

WORLD METEOROLOGICAL ORGANIZATION

IPM/2011/Doc. 3

INFORMAL PLANNING MEETING OF THE
VOLUNTARY COOPERATION PROGRAMME

ITEM: 3.2

GENEVA, SWITZERLAND
11 - 12 APRIL 2011

Original: ENGLISH

REPORTED BILATERAL TECHNICAL COOPERATION ACTIVITIES IN 2010

(Submitted by WMO Members)

Summary and Purpose of Document

This document provides information on Member bilateral cooperation activities during 2010 including VCP Coordinated Programmes.

ACTION PROPOSED

The meeting is invited to consider the information on the activities of the Members in bilateral cooperation during 2010 to inform and guide donor Members in planning their support to VCP during 2011 and their technical assistance programmes more broadly.

The reports below vary quite a lot in detail in terms of activities and budget. This is linked to reporting on trends regarding support for cooperation activities so the meeting may wish to consider some guidelines on reporting on cooperation activities and how financial reporting should be dealt with to enable tracking of trends.

Canada

Activities in 2010

Direct Financial Support

Canada continued its contribution to Trust Funds¹ that help to enhance scientific and technical capacity in developing countries.

Expert Services & Training

Canada concentrated efforts on the mission to rebuild the “Centre national de Météorologie” of Haiti in the aftermath of the January 12th, 2010 earthquake. Canada, in collaboration with Meteo-France - Martinique, the UK, USA, CNM and the WMO provided equipment, services and meteorologists to ensure a reliable forecast program for the 2010 rainy and hurricane season. In addition, Canada invested a person year human resources efforts to plan, design, develop, implement a website on behalf of CNM including monitoring and improving the site after launch.

Canada assigned an expert to work with the WMO Department of Education and Training to develop the compliance kit to assist WMO Members demonstrate that their aviation meteorological forecasters meet the new competencies.

Other

Canada concentrated efforts to improve monitoring and prediction in Polar Regions through its leadership on the EC Panel of Experts on Polar Observations, Research and Services. Canada also remains engaged in the Sustaining Arctic Observing Network (SAON) initiative undertaken under the auspices of the Arctic Council.

Cash and in-kind contributions 2010 were approximately USD 680,000.

Initiatives for 2011

Considering the state of readiness of the CNM to take charge in 2011, discussions continue between Canada, Meteo-France, WMO and other partners to measure the type and level of continued assistance to the CNM to support their forecast program in 2011. Training and development activities will be undertaken. Canada will also contribute expertise toward the facilitation of Quality Management Systems in NMHSs in Region IV, North and Central America and the Caribbean.

Canada will consider the outcomes of our discussions on the Global Framework for Climate Services to take place in May 2011 to determine an appropriate contribution to its implementation. We continue to scope out opportunities for funding relevant activities to assist NMHSs through the Climate Change Adaptation fund.

Canada will be providing five year funding commencing in April 2011 for the International Research Initiative on Adaptation to Climate Change (IRIAC-FACE) "Faire-face Aux Changements Ensemble" (FACE), an initiative to address water resource management in West Africa. We will also be determining if we can assist with the DBCP's Second Western Indian Ocean Capacity Building Workshop to be held in Mauritius in May 2011.

Canada will continue to contribute to Trust Funds to levels similar to those of 2010.

Canada's cash and in-kind contribution to capacity development activities will be in the order of USD 630,000 for 2011.

¹ Trust fund contributions for 2010 include - DBCP (\$25k), AMDAR (\$10k), GEO (\$88k), Thorpex (\$50 k), EC PORS (\$50k), IPCC (\$50k), Brewer (\$30k)

Contribution to Capacity Building Activities Calendar Year 2010 Canada	
Item	Value USD
Haiti NMHS – secondment of forecasters (Canada portion)	50,000
Haiti – Website development and maintenance	80,000
Haiti Equipment (Computers)	35,000
Agrhyment Regional Centre	40,000
Aviation Forecast Competencies - QMS	50,000
Other Bilateral activities	50,000
Trust Funds ²	303,000
ODA portion of WMO Assessed Contribution (4%)	72,000
Total Contributions	680,000

VCP F	VCP ES - WMO	VCP ES - Bil	Sub Total	Total
Nil	nil	680,000	680,000	680,000

Estimated Contribution to Capacity Building Activities Calendar Year 2011 Canada	
Item	Value USD
Haiti NMHS support (forecasters, website)	150,000
Aviation Forecaster competencies and QMS in RA IV	50,000
Other Training Activities	50,000
Trust Funds	300,000
ODA portion of WMO Assessed Contribution (4%)	80,000
Total Contributions	630,000

VCP F	VCP ES - WMO	VCP ES - Bil	Sub Total	Total
		630,000	630,000	630,000

China

Summary of China's Contribution Through WMO VCP Programme and Bilateral Arrangements in 2010

Item	Description of Projects		Project number	Total cost (USD)
1	Study Tour	39 th China Study Tour (China, 6-16 May		90000

² Trust fund contributions for 2010 include - DBCP (\$25k), AMDAR (\$10k), GEO (\$88k), Thorpex (\$50 k), EC PORS (\$50k), IPCC (\$50k), Brewer (\$30k)

		2010)		
2	Training and Fellowships	International Training Course on Satellite Meteorology (Beijing Component of RTC-Nanjing, 22 June – 2 July 2010)		34000
		Training Course on Agricultural Meteorology in Beijing (Beijing Component of RTC-Nanjing, 16-27 August 2010)		16969
		Field Training Seminar on Typhoon Forecasting and Warning Skills and the Application of DVB-S in Viet Nam (Beijing Component of RTC-Nanjing, 18-24 April 2010)		20300
		Field Training Seminar on Climate Prediction and Warning Techniques (Beijing Component of RTC-Nanjing, 8 November – 3 December 2010)		20500
		International Training Course on Multi-hazard Early Warning (10 to 28 May 2010, RTC-Nanjing)		59394
		International Training Course on Numerical Weather Forecast (13-24 September 2010, RTC-Nanjing)		50909
		Training Seminar on Management for Meteorological Officials from Developing Countries (13 Oct – 2 Nov 2010, RTC-Nanjing)		91636
		International Training Course on South-South Cooperation (8-12 November 2010, RTC-Nanjing)		118788
		International Training Course on Meteorological Information Service (7 June – 4 July 2010, RTC-Nanjing)		11200
		Two-year Master degree training for ten students from Pakistan Meteorological Department under bilateral agreement		46222
3	Donation of Instruments and Equipment by Bilateral Agreement	Upgrade the GTS communication between Beijing and Ulan Bator		6511
		Donation of a Radar 59701C, radio sounders, a server and a projector to DPRK		65465
		Donation of a sandstorm station to Kazakhstan		84876
4	VCP(F)	VCP(F), IPCC Trust Fund, WIS Fund and THORPEX Trust Fund		37000
	Total			753770

Expected Contributions of China to the WMO VCP in 2011

(a) Study Tour

The 40th China Study Tour will be organized from 11 to 19 April 2011. About eighteen participants have confirmed their participation in the study tour.

(b) Training and Fellowships

1. Regional WIS Training Seminar (11-14 April 2011, Beijing)
2. Regional Seminar on Aeronautical Meteorology Service in Asia (11 to 15 April 2011, Beijing)

3. International Training Seminar on Methods for Short-term Climate Prediction (28 March – 8 April 2011, RTC-Nanjing)
4. International Training Course on Satellite Meteorology (18-29 April 2011, RTC-Nanjing)
5. Training Course on Meteorological Hazards Early Warning for Developing Countries (11-13 May 2011, RTC-Nanjing)
6. Training Course on Management for Meteorological Officials from Developing Countries (15 June – 5 July 2011, RTC-Nanjing)
7. Training Course on Climate Change and Climate Information Service for Developing Countries (30 August – 19 September 2011, RTC-Nanjing)
8. International Training Course on Agrometeorology (17 October – 4 November 2011, RTC-Nanjing)
9. International Training Course on Weather Modification (14-25 November 2011, RTC-Nanjing)
10. International Training Course on Tropical Cyclone (5-16 December 2011, RTC-Nanjing)
11. Training Course on Radar Application (September or October 2011, RTC-Nanjing)
12. International Training Course on Application of Satellite Information (Beijing Component of RTC-Nanjing, 7-17 June 2011)
13. International Training Course on Weather Modification (Beijing Component of RTC-Nanjing, 22 August – 2 September 2011)
14. Training Seminar on Regional Climate Change Impact and Adaptation (Beijing Component of RTC-Nanjing, October/November 2011)

(c) Donation of Instruments and Equipment

1. Provision of 20 sets of CMACast user stations and MICAPS 3.1 to 17 countries, including Bangladesh, DPRK, Indonesia, Kyrgyz, Laos, Malaysia, Maldives, Mongolia, Myanmar, Nepal, Pakistan, the Philippines, Sri Lanka, Tajikistan, Thailand, Uzbekistan and Viet Nam
2. Provision of emergency assistance to Pakistan Meteorological Department

(d) Donation of fund

1. USD 10,000 to IPCC Trust Fund
2. USD 10,000 to WMO Trust Fund for Voluntary Cooperation Programme
3. USD 12,000 to WMO THORPEX Fund
4. USD 5,000 to WMO WIS Trust Fund

Finland

Expert Services

Pacific Island Countries

In 2010, the project with SPREP on the Pacific Island Countries Aviation Weather Service QMS implementation has progressed well. The series of training workshops started in September 2009 in Samoa, continued in July 2010 in Tonga and will conclude in April 2011 in Fiji. The current status of QMS implementation is as follows: Fiji and PNG have completed QMS implementation, have most documents done and have plans for certification; Cook Islands, Niue, Samoa, Solomon Islands, Tonga and Vanuatu have started implementation and have some documentation ready; Kiribati and Tuvalu have not started on the QMS work (small islands and only do observations).

A “Communications and Information Services in Meteorology” workshop was organised in cooperation with WMO, JICA, JMA and FMS and was held on 1-5 February at Nadi, Fiji with co-financing and trainers from FMI. The aim is to assist PIC NMHSs develop

communications strategies and cooperate with representatives of the media to increase their visibility.

The study on the regional socio-economic impact of meteorological services has been drafted and will be submitted to the 14th RMSD in July 2011. Cooperation in the convergence of donor activities to support the regional strategy for meteorology in the Pacific is strongly supported by the project.

Peru

In 2010, several FMI expert missions to Lima and SENAMHI expert study tours to FMI have been organised to support the capacity building of the Peruvian NMHS (SENAMHI). The capacity building activities focus on climate change research, NWP and automatic weather observations in Peru and support sustainable development of these functions at SENAMHI.

SADC Countries (Southern Africa)

A project office located at the South African Weather Service (SAWS) in Pretoria was setup in January 2010 and carried out project activities to the 14 SADC member countries. The activities of the project included workshops in aviation weather QMS implementation, TDCF implementation, climate change, remote sensing and strategic planning and in-country assessments of critical development needs for all countries. The project was successfully completed in 2010.

The project produced a regional development project plan in close cooperation with the Meteorological Association of Southern Africa (MASA) and submitted it for approval to the MFA in November. The MFA has approved a financing of 8 M€ for the project over four years starting in 2011 with major components in lightning detection and AWS networks and capacity building.

Viet Nam

A two-year, 500k€ project with the NHMS of Viet Nam was signed in April and launched in May. The project will focus on supporting the use of weather radar products in nowcasting through product development and capacity building, AWS network planning, maintenance and calibration and strategic planning. In 2010, one NHMS study tour and four expert missions were completed.

Caribbean

The MFA is financing four projects in the Caribbean region:

- SHOCS: multi-hazard early warning system and QMS capacity building project with the Caribbean SIDS and ACS & WMO, launched in June, 500k€ over two years. Includes a feasibility study on MHEWS and workshops on DRR and QMS implementation for aviation weather services. In 2010 three expert missions and one co-financed workshop one disaster risk management with WMO were completed.
- Jamaica: weather production system upgrade and capacity building at the Jamaica NMHS, launched in June, 70k€ over one year. In 2010 one expert mission was completed.
- Trinidad & Tobago: weather production system upgrade and capacity building at the Trinidad & Tobago NMHS, launched in June, 70k€ over one year. In 2010 one expert mission was completed.
- Barbados: CIMH regional instrument calibration centre modernisation and capacity building, signed in November, 65k€ over two years. The project will focus on improving the sustainability of the CIMH RIC by developing SOPs, training new staff and purchasing some equipment. Project will begin in 2011.

Nepal

The FMI has started a 2.5-year project with the Department of Hydrology and Meteorology of Nepal (DHM) in February 2010. This MFA funded 500k€ project will focus on building the capacity of DHM in weather observations and remote sensing and adaptation to climate change. In 2010 four FMI expert missions to Nepal and two DHM study tours to Finland were completed. A major stakeholder workshop is planned for February 2011 in Kathmandu.

India

MFA funds a research-oriented project between Finland and India on the research of air pollution and air quality in India. The project is managed by the FMI and involves the research teams on aerosols and air pollution. The project has been granted continuation until 2012. A supplementary EU project also led by the FMI addresses some of the same issues in India.

Secondments

MFA is funding a JPO position at the WMO Resource Mobilisation Office for two years from June 2010. The JPO is Ms Salla Himberg.

Summary 2010

Total sum of all FMI projects funded by the Ministry for Foreign Affairs of Finland in 2010 is **1,501,804.0 EUR (i.e. 1,973,701.19 USD)**. In addition, two EU Twinning projects in Croatia and FYR Macedonia in the field of air quality were implemented during 2010 with total value of 276 237,0 EUR.

Plans for 2011

Total MFA funding for 2011 to FMI managed projects in the field of meteorology is estimated at **1,185,000.0 EUR**. The total funding allocations from MFA for 2009-2012 is 3,430,000.0 EUR. In addition to these projects, the government of Finland is supporting several other climate change and adaptation funds, NGOs and mechanisms.

List of projects in 2010:

- Pacific Island Countries
- Peru
- Nepal
- Viet Nam
- Caribbean (ACS)
- Barbados
- Jamaica
- Trinidad & Tobago
- India

Project Proposals in planning for

- Sudan
- Central Asia
- Colombia
- Philippines

2011 Tentative Schedule

- January
 - Jamaica and Trinidad & Tobago weather service study tour to Helsinki

- February
 - 7-11 Feb Workshop on the role of national weather service in the society, early warning and climate adaptation in Kathmandu, Nepal
- April
 - 1-5 Apr 3rd QMS implementation workshop for the PIC NMHSs in Nadi, Fiji
 - 6-7 Apr Strategic planning workshop for the development of meteorology in the Pacific for donors and stakeholders in Nadi/Suva, Fiji
 - 4-8 Apr Weather radar products in nowcasting workshop for NHMS in Ha Noi, Viet Nam
 - 11-13 Apr VCP IPM
- May
 - Observation networks workshop in Viet Nam
 - WMO Congress
- June
- July
- August
 - 1-5 Aug 14th RMSD in Majuro, Marshall Islands
- September
- October
- November
- December

France

Bilateral activities:

In 2010 France's Météo-France contribution to technical cooperation activities by bilateral agreements amounted to 905 591 €.

It includes:

1) Experts services: in 2010, 8 Météo-France experts carried out technical assistance missions in several countries including Algeria, Morocco and Croatia, for an estimated cost of 68 176 €

2) Training and fellowships: in 2010, Météo-France welcomed 82 trainees and scientists from countries such as Algeria, Benin, Burkina Faso, Bulgaria, Estonia, Ethiopia, Ivory Coast, Madagascar, Morocco, Mozambique, Ukraine, Zambia, Niger, Romania, Sao Tome and Principe, and Senegal for an estimated cost of 774 984 €

3) Equipment: RETIM through EUMETCast: in 2010 Météo-France funded the installation of new equipment required by the transition of our satellite data and products broadcasting service (previously known as RETIM) over to the EUMETCast broadcasting system of EUMETSAT for ACMAD, and 11 NMS users of the former RETIM system for an amount of 62 431 €

In 2011, Météo-France will maintain its contribution to technical cooperation activities by bilateral agreements at the same level as in 2010.

Assistance to Haiti:

Météo-France also participated actively in the WMO coordinated support for Haiti following the devastating Earthquake which struck the country in January 2010.

It took part in the two WMO coordination meetings which took place in Hamilton and San Jose in March 2010 to meet urgent needs and help CNM to cope with the next rainy and hurricane season as well as in the assessment mission which was carried out in Haiti in April 2010 in order to evaluate longer term needs in terms of equipment, infrastructure, training of meteorologists etc.

Its contribution together with those of others WMO Members is underlined in the WMO concept paper "Capacity Development of the National Meteorological and Water resources Services of Haiti to meet Short Term and Immediate Needs". It consists essentially of:

- Development of a dedicated Extranet with relevant meteorological information, data and prediction products to be used by Haitian forecasters in their production of daily forecasts and warnings with the assistance of a team of forecasters from Environment Canada, UK Met Office, and Météo-France, based at Météo-France Office in la Martinique since 28th May 2010. The estimated cost of this operation amounts to 45 000 €
- Training of five Haitians at Ecole Nationale de la Météorologie (ENM) in Toulouse: In August 2010, the Deputy Director of ENM carried out a mission in Port au Prince to evaluate the candidates proposed by the Director of CNM to be trained at ENM. In September 2010, the five selected Haitians began their training at ENM for a period of 11 months. This one year training will allow them to be qualified as meteorological technicians. It will be followed by several weeks of on-the-job training at Météo-France offices in Martinique and Guadeloupe. This operation was financed on the French VCP line for an amount of 60 000 €

Plans for 2011:

Météo-France will continue to maintain operational the dedicated Extranet and to host and support the visiting forecasters team until the next hurricane season. It will also participate in the discussions, coordinated by WMO, concerning the strengthening of the Haitian forecasting capacities which could include notably:

- The completion of the training of the five technicians already trained at ENM and in Martinique and Guadeloupe to allow them to join and progressively replace the forecasters team based in La Martinique.
- The training of two other Haitians.
- The transfer of the forecast production tool at the CNM, in Port au Prince, as soon as the political situation allows it.

Support to the WMO activities and programmes through Trust Funds:

In 2010, France made the following contributions:

- Intergovernmental Panel on Climate Change (IPCC) Trust Fund: 200 000 €
- THORPEX Programme Trust Fund: 25 000 €
- AMDAR Programme Trust Fund: 21 000 €
- CCI and CIMO TECO Trust Fund: 6000 €

Support to the ACMAD Centre (Niger):

In 2010, The French Ministry of Foreign and European Affairs continued its support to the ACMAD Centre with an estimated contribution of 216 000 € covering the salary of the technical assistant and the implementation of the 2010 working plan.

Meteo-France also provided scientific, technical and financial support to the organization of ACMAD's PRESAO activities

VigiRisC Project (total cost 4 M€, FGEF contribution 2 M€):

The project started its activities in 2009 under the coordination of the ACMAD Centre. Its objective is to strengthen the capacities of African countries for the prevention of risks and socio-economic impacts related to variability and climate change through relevant and adapted tools.

A workshop on the operational aspects of the implementation of vigilance systems will be organized in Toulouse, from 8 to 10 February 2011, with the support of Météo-France and the participation of the ACMAD Center.

The workshop will include several round tables during which the main actors of the Vigilance System in France will discuss and share their experience with the experts of the project in charge of the development of Vigilance products and services for Africa.

ACClimate (total cost 3 645 000 €, FGEF contribution: 1 000 000 €, French Ministry of Foreign Affairs contribution: 495 000 €, «Région La Réunion» contribution: 215 000 €):

The objective of the project is to strengthen the capacity of the Indian Ocean Commission (IOC) and of its Member States to adapt to the effects of climate change.

In 2010 the main activities of the project focused on:

- Organisation, in collaboration with the «Réseau de surveillance épidémiologique et de gestion des alertes (SEGA)» and the IOC of a symposium on Health and Climate in La Réunion, 17-22 May 2010.
- Participation in the 7th African Development Forum; Addis Ababa, 10-15 October 2010
- Call for tender for a study on the potential of a climate simulation "COI Counties" and the feasibility of a Regional Climate Data Base.

AOC Project (total cost of the project: 3 000 000 €, FGEF contribution: 1 200 000 €, French Ministry of Foreign Affairs contribution: 300 000 €):

The objective of the project is to develop a regional platform for the exchange of information on climate change in West Africa in Agriculture and Water Resources.

It aims to become a component of the Economic Community of West Africa States (ECOWACS) Regional Programme on climate change. A technical assistant was appointed for the project in 2010.

Carib-Hycos:

Activities in 2010:

- Finalization and consolidation of the project budget.
- Launch of a call for tender for the Hydrometeorological Data Management System (HDMS).

Plans for 2011:

- Installation of the HDMS HYDROMET in all the participating countries.
- Organization of training sessions on the use of the HYDROMET software in Dominican Republic and Cuba for Spanish speaking participating countries and in Barbados for English speaking countries.
- Launch of a call for tender for hydrometeorological equipment.

Germany

Review of Contributions to the VCP in 2010 and Expected Contributions in 2011

In 2010, Germany's total contribution to the WMO Voluntary Cooperation Programme was 5,277,772 US\$, consisting of 4,259,853 US\$ for bilateral arrangements and 1,017,919 US\$ for training and fellowships.

Training:

Germany has continued to provide assistance in training and fellowships, mostly on a bilateral basis, and organized training courses in support of the National Meteorological Services of developing countries:

To support NMHSs in developing countries in the introduction of regional numerical weather prediction, the DWD carried out once again a two-week Regional NWP Training Workshop in July 2010.

The “Advanced EUMETSAT/CM-SAF Training Workshop” for the use of satellite data for climate purposes was held in Rostock in September 2010. In October 2010, the DWD supported participants of the RCC workshop, held at DWD’s headquarters in Offenbach.

For all seminars held at the DWD Meteorological Training and Conference Centre or at the DWD headquarters, accommodation expenses are reduced for participants from developing countries and countries with economies in transition.

In connection with the CM SAF (Satellite Application Facility on Climate Monitoring), Germany supported again a CLIPS showcase (WMO’s Climate Information and Prediction Services) at the Armenian National Meteorological Service.

Two training courses (“Hydrometeorological Monitoring Network and Geo Data Bases” and “GIS in Hydrology”) were organized for representatives of the Central Asian Hydrometeorological services (Afghanistan, Kazakhstan, Kyrgyzstan, Tajikistan and Uzbekistan) at the German Research Centre for Geosciences in Potsdam (GFZ) in co-operation with the Central Asian Institute for Applied Geosciences in Bishkek.

All costs were covered by the Central Asian Water (CAWa) project funded by the German Federal Foreign Office in the frame of the Central Asia Water Initiative (“Berlin Process”).

Together with the Lake Chad Basin Commission (LCBC) Germany continued a project targeting on the training of national experts of the bordering countries in the collection and analysis of surface water-related data and in the consultancy of the LCBC regarding data and information management.

With its support for the GAWTEC (Global Atmosphere Watch Training and Education Centre), Germany contributed to the continuous quality assurance programme of the WMO. Two courses were financed during 2010 to provide technical assistance and training to station personnel and central facilities from all WMO regions, whereby most trainees came from countries in the WMO regions Africa, Asia and South America.

Together with the ArbaMinch University, the German IHP/HWRP Secretariat co-organised and supported the “11th International Symposium on Sustainable Water Resources Development” on 3rd and 4th December 2010 in Arba Minch, Ethiopia. The symposium was attended by more than 160 national and international scholars in areas related to water resources.

Expert services:

The DWD supports 19 developing countries and countries with economies in transition in the operational use of the DWD’s NWP model by providing them with the corresponding boundary data and training.

Several WIS Jumpstart Offers were supported by Germany through on-site training courses (like in Turkey), through assistance of the WMO team in Morocco and Indonesia or through the provision of information on WIS requirements to prepare future Jumpstart Offers.

Germany supported the Mekong River Commission (MRC, Laos, Cambodia, Vietnam and Thailand) in the field of flood management and flood forecasting. The project works in three components: flood-related climate modeling, networking of regional information- and data-systems and support for the implementation of selected aspects of national adaptation strategies.

The GIZ (German Agency for International Cooperation) carried out a project, funded by the Federal Ministry for Economic Cooperation and Development (BMZ), to support the Commission Congo-Oubangui-Sanga (CICOS) in the establishment of an information system, including the exchange of hydrometeorological data from the basin.

Within the framework of bilateral arrangements, Namibia and Germany discussed next steps for a Technical Co-operation in Meteorology, targeting on the improvement and modernization of the Namibian Weather Service.

Germany continued its support of the WMO RA VI Regional Dobson Calibration Centre at Hohenpeißenberg. Following the Nitrogen Oxides (NO_x) GAW Workshop held at DWD's Observatory at Hohenpeißenberg in 2009, DWD and WMO developed the NO_x report in 2010.

Infrastructure:

In 2010, three automated hydrometeorological monitoring stations were installed in Kyrgyzstan. The station "Baitik", which was installed at an existing meteorological station south of Bishkek, is intended to serve as a training station for the Central Asian Hydrometeorological Services in the framework of the Central Asian Water (CAWa) project. The other two monitoring stations (Taragay and Kokomeran) were installed at higher elevations in the Naryn basin.

The station data will be accessible through the project website www.cawa-project.net and responsibility for the stations is planned to be handed over to the Hydromet services at the end of the project. It is planned that the station data are directly fed into the existing communication system of the Central Asian Hydrometeorological services by then.

In co-operation with the Meteorological Institute Mozambique (INAM), Germany supported the third phase of the establishment of a basic flood warning system for the river Rio Save and the river Búzi and provided appropriate training.

Through the GCOS Co-operation Mechanism Germany was able to contribute to GCOS by supporting the restoration of the building at the GSN station Arragats, Armenia.

Similar to former years, Germany contributed to Trust Funds that help support scientific and technical capacity building activities (e.g. AMDAR, WIGOS, WIS). In 2010, Germany was again able to support the GCOS secretariat

Plans for 2011

In July 2011, Germany will conduct the next NWP workshop "Capacity Building in Regional Numerical Weather Prediction Based on HRM and COSMO Models" at the DWD's Meteorological Training and Conference Centre in Langen.

An international workshop on flood forecasting is planned to be held in Germany in autumn 2011, organized by the German IHP/HWRP Secretariat.

DWD will act as an associated partner of two projects for the establishment of Regional Science Service Centres (RSSC) aiming at sustainable land management and adaptation to climate change in the Southern and the Western African region. The DWD's contribution to these projects, funded by the German Federal Ministry of Education and Research, will be to provide expertise and consulting.

In the framework of the Central Asian Water CAWa project, it is planned to install two more stations in Central Asia in 2011 and to hold two more trainings for Hydrometeorological specialists.

The IPM VCP 2011 meeting was informed that Germany will also continue to provide technical assistance, mostly on a bilateral basis and taking into consideration the relevant recommendations of WMO bodies.

Japan

The VCP and related activities by Japan - report on 2010 and outlook for 2011

Japan's contribution to the WMO Voluntary Co-operation Programme in 2010 (US\$)

Donor Member	VCP(F) (US\$)	VCP(ES)				Total Contribution (US\$)
		Equipment and Services through WMO	Equipment and Services by bilateral arrangements	Training/ Fellowships	VCP(ES) including fellowships Sub-total	
JAPAN	46,000	184,100		250,000	434,100	480,100

1 Direct Financial Support

In 2010, Japan made a cash contribution of US \$46,000 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.

2 Training issues

The Japan Meteorological Agency (JMA) conducted a three-month Group Training Course in Reinforcement of Meteorological Services with funding support from the Japan International Cooperation Agency (JICA). The course was offered to eight participants from eight countries (Bhutan, Cambodia, Iran, Lao PDR, Malaysia, Mongolia, Myanmar, and Tonga) from 14 September to 18 December 2010. This course aimed at promoting activities to reinforce the meteorological services of each country applying meteorological data/products such as numerical weather prediction, satellite images, and climate information.

On-the-job training for typhoon forecasters, funded by the Typhoon Committee, was offered to two forecasters from Hong Kong China and Singapore at RSMC Tokyo Typhoon Center from 21 to 30 July 2010.

Training Seminar on Climate Information and Forecasting has started since 2008. The third seminar was conducted at Tokyo Climate Center from 18 to 21 January 2011, offered to participants from 11 countries (Bangladesh, Hong Kong China, Indonesia, Kazakhstan, Lao

PDR, Malaysia, Maldives, Mongolia, Myanmar, Nepal, Pakistan, Philippines, Singapore, Sri Lanka, Thailand, Uzbekistan and Viet Nam).

3 Infrastructure

In 2010, Oriental Electronics, Inc. Japan generously offered in-kind support through the VCP by providing engineering services to the Department of Meteorology in Cambodia for reinstallation of the MTSAT Satellite Reception System and its connection with the MSS servers, and to the National Agency for Meteorology and Environment Monitoring of Mongolia for upgrading the circuit for the GTS links to the Digital Data Network and migration of data exchange code to the Table Driven Code Format. .

4 Expert Services

JMA sent experts for technology transfer to Argentina, Paraguay and Uruguay in the field of climate adaptation, to Indonesia in the field of satellite meteorology, to Thailand in the field of calibration of meteorological instruments, and to Philippine in the field of ozone observation.

5 Grant Aid Projects

A Grant Aid Project (total: \$29 million) was launched in November 2009 in the Philippines for the improvement of the meteorological radar system. Three radar systems at Vlrac, Aparri and Guiuan and data satellite communication system are being installed under this project.

A Grant Aid Project (total: \$8 million) was launched in 2010 in Samoa for Improving the Weather Forecasting System and Meteorological Warning Facilities. Seven AWS, one airport observation system, one wind profiler system and data communication systems are being installed under this project.

6 Technical Cooperation Projects

A technical cooperation project on developing human resources for meteorology and hydrology in Lao PDR started in July 2006. This project followed the two-year Grant Aid Project for installation of a meteorological radar system and an MTSAT data-receiving/analysis system. This technical cooperation project is scheduled to continue until the beginning of 2011.

A technical cooperation project in Bangladesh on development of human capacity on operation of weather analysis and forecasting was launched in 2009. This is to follow-up the Grant Aid Projects for the improvement of the meteorological radar system.

A technical cooperation named Disaster Management Capacity Enhancement Project Adaptable to Climate Change in Sri Lanka was launched in November 2009. This is to follow-up the Grant Aid Project for the improvement of the meteorological and disaster information network.

A technical cooperation project for supporting enhancement for adaptation to the impact of climate change in Yucatan Peninsula in Mexico was conducted from June 2009 to June 2010.

A technical cooperation project for Meteorology Training for Fiji and neighboring countries has been conducted since 2010. Along with this project, a training course on calibration, repair and maintenance of meteorological instruments was conducted in October 2010. To this training course, a staff member of RA-II Regional Instrument Center in Tsukuba was dispatched.

A technical cooperation project has been launched in Myanmar for developing early warning systems for Cyclone Nargis affected areas. In association with this project, two experts have been dispatched to the Department of Meteorology and Hydrology in Myanmar to investigate and analyze its capacity for disseminating cyclone advisories and warnings.

7 Plans for 2011

Instead of cash contribution to the VCP(F), "Japan Trust Fund for Global Frameworks" was established in order to facilitate the financial contribution of JMA to a broad range of WMO programmes and projects that support the establishment, implementation and strengthening of all components of the Global Framework for Climate Services, including disaster prevention, agriculture, and water resource management in the world.

In 2011, Japan will continue to support the improvement and enhancement of meteorological and hydrological services of NMHSs, particularly in developing countries through this new fund, and related activities including training/fellowship, in-kind contributions by private companies in Japan, and bilateral cooperation under the Official Development Assistance scheme.

New Zealand

ACTUAL		WMO VCP - NEW ZEALAND CONTRIBUTIONS				
YEAR	2009/2010					
Currency	USD					
Donor	VCP (F)		VCP (ES) Via Bilateral	Training	VCP (ES) Sub Total	Total
Member		via WMO				Contributions
New Zealand			1,628,989	280,831	1,628,989	1,909,820

FORECAST		WMO VCP - NEW ZEALAND CONTRIBUTIONS				
YEAR	2010/2011					
Currency	USD					
Donor	VCP (F)		VCP (ES) Via Bilateral	Training	VCP (ES) Sub Total	Total
Member		via WMO				Contributions
New Zealand		80,000	1,850,550	TBD	1,930,550	1,930,550

(a) 2010 Country Report

New Zealand (NZ) contributions to the WMO VCP (**US1,90,9820 (2009/10 FY) and US1,930,550 (2010/11 FY)** – see summary section for breakdown) are predominantly

bilateral in nature via a mix of direct NZ government Overseas Development Assistance (ODA) programme and joint projects with other development partners, the US National Oceanic and Atmospheric Administration (NOAA) Global Climate Observing System (GCOS) Programme, US NOAA NWS International Affairs (IA), Met Office UK and the Australian Bureau of Meteorology (BoM) being the primary ones under the umbrella of WMO.

The goal of NZ and its partners' assistance is to further enhance the capacity of National Meteorological and Hydrological Services (NMHSs) of Small Island Developing States of the Pacific (Pacific SIDS) to operate and manage their own affairs.

Funding from NZ comes out of the NZ Ministry of Transport (MOT) contract, managed by MetService, the NZ Climate Change Development Fund (CCDF), managed by the NZ Ministry for the Environment (MfE) and NZ Overseas Development Assistance (ODA) programme, managed by NZ Ministry for Foreign Affairs and Trade (MFAT). Priority areas of assistance include;

- Ensuring the continuing quality and integrity of data gathered in Pacific SIDS are 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.
- Hosting and operating the HF/RANET Pacific Regional hub in Wellington
- Providing backup service to the Regional Specialised Meteorological Service (RSMC) Nadi/Fiji Meteorological Service (FMS) during the tropical cyclone seasons
- Hosting the WMO Severe Weather Forecast Disaster Risk Reduction Project (SWFDRR) for RA V (South Pacific)
- Implementing the NZ Climate Change Development (CCD) assistance programme
- Managing Trust Funds as agreed from time to time with other organisations funding Pacific SIDS weather and climate data acquisition, data management, and telecommunication systems.
- Climate monitoring and research in NZ and Pacific SIDS

Highlights from 2009/10

NZ Ministry for Foreign Affairs and Trade (MFAT) ODA - Natural Disasters and Environment Programme

- Weather forecasting service Pacific (MetService)
- Broadcasting Service, including severe weather and tropical cyclone warnings under the WMO RA V Tropical Cyclone Operational Plan (Radio NZ International (RNZI))
- Community-based DRR programme (FSPI) – community based DRR in PNG, Solomon Islands, Tonga and Vanuatu
- Disaster and Tsunami Readiness (with Ministry of Civil Defence and Emergency Management); strengthen disaster risk management in the Pacific (Samoa, Tonga, Cook Islands, Niue and Tokelau).
- Meteorological Services Pacific Review (SPREP)
- Island Climate Update (ICU) (SOPAC)
- Water demand management (SOPAC)
- Water Quality Monitoring (SOPAC)

NZ Ministry Of Transport (MOT) contract

- Technical assistance and advice (GCSO stations inspections, calibrations and maintenance) via in-country visits and remotely were provided to Kiribati, Tuvalu, Samoa, Tokelau, Tonga, Niue and Cook Islands.
- MetService continued to assist Pacific SIDS maintain and upgrade Reporting Basic Synoptic Stations Network (RBSN) and monitor their performance on a daily basis.
- Backup to Regional Specialised Meteorological Centre (RSMC) Nadi, Fiji during the Tropical Cyclone Season.
- Lead RSMC for the WMO Severe Weather Forecast Disaster risk reduction Demonstration Project for RA V (SWFDDP).

NZ Climate Change Development Fund (CCDF)

Assistance provided under this programme includes the following:

- Support for two workshops organised under the auspices of the United Nations Framework Convention on Climate Change (UNFCCC); the first (held in Samoa) on the roles of regional centres and networks in assessing and planning for adaptation to climate change; and the second, a workshop for Small Island Developing States (held in the Seychelles) where participants shared experiences, lessons learned and good practices in developing and implementing climate change education, training and awareness activities and discussed opportunities for strengthening and expanding those activities.
- Assistance to the Asia Pacific Network (APN) for Global Change Research (APN) contributing to the CAPaBLE capacity development and enhancement programme that builds/enhances scientific capacity in developing countries in the Asia-Pacific region to improve their decision-making in target areas related to climate change, water and food security, and global change that are linked directly to their sustainable development.
- IPCC outreach in WMO Region V, involving holding meetings/workshops in several South East Asia centres and Fiji with the aim of improving the relevance, coverage and inclusion of material for this region in the IPCC fifth assessment (AR5), and to involve regional stakeholders in the review process and uptake of findings.

Pacific Trust Fund; a joint UK/NZ bilateral Project (PF)

- NZ (MetService) and UK (Met Office) continued to assist Kiribati, Tuvalu and Cook Islands manage and operate their upper air stations at Tarawa, Funafuti and Rarotonga. Assistance includes provision of funding for day to day operation, procurement and supply of consumables, spare parts, financial management, reporting, remote support and incountry technical preventative and restorative maintenance visits. The project also provided telecommunication (HF/RANET) and computer systems to Tuvalu and Kiribati. Direct financial assistance to continue the upgrade and refurbishment of Tuvalu and Kiribati NMSs offices in Funafuti and Tarawa were provided under the PF.

Pacific Islands GCOS System Support; a joint US/NZ bilateral Project (PI GCOS SSP)

- This joint collaboration between MetService (Wellington) and the US GCOS Programme (based at NOAA's Silver Spring, Maryland) is made possible under the New Zealand/US Climate Change Partnership bilateral agreement. The project involves the support of bilateral activities in three distinct areas: (1) Pacific Technical Support Project (TSP) support for maintaining regional climate observing networks; (2) Climate research and observational activities; and (3) Pacific Islands GCOS programmatic support for the region. The goal is to ensure a sustained long term continuity, quality and integrity of meteorological data gathered from Pacific Islands GCOS network for use in weather and climate monitoring, modelling and research. The main objectives are; (i) to oversee the operation, maintenance, and calibration of the region's GCOS Surface Network (GSN) and GCOS Upper Air Network (GUAN) stations to the agreed upon GCOS standards as documented by the GCOS Program at <http://www.wmo.int/pages/prog/gcos/> as documented in GCOS Publication 73,

“Guide to the GCOS Surface and Upper-Air Networks: GSN and GUAN - (Version 1.1)”; (ii) to work towards continuing critical climate research and associated observations via the shipboard trace gas measurements project undertaken between New Zealand and Japan, publication of and research support associated with the monthly Island Climate Update (ICU) for regional south Pacific climate outlooks, South Pacific Rainfall Atlas (SPRAT) and preparation for the GCOS Reference Upper Air Network operations at the upper site in Lauder, New Zealand and (iii) to provide on-going support for the Pacific Islands GCOS regional coordinator based in SPREP, Apia, Samoa

(b) 2010/11 VCP Plan and related projects

New Zealand will continued its ongoing support to the projects funded in 2010. Funding is expected to remain static in 2010/11 fiscal year. The projects we expect to support in 2011 include:

- A continuation of the support NZ MFAT provides for Weather forecasting service Pacific (MetService), Broadcasting Service, including severe weather and tropical cyclone warnings under the WMO RA V Tropical Cyclone Operational Plan (Radio NZ International (RNZI)), Community-based DRR programme (FSPI) – community based DRR in PNG, Solomon Islands, Tonga and Vanuatu and Disaster & Tsunami Readiness (with Ministry of Civil Defence and Emergency Management); strengthen disaster risk management in the Pacific (Samoa, Tonga, Cook Islands, Niue and Tokelau).
- A continuation of the support NZ currently provides to Pacific SIDS (Kiribati, Tuvalu, Samoa, Tokelau Islands, Tonga, Niue and Cook Islands) under the New Zealand MOT Contract
- A continuation of the support NZ provides under the CCDF
- A continuation of the support NZ provides under the PI GCOS SSP
- In-country training and technical support will be provided to the observers and operators of the GSN, GUAN and RANET systems in selected Pacific SIDS.
- Restoration of the Niuatoputapu Meteorological Service’ facilities destroyed by the September 29th Pacific tsunami. The project is a joint initiative by US NOAA International Affairs (IA) Division, WMO VCP, MetService and Tonga Meteorological Service (WMO, NOAA IA).
- Reinforcement of Meteorological Services in Tonga (jointly with JICA and Tonga Met Service)
- SWFDDP – further enhancement of Met Connect Pacific and follow up in-country trainings (with US NOAA NWS International Affairs and SWFDDP participating Pacific Islands NMSs and Global Producing Centres (GPC).
- Update of the Strategic Action Plan for the Development of Meteorology in the Pacific (SPDM), 2001-2009 (with SPREP, Finland, US NOAA NWS IA and Australian Bureau of Meteorology, WMO)
- Update of Pacific Meteorological Services Needs Analysis Project (PMSNAP) reports (with SPREP and SPREP members, WMO)
- Implementation of the recommendations of the SPREP led Review of Pacific Meteorological Services (SPREP and SPREP members, WMO)
- PI-GCOS Programmes (SPREP, NIWA and US NOAA GCOS)
- Pacific Climate Information System (PaCIS) (US NOAA, NIWA and BoM)
- Climate Hazards Project (with NIWA, MfE, NZAID)
- Implementation of WMO RA V SP/SOP, 2012-2015 – Pacific Islands’ components (WMO and relevant development partners and agencies)

Republic of Korea

Contributions in 2010

1) Estimated Financial Value of Contribution of ROK in 2010:

VCP(F)	VCP(ES)	Bilateral		Total
		ES	E&TR	
USD30,000	Nil	1,263,100 USD	406,700 USD	1, 699,800 USD

2) Equipment and Services by Bilateral Arrangements:

The Korea Meteorological Administration (KMA) has been providing expertise support for the project – Establishment of Early Warning and Response System for Disaster Mitigation in the Metro Manila (Pasig-Marikina River Basin). This 3M USD project, funded by the Korea International Cooperation Agency (KOICA), is implemented from 2010 to 2012 in order to modernize the flood forecasting system and early warning system for the Metro Manila region. The contribution in 2010 was 1M USD.

KMA dispatched its experienced retirees to the National Hydro-Meteorological Service (NHMS) of Viet Nam, the National Agency for Meteorology and Environment Monitoring (NAMEM) of Mongolia and the Kenya Meteorological Department in 2010 through the World Friends Korea (WFK) program sponsored by the Ministry of Knowledge Economy to provide consultations for the modernization of meteorological services in the countries. The WFK program aims at providing support for the socioeconomic development of developing countries based on the exploration and planning of development projects, and the provision of technical and managerial consultation for the promotion of such projects. The contribution amounts to 202,200 USD.

KMA funded 60,900 USD for a joint research project with NHMS of Viet Nam to develop a typhoon forecast system using multi-model ensemble, which included:

- A three-month secondment for joint research at the National Typhoon Center of KMA by two NHMS experts;
- An one-week training for typhoon forecasters at KMA; and
- Funding NHMS for its system development.

3) Education and Training by Bilateral Arrangements:

In 2010, with the sponsorship of KOICA, KMA provided Training Courses on:

- Information and Communication Technologies for Meteorological Services (107,500 USD);
- COMS (Communication, Ocean and Meteorological Satellite) Data Analysis (USD 87,100 USD); and
- Improvement of Meteorological Disaster Responsiveness for African Countries (42,400 USD).

KMA co-organized with the Malaysian Meteorological Department (MMD) the Training Workshop on Mesoscale Numerical Weather Prediction (Phase I) in October 2010 for 20 participants from the 10 ASEAN NMHSs under the auspices of the ASEAN-ROK Special Fund. The contribution was 87,300 USD.

KMA invited two experts from the Thai Meteorological Department (TMD) and the MHMS of Viet Nam to KMA to provide an attachment training at the National Typhoon Center of KMA on typhoon analysis and forecast system (TAPS) in 2010 for three months within the framework of the 2010 Typhoon Committee Research Fellowship Scheme. The contribution was 12,200 USD.

KMA invited 7 Directors of NMHSs of the East Africa and the Director of the IGAD Climate prediction and Applications Center (ICPAC) to the Korea-Africa Leaders' Workshop on Meteorological Cooperation, which was held on 24-28 October 2010 in Seoul aiming to identify cooperative activities between KMA and the NHMSs of ICPAC Members. The contribution was 54,700 USD.

KMA organized the following short-term training events:

- On-the-job training for six NHMS (Viet Nam) experts for one week on forecast system, applied meteorological services and climate data rescue (10,800 USD);
- On-the-job training for two NHMS (Viet Nam) experts for two weeks on short-range NWP (4,700 USD)

Prospects for 2011

1) VCP(F)

KMA will contribute 30,000 USD to the VCP Fund in 2011.

2) Equipment and Services by Bilateral Arrangements:

KMA will continue implementing the KOICA Project - Establishment of Early Warning and Response System for Disaster Mitigation in the Metro Manila (Pasig-Marikina River Basin) – aiming at putting the system in operation by the end of the year.

Also, KMA plans to continue participating in the WFK program to dispatch experienced retirees to some NHMSs for consultations on the modernization of meteorological services. To this end, KMA is discussing with the NHMSs of Tanzania, Ethiopia, the Philippines, Uzbekistan and Malaysia.

KMA has developed another KOICA project for development of a COMS data receiving and analysis system in Sri Lanka (2011-2013/\$2M), and is planning to expand such projects for other developing countries within the COMS service boundary.

3) Education and Training by Bilateral Arrangements:

In 2011 KMA will organize the following two KOICA training courses:

- Information and Communication Technologies for Meteorological Services; and
- Improvement of Meteorological Disaster Responsiveness for African Countries.

KMA will co-organize the Training Workshop on Mesoscale Numerical Weather Prediction (Phase II) with MMD in 2011 in Malaysia.

KMA will provide two NAMEM experts with a three-month training program on supercomputer and NWP in line with NAMEM's plan to introduce high-performance computing system for the enhancement of its regional NWP system.

For contribution to capacity building in the field of climate prediction and application in the East Africa, KMA plans to organize the following activities in 2011:

- Attachment training at KMA in the field of climate modeling for an expert from Ethiopia for three month;
- A secondment program to KMA for joint research on climate for an expert from Africa for one year; and
- Invitation to 10 experts from Africa to a symposium on climate change adaptation in Seoul.

KMA will organize a training event on severe weather forecast for 10 NHMS (Viet Nam) experts in 2011.

Spain

Activities in 2010

In 2010 Spain contributed to two of the four specific Trust Funds that had been built within the WMO by Spain. Several multi-lateral or bi-lateral co-operation projects supported by WMO and related to the goals of VCP have been funded by means of these. Spain also mobilized resources in favour of development projects and technical assistance. Training activities for staff of NMHSs of other members also continued in 2010.

1. VCP Trust Fund

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

2. Multilateral activities in Regional Associations III and IV financed through bi-lateral agreements with WMO

Spain established in 2006 a Trust Fund in WMO to finance the activities of the “Program of Cooperation for Ibero American NHMSs” agreed with 20 NMHSs of Latin America and Portugal. The contribution to this fund was of **1.707.552 USD** in 2007, **1.740.803 USD** in 2008, and **345.466 USD** in 2010. The Trust Fund is kept at WMO for financing present and future activities.

The highlights from activities implemented during 2010 were:

- Support and update of the contents of the web page of the Directors' Conference (www.meteo-iberoamericana.com)
- CLIBER (“*Clima Iberoamericano*”, “Iberoamerican Climate”) project for studies of current situation and development of NMHSs infrastructures. Presentation to the corresponding authorities of the Projects CLIBER-Colombia and CLIBER-Nicaragua.
- Pilot implementation of the hydrometeorological database administration system MCH in Costa Rican *Instituto Meteorológico Nacional*. MCH system is free-licensed and is common and available to all NMHSs interested.
- Holding of a meeting between Uruguayan and Paraguayan NMSs and end users.
- Continued support to practical learning pilot projects regarding the relationships between NMHSs and key sector users in Chile (salmon industry, transport and agriculture), Peru (health and agriculture) and Panama (agriculture).
- Organization of a Conference of NMHSs’ Directors in Mexico City (July 5-7, 2010) dealing about the participation of NMHSs in the Global Framework for Climate Services.
- Organization of the 8th Meeting of the Iberoamerican NMHSs’ Directors Conference in Santiago de Chile (November 17-19, 2010).
- Funding of the PROHIMET Network Conference about “Regional Hydrometeorological Observation Systems: exchange of information”, held in July 19-23, 2010 in San José (Costa Rica).
- Workshop on coordination of NMHS Communication Offices, held in May 31-June 3, 2010 in San José (Costa Rica).
- Support of the climate forum in Central and South America.
- Support to horizontal cooperation between NMHSs (expert training, stays, etc.) about:
 - o implementation of WIS in South America
 - o instrument calibration
 - o generation of climate change scenarios
- Funding of different training courses:
 - o Workshop on Quality Management Systems for NMHSs. Santa Cruz de la Sierra (Bolivia), April 12-16, 2010.
 - o 2nd Course on Introduction to Strategic Management for NMHSs (distance learning). April 5-June 6, 2010.

- Roving course on use and installation of automatic hydrometeorological stations. Costa Rica, July 19-30, 2010.
- 7th Course on Satellite Meteorology (partially funded by EUMETSAT). Antigua (Guatemala), August 30-September 10, 2010.
- 5th Course on use and interpretation of ECMWF products. Cartagena de Indias (Colombia), September 6-17, 2010.

The expenditure from the Trust Fund during 2010 can be estimated around **550.000 USD**. In addition, staff from AEMET and other Spanish institutions have been involved in all these activities.

3. Multilateral activities in Regional Association I (Africa) financed through bi-lateral agreements with WMO

As a consequence of the Las Palmas Action Scheme approved in 2007, Spain established in 2007 a Trust Fund in WMO to finance the activities of the “West Africa Co-operation Programme”.

In 2008 Spain contributed to that Trust Fund with **2.249.100 USD**, although this amount was received by the WMO in January 2009, and in 2010 Spain contributed to that TF with **345.466 USD**. The Trust Fund is kept at WMO for financing present and future activities, specifically the activities programmed in the meetings of the Conference of Directors of West Africa NMHSs.

The highlights from the activities implemented in West Africa during 2010 were:

- Maintenance and update of the Forum of Directors of West Africa NHMSs webpage (www.afrimet.org): 3.597 USD
- Meetings and conferences: 207.235 USD
 - 3rd Conference of Directors of West Africa NMHSs. Banjul (The Gambia), February 1-5, 2010.
 - Coordination meeting AEMET-WMO. Seville (Spain), February 19, 2010.
 - Support to the 1st Conference of African Ministers Responsible for Meteorology. Nairobi (Kenya), April 12-16, 2010.
 - MARINEMET technical coordination meeting. September 29, 2010.
- Equipment: 519.493 USD
 - 6 marine weather radars (purchase, installation and maintenance): Mauritania, The Gambia, Senegal and Cape Verde.
 - Rain gauge manufacture and distribution
 - L-band use license
- Courses and seminars: 71.931 USD
 - Roving seminars and rain gauge distribution in Mauritania, Senegal, The Gambia, Cape Verde, Guinea-Bissau, Guinea-Conakry, Togo, Benin, Niger and Burkina Faso.

The expenditure from the Trust Fund in all these activities adds up to **802.256 USD**.

Although Spain made no contributions to the specific WMO Trust Fund for financing the African Centre of Meteorological Application for Development (ACMAD), dated January 1, 2010 there were **284.549 USD** in the TF that have been partially invested during 2010, particularly in capacity building, research and general operations.

4. Training Fellowships

During 2010 ten students from Iberian America continued their participation in the two-year international Course on Applied Meteorology organized by AEMET in Madrid. Costs of fellowships granted to the students were **167.000 USD**. Training costs and overheads can be estimated around another **140.000 USD**.

5. Other technical activities

Spain contributed with **10.074 USD** to the *Institut Méditerranéen de l'Eau* (IME), a network of experts gathering institutional and technical scopes in the Mediterranean Basin on water issues.

The AEMET Izaña Atmospheric Research Centre went on its long term collaboration with the Argentinean NMS in the Ushuaia GAW station. AEMET provided 14 ozonesondes in 2010 with an estimated cost of **20.800 USD**. These observations are of prime importance due the shortage of this kind of data in the high latitudes of the Southern Hemisphere.

Also, staff from AEMET installed an AERONET-PHOTONS-RIMA station in Cairo (Egypt). The cost of the equipment (a Cimel Sun Photometer) was financed by the Spanish International Cooperation Agency for Development (AECID) through WMO (SDS-Africa Project) and developed by AEMET Izaña Atmospheric Research Centre, working closely with the Egyptian Meteorology Authority (EMA). This inversion added up to **55.492 USD**.

A summary of all figures can be found in the **Annex**.

Outlook for 2011

During 2011 these activities are expected to continue. On 2011 there has been a contribution of **691.300 USD** to each of the Ibero American and the West African Trust Funds. Regardless of the difficult economic situation, and its low predictability, there are now more than **2 million USD** in each of the Trust Funds that guarantee the continuity of these schemes. At the time of writing, two Conferences of Directors are to be held in Cape Verde and in San José (Costa Rica) to decide the action plans for the immediate years. As an example, the 2011-2013 Meteorological Action Plan for Iberoamerica to be approved in San José plans to invest around 1.8 million USD in cooperation activities.

The training activities for staff of less developed Members will continue through the finalization of the current long term training (2009-2011). The collaboration of the Spanish International Cooperation Agency for Development (AECID) will also continue with the support from their Training Centers in Iberoamerica.

Regarding the AEMET Izaña Atmospheric Research Centre, two more photometers are to be installed in Morocco and Tunisia in 2011, aiming to reinforce atmospheric monitoring capacity of aerosols in Northern Africa, complementing the activities carried out by the Barcelona WMO Regional Centre of the SDS-WAS for Northern Africa, Middle East and Europe.

Annex: Summary of 2010

	2010	
	EURO	US DOLLAR
WMO voluntary contributions (to the TF)	500.000 €	690.932 USD
Iberoamerica Cooperation Program*	250.000 €	345.466 USD
West Africa Cooperation Program**	250.000 €	345.466 USD

* The figures in the table refer to the AEMET contributions to this particular WMO Trust Fund in 2010. Actual expenditure from the Iberoamerican Fund in 2010 was around 550.000 USD (400.000 EUR)

Other Spanish donors	40.000 €	55.492 USD
International Cooperation Agency for Development (AECID)	40.000 €	55.492 USD
	540.000 €	746.424 USD

Other expenditure	2010	
	EURO	US DOLLAR
Equipment and services (Izaña A.R.C.)	15.000 €	20.800 USD
Training/Fellowships	220.000 €	307.000 USD
Contribution to I.M.E.	7.296 €	10.074 USD
	242.296 €	337.874 USD

United Kingdom

The main UK contribution to WMO VCP is funded as part of the UK Public Weather Service (PWS) which sets some priorities:

- 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.
- Increased access to forecast and observational data by developing country NMHSs via the World Weather Information Service.
- Ensure the continued unrestricted exchange of data and products, and effective results of WMO Programmes.

In addition, we seek to mobilise resources from other donors, where possible.

Highlights from 2010

Observations

- Continued support was provided to the GUAN stations at Seychelles and Gough Island (mainly in the form of equipment supplies), as well as support to GUAN stations in the Pacific (including Funafuti, Tarawa and Rarotonga) through the 'Pacific Fund', managed by MetService New Zealand.
- Responsibility for the GUAN station at St Helena was assumed by UK VCP in April 2009 – 2010 has seen negotiations continue with the Government of St Helena, Ascension and Tristan da Cunha for a sustainable arrangement for this station.
- Following a VCP request to WMO, UK VCP assisted in providing Gan – Maldives - with a batch of 470 balloons and 400 radiosondes.
- During 2010, UK VCP has assisted with a GCOS funded project in Madagascar which aims to install 11 AWS across the country. An initial scoping study was carried out in November prior to continuation of this project in 2011.

Forecasting

- Support continued to be provided to the WMO SWFDP, including participation in the management teams for both RA-I and RA-V and the continued supply of MOGREPS products. Forecaster training was provided for SWFDP East-Africa in October, followed

** The figures in the table refer to the AEMET contributions to this particular WMO Trust Fund in 2010. Actual expenditure from the Western African Fund in 2010 was around 800.000 USD (577.000 EUR)

by a week of Public Weather Service training for attendees, designed and delivered by one of the Met Office 'PWS Advisors'.

- The annual Met Office WMO Aviation Seminar was developed and delivered to 25 delegates at IMTR, Kenya, in September, with logistical support provided by the Kenya Meteorological Department. The training was on the Tuition and Assessment Kit to support implementation of WMO-258 certification for forecasters, which was developed by CAeM with funding from UK VCP.
- GRIB data from the Africa LAM continues to be disseminated via the EUMETCAST system and by website as graphical products. Preparation continues for resolution of the Africa LAM to be increased to 12Km (due March 2011). In addition, the ATD Lightning data over Africa continues to be disseminated via website. It is now available from the same website as the Africa LAM <http://www.metoffice.gov.uk/weather/africa/lam/index.html>.
- In July, support was provided to a Met Office college trainer to travel to the Caribbean Institute of Meteorology and Hydrology to conduct a training course in marine forecasting.

Climate Services

- Development of the Climsoft climate data management system – Version 3 - continued throughout 2010. A developers meeting was held at ACMAD in July.
- Funding was provided to develop the e-SIAC (Statistics In Applied Climatology) course with improved support for those for whom English is a third language, and the addition of tuition on temperature statistics and risk related to climate. As in previous years, UK VCP funded a number of students to participate in the e-SIAC course.
- The Climate Science Research Partnership between the Met Office Hadley Centre and DFID was launched at the beginning of the year working, in consultation with African stakeholders, to advance scientific understanding and bring new science into use. UK VCP has had the opportunity to provide assistance with this programme including helping with the development of the fellowship scheme which aims to strengthen the pool of in-country climate science researchers in Africa.

IT and communications

- The "localisation" project has continued in Uganda, implemented using Climsoft on second-user PCs supplied by Computer Aid International. Additional funding was supplied during 2010 to aid with the remaining rollout of computers and updates/ swaps where required. A workshop was also held to train further observers in using Climsoft and TDCF with additional participants from Rwanda attending. This workshop was run by Mr. Samuel Machua from Kenya Meteorological Department who provided additional assistance to Uganda DoM at that time including helping with their transition to Climsoft V3 and configuring Climsoft to receive AWS data.
- A similar "localisation" project in Zambia has been agreed and funded, again with matching funds from Computer Aid International. The equipment has been procured and delivered to Zambia and an initial 'Train-the-Trainer' workshop is due to be held in Lusaka in March 2011 prior to roll-out of the computers and training at provincial stations.

Service Delivery

- Support continued for TV weather presentation delivery by NMHSs. Hardware components were replaced a number of sites including Malawi, Guinea. Support continued for users of WeatherEye-PC, the TV weather graphics package provided free to developing country NMHSs.
- A successful WeatherEyePC workshop was organised and held in Dakar, hosted by DMN Senegal, for 2 weeks in April. 13 participants attended from Francophone NMHSs which had previously received media systems assistance, with trainers from Mali, Benin and Kenya.

Human Resources Development

- Our sponsored delegate from South Africa (co-funded with SAWS) successfully completed his Msc in Applied Meteorology at Reading University in September. A further delegate from The Gambia began a Masters at Reading in October.
- We continued to provide support for delegates from Uganda and Rwanda for their in-country MBA courses, as well as for another delegate from Rwanda for his distance-learning MSc in Climate Change and Sustainable Development.
- A further run of the online course - 'Management by e-Learning' - was completed in February, with participants from RAI, RAIL and RAIV taking part. An evaluation of this course was undertaken during 2010 with recommendations and alterations to be taken forward before the next run of the course planned for the second half of 2011.
- A WMO workshop on global temperature series was hosted at the Met Office in Exeter UK in September; a number of participants from developing countries were supported to attend with funding from WMO and UK VCP.

Disaster Contingency/Others

- UK VCP were pleased to be able offer support to the Haiti Mission during 2010 through the provision of a Met Office forecaster to the forecasting desk set up in Martinique. Our forecaster originally worked in Martinique from July until September to provide support for the hurricane season, and has just returned to Martinique in December to provide additional support through to March 2011.
- During April, at the 'First Conference of Ministers Responsible for Meteorology in Africa', UK VCP had the opportunity – through an exhibition stand at the conference - to promote to the Ministers in attendance the capacity building work undertaken through VCP and the vital importance of investment in NMHSs.
- In addition, in April, Tom Butcher from the Met Office was seconded to the WMO Resource Mobilisation Office for a year's secondment.

Finance 2010

Contribution:	Total GBP:	Total USD:
VCP(F)		
Equipment and Services through WMO	25,295	38,701
Equipment and Services through bilateral agreement	653,345	999,618
Training and fellowships	78,949	120,792
Grand Total:	£757,589	\$1,159,111

Using exchange rate of £1 = \$1.53 (average over 2010)

UK VCP Plan for 2011

The UK will continue its commitment to the targets outlined above; the overall funding available is expected to be similar to 2010. Projects we expect to support include:

Observations

- UK support will continue for the GUAN stations at St Helena (including possible replacement of the Hydrogen generator observing equipment); Gough Island (with SAWS); Seychelles, Funafuti, Tarawa and Rarotonga (with New Zealand MetService). In 2011 we will further review, with SAWS, the future of observations from Gough Island.
- UK VCP will continue to provide support and advice for the GCOS sponsored AWS installation currently taking place in Madagascar.

- The Met Office is working with NOAA, USA and other partners to continue the key GUAN and gas monitoring programmes at Ascension following a reduction in funding.

Forecasting

- Support to the SWFDP in Southern Africa and the Pacific will continue, including the operational supply of MOGREPS products and involvement on the management groups.
- Support will also continue for the SWFDP for East Africa through the supply of products, training, and involvement in the management group. This will include further NWP forecaster & PWS training in East Africa, and support for the regional guidance website.
- A project on Mobile Weather Alerts is being planned by WMO, linked to the SWFDP East Africa; UK VCP will support this by providing funding for observing activities, training and by implementing a 4Km NWP model over the Lake Victoria region.
- Complementing the SWFDP, the resolution of the Africa LAM is due to increase to 12km by March 2011, with BUFR dissemination via EUMETSAT (as well as planned dissemination of the ATD lightning products through EUMETSAT).
- The Met Office WMO Aviation Seminar will be delivered in Europe (location to be confirmed) in the autumn and will be focussed on the implementation of Aeronautical Met personnel competence standards.

Climate Services

- The Met Office / DFID Climate Science Research Partnership will continue to be supported by UK VCP through advice and complementary activities, particularly on climate data and applications.
- Climsoft will continue to be developed in association with WMO, ACMAD and the Statistical Services Centre at the University of Reading. Version 3 of the package will continue to be rolled out to the various country users and updated on the met e-learning website.
- Financial support will be provided to assist with an e-SIAC (Statistics in Applied Climatology) course being held in cooperation with CIMH in the Caribbean in the spring, with potential support for a follow-on face-to-face SIAC course in the summer.

IT and communications

- The Zambia localisation project will continue into 2011 as documented earlier. A review visit will be undertaken for both the Zambia and Uganda localisation projects.
- Follow-up activities to the project on localisation of data input and use in Uganda will be supported
- Support for plans to implement TDCF and WIS connectivity will be supported where possible although there are no specific plans at present. Software changes will be implemented to ensure that the supported upper air stations can transmit in BUFR.

Service Delivery

- Further training and maintenance support will be provided to the operators of the Media Weather Presentation Systems. The development of the WeatherEye-PC software package will continue, with a potential training course in Africa and the South Pacific, alongside the provision of advice, support and training materials.
- Work has begun on the implementation of a TV weather presentation system in the Comoros Islands, being undertaken in partnership with WMO VCP. Training and installation are expected in April 2011. An upgrade to the TV studio in Madagascar will be provided, and training for both Comoros and Madagascar will be done jointly.
- Some support will be provided to implement TV weather presentation in other countries - possibilities include Cape Verde, Sao Tome and Dominica.

Human Resources Development

- Improvements and updates will be made to the 'Management by e-learning' training course in 2011 following the outcomes from the evaluation last year. A further run of the course is expected to be undertaken in the second half of the year.

- During 2010, UK VCP has been working with Reading University on the development of a Masters Programme (extended from their existing MSc. In Applied Meteorology) which is targeted towards building skills in meteorology as well as climate science and applications. The course will also include a management training element. It is hoped that the course can be promoted through WMO ETR in February with the potential of around 5 fellowships being offered for suitable candidates from developing countries.
- Advisory services will be provided to a project funded by the Government of Rwanda on organisational transformation of Meteo-Rwanda.

Disasters

Our Met Office forecaster will continue her secondment to Martinique to support forecasting for Haiti, until the end of March. Other disaster assistance will be provided as required and where possible.

United States of America

The United States provided \$2,050,000 to the WMO VCP in 2010. The U.S. contribution is coordinated by the National Oceanic and Atmospheric Administration, National Weather Service (NOAA/NWS).

Direct Financial Support

The United States provided \$812,606 in direct financial support to the WMO VCP. This included funds to:

Promote tropical cyclone preparedness and disaster risk reduction:

- RA IV Hurricane Committee (\$26,750)
- RA IV Hurricane Attachment (\$42,800)
- Typhoon Committee, ESCAP (\$25,680)
- RA IV DRR Pilot Project in El Salvador (\$190,226)

Provide technical assistance and training to improve forecasting capabilities (see also "Training"):

- International Training Desk-Africa (\$128,400)
- International Training Desk-Tropical and South America (\$85,600)
- International Training Desk-Pacific (\$74,900)
- Workshop on Societal Benefits (Communications) of Met Services (\$133,750)
- International Workshop on Tropical Cyclones in La Reunion (\$39,590)

Support observation and communication capacity building (see also "Infrastructure"):

- GEONETCast Satellite Receiving Stations in RA IV (\$65,000)

Training

The United States provided \$705,615 in VCP funds to support training and technical assistance to improve forecasting capabilities, including hands-on fellowships for meteorologists from Africa, Central America, the Caribbean, South America, and the Southwest Pacific at the NWS National Centers for Environmental Prediction and the NWS Pacific Region:

- Hydrology distance learning modules (\$71,000)
- West Africa Workshop on Marine Forecasting (\$21,000)
- Aviation Meteorology distance learning module (\$95,000)
- Translation of distance learning modules (\$61,500)
- Tropical Meteorology On-line Degree Program (\$90,500)
- Weather and Society Caribbean Workshop (\$41,000)
- Tsunami Warning and Mitigation Systems Training (\$44,385)

- Tsunami Preparedness in the Caribbean Educational Video (\$14,000)
- International Training Desk-Africa (\$114,000)
- International Training Desk-Tropical and South America (\$18,500)
- International Training Desk-Pacific (\$137,190)
- Translation of distance learning modules (\$61,500)

Infrastructure

As noted above, the United States provided \$65,000 to deploy GEONETCast Satellite Receiving Stations in Costa Rica, El Salvador, and Mexico.

Expert Services

In addition to its direct financial support, the United States provided \$234,396 in support of RA IV DRR pilot projects, including \$100,000 for flood inundation mapping for the Rio Bravo/Rio Grande, \$99,829 to help Mexico improve flood forecasting and warnings in Chiapas, and \$34,567 to support the WMO DRR MHEWS Workshops in Costa Rica and Barbados. \$83,030 was provided for data rescue services in Kenya, Malawi, Mozambique, Niger, Senegal, Tanzania, Uruguay, Zambia, Dominican Republic and El Salvador, and \$23,900 for maintenance and training for the Cooperative Hurricane Upper Air Stations. An additional \$9,930 was provided to help assess communications requirements among RA IV and RA III NMHSs (\$161,665 had been provided 2009.). The United States provided \$40,000 to support developing country participation in the Satellite Direct Readout Conference. A small portion of VCP funds was used to facilitate Caribbean Hurricane Awareness Tour in Mexico, Bermuda, Antigua, and El Salvador (\$3,410), to support the Hurricane Committee meeting (\$6,490), and to support the Workshop on Societal Benefits (\$7,523).

Secondments

None

Plans for 2011

The United States has not determined its level of commitment to the WMO VCP in 2011. For planning purposes NOAA/NWS has assumed that approximately \$1,800,000 will be made available. Depending on the availability of funds, approximately \$300,000 will be made available for activities in support of the Global Framework for Climate Services, \$100,000 for tsunami warning programs, \$500,000 for fellowships at the International Training Desks, \$300,000 for distance learning programs, \$400,000 for DRR MHEWS pilot projects in RA IV and the Tropical Cyclone Program.