is intended for the acquisition of an anemometer for the mountain station Bjelasnica in Bosnia-Herzegovina.

In August 2007, the International German Summer School of Hydrology (IGSH) was held at the Ruhr University of Bochum. The IGSH is a platform for conveying hydrological knowledge in two-week courses with annually changing topics. The 2007 course, supported by the German IHP/HWRP National Committee, was amongst others attended by 5 representatives of the NHS of WMO Members, which received financial support.

In 2008, the main topics of the summer school will be: Soil water modelling, Groundwater modelling and Modern components to flood management. A further project of the German IHP/HWRP National Committee will focus on E-Learning modules of water related issues.

In July 2008, Germany will conduct the next Regional Numerical Weather Prediction Training workshop at DWD's Meteorological Training and Conference Centre in Langen.

Also in 2008, Germany will be able to contribute an amount of €10,000 to GCOS through the GCOS Cooperation Mechanism.

Germany will continue to provide technical assistance, mostly on a bilateral basis, and taking into consideration the relevant recommendations of WMO bodies. In addition, emphasis will be placed on support to WWW System Support Activities by means of seconded experts and training

Hong Kong, China

In 2007, Hong Kong, China continued to contribute to VCP(ES) by running a training course on the "Automatic Weather Station Network" from 26 to 30 November 2007. Training fellowships were provided to nine meteorologists from Colombia, Costa Rica, Guinea-Bissau, Kuwait, Malaysia, Mongolia, Pakistan, Sri Lanka and Uganda to enable them to participate in the courses. The training courses consisted of lectures and practical sessions, and were aimed at enhancing the capability of trainees in understanding of the technical aspects in the development and implementation of automatic weather stations (AWS) networks.

The total contribution in monetary terms for this course was US $ 0,800 inclusive of per diem allowances, accommodation costs, a number of air passages, staff and preparation costs.

In 2008, Hong Kong, China will continue to contribute to VCP by conducting a training course for Members.

Japan

In 2007, Japan made a cash contribution of US $178,000 to the VCP(F) and VCP-related activities through the WMO. Further to its budgetary contribution, Japan provided training activities to the value of US $250,000 and several types of in-kind support by Japanese manufacturers during the year.

Contributions to the Volunteer Cooperation Programme (VCP) by Japan in 2007:

(1) The Japan Meteorological Agency (JMA) conducted a three-month Group Training Course in Meteorology with funding support from the Japan International Cooperation Agency (JICA). The course was offered to eight participants from eight countries (Bangladesh, Ethiopia, Iran, Myanmar, Sri Lanka, Thailand, Timor-Leste and Zimbabwe) from 12 September to 14 December 2007. Its lectures and exercises were focused on operational application techniques for NWP products, satellite data and climate-related products.

(2) In 2007, three meteorological instrument manufacturers in Japan generously offered in-kind support to the following countries through the VCP:

- Philippines*[1] - GTS Message Switching System (MSS) hardware and software (Oriental Electronics, Inc.);
- Sri Lanka *[2] - Sonde Ground Receiving Station (Meisei Electric Co., Ltd) Balloons (TOTEX);
- Maldives - Balloons (TOTEX);
- Armenia - Balloons (TOTEX).

*1) VCP (F) was also provided for expert services to install the software and conduct training.
*2) Some radiosondes will be provided by funding from Japan and the VCP (F).

VCP-related activities by Japan in 2007 and prospects for 2008:

(1) Training events

- On-the-job training for typhoon forecasters, funded by the Typhoon Committee, was offered to two forecasters from Cambodia and the Philippines at RSMC Tokyo Typhoon Center from 18 to 27 July 2007;
- JMA bilaterally offered training events and sent experts for technology transfer to several countries (Hong Kong, China, Indonesia, Malaysia and Thailand).

(2) Grant Aid Projects

- A two-year Grant Aid Project (total: $15 million) is underway in Bangladesh, aimed at the improvement of the meteorological radar system at Cox's Bazar and Khepupara. The Cox's Bazar radar was installed in February 2007, and the Khepupara radar is scheduled for installation in February 2008. Another Grant Aid Project (total: $9 million) was launched in June 2007 in Bangladesh, aimed at the establishment of a meteorological radar system at Moulvibazar.
- A Grant Aid Project (total: $7 million) was launched in August 2007 in Sri Lanka for the improvement of the meteorological and disaster information network. The project aims to install 38 automated weather stations.
- A Grant Aid Project (total: $6 million) was completed in March 2007 in Pakistan for the improvement of the flood forecasting and warning system for the Lai Nullah Basin. Rain gauges, water level gauges and a radio telecommunications network were installed under this project.

Technical Cooperation Projects

- A JICA technical cooperation project on developing human resources for meteorology and hydrology in Lao PDR started in July 2006. This followed the installation of a meteorological radar system and an MTSAT data-receiving/analysis system in February 2006 under a Japanese two-year Grant Aid Project. This technical cooperation project is scheduled to continue until the beginning of 2010.
- A 1.5-year JICA technical cooperation project on the rehabilitation and improvement of civil aviation in Cambodia was started in December 2006. An MTSAT data-receiving/analysis system and aeronautical meteorological equipment will be installed under this project. The dispatch of three experts is also included in the project.
- Technical cooperation projects in Mongolia (February 2005 - October 2008), China (December 2005 - July 2009) and Fiji (July 2007 - December 2009) are underway.

In 2008, Japan will continue to support the improvement and enhancement of meteorological and hydrological services of NMHSs, particularly in developing countries through the VCP and related activities including training/fellowship, in-kind contributions by private companies in Japan, and bilateral cooperation under the Official Development Assistance scheme.

Kenya

In 2007, Kenya, through the Kenya Meteorological Department (KMD), contributed to the Technical Cooperation Programme in a number of ways, as shown below:

a) WMO Sub-regional Office for Eastern and Southern Africa

Kenya has continued to host the WMO Sub-regional Office for Eastern and Southern Africa since its inception in 1998. As has happened over the years, KMD has continued to put at the disposal

of WMO a total of 434.5 square metres of office space and provided furniture for the offices. Further, KMD has continued to meet full expenses for water and electricity consumption by the office. These services are valued at US $39,165 per annum.

b) IGAD Climate Prediction and Application Centre (ICPAC)

The IGAD Climate Prediction and Application Centre (ICPAC), which is also housed at the premises of the Kenya Meteorological Department, has at its disposal a total of 566 square metres of office space whose annual value, together with that of water and electricity, costs also borne by KMD, is estimated to be US $50,962. A staff compliment composed of three meteorologists, two meteorological and two engineering technicians was also extended to the Centre, all valued at US $52,056.40. The total contribution to ICPAC was therefore US $03,018.40.

c) Support to the IPCC and LDC programmes

The Kenya Meteorological Department made the following contributions:

- Intergovernmental Panel on Climate Change (IPCC) Trust Fund: US $4,896.83;
- WMO Trust Fund on Least Developed Countries (LDCs): US $4,896.83.

In 2008, as reported by the Permanent Representative during the report for 2005, KMD will assist the NHMSs of the region, particularly those in the Least Developed Countries (LDCs) under the Technical Cooperation between Developing Countries (TCDC) Programme. This assistance will mainly consist of capacity building, on a cost-sharing basis. Arrangements for this are at advanced stage and communication will be released in the near future.

New Zealand

In 2007, the New Zealand (NZ) contribution to the VCP (US $1,436,560) is solely bilateral in nature via a mix of direct NZ government overseas development assistance and joint programmes and activities with other development partners, the Met Office UK and US NOAA Global Climate Observing System (GCOS) Programme being the primary ones. The goal of NZ and its partners' assistance is to further enhance the capacity of NMHS of Small Island Developing States of the South Pacific (Pacific SIDS) to operate and manage their own meteorological, including climatological and hydrological, affairs. Funding from NZ comes out of the NZ Ministry of Transport (MOT) NPAC contract (managed by MetService NZ Ltd) and Climate Change Development Fund (managed by NZ Ministry for the Environment (MfE)). Priority areas of assistance include:

- Ensuring the continuing quality and integrity of data gathered in Pacific SIDS in accordance with the Global Observing System (GOS) of the World Weather Watch (WWW);
- Ensuring the continuing quality and integrity of climate data gathered in Pacific SIDS as part of the GCOS programme;

- Providing facilities for the Global Telecommunications System (GTS) via maintaining a Regional Telecommunication Hub (RTH) on the GTS for the purpose of relaying observations to and from Australia and Pacific SIDS National Metrological Centres (NMCs) and other islands and relaying forecasts, analyses and other messages to and from Australia and the Pacific SIDS NMCs;

- Providing backup service to the Regional Specialised Meteorological Service (RSMC) Nadi/Fiji Meteorological Service (FMS) during the tropical cyclone season;

- Implementing the NZ climate change development assistance programme;

- Managing Trust Funds as agreed from time to time with other organizations funding Pacific SIDS data acquisition, data management and telecommunication systems.

Highlights from 2007

NZ NPAC Ministry of Transport (MOT) contract

- Technical assistance and advice via in-country visits and remotely were provided to Cook Islands, Fiji, Kiribati, Niue, Samoa, Tokelau, Tonga and Tuvalu. A MetDisplay slave system was designed and installed in Funafuti Airport Tower to provide air traffic controllers with a much better display of weather graphics and aviation products and services. MetService restored and upgraded a number of inactive Global Surface Network (GSN) stations in Cook Islands, Kiribati, Niue, Tokelau, Tonga and Tuvalu. Samoa received observing equipment and a desk top computer and printer. Niue's anemometer and damaged AWS were restored. Tokelau received an early warning telecommunication system for dissemination of severe weather warnings to its outer islands as well as a new laptop for its Nukunonu AWS. Seven in-country routine preventative maintenance visits were carried out in 2007 under NPAC.

NZ Climate Change Development Fund (CCDF)

- Assistance provided under this programme was predominantly for training of Pacific SIDS personnel and UNFCCC/IPCC Fourth Assessment public outreach activities on climate change issues (science and policy). Three outreach workshops were funded under this programme – Rarotonga (Cook Islands), Suva (Fiji) and Nukualofa (Tonga) – involving NZ institutions (NIWA, MetService and MfE), SOPAC, SPREP, USP PACE, host Pacific SIDS, Australian Bureau of Meteorology and Australian Greenhouse Office under the Australia-NZ climate change partnership.

- The programme also provided assistance to the Asia Pacific Network (APN) for Global Change Research (APN) in the development of strategies for climate change adaptation in Pacific SIDS.

- The programme also supported the Pacific Island Data Rescue project implemented by National Institute of Water and Atmospheric Research Ltd (NIWA) and Pacific Geosciences Commission (SOPAC). Historical Pacific SIDS climate data and metadata on paper records are being rescued and digitized. Progress is going well with metadata rescued and updated for Cook Islands, Kiribati, Niue, Pitcairn Island, Samoa, Tokelau, Tonga and Tuvalu, and images of earlier observing stations captured on CDs. Digitization is also progressing well with historical climate data. This has been completed for Kiribati, Niue, Tokelau Islands and Tuvalu. Digitization of data from the Cook Islands, Pitcairn Island, Samoa and Tonga are yet to be completed.

Island Climate Update (ICU) bulletin

- This multi-national project, funded by NZAID and coordinated by NIWA, continued in 2007. It provides seasonal forecasts for Pacific SIDS as well as analyses of the state of ENSO and tropical cyclones. Twelve issues were published in 2007. A second end user survey assessing the usefulness of the ICU was carried out. The survey found high satisfaction amongst users with the guidance and climate information provided in the bulletin.

Pacific HYCOS Project

- Development and calibration of Flood Warning systems for the Navua and the Rewa basins in Fiji. This project is funded by the European Union (EU), managed by SOPAC with technical scientific advice provided by NIWA.

Global Climate Observing System (GCOS) Upper Air Network (GUAN)

(i) Joint NZ (MetService) and Met Office UK Pacific Fund (PF) Trust Fund

- MetService and Met Office UK continued to provide ongoing financial, administrative and technical assistance and advice to GUAN stations in Tarawa (Kiribati), Funafuti (Tuvalu), Penrhyn and Rarotonga (Cook Islands). Assistance included provision of funding for day-to-day operation, procurement and supply of consumables, spare parts, financial management, reporting, remote support and in-country technical preventative and restorative maintenance visits. The programme also provided telecommunication (HF/RANET) and computer systems to the participating Pacific SIDS. Direct financial assistance to upgrade and refurbish local Met Service offices in Funafuti and Tarawa was provided under the PF. Kiribati Met Service received a brand new vehicle purchased out of the Pacific Fund. Two new AWSs were built for Tuvalu and Kiribati. Cook Islands received partial funding for the restoration of the Rarotonga upper-air programme (majority of funding from NZAID).

(ii) Joint NZ (MetService) with the US GCOS Programme on a Project - Technical Support Programme for the Pacific (TSP)

- A joint partnership project, under the New Zealand/US Climate Change Partnership bilateral agreement, between MetService and the US GCOS Programme (based at NOAA's National Climatic Data Centre) on establishing a regional TSP on behalf of supporting GCOS systems in the region began in 2004. The goal of the programme is to provide a technical support and programme management solution to ensure that upper-air programmes that are part of the GUAN, as well as some GCOS Surface Network (GSN) sites operated in Pacific SIDS, are effective. The TSP is modelled on existing support programmes that MetService provides for other GUAN programmes in the Pacific (e.g., Met Office Pacific Fund (PF)). Like the PF, the TSP provides day-to-day operation, procurement and supply of consumables, financial management, reporting, remote support and in-country technical preventative and restorative maintenance visits to those Pacific SIDS GUAN stations (Port Moresby (PNG), Bauerfield (Vanuatu), Honiara (Solomons), Nadi (Fiji) and Rarotonga) not covered under the Met Office UK PF. Four preventative maintenance in-country visits to these stations took place in 2007. Three additional restorative (emergency) maintenance visits were made to Nadi, Port Moresby and Honiara. The TSP also fully funded the restoration and upgrade of the Bauerfield (Vanuatu), Port Moresby (PNG), Penrhyn (Cook Islands) and Honiara (Solomons) GUAN stations in 2006/07.

Uganda Department of Meteorology (UDM)/US NOAA/NZ (MetService) GCOS and RANET Joint Technical Support Project for Africa

- This project is modelled on the Pacific TSP and PF. It provides direct funding to UDM to service GCOS and RANET equipment in Africa, monitor GUAN/GSN Network performance, assess country needs and provide training where appropriate to advance activities of GCOS and RANET in Africa. The project began in July 2007. The Project Coordinator visited NZ, Australia and Vanuatu in November 2007 as part of his management and technical training. The project is funded via the US RANET Programme Manager at NOAA who is supported by USAID, and works closely with the US GCOS Programme.

RESCUE PAC Project

- The **RES**toring aging weather and **C**limate **U**pper air **E**quipment in **PAC**ific SIDS (RESCUE-PAC) is a joint project between NZ (MetService) and the UK Government (UK Foreign and Commonwealth Office (FCO)). The project includes provision of basic GSN observing equipment (barometers, thermometers, evaporimeters, Stevenson Screens, etc.) to 12 SIDS NMSs, including Pitcairn Island.

Tonga Early Warning System (RANET) Project

- NZ (MetService) assisted Tonga to purchase five HF/RANET systems to disseminate severe weather warnings and data to/from outer islands in Tonga. The project is a joint initiative between the Tongan Government (Tonga National Emergency and Management Office (NEMO) and Tonga Met Service), MetService and Munich Re Foundation, Germany. Training of TMS staff on RANET systems and procurement of system components have been completed.

In 2008, New Zealand will continue its commitment to programmes described above. Funding is expected to increase in 2008/09 fiscal year compared to 2007/08. The projects that New Zealand expect to support include:

- A continuation of the support NZ currently provide to Pacific SIDS (Kiribati, Tuvalu, Samoa, Tokelau Islands, Tonga, Niue and Cook Islands) under the New Zealand NPAC MOT Contract;
- A continuation of the support NZ provide to the GUAN stations at Funafuti (Tuvalu), Tarawa (Kiribati), Penrhyn, Rarotonga (Cook Islands), Port Moresby (PNG), Honiara (Solomon Islands), Bauerfield, Port Vila (Vanuatu) and Nadi (Fiji) (with Met Office UK PF and US NOAA GCOS TSP Programme);
- Continuing support to Kiribati Met Service to restore and upgrade their GSN observing networks (with US NOAA TSP, Met Office UK, Australian Bureau of Meteorology, World Bank and WMO VCP);
- The joint MetService/Victoria University of Wellington "Meteorologist" training course already underway with 12 students from NZ, Australia and Singapore;
- In-country training and technical support will be provided to the observers and operators of the GSN, GUAN and RANET systems in Pacific SIDS;
- Likely continuation of some of the scientific projects funded under the climate change development fund (e.g., the Island Climate Update (ICU), Pacific SIDS Data Rescue, etc);
- Continuation of bilateral technical advice and support to individual Pacific SIDS on an 'as need' basis. Projects already received approval and funding for 2008 include the Tonga Early Warning System (RANET) project, Kiribati AWS for Tarawa Airport and Kiritimati Island (Christmas Island), GCOS RANET technical support for Africa with Uganda Department of Meteorology (UDM), Island Climate Update (ICU) and Pacific SIDS Data Rescue.

Republic of Korea

The Republic of Korea's total VCP contribution in 2007 was US $1,236,919: US $10,000 was cash contribution for VCP(F) and US $1,236,919 was related to technical cooperation activities.

The following training and fellowships were provided in the Republic of Korea with full financial support from the Korea Meteorological Administration (KMA) and the Korea International Cooperation Agency (KOICA) (US $236,919).

a) A training course on Information and Communication Technologies (ICT) for Meteorological Services was held in KMA from 3 April to 2 May 2007 with 14 participants from 13 WMO Members (US $ 7,292).

b) The Expert Programme for Climate Prediction in Asia-Pacific was supported by KMA from 5 August to 30 October 2007 with three climate experts from three WMO Members (US $42,735).

c) A training course on Analysis of COMS (Communication, Ocean and Meteorological Satellite) Data held in KMA from 2 to 17 September 2007 with 13 climate experts from 13 WMO Members (US $82,700).

d) A training programme on Numerical Weather Prediction was provided by KMA to the Department of Meteorology and Hydrology (DMH) of Myanmar from 3 November to 29 December 2007 (US $7,258).
e) GEO Training Workshop for the use of NWP Products held in KMA from 9 June to 13 April 2007 with 16 participants from 15 WMO Members (US $103,226).

Support of equipment and training of experts under a bilateral arrangement (US $1,000,000) with the Philippines Astronomical, Geophysical and Atmospheric Service Administration (PAGASA) was provided for PAGASA's two-year (2007-2008) project, entitled: "The Establishment of an Early Warning and Monitoring System for Disaster Mitigation in the Philippines" by KMA and KOICA.

In 2008, the contribution to the VCP is expected to increase to US $1,570,000 broken down as follows:

a) Cash contribution: US $30,000 (increases by 20,000).
b) Provision of training and fellowships (US $240,000):

- Training course on the Information and Communication Technologies (ICT) for Meteorological Services;
- Expert Programme for Climate Prediction in Asia-Pacific;
- Training course on the Analysis of COMS (Communication, Ocean & Meteorological Satellite) Data;
- Support for RA II/RA V International Cooperation Advisor's meeting in April 2008.

c) Provision of support by KMA and KOICA to the National Agency for Meteorology, Hydrology and Environment Monitoring (NAMHEM) for the two-year (2008-2009) project entitled "Historical Climate Data Rescue and Modernization of Preserving System in Mongolia" to modernize the preservation system of historical climate data stored on paper to scanning paper records, developing the climate data preservation system (US $1,300,000).

Spain

Activities in 2007 (Economic figures in US $ using exchange rate of € 1 = US $ 1,4692)

In 2007 Spain contributed in cash to several multi-lateral or bi-lateral co-operation programmes in joint collaboration between INM of Spain and WMO supporting the goals of VCP. Spain also mobilized resources in favour of development projects and technical assistance. Training activities for staff of NMHSs of other Members also continued in 2007.

VCP Trust Fund

There were no direct contribution to the VCP, all the activities being managed through agreements with WMO and the beneficiary countries.

Technical cooperation activities in Regions III and IV financed through agreements between INM of Spain and WMO

- Spain established in 2006 a Trust Fund in WMO to finance the activities of the "Ibero American Co-operation Programme" agreed by 21 NMHSs of the Iberoamerican region. The contribution to this fund was of $ 1, 440,000 in 2006 and of **$ 1,706,000 in 2007**. The Trust Fund has been kept at WMO for financing present and future activities. Highlights for some activities implemented during 2007 were:

- CLIBER project for studies of current situation and development of NMHSs infrastructures. In 2007 the project was addressed to the NMHSs of Bolivia, Ecuador, Guatemala and Dominican Republic. A team of consultants composed of a Project Coordinator and staff of the Spanish Meteorological Institute (INM) and of the WMO Secretariat participated in the preparation of development projects for the above mentioned NMHSs.
- Provision of equipment for reception of MSG satellites through EUMETCast. Purchasing and installation of the equipment in 19 NMSs was completed in 2007 in co-operation with WMO and EUMETSAT.
- Training activities in South and Central America (Satellite Meteorology, Use of NWP products, Climate scenarios, Operation of EUMETCast reception stations and maintenance and operation of automated hydro-meteorological weather stations). Spain has financed the training (in co-operation with EUMETSAT in satellite courses), students travel, organization etc.
- Support to the creation of a Virtual Centre for Forecasting of Adverse Phenomena through co-operation between Argentina, Brazil, Paraguay and Uruguay. A workshop was organized in Madrid, and the participation of the delegates was fully financed.
- Organization of meetings and participation of delegates at the conference of NMSs, a meeting of civil protection agencies, and a workshop on Earth Observation capacities.
- Administration of the programmes, maintenance of a web page etc.

The expenditure during 2007 has not been accounted yet with accuracy but can be estimated around 700,000 US $ (of which training around $ 200,000) from the Trust Fund plus 130,000 $ of overhead costs financed directly from the INM budget.

- Spain contributed in cash with $ 220,000 to the WMO Trust Fund for financing the CIIFEN Centre for Research on El Niño in Guayaquil (salary of international director and operations)

Technical cooperation activities in Africa

A meeting of Directors of NMHSs of North and West African Countries was held in Las Palmas de Gran Canaria, Spain from 17 to 19 October 2007. The meeting was organized by the National Meteorological Institute of Spain and co-sponsored by WMO. It was attended by the Directors of the NMHSs of the North and West African countries, ECOWAS, the African Union, AGRHYMET, ACMAD and other organizations as well as representatives of the NMSs of France, Portugal, USA and the UK. The aim of the meeting was to establish a Forum of Directors of NMHSs of North and West African countries in order to develop and implement development plans in meteorology and related activities.

Spain offered a main source of seed funding through the Trust Fund created in the WMO Secretariat in the frame of the Africa Plan of the Government of Spain (other possible sources of funding will be explored). In 2007 Spain has contributed to that Trust Fund with US$ **2,204,000** received by the WMO in the last quarter of the year. Obviously most of this amount had not been used in 2007 but it will cover expenditure of projects to be developed in 2008. However the Fund was already used for financing the organization of the conference and travel of delegates as well as expenditure in two other co-operation meetings:

- WMO LDC workshop in Uganda ($ 73,000 reimbursed to WMO against pre-financing).
- Participation of African Delegates in the meeting of experts for the creation of a Sand and Dust Study and Warning System in Barcelona, November 2007 (Around $ 20,000)

Other activities in Africa

- The INM of Spain made a contribution of $ 31,000 to the WMO Trust Fund for support to the maintenance of stations from the PUMA project (EUMETSAT and EU) in Africa

- The Spanish Co-operation Agency has contributed in cash to two programmes of atmospheric research of which the main expenditure is the purchasing and installation of scientific equipment in Algeria and Morocco, as well as training activities:

    - o "*Global Atmospheric Watch in the Magreb-Sahara Region*" (GAW-Sahara). Contribution of $ 500,000
    - o *"Sand and Dust Storm Early Warning System in the Magreb Region"* (SDS-Africa). Contribution of $ 270,000

- These programmes will be implemented during 2008. Overhead costs added $ 36,000 financed directly by the INM in 2007

- Some bilateral technical co-operation activities have been discussed with the NMSs of Mauritania and Senegal

Activities in other regions

- The INM contributed directly with $ 25,000 to the participation of Asian Delegates in the SDS meeting of experts (Barcelona, November 2007).

Training Fellowships

- During 2007 six students from America and Africa were awarded fellowships for the second term of the International Course on Applied Meteorology organized by the INM in Madrid. Estimated costs were $ 118,000.

- The programme of short term fellowships for on-the-job training at INM departments was recovered in 2007. Fellowships, including travel and accommodation expenses, were awarded to 15 staff of foreign NMSs, out of them 9 from LDC of Africa and America and 1 from Armenia. The total cost of the programme with overheads was $ 125,000.

Organization of conferences

In 2007 Spain contributed to WMO with $ 660,000 for the organization of the WMO Conference on Secure and Sustainable Living, Madrid, March 2007, this amount specially used to finance the participation of delegates from less developed countries.

Outlook for 2008

The highlight will be the use of already available funds for several co-operation projects in North and West Africa expected to be initiated during 2008.

Spain will continue its usual contribution to the WMO Trust Fund in support of the operations and administration of ACMAD which was not implemented in 2007. However a contribution of $ 257,000 is expected to be made during the first half of 2008.

Co-operation activities with South and Central America are expected to be maintained at the current high level with continuous support to the Ibero-American Co-operation Programme. Financial support to the CIIFEN will also continue.

The training activities for staff of less developed members and the number of long-term fellowship will increase over the figures in 2007.

Switzerland

Switzerland is continuously operating the following central facilities in favour of the GAW Programme:

- World Calibration Centre and Quality Assurance/Science Activity Centre for ozone, carbon monoxide and methane at the Swiss Federal Laboratories for Materials Testing and Research (EMPA, Dübendorf): EMPA provides calibration services, station audits, training and operational support of the global GAW network

- World Optical Depth Research and Calibration Centre (WORCC) at the World Radiation Centre (Davos): The WORCC is providing quality control and quality assurance for the operational aerosol optical depth measurements at a dozen of the global GAW stations.

- A calibration centre for infrared radiation is maintained at the World Radiation Centre (Davos).

Following a decision of the Swiss Federal Government, Switzerland will continue its involvement with the World Radiation Centre Davos, while substantially increasing its financial contribution. As in the past, the World Radiation Centre will be jointly financed by the Swiss Federal Government, the Canton of Grisons and the township of Davos. From 2008, the WORCC will be operated under the Budget of the World Radiation Centre.

- MeteoSwiss and EMPA regularly provide capacity building and consumables to the global GAW station in Kenya.
- Switzerland continued its substantial contribution to the AMDAR-Panel.
- With regard to Regional Association VI, the Permanent Representative of Switzerland was in 2007 in the function of elected President. In addition, Switzerland supported the RA VI Sub-regional Office with a cash contribution.
- Switzerland has sponsored the GEO Secretariat in Geneva with cash contributions.
- Switzerland sponsored the Technical Conference on RA VI Strategic Planning with a cash contribution.
- Switzerland supported the GCOS AOPC meeting with a cash contribution.

The Swiss voluntary contributions for 2008 will be approximately in the same range as that for 2007. Budget will be made available to operate the European UV Calibration Centre.

United Kingdom

(a) 2007 Country Report

The UK contribution to the VCP is funded through the UK Public Weather Service (PWS). The PWS is defined in a Customer-Supplier Agreement from which the following priorities are highlighted:

- Improved protection of life and property of British Citizens overseas through the provision of sustainable public weather services by developing country National Meteorological and Hydrological Services (NMHSs).
- Sustained, and optimally improved, levels of observation data available on the WMO Information System (WIS) in support of Met Office NWP and seasonal forecasting applications.

- Increased access to forecast and observational data from developing country NMHSs via the World Weather Information Service.
- Maintained influence within WMO in order to ensure the continued unrestricted exchange of data and products, and effective results of WMO Programmes.

Highlights from 2007

Africa LAM

- GRIB data from the Africa LAM continued to be disseminated via the EUMETCAST system. A training course on the use of NWP products was developed and delivered by Met Office staff to 20 delegates from east African NMSs in Dar es Salaam in November. Financial support for LDC delegates and a Met Office Chief Forecaster was also provided to assist in the delivery of the SWFDP-RA-I training package at SAWS in Pretoria in October.

TV Weather Systems

- The media weather systems for Gabon, Mauritania and Niger were upgraded with a new system for Cote d'Ivoire through a workshop held at ACMAD. A new version of the presentation software, WeatherEye PC, was developed and implemented in Kenya, Benin, Swaziland and Uganda. This gives a much better display of weather graphics. A training course is being prepared.

SIAC

- A run of the e-SIAC course was delivered to around 85 participants from 20 countries within RA I, along with 15 delegates from elsewhere, using distance learning techniques. Roger Stern from the SSC was contracted to provide training and other services in Mozambique.

Computer Aid Uganda

- A partnership was established with Computer Aid, a UK charity that supplies refurbished second-user PC's. This project is providing hardware to enable climatic data to be held and used locally within Uganda.

Fellowships

- Delegates from Lesotho and Swaziland successfully completed their studies for an MSc at the University of Reading. MSc Fellowships were awarded to delegates from Malawi and South Africa and these began in September 2007.

- A delegate from Uganda successfully completed a BSc at Makerere University in Kampala.
- A delegate from Nigeria continued his research MSc at the University of Pretoria, with an expectation of completion during 2008.

WAFS trust fund

- Money was placed within the WMO Trust Fund for WAFS implementation in the LDCs.

Elements for Life

- The IPM members cooperated on an article in the book published with the Madrid Conference on Socio-economic Benefits of Met Services. Funds were provided for distribution of copies to decision makers.

GUAN

- Continued support was provided to the GUAN stations at Gough Island and Seychelles and funds were provided to GUAN stations on Pacific Islands through the Pacific Fund managed by Metservice New Zealand.

Climsoft

- Further development of the Climsoft climate data management system was undertaken, along with a users workshop in Rwanda. Funding support was also provided to WMO Climsoft workshops held in Brazzaville, Congo in April and in Hanoi, Viet Nam in November.

Workshop/Conference Support
- Financial support was provided to the WMO LDC workshop in Uganda

PRECIS
- Technical Support was provided to a PRECIS workshop held at ICPAC.

Aviation Seminar
- The annual WMO Aviation Seminar was developed and delivered to 25 delegates from RA I, RA II and RA VI by the Met Office at IMTR Nairobi, using facilities and support provided by the KMD.

(b) 2008 VCP Plan

The UK will continue it's commitment to the targets outlined above, although funding from the UK PWS is expected to be less than during 2007. The projects we expect to support include:

- A continuation of the support that the UK provide to the GUAN stations at Seychelles, Gough Island (with SAWS), Funafuti, Tarawa, and Penrhyn (with New Zealand MetService).
- Further training and support will be provided to the operators of the Media Weather Systems, along with an upgrade to the studios in Rwanda and Togo and training on WeatherEye-PC. A simplified system will be provided to Sierra Leone.
- The 'Management by e-learning' training course will be delivered to the first set of students during the first half of the year. We aim to evaluate and improve this course with a view to delivering another run by the end of the year.
- Continuing support will be provided to the two MSc students in order to complete their studies, and two students will be funded during the next academic year.
- Climsoft will continue to be developed in association with the Statistical Services Centre at the University of Reading and financial support will be provided to facilitate the delivery of e-SIAC courses in January and October.
- The annual WMO Aviation Seminar will be delivered in Oman during July, with a further training course combining aviation meteorology with NWP and a train-the-trainer workshop to be delivered in East Africa in October.
- The Africa LAM will continue to be provided free of charge to NMSs in RA I and innovative ways of developing and delivering additional products will be explored.

United States of America

In 2007, the USA contributed $1,881,000 million dollars to the World Meteorological Organization Voluntary Cooperation Program and was also able to leverage additional resources and expertise to multiply the affect of the US contribution. These funds were dedicated to projects and training which enhance the sciences of meteorology and hydrology and enhance the Global System of Systems for Earth Observation.

Goals of this last year were to create training materials and experiences that enhance end-to-end early warning systems from earth observations, to modelling and forecasts warning formulation, to dissemination of warning products, to working with professionals for right response to right action of public. We have concentrated on leveraging funds and in kind contributions from other US and International organizations such as GEO, USAID, and other WMO member partners. While total contributions for the US VCP total $1,881,000, we estimate that total contributions are closer to $4,500,000 in total with leveraged contributions. Programs at WMO such as the Space Program, THOPEX, and the GEO Secretariat received US VCP support.

Below are highlights of the major projects undertaken with the US contribution to the WMO Technical Cooperation Program and a complete list of projects fund is an appendix to this document.

Creation of Numerical Weather Prediction and WRF Modeling Resources and a Joint NOAA NCEP- South Africa National Weather Service Workshop:

Experts from NOAA's National Center for Environmental Prediction in cooperation the South African National Weather Service gave a technical workshop on numerical weather and climate prediction methods looking at observing systems and data assimilation for forecasting models and ensemble models. Seventeen professionals from eight countries participated in the October workshop which featured hands-on laboratories and donated desk top computer systems loaded with the WRF EMS software needed to support operational weather forecasting of severe weather events. All participants completed the COMET Distance Learning Numerical Weather Prediction modules prior to the course and were certified in the knowledge. The participants learned to install and benchmark the WRF EMS model, run a simple model experiment, design and run sensitivity experiments, conduct nested simulations and make real time simulations.

The objective of the workshop was to reach out to operational weather forecasters in Africa to access and use the NCEP NWP guidance, but also and even more importantly to train them on the use and interpretation of ensembles products so that they can incorporate these in their forecast decisions. The lab sessions were based on actual cases selected from the 2006-07 southern Africa rainfall season and geared towards showing the participants how to access NCEP NWP guidance and to actually take advantage of ensembles to enhance the quality of the forecasts.

Later in 2008, many of these lecture and course materials will be available on the COMET website for independent study. Continued support and follow-up with the workshop participants is being supported by NCEP Climate Prediction Center. Future workshops in NWP and WRF modeling are planned for Latin America in June 2008 and other sites to be determined in the Americas and Africa.

RANET Workshops in Africa, the Pacific, and USA:

RANET is an international collaboration of National Meteorological and Hydrological Services (NMHSs) dedicated to improving rural and remote community access to environmental information. The program today provides training, helps to develop new tools, and maintains, on behalf of the meteorological community, several communication platforms and is operating throughout Africa, in Asia and the Pacific. RANET is organized chiefly at the community level, where operation and ownership of the communications systems is maintained. National Meteorological and Hydrological Services (NHMS) typically serve as the host for RANET activities and provide significant monetary and in-kind contributions to ensure the program continues.

In 2007 RANET held two Technical Training Workshops (RTTWs) for the Asia-Pacific and Africa regions. In addition to US VCP funds support for these activities was provided by the Australia Bureau of Meteorology (Bureau) and the USAID Office of US Foreign Disaster Assistance (OFDA).

The RANET Technical Training Workshop for the Asia-Pacific region focused on technicians from the Pacific region with a few technicians from newly established RANET countries in Asia. The workshop also served to provide training to the RANET / GCOS Technical Support Project (TSP) lead from Uganda on systems used by RANET in the Pacific but not Africa region. The two-week workshop was hosted by BoM in Australia in October 2007. Training topics included setup and operation of RF systems, use of satellite terminals, web development, alternative energy applications, as well as good safety and operational practices. During the workshop a number of members from the Pacific Communications Steering Committee (PCSC), a regional guidance body for RANET in the Pacific, also met to discuss the status of RANET and future developments.

The RTTW for Africa was hosted by the Tanzania Meteorological Agency (TMA) in January 2008 in Arusha, Tanzania. The RTTW in Africa brought together project managers from the various RANET countries in the region. The week long workshop focused on introducing new systems and discussing technical trends within RANET. Topics covered included the RANET Community Reporter Program, warning applications, GEONETCast, use of web content management systems as Drupal, HF digital e-mail, and the new RANET Satellite Broadcast Management System. Participants also worked in groups to complete exercises on community partnership development and system planning. A representative from the Australia Bureau also attended the meeting as a trainer, but this provided time as well for the RANET point of contact at NOAA and Bureau to discuss operations and new system development. USAID also supported several NGO representatives to attend the workshop to help the NMHS participant discuss appropriate sector applications.

Prior to the RTTW in Tanzania, the RANET Africa Leadership Team, the organizing body of RANET in Africa, convened a meeting. The RALT finalized its charter, developed plans to establish a legal identity, and finally assigned several tasks to perform assessments and better document RANET in the Africa region.

AMS International Session in New Orleans, Louisiana:

This year our International Session at the American Meteorological Society's Annual Meeting in January 2008 was titled The Road to a Perfect Forecast and a Perfect Response: Connecting Hydro-meteorological Services with the Disaster Management Communities. The session explored the anatomy of a warning system that extends from the environmental observation to warning formulation through to dissemination of warnings and actions taken by the public. A unique panel comprised of the former directors of the Federal Emergency Management Agency, James Lee Witt; NOAA's National Hurricane Center, Max Mayfield; Private Industry Representative, Jamin Kazarian; the media Mark Schleifstien; and an Emergency Management Specialist, Walter Maestri who dissected the warning process during Hurricane Katrina and its aftermath and discussed how to improve early warning systems for future disasters. A WMO, World Bank, Region IV and NOAA joint team also held a panel discussion about an upcoming pilot project to enhance early warning systems in Central America.

Multiple side meetings were held in association with the AMS International Session which included the launch of the Multi-Variant Enzo Index Website Pilot, GEOSS Americas Applied Satellite Training and Capacity Building working group, and the Central America Disaster Early Warning System working group.

Enhancing the Global Tsunami Warning System – Global Telecommunications Training and Launch of Tsunami Warning Center Concept of Operations Resource Guide:

WMO and NOAA jointly hosted a workshop on getting ocean observing systems data from the GTS. The workshop took place in Bangkok in October and complimented the efforts of the Indian Ocean Tsunami Warning Project sponsored by the US government. VCP funding will be leveraged with WMO resources to develop a workshop and training about the Global Telecommunications System as the base system for communicating tsunami and multi-hazard warnings.

NOAA staff contributed expertise to other IOC and WMO workshops about Tsunami Warning Center and is currently sponsoring an International Tsunami Institute with IOC. There will be a launch of several documents and learning materials generated from the aid to the Indian Ocean which will be made available on the COMET website in the coming year. Currently documents Tsunami Warning Center CONOPS can be found at IOTWS.org and in the coming years these resources are expected to be developed for multiple hazards. Also in 2008, we will develop a CONOPS document for hydrometeorology.

GEOSS in the Americas – Remote Sensing for Societal Benefits:

33 participants from 12 countries in Central and South America participated in the Global Earth Observation System of Systems (GEOSS) Americas/Caribbean Remote Sensing Workshop – Transforming Data into Products. The countries included Argentina, Brazil, Bolivia, Chile, Colombia, Costa Rica, Ecuador, México, Paraguay, Peru, Uruguay and Venezuela. This first tier of the 3-tier NOAA-GEOSS regional training workshop was successfully held November 2007 at the Center for Weather Forecast and Climatic Analysis/National Institute for Space Research (CPTEC/INPE) in Brazil..

The forty-four hours of classroom work included: lectures that provided a detailed understanding of GOES and MODIS earth observations along with data to products processing algorithms and laboratory exercises that allowed hands-on exploration of individual GOES, MODIS and combined GOES / MODIS images along with derived products. The NOAA NESDIS and CIMSS UW-Madison lecture team included Tim Schmit and Gary Wade of NOAA/NESDIS and Allen Huang, Kathy Strabala, and Tom Rink of CIMSS UW.

This workshop combined classroom lectures and hand-on laboratory exercises for explaining remote sensing theory, GEOSS capabilities, transforming digital data into products, and the utility and limitations of satellite imagery and derived products. The information provided in this workshop and the access to GOES-10 data continues to demonstrate NOAA's long term commitment to GEOSS.

In 2008, US VCP funds are being used to build an integrated training and capacity building program for use of the newly available data. NOAA is working with INPE, the Argentine space commission (CONAE), the WMO and other organizations in the region to develop a series of trainings throughout South America in September 2008 on the use and application of the GOES-10 data. COMET, CIRA, and CIMMS Cooperative Institutes will assist in designing and executing this training.

NOAA WMO Flood Forecasting Workshop for this Summer 2008:

VCP 2007 funds were used for the development of the International Hydrometeorology Analysis and Forecasting Course which is being designed and organized by NOAA in cooperation with WMO and the University Corporation for Atmospheric Research (UCAR) COMET® Program. Hydro-forecasters from around the world will be invited. The course is scheduled to be held June 2008 in Boulder, Colorado. The course includes formal lectures by NOAA experts as well as academic and private institutions on topics covering an end-to-end hydrological system; computer lab exercises; a visit to the National Weather Service Weather Forecast Office (WFO) in Boulder; and several field visits to areas effected by tragic flood events.

Our VCP funds also supported the translation of 15 hydrological training modules of COMET into Spanish; which will be used as prerequisite materials for the workshop. These modules are available on-line free for any person to take and they include such subjects as: Unit Hydrograph Theory, Flash-Flood Processes, Introduction to Ensemble Stream Flow Predictions, Introduction to Distributed Hydrological Modules, Verification of Hydrologic Forecasts, Hydrology of Dam Failures, River Ice Processes, and Snowmelt Processes. Other Met and Hydro trainings created by COMET are being translated into Spanish. For a complete listing of all training modules available go to: http://www.meted.ucar.edu/ Translation of training modules will continue into 2008, with a focus on Numerical Weather Prediction.

Primer on Economics for National Meteorological and Hydrological Services:

This primer on economic theory, methods, and applications is primarily for members of the weather community. It is intended to increase their understanding of economic methods and their applicability in evaluating both the impacts of national meteorological and hydrological services (NMHS) and the associated benefits and costs of those services. To this end, the document (1) explains the concept and practice of an economic benefit-cost analysis (BCA); (2) discusses why conducting such economic analyses is important and useful; (3) offers guidance on how to conduct BCAs and document and communicate the inputs and outputs of such analyses; and (4) presents illustrations of economic analysis for NMHS projects in the form of case studies.
While funded in 2006, the now completed paper will be published in 2008 and be also distributed on various websites including WMO. The content is also being developed as potential workshop content to build assessment capability in NMHS globally and further illuminate the socio-economic benefits of Met-hydro Services. Discussions with WMO and possible partners from the donor community such as Spain are underway for workshops.

ACMAD Emergency Assistance Support:

The African Center of Meteorological Applications for Development (ACMAD) serves as a regional and pan-African institution to promote the use of climate, weather, and hydrological information. ACMAD further focuses on the use of such information to improve development and reduce hazard impacts throughout Africa. Historically, the Center has served as an important training facility for National Hydro-Meteorological Services (NMHSs) and related national agencies in Africa. ACMAD also serves as a primary gateway for science and technology transfer and capacity building activities to be undertaken with donor country or international organization support, and the Center has often been an innovator of programs and services that either support or can be transferred to its member countries.

NOAA National Weather Service (NWS) believes that it is important for the USG to support ACMAD through its reorganization, as well as to counsel the Center on how to achieve sustainability. The U.S. Government approach to development and capacity building in Africa, particularly in the areas of the earth sciences and services, is to work through and promote regional institutions because such an approach reduces administrative costs to undertake S&T and capacity building activities, but also many operations only make financial sense and are sustainable at regional centers.

Assessing the ENSO State through an Improved Multivariate ENSO Index (MEI):

This project aims to refine a new internationally acceptable index for the description and classification of ENSO events. The MEI will improve near-real time monitoring of ENSO phenomenon with truly comprehensive ("top-to- bottom"=OLR-to-subsurface ocean data) approach and provide an enhanced decision support tool for ENSO assessment for the global community. It is hoped the project will encourage use of a common index, promote facilitated discussion and action on regional cooperation prior to issuance of ENSO updates, press releases, alerts and public communiqués.

NOAA-affiliated Klaus Wolter developed the original Multivariate ENSO Index (MEI; http://www.cdc.noaa.gov/people/klaus.wolter/MEI/), which incorporates oceanic and atmospheric parameters into an index to provide an assessment of the state of ENSO. The index is a weighted average of the main ENSO features contained in six variables: sea-level pressure, the east-west and north-south components of the surface wind, SST, surface air temperature, and total amount of cloudiness. There is now an evaluation team looking at the available index tools and helping to plan for the tutorials and capacity building efforts scheduled for year 2 and 3 of this project. Workshops will be schedule in 200-9 for developing countries to introduced the enhanced index and new tools which will help to bring about a consensus on ENSO event definitions, both historically and for near-real time monitoring purposes.

Caribbean-wide Emergency Manager's Weather Information Network (EMWIN) Equipment and Training:

The Emergency Managers' Weather Information Network (EMWIN) is a reliable, priority-driven weather-warning and data-broadcast system, which provides free and rapid dissemination of warnings, forecasts, graphics and imagery that has been in operation for nearly ten years. It is a key component in strengthening emergency preparedness and disaster risk reduction in the Americas and the Pacific Rim. EMWIN has very low latency, increasing lead times to warn and possibly evacuate communities. It is low cost and has no recurring fees for data or reception and is relatively easy to use. In addition, vendor-provided, end-user software packages are available allowing users to customize implementation for each user's particular needs. The broadcast is disseminated via the Internet, Peace Sat (GOES-7 satellite donated to the University of Hawaii), and on RANET. The data is also rebroadcast, in some areas, on VHF radio and KU-band satellite.

In 2007 VCP funding was used to leverage resources provided by the White House Third Border Initiative (TBI) in support of a week-long EMWIN training exercise in Florida, during which time students representing the meteorological services and disaster-management agencies from five (5) countries learned how to deploy and utilize this capability. The TBI supported the deployment of EMWIN systems in 12 eligible countries: Antigua & Barbuda, Bahamas, Belize, Dominica, Dominican Republic, Grenada, Guyana, Haiti, Jamaica, St. Kitts & Nevis, St. Lucia, and Suriname.

International Training Desks:

In the area of training and fellowships, the USA trained 28 international students at the Tropical, South American, and African training desks, located at the National Center for Environmental Prediction, and six students at the Pacific Training Desk in Honolulu.

Hurricane Attachments to the Tropical Prediction Center (TPC) :

Central American and Caribbean forecasters were invited to NOAA's TPC to experience hurricane season and understand the US system of hurricane prediction, early warning, and post disaster management. This year emergency managers were invited to participate in the program to nurture more communication in the region.

WMO Regional Association IV Website Hosting Project:
The purpose of the hosting project is to continue to present meteorological data and products of National Meteorological Services in WMO Regional Association IV in a easy to access format. The Public Weather Services of the National Meteorological Services produce very important forecasts, warnings and meteorological and climatological products, many of which never reach the end-user in a timely and efficient manner or never reach potential users at all. This will be taken over by the RA-IV.
Distance Learning Masters Degree –Phase 2:

The USA has entered Phase 2 in the development of a Distance Learning Masters degree program with collaboration with COMET and Erasmus University of Netherlands. Students have completed the preparatory course work and are expected to begin the accredited program in September of 2008. New developments with the Mississippi State University may alter original plans for the degree and the Foundation overseeing the program is now consulting with the Regional leaders in RA-IV to reformulate the initiative to meet the needs for training at the masters level.

Emergency Assistance for Iran:

National Weather Service is still poised to assist Iran with education and training to rebuild their Met Service. Negotiations continue with the Permanent Representative to identify training appropriate for their needs.

Note 1: All contributions described are activities based on funds that went to support WMO programs, but not necessarily passing through the WMO itself. Due to the unique relationship between NOAA's NWS and WMO, this category was difficult to separate out funding modalities when designating projects.

Note 2: The contributions listed under the "Equipment and Services by Bilateral Arrangements" category only list projects completed with the VCP funding allocated by the U.S. Department of State. They do not reflect all Technical Cooperation contributions given under bilateral arrangements that come from other funding sources.

Funding Planned for 2008:

In 2008, we expect to contribute $1,881,000 to the Voluntary Cooperation Program. The programs mentioned through out the text will be pursued along with other initiatives that leverage our contribution to the WMO VCP.

ANNEX V

WORLD METEOROLOGICAL ORGANIZATION

INFORMAL PLANNING MEETING ON THE VOLUNTARY CO-OPERATION PROGRAMME AND RELATED TECHNICAL CO-OPERATION ACTIVITIES

Pretoria, March 2008

Perspectives of WMO Technical Programmes Regarding Priority Requirements for Technical Assistance

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1. Aeronautical Meteorology

1.1 ICAO has conducted, as part of their drive to achieve satisfactory safety standards in all areas, Safety Oversight Audits in a number of Small Island Developing States of the Pacific region, and found significant deficiencies in the provision of aeronautical meteorological services.

The problem is considered very urgent as aviation is the main pillar of transport between the islands and the main link to the outside world in terms of passenger transport, and some of the islands airports are needed as alternate airports for intercontinental flights, and ICAO is planning to carry out a special implementation project in the region, asking WMO to contribute to this effort by providing a training element and possibly some basic observing equipment.

1.2 The contribution expected from WMO to the training effort will likely comprise logistic support to travel and subsistence of trainees from the islands, but also expertise and trainers as well as some basic instrumentation where this has been found to be inadequate, outdated or unserviceable. Funds in the order of US $50K have been requested formally by ICAO for the training component, with a need for a similar amount in kind considered as a realistic minimum requirement. Both financial contributions (for trainees and local arrangements) and in-kind contributions (training material, trainers and experts, and probably some observing and telecommunications equipment is likely to be needed. A final, detailed request will be made once a fact-finding mission by the consultant employed by ICAO has been concluded and a report received at the Secretariat.

1.3 ICAO has informed WMO of plans to upgrade provisions in Annex 3 related to implementation of ISO recognized Quality Management Systems to Standards in support of its policy on Safety Management Systems through Amendment 76 due November 2010. ICAO's intention is also to align the status of these provisions with that in Annex 15, *Aeronautical Information Services* where provisions related to QMS are already classified as Standards.

1.4 Congress XV last year considered the question of the introduction of QMS by Members providing aeronautical meteorological services, and mandated a demonstration project in at least one developing country. A proposal for such a project for the certification of the aeronautical meteorological services in Tanzania will be submitted to Executive Council. Tanzania is one of five Partner states in the East African Community where the other four partner States have shown interest in extending the QMS project to their region and are soliciting for funds. QMS, by ICAO regulations, is cost recoverable from aviation but unfortunately, it is only Tanzania and, to a small extent Uganda, that are currently recovering costs for aeronautical meteorological services. VCP support for these countries could be given either as funding the use of consultancy companies in the process of preparing the services for ISO certification , or by providing both experts ad existing documentation and guidance on the process by donors that have successfully completed their ISO certification, and have suitable expertise and documentation available.

2. Agricultural Meteorology Programme

2.1 In the Agricultural Meteorology Programme, the main priority activities, which should be considered for VCP support, are:

Immediate priorities
- Roving Seminars on Weather, Climate, and Farmers;

Long-term priorities
- World Agrometeorological Information Service (WAMIS); and
- Training to NMHSs in the use of new methodologies and tools available on WAMIS.

Roving Seminars on Weather, Climate, and Farmers

2.2 Weather and climate are some of the biggest risk factors impacting on farming performance and management. Extreme weather and climate events such as severe droughts, floods, or temperature shocks often strongly impede sustainable farming development, particularly in the tropics and sub-tropics. Factors such as climate variability and change contribute to the vulnerability of individual farms, as well as on whole rural communities. This also particularly impacts on regional and world food security. Recent weather and climate research efforts have demonstrated the importance of targeted forecasting and scenario analyses in increasing overall preparedness of farmers and farm business managers, leading to substantially better outcomes overall.

2.3 The 14th Session of the Commission for Agricultural Meteorology recommended that a Roving seminar on Weather, Climate and Farmers be developed. The first series of Roving Seminars on Weather, Climate, and Farmers were held in 2007 in Ethiopia and India. The seminar in Ethiopia had 64 participants while 6 seminars were held in India with average of 80 participants. These seminars brought together farmers from a group of villages and officials from the meteorological department and agricultural extension agencies for a one day seminar. In the first part of the seminar, farmers were given brief lectures on the climate of their farming region, weather and climate forecasts and information and how they can be used in on-farm operational decision making. The second part of the seminar was entirely devoted to feed-back from the farmers on their needs for weather and climate information and how to provide better assistance for their farm activities.

2.4 VCP support is being requested for the organization of additional Roving Seminars in three different countries at a cost of $8,000 per country. Therefore, the total request is being made for US $24,000.

World Agrometeorological Information Service (WAMIS)

2.4 Disseminating agrometeorological information is part of a process that begins with scientific knowledge and understanding and ends with the evaluation of the information. But, in order for this information to be useful, it must be accurate, timely, and cost-effective. The Internet is one of the new technologies that can accomplish this since vast amounts of timely information can be found with one click of a mouse button. Additionally, the Internet can play a vital role in the training of agrometeorologists by providing useful knowledge to a large number of people in a cost-effective manner.

2.4 Following the recommendations of several workshops, the World AgroMeteorological Information Service (WAMIS) was created. The goal of WAMIS is to make agrometeorological products issued by WMO Members available to the global agricultural community on a near real-time basis. These products are produced on either a weekly, monthly, or yearly time frame and the format of the products will range from text and MS Word files to PDFs. Provision of a central location for agrometeorological information can help the users quickly and easily evaluate the various bulletins and gain insight into improving their own bulletins. To further help Members improve the quality and presentation of their agrometeorological bulletins, WAMIS will also host training modules which may include some interactive computer programs along with text and PDF files.

2.7 As of January 2008, there are bulletins or links to 31 countries and organizations. Additionally for many countries, there is already an archive of several years of bulletins on WAMIS. Also, there are bulletins on WAMIS from 5 African countries that don't have their own web site.

2.8 WAMIS is now fully operational and can be accessed on: www.wamis.org. Initial funding for WAMIS was provided by the National Weather Service of the United States. VCP support is

being requested for the maintenance and improvement of WAMIS for 2008, estimated at US $10,000.

Training to NMHSs in the use of new methodologies and tools available on WAMIS

2.9 It is proposed to organize a number of training workshops in different Regions to train staff in the NMHSs in the use of improved methodologies and tools available on WAMIS for the preparation of agrometeorological bulletins and advisories.

2.10 VCP support is being requested for the organization of two training workshops in RA II and RA III in 2008. Estimated funding needed is US $10,000 for each of the two training seminars.

The delivery point of climate-related services is within WCDM, WCAS and AgM. In this view, CCA does not have any project so far to be benefited from VCP.

3. Education and Training Fellowship Activities

3.1 Under the restructuring of the WMO Secretariat, the Education and Training Office is now part of the Development and Regional Activities (DRA) Department. This new Department is responsible for leading capacity building within the WMO Strategic Plan, particularly for Expected Result 9 "*Enhanced capabilities of National Meteorological and Hydrological Services in developing countries, particularly least developed countries, to fulfil their mandates*". Within the DRA Department the Education and Training Office leads the activities based around human resource development. For many Members, the WMO Fellowship opportunities co-ordinated by the Fellowships Division of the Education and Training Office are an extremely important part of their human resource development plans.

3.2 In the shorter term several areas are expected to generate further demands for fellowships and placement opportunities over the next one to two years. These areas include improved management skills, in particular communicating and marketing the value that NHMSs can add to the national economies as way of improving their national funding (coming out of work in the PWS area) and, perhaps more critically, demand for upgrade courses for non-degree staff providing aeronautical meteorological services (in response to moves by ICAO to upgrade the Quality Management Systems in Nov 2010). This is particularly important for the Small Island Development States such as the Caribbean and Western Pacific who are reliant of international air navigation for tourism and commerce.

3.3 The VCP (F) annual allocation for short-term, very short-term fellowships and group training activities of US$ 100,000 in 2007 has contributed in meeting some of the requests of developing Member countries, especially LDCs. However, there are still many urgent needs to be met from these countries, especially those affected by natural disasters and civil strife such as Afghanistan, Democratic Republic of Congo (DRC), Iraq, Liberia, Rwanda and Sierra Leone. Approximately chf 810,000 of funds from the Regular Budget have been allocated for Fellowships in 2008. Of this some chf 230,000 has already been approved for Fellowships from the FELCOM XIII meeting in November 2007. Therefore the VCP(F) will continue to be significant in terms of Fellowship support.

4. Disaster Risk Reduction

4.1 In June of 2007 Congress XV adopted WMO Strategic Goals in disaster risk reduction, derived from key activities of the Hyogo Framework for Action 2005-2015 (HFA) falling under the mandate of NMHSs. and the needs of Members identified through a survey conducted in 2006. Furthermore, a sustainable DRR integrated capacity development action plan was approved, based on Members' needs that were not currently addressed by ongoing activities and built upon the following five major thrusts:

(i) modernization of NMHSs and observing networks;
(ii) implementation of national operational multi-hazard early warning systems;

(iii) strengthening of hazard analysis and hydrometeorological risk assessment tools;
(iv) strengthening NMHSs cooperation with civil protection and disaster risk management agencies; and
(v) coordinated training and public outreach programmes. This action plan is built upon priority areas of the WMO Strategic Plan 2008 – 2011 and is being implemented through concrete regional and national projects.

4.2 In light of the new opportunities arising from implementation of HFA that calls for a paradigm shift from disaster response to disaster prevention and mitigation NMHs would greatly benefit from being trained in the use of the "WMO guidelines in disaster risk reduction: opportunities for NMHSs in governance and coordination mechanisms" and "WMO guidelines for standard framework for documentation of early warning systems with multi-hazard approach" to enhance the effectiveness of their links with disaster risk management authorities and emergency relief and response agencies.

4.3 Furthermore, a number of PRs in Africa are new and would benefit from the above training. Contribution required would include financial contributions (travel, subsistence for trainees and local arrangements), training material and training experts. It is proposed therefore that the first of such training should held in Africa for a sub-set of countries. This would be linked to WMO coordinated approach to leverage WMO and other external partners' capacities for development national and regional projects for strengthening NMHS capacities, cooperation and coordination to support early warning systems with multi-hazard approach.

5. Global Climate Observing System

5.1 A priority for GCOS is to ensure the full functioning of the GCOS Surface Network (GSN) and GCOS Upper Air Network (GUAN). A key point to emphasize is that the full functioning of these networks serves the interests of all constituencies of the VCP.

5.2 The Climate for Development in Africa Programme (ClimDev Africa) Programme is one of the first major follow-up initiatives to the Global Climate Observing System (GCOS) Regional Workshop Programme and, in particular, to the GCOS Regional Action Plans for Eastern and Southern Africa and for Western and Central Africa. (Refer Document 3.1 for further detail). Both GCOS and WMO are international partners can play an important role in the further development and implementation of the Programme. No funds have been committed yet by development agencies, but after a slow start the development of the Programme is proceeding. The first meeting of the Specialized Working Group, of which both GCOS and WMO are members, to review and validate the draft Logical Framework and draft Programme Document will be held in Addis Ababa, Ethiopia 19-21 March 2008.

5.3 The European Commission and the UK Department for International Development (DFID) and other potential development partners had expressed interest in supporting ClimDev activities leading to achievement of the MDGs. Others are encouraged to consider such support.

5.4 Immediate priorities include:

- The CLIMAT/CLIREP Workshop in the Pacific We had to postpone this GCOS/WCP/WWW workshop scheduled for this March because of lack of funds. Its important to GCOS and to the region ($50K).
- Up grade the GSN stations in Angola KNMI are funding the first phase which includes observer training. Additional effort will be needed to actually replace the instruments at the 8 GSN stations ($50K).
- Replacement generator for Rarotonga. This is the last remaining GUAN station needing replacement equipment ($75K)
- A longer term priority would be to address the GSN stations in Madagascar ($300K).

5.5 List of additional priorities is attached at Appendix I

6. Least Developed Countries

Priority needs for consideration by the IPM, in line with Cg-XV Resolution on the VCP stating that "Special assistance should be provided to new Members of the Organization as well as the Least Developed Countries (LDCs) and Small Island Developing States (SIDS) with emphasis on increasing the visibility of their NMHSs" include the following:

(v) Support to participants in the WMO Coordination and Capacity Building Workshop for LDCs and SIDS in Asia-Pacific, Vanuatu, 6 – 10 October 2008: Financial contribution
(vi) Formulation and implementation of pilot and demonstration projects on socio-economic benefits of weather, climate and water services adapted to LDCs: Financial contribution
(vii) Development and implementation of the WMO Country Profile Database: Expert services

7. Observation Systems

7.1 The Commission on Basic Systems has developed some strategic documents, available at the WMO web site, describing the evolution of the Global Observing System, which could be used as guidance to Members in their VCP activities, such as the Implementation Plan for the Evolution of the Global Observing System (EGOS-IP) and the yearly updates of the Statement of Guidance for selected application areas
http://www.wmo.int/pages/prog/www/OSY/WorkingStructure/index.html).

7.2 The main priorities related to the Integrated Observing Systems (IOS) are as follows:
(a) Highest priority should be given to the projects aiming at improving and restoring the existed and building the new upper-air observational capabilities of the RBSN/RBCN with emphasis to the activation of silent upper-air stations and the improvement of coverage over data-sparse areas;
(b) High priority should be given to the projects related to the improvement of data quality, regularity and coverage of surface observations of the RBSN/RBCN with emphasis to the activation of silent stations and the improvement of coverage over data-sparse areas;
(c) High priority should be given to projects related to the introduction and/or use of new cost-effective observing equipment and systems including surface-based AWSs, AMDAR, ASAP and drifting buoys;
(d) Medium priority should be given to the projects related to the improvement/upgrading of stations not included in RBSN/RBCN list of stations.

7.3 Priorities related to the Instruments and Methods of Observation Programme (IMOP):
(a) Highest priority should be given to projects aiming at improving and restoring the existed and building the new regional calibration laboratories, such as Regional Instrument Centers and Regional Radiation Centers;
(b) Highest priority should be given to projects aiming at improving and restoring the existed and building the new regional instrument intercomparisons sites;
(c) High priority should be given to the projects aiming at improving and restoring the existed and building the new national calibration laboratories.

7.4 Priorities related to the Marine and Oceanographic Observation programme (IMOP): Highest priority should be given to projects aiming at improving and developing in situ ocean observing systems (drifters) in data sparse regions, especially the Gulf of Guinea, and/or the Western Indian Ocean.

8. Regional Office for Africa

8.1 The following initiatives were offered by the Regional Office for Africa as immediate priorities requiring support:

- Central Africa remains a sub-region where the NMHSs needed a strong assistance (support) in particular in equipment and human resources.
- Support of the partners for the organization of the meeting of Ministers in charge of meteorological Services in RA1 with the aim of more visibility and good location at the national level of the NMHSs of Africa.

9. Tropical Cylone Programme

9.1 According to the WMO Strategic Plan, Tropical Cyclone Programme (TCP) places its main priority on the activities which are relevant to ERs 1, 6 and 9. As concrete actions to contribute to those ERs, TCP will organize a number of workshops, training courses and forecaster attachments at major tropical cyclone warning centers including TC RSMCs and TCWCs, aiming primarily at facilitating transfer of recent knowledge and technology both on global and on regional bases. Focuses will be drawn to 1) extended use of ensemble techniques and probabilistic information – ER 1, 2) development of storm-surge warning service – ER 6 and 3) capacity building in tropical cyclone forecasting for developing NMHSs, especially those of small island countries – ER 9.

9.2 In view of the above, priority should be placed on the following subjects for possible assistance from VCP:

(a) Workshops on the utilization of ensemble techniques and probabilistic information to enhance tropical cyclone warning services;
(b) Training support for Storm-surge Workshop and attachment of storm-surge forecasters at IIT;
(c) Attachment of tropical cyclone forecasters as trainees at TC RSMCs, TCWCs and sub-regional TC warning centers. Special attention should be given to the attachment training at TC RSMC Nadi (Fiji) which is currently confronted with operational problems and requires external support to discharge its responsibilities as RSMC.

10. World Weather Watch

10.1 The World Weather Watch is dependent on computer-based solutions for its operation. The Fifteenth Congress invited WWW centres to consider offering meteorological application software for free exchange among Members and to provide relevant updates to the CBS software registry. Congress noted the difficulties met by developing countries in the purchase of software packages, including licences, and their maintenance. Congress agreed that the issue should be taken into account in the offers of donor countries, in particular as regards the possibility of developing common “standard” software packages, such as packages for automatic weather stations and/or visualization systems.

10.2 High priority should be given to activities related to climate data rescue (preservation of paper records in digital format and key-entering of the data) by providing digital imaging capability and climate data management systems (equipment, software and training) to other least developed countries which need a simple, modern and easy to use tools to preserve paper records and operate robust and modern Climate Data Management Systems. Countries with urgent needs in Climate Data Rescue including acquiring Climate Data Management Systems are:

- Africa: Eritrea, Gambia, Guinea, Namibia, Sudan
- Asia: Bangladesh, Cambodia, Iraq, Mongolia, Turkmenistan, Uzbekistan;

- East Europe: Armenia, Belarus, Bosnia and Herzegovina, Georgia, Former Yugoslav Republic of Macedonia;
- Middle East: Lebanon.

10.3 In the longer term, there is a need to develop CLIMSOFT and other CDMSs, so that they include more applications and enable more services as well as allowing better interface and discovery functions for the users and end users. In this respect a significant priority activity is the organization of refresher courses for countries already using the new CDMSs to strengthen their ability to stay up to date in operating the new CDMSs versions. One way to meet the increasing needs in this aspect is the development of dedicated e-learning portals and the organization of specialized face-to face expert forums and workshops for all WMO CDMSs. This will lead to develop a closer-regional expertise to help countries maintain and update the new versions.

10.4 Additionally, a main priority would be incorporating CDMSs as part of the national WIS platform for climate data services. The achievement of this goal will make a tremendous step forward in strengthening and upgrading NMHSs position as the primary point of contact for high-quality climate data discovery and services. In this regard, there is a need to develop new advanced workshops to address these priorities.

10.5.1 A new immediate priority would be the organization of a first CLIMSOFT-WIS Expert-Workshop which is planned in October 2008 tentatively in Accra, Ghana to:

1. Discuss ways to make CLIMSOFT more robust and more sustainable with the development of a version 3
2. Initiate the development of a CLIMSOFT - WIS interface
3. Provide advanced training for few selected key CLIMSOFT experts to become Regional CLIMSOFT - WIS Experts in all WMO regions.

APPENDIX 1

GCOS PRIORITY RENOVATION PROJECT CANDIDATES

$30K **Renovation of GSN stations in Ecuador**
The four GSN stations in Ecuador need replacement instruments.
(Spain is willing to support)

$15K **Replacement/Up grade Instruments for Tbilisi, Georgia GSN**
The GSN station at Tbilisi, Georgia needs replacement instruments. This observatory has been in operation for a very long time.

$15K **Replacement/up grade GSN station at Chisinau, Moldova**
The GSN station at Chisinau, Moldova needs replacement instruments.

$20K **Complete Refurbishment of Bjelasnica, Bosnia & Herzegovina**
This important refurbishment project is nearly complete. Both the exterior and the interior of this mountain top observatory have been repaired and the replacement high performance wind system has been replaced. Only the replacement of the remaining classic observing instruments remains.

$50K **CLIMAT/CLIREP workshop in Pacific**
This workshop was planned for March 2008 in Fiji but unfortunately the WWW budget was cut and the remaining funds available to GCOS and WCP were insufficient. This is considered a high priority by the AOPC and by the Region.

$50K **GUAN Upper Air Workshop for Asia**
Last year a very successful GUAN workshop was held in Namibia for all GUAN stations in Africa. The next workshop should be held in Asia, probably India as they begin to operate their improved radiosondes

$50K **Replacement Stevenson Screens for African GSN stations**
Many African GSN stations need replacement Stevenson Screens. They have been prohibitively expensive in the past as they needed to be shipped from Europe. A source in South Africa has recently been found.

$350K **Madagascar GSN (all)**
Replacement of all 11 GSN stations in Madagascar with AWS. One is a new proposed station. This project could be done through MeteoFrance. The Met Service there agrees to conduct a two year parallel measurement study following installation of AWS.

$27K **Operating Supplies for Penrhyn**
The WMO VCP program can no longer support the operation of the Penrhyn GUAN station. New Zealand receives some assistance from the UKMO but additional assistance is needed.

$300K **Luanda, Angola GUAN**
Renovation of the upper air station at Luanda. Needs a generator and upper air equipment. One of the AOPC priorities for additional GUAN.

$75K **Rarotonga GUAN (generator)**
The GUAN station at Rarotonga needs a replacement generator. The upper air equipment has been refurbished through the TSP following a fire but a replacement generator is still needed. They prefer a Proton.

$500K-1000K Additional radiosondes for GUAN stations
Several GUAN stations routinely require support with radiosondes and balloons. Stations such as Costa Rica, Galapagos, Yerevan, Laoag, Mauritius, Dar es Salaam and others will need radiosondes. (About $75K/year per supported station) (KNMI willing to support one year supply for Mauritius)

$175K Technical Support Project for Africa
Two years ago, a TSP was established in Botswana to support SADC. It was partially successful but funding has expired. Africa remains one of the areas that most needs a TSP.

$20K Yerevan electrical work
The electrical power feed to the upper air station needs repair. Frequent outages impact operations at the station. The project could be managed by the UKMO.

$65K Yemen Data Rescue
Most of the historical data from stations in Yemen is in libraries in the UK. Yemen is a high priority addition to the GSN but the historical data would be needed. A cooperative data rescue effort is needed. The staff from Yemen could do the work with some assistance for the UKMO and project support for equipment and travel.

$60K North Salang, Afganistan GSN
Renovation of the damaged GSN station at North Salang, Afganistan. This is a high altitude station which we may renovate be able to do through the Iranian Met Service.

$100K Angola GSN (all)
Replacement of all of the necessary manual instruments for the 8 GSN stations in Angola. Additional observer training is needed and they would also like to add AWS at their stations. (KNMI willing to support first phase)

$60K Zambia Telecoms
Up grade of the telecommunications equipment used within the country to a modern CODAN based system. This robust Australian made HF telecoms equipment would resolve most of the current internal station to station telecommunication problems and get the observations onto the GTS.

$75K Zambia GSN (all)
Replacement of all the manual surface observing instruments at the 6 GSN stations in Zambia. They also want AWS.

$25K Malawi GSN (all)
Replacement of the instruments at the GSN station in Malawi with AWS.

$75K Iraq GSN
Renovation of the GSN station at Kut al Hai, Iraq which was badly damaged in the war. This is a very remote station. Renovation could be managed by the Iranian Met Service.

$35K Eritrea GSN (AWS)
Installation of AWS at the GSN station in Asmara.

ANNEX VI

WORLD METEOROLOGICAL ORGANIZATION

INFORMAL PLANNING MEETING ON THE VOLUNTARY CO-OPERATION PROGRAMME AND RELATED TECHNICAL CO-OPERATION ACTIVITIES

Pretoria, March 2008

Resource Mobilization Office
Mission Statement and Strategic Plan

WMO RESOURCE MOBILIZATION OFFICE
MISSION STATEMENT

RMO Vision

National Meteorological and Hydrological Services (NMHS), in particular those in developing countries, LDCs and SIDS, adequately resourced and delivering efficient services in support of protection of life, property and environment and thereby contributing effectively to their national socio-economic development process.

RMO Mission

In line with the WMO Strategic Plan, in particular Expected Results 7 and 9, the RMO will support NMHS and WMO Scientific and Technical Programmes to enhance the level of in-country and external support and funding to programs and projects aimed at development of NMHS to reach the levels and range of services needed to support the protection of life, property and environment and ensure the security of food production, energy and water resources, with particular emphasis on the developing countries, LDCs and SIDS and in keeping with the Regional Strategic Plans and Strategic development Plans.

Guiding Principle

To enhance the level of in-country and external support to NMHS it is imperative to advocate strongly on the importance of the NMHS and their products and services in support of the national development process. This will require demonstrating the value and contribution of WMO Scientific and Technical Programmes and NMHS products and services to the reduction of poverty overall and to a wide range of key sectors including agriculture, health, energy, water, transport disaster risk reduction and early warning systems and adaptation to climate change. In line with the Madrid Action Plan, it will be critical to demonstrate the real socio-economic value of investments in, and of the contribution of WMO / NMHSs to the national development agenda.

Resource Mobilization in WMO – the Fundamentals

- In the context of WMO operations, RM means both availing of ad hoc opportunities for development of small to medium scale projects in response to calls from various modalities and more importantly developing in parallel, a strategic program of activities aimed at securing sustained resourcing for Member Countries NMHS
- The current VCP mechanism for supporting activities in NMHS through facilitation of the provision of funds, equipment and services by developed country NMHS is a valuable element of RM but is "gap filling" rather than "development" oriented. RM activities will need to focus significantly on strengthening the VCP mechanism but additionally, mobilization of significant resources for multi-annual and multi-country activities will require strategically engaging other key funding agencies.
- In the current financing environment it is critical that the wider national and regional socio-economic development context is taken into account such as the contribution of activities to achievement of MDGs, National Development Plans and Action Plans of LDCs and SIDs.
- Significant in-country financing opportunities could exist through the national budgeting processes, Overseas Missions and Embassies, the UN "One UN" country funds, GEF and other mechanisms. RM will need a focus on assisting NMHS to avail of these in-country financing opportunities through training seminars and direct support.
- One of the most significant challenges is to find an alignment between the stated priorities of the donors and the priorities identified within Regional Strategies and national plans.
- Securing extra-budgetary resources to allow WMO Technical Programmes to engage in development activities is also significant priority.

WMO RESOURCE MOBILIZATION OFFICE
MISSION STATEMENT

OPERATING PRINCIPLES

The RMO services and activities will be focused on addressing development needs of the NMHS in Member Countries as directly identified and expressed by the Members. The RMO will work in close cooperation with the WMO Regional Offices and WMO Technical Programmes in all aspects of its work programme.

The focus of RMO will be to:

At the Global and Regional Level:

- Identify development needs at regional and national level in association with RAs, PRs and Regional Offices.
- Sensitize development partners and national governments to the value of NMHS products and services and the benefits that building greater capacity can bring to a variety of users.
- Develop a comprehensive understanding of the needs and operations of funding agencies and development partners, including their project cycles, modalities and priorities and transmit this information to WMO Programmes, Regional Offices and PRs.
- Facilitate development of, and source financial support for high-impact hydro-meteorological infrastructure and service development projects by engaging with existing and potential development partners for establishment of multi-annual framework agreements and partnerships agreements for joint regional and national interventions.
- Engage and establish mutually beneficial relations with the private sector and establish private-public partnerships as appropriate.
- Strengthen collaboration with NMHS of developed countries and forge links between these and NMHS of developing countries with a view to continuation of existing VCP support and also increasing number of countries contributing to VCP and also engaging in major bi-lateral programmes of cooperation.

At the National Level:

- Assist NMHS to avail of funding opportunities within the national system through raising their political and public profile; understanding and engaging in investment planning processes such as for national GEF, ACP, Development Bank and UNDAF planning processes and national fiscal processes.
- Assist NMHS to demonstrate the socio-economic value of their products and services and through case studies to inform their governments and communities on this through targeted social-marketing mechanisms.
- Advocate for the role of NMHS in Climate Observations and Climate Change Adaptation and Disaster Risk Reduction.
- Assist NMHS to engage and establish mutually beneficial relations with the private sector and establish private-public partnerships as appropriate.

VCP Programme Coordination:

- Coordinate and enhance the efficiency and timelines of VCP (VCP_F & VCP-ES) applications and approval process.
- Increase current VCP support base (number of donor countries and amount of funds) and accelerate delivery of the WMO Voluntary Cooperation Programme (VCP Trust Fund and VCP Coordinated) working closely with Regional Offices.
- Seek to expand the financial and other support to Regional Specialised Centres.
- Facilitate partnerships with other UN Organisations and with particular emphasis on WMO engagement in the UN “Delivering as One” Process.

ANNEX VII

WORLD METEOROLOGICAL ORGANIZATION

INFORMAL PLANNING MEETING ON THE VOLUNTARY CO-OPERATION PROGRAMME AND RELATED TECHNICAL CO-OPERATION ACTIVITIES

Pretoria, March 2008

Major Cooperation Programmes

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9.1 Programme of Cooperation for Meteorology and Hydrology for Iberoamerican NMHSs

The Conference of Directors of Iberoamerican NMHSs was created in November 2003 in Antigua, Guatemala and two years later in November 2005 a Programme of Cooperation for Meteorology and Hydrology for NMHSs of Iberoamerican countries was established, with the creation of a Trust Fund by the INM of Spain in the WMO Secretariat. The programme supports 19 NMHSs of Iberoamerican countries distributed in RA III and RA IV. The Cooperation Programme includes three main areas of action: 1) Institutional development, 2) Training, and 3) Consolidation of operational management. Annual programmes of activities are discussed and approved by the Conference of Directors which meets once a year. Main activities (in 2008) include among others the following:

Institutional development

- development of the Iberoamerican Climate Project for strengthening the capacity of NMHSs in the following countries that have requested assistance: Bolivia, Costa Rica, Ecuador, Dominican Republic, El Salvador, Guatemala, Honduras, Nicaragua, Panama, Paraguay and Uruguay;
- two pilot projects for practical apprenticeship in relations between NMHS and key user sectors in selected countries, according to criteria established by the WMO Forum: Social and Economic Benefits of Weather, Climate and Water Services;
- organization of the following meetings and workshops: NMHSs and the media; exchange of seasonal forecasting experience and techniques in the second half of 2008, to be organized by CIIFEN;
- support the implementation of the project on the Virtual Centre for Monitoring, Forecasting and Early Warning of Severe Weather Phenomena for the south and south-east of South America in all of its components (monitoring, forecasting and warning);

Training

- two roving seminar events on the operation and maintenance of AWS;
- course on the use of ECMWF products and satellite meteorology;
- course on regional climate change scenarios and a seminar on climate change in Latin America;
- two courses on methods to evaluate the economic and social benefits of meteorological services and information;
- training course for integrated flood management instructors.

Consolidation of operational management

- Support the commissioning of EUMETCast reception stations and creation of a forum for the exchange of experience to support their installation and operation

The Cooperation Programme began activities at the end of 2006 with the support from Spain. Contributions made for the implementation of activities in 2007 and 2008 amount a total of 2.2 million Euros.

9.2 Programme of Cooperation or West and North African Countries

The Programme of Cooperation for NMHSs of West African countries was launched in a meeting held at Casa Africa of the Spanish Cooperation in Las Palmas de Gran Canaria, Spain from 17 to 19 October 2007. The meeting was organized by the National Meteorological Institute of Spain and co-sponsored by WMO. The meeting was attended by the Directors of the NMHSs of the West and

North African countries, ECOWAS, the African Union and representatives from NMS of France, Portugal and the USA.

The main outcomes of the meeting included: i) the establishment of a Forum of Directors of NMHSs of West and North African countries including the organization of an annual meeting in the initial phase; ii) approval of an initial Action Plan reflecting short term and medium term needs presented by NMHSs of the West Africa Region; iii) facilitation of horizontal cooperation in meteorology and hydrology within the region with the purpose of increasing multilateral cooperation. The activities included in the Action Plan will be implemented making use of the Trust Fund (1.5 million Euros) created in the WMO Secretariat by Spain, the Africa Plan of the Government of Spain, as well as from other sources of funding.

The overall objective of this Action Plan is therefore to enhance the capacity of the NMHSs of West and North African countries and provide them with the relevant tools that will allow them to contribute to the sustainable development of their respective countries and enhance the delivery of products and services to the various socioeconomic sectors that are essential for them.

The Action Plan includes assistance among other areas in the following:

- Improvement of Marine Meteorology Services for maritime safety and fisheries management by implementation of a harmonized project, incorporating the existing WMO initiatives with Senegal, Morocco and Spain;

- Improvement of agricultural meteorology services for food security and reduction of poverty by implementing a sub regional project based on the strengthening participating NMHSs;

- Support to Least Developed Countries in West Africa recently emerging from war with their NMHSs in extreme transition;

- Planning and execution of a workshop on Meteorological Services Management for Directors of NMHSs;

- Training on Satellite Meteorology and Numerical Weather Products use (NWP

- Development and execution of a feasibility study covering the West African countries aimed to set up a **long term development plan for the region;**

- Development of a plan to engage additional development partners (MétéoFrance, IM Portugal, NOAA and others such as the World Bank and the European Commission in support of the Long Term Programme of Action; and

- Organization of a meeting of the Forum of Directors of NMHS to review progress and identify actions for the following year.

Activities carried out so far in 2008 include a meeting in Geneva to coordinate the implementation of the 2008 Action Plan between WMO and INM of Spain (AEMET), and another meeting recently held in Dakar, Senegal to coordinate activities for the marine meteorology project.

9.3 Programme of Cooperation for Pacific Islands Region

A feasibility study was carried out in 2006 with technical and funding support from the Finland Meteorological Institute (FMI) to assess the status and needs of the NMHS of Pacific Island

Countries with respect to their capacities to contribute to national preparedness to climate variability, natural hazards and global change.

From this assessment a program of development of NMHS was proposed. The Government of Finland has made a strong indication that it will provide financing for implementation of the activities proposed, over a period of 7 years and with support in the region of 2M€ per year. The proposal is currently in final review by the Ministry of Foreign affairs in Finland. FMI has taken a leading role in facilitating discussions between WMO and the FA of Finland.

The **goal** of the project is to assist the Pacific Island Countries to improve their capabilities to be prepared and manage the risks and adapt to the changing climatic conditions and progress towards achieving the UN Millennium Development Goals.

The focus of activities will be to build scientific, technical, infrastructural and institutional capacity of the countries in the following areas:

(1) Meteorological and climatological training and research;
(2) Strengthening the observation networks;
(3) Improving the multi-hazard early warning telecommunications;
(4) Diversification and increase of weather and climate services; and
(5) Institutional strengthening of the PI-National Meteorological and Hydrological Services.

The participating countries are Cook Islands, Fiji, Kiribati (LDC), Marshall Islands, Federated States of Micronesia, Nauru, Niue, Papua New Guinea, Palau, Samoa (LDC), Solomon Islands (LDC), Tokelau, Tonga, Tuvalu (LDC) and Vanuatu (LDC).

It is proposed to establish a project management coordination office within the region, co-located with SPREP and the WMO Office for the SW Pacific in the SPREP HQ in Apia, Samoa. A supervisory board involving the Pacific Islands Forum Secretariat, Secretariat of the Pacific Regional Environment Programme (SPREP), South Pacific Geoscience C and possibly another regional high-level body with participation of Ministry for Foreign Affairs of Finland, and WMO should be established as the highest executive body of the project. A **steering committee** guiding the activities of the components comprising of the Directors of the NMHSs of the participating countries and major donors should be established.

The proposed project activities are to be implemented in three successive and incremental Phases. Mid-term evaluations are proposed at the end of first and second Phase.

Indicative budget summary for the proposal is presented below:

	Phase I	**Phase II**	**Phase III**	**Total US$**
Component	**Years 1-3**	**Years 4-6**	**Year 7**	**Years 1-7**
1 Training and research	1 005 000	1 030 000	10 000	2 045 000
2 Strengthening observations	2 245 000	2 860 000	1 000 000	6 105 000
3 Improving telecommunications	800 000	210 000	2 560 000	3 570 000
4 Improving weather and climate services	1 100 000	600 000	0	1 700 000
5. Institutional strengthening including public and political awareness raising	800 000	330 000	0	1 130 000
Project management	600 000	450 000	200 000	1 250 000
Total	6 550 000	5 480 000	3 770 000	15 800 000

9.4 Programme of Cooperation in SE Europe

In the framework of collaboration of WB/UNISDR/WMO and the Finland Meteorological Institute, a Feasibility Study on Strengthening of the National Meteorological and Hydrological Services in S. E. Europe was undertaken in 2007 and a financing proposal prepared on the basis of findings.
The **Objectives** of the proposal are to enhance the capabilities of SEE Countries NMHS to: provide services in support of management of existing and potential climate and weather related risks; meet the challenge of coping with providing critical services and products in the face of changing climatic conditions and thereby support their nations progress towards achieving the UN Millennium Development Goals.
The EC-DG Enlargement is interested in supporting the IPA countries (Albania, Bosnia & Herzegovina, Croatia, the former Yugoslav Republic of Macedonia, Montenegro, Serbia including Kosovo under UNSCR 1244) for regional cooperation and sharing of hydermeteoroligical data and information for disaster risk management and early warning in the context of the proposal with the WMO as the implementing partner.
The relevant PRs, (Zagreb 20-22 Feb) agreed on the need for the establishment of a management group to oversee the development of the proposal for DG Enlargement and also project implementation. Croatia would be a leading country, with continuing support of the FMI of Finland and the WMO Secretariat.
Proposed activities are based on discussions in Zagreb. It is generally agreed that the following priority activities should be proposed for support of DG Enlargement:

1. The most strategic step towards improvement of NMHSs' capacity to support users would be the membership of the European Meteorological Infrastructure entities (ECMWF, EUMETNET and EUMETSAT). In addition, the process of the governmental approval of the membership in these intergovernmental organizations help to improve the political recognition and overall visibility of NMHs in the SE European countries.
2. The improvement of data sharing in order to support the flood forecasting on the River Sava is also consdiered a major priority for the riparian states (Slovenia, Croatia, Bosnia and Herzegovina, Serbia, Montenegro and Albania).
3. A series of Regional Centres of Excellence are being established to support regional cooperation and integration across several key thematic sectors. Support to the development of these Centres of Excellence in SE Europe will significantly contribute to imrpoving cross border collaboration and utilisation of data and information in critical sectors:
   - Drought Managent Centre for South Eastern Europe (DMCSEE), established in Ljubljana, Slovenia, including the activities of the WMO Regional Instrument Centre;
   - Climate Change Center (CCCSEE) for SE Europe, established in Belgarde, Serbia, under endorsement of the European Conference of Environment Ministers 2007;
   - Marine Meteorological Centre for the Eastern Adriatic (MMCEA) to be established in Split, Croatia 2008.
4. The Regional Association VI Technical Conference on the Role of NMHSs in Prevention and Mitigation of Natural Hazards Impact, Moldova, October 2008 will focus on the role of NMHSs and their cooperation with the user community and in particular the Disaster Risk Management community (Civil Protection Agencies, Disaster Risk Management Authorities. Disaster Prevention and Preparedness Initiative for SEE etc.) in reaching the common goal of preventing and mitigating the natural hazards impact. Additional funds are necessary to ensure the participation of the DRM connunities in addition to WMO funding for NMHS.

9.5 Programme of Cooperation in SADC Region

The Government of Finland in 2006 provided financial support through WMO to organize assessment missions to the seven countries (Ethiopia, Kenya, Mozambique, Namibia, South Africa, Tanzania and Zambia) with the view to developing proposals for enhancing the respective NMHSs to contribute to national and regional efforts for attaining socio-economic development. A combined proposal was developed as a result of these visits.

The goal of the project is to assist the seven African countries to improve their capabilities to prepare and manage risks associated with extreme weather/climate events, to adapt to climate variability and change. The goal will be achieved through improving the technical and scientific capabilities of the respective NMHSs to provide data, products and services in support of priority areas such as natural disaster mitigation and prevention, poverty alleviation, enhanced food security, adaptation to climate variability and change, and water resources assessment and management, among others. This will also involve the organization of capacity building and human resources development activities, and the strengthening and maintenance of hydrometeorological infrastructure and facilities.

The project proposal to be implemented over a six year period has been developed based on discussions held with a great number of stakeholders and end-users from different socio-economic sectors conducted during the 2006 missions, and during a consultative regional workshop organized in Livingstone, Zambia from 22 - 24 January 2007.

The key objective of the project is to strengthen the NMHSs and their regional cooperation. The more specific objectives are:

- to promote immediate support to the socio-economic development of the respective countries in line with national development plans and the internationally agreed development goals including those contained in the Millenium Declaration (MDGs);
- to promote and contribute to the implementation of national plans for protecting the environment;
- to build adequate early warning systems for enhanced national disaster preparedness and mitigation;
- to promote training and capacity building;
- to reinforce communication and data management systems;
- to strengthen research and development in basic hydro-meteorology and relevant applications;
- to promote the establishment of centres of excellence;
- to promote partnership with public and private sectors;
- to promote the production of commercial activities and services of the NMHSs;
- to promote regional and international cooperation and data sharing;
- to promote sustainable development of the NMHSs;
- to promote international and national multi-donor approach for implementation of the projects;

The Government of Finland is considering support to this project as a component of a wider support program for countries in the SADC region.