



**WORLD METEOROLOGICAL ORGANIZATION**

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**REPORT OF**

**INFORMAL PLANNING MEETING OF THE  
VOLUNTARY COOPERATION PROGRAMME**

**Willemstad, Curacao**

**19 & 20 April 2013**

## **1. OPENING OF THE MEETING**

1.1. The Informal Planning Meeting (IPM) of the Voluntary Cooperation Programme (VCP) met in Willemstad, Curacao from 19 to 20 April 2013, following the sixteenth session of Regional Association IV.

1.2. The meeting was chaired by Mr Jaakko Nuottokari (Finland) and attended by representatives of Canada, China, Finland, France, Germany, Japan, Mexico, Republic of Korea, Spain, United Kingdom and United States of America and the Caribbean Institute for Meteorology and Hydrology. The Chair welcomed the participants who were attending the meeting for the first time. The full list of participants is given in **Annex I**.

1.3. The opening address was delivered by Dr Albert A.E. Martis, Permanent Representative of Curacao and Saint Martin with WMO and recently elected Vice President of RA IV. He stated that it is opportune for recipient countries when Donors come together and have discussions on current and future projects. It brings increased collaboration and new funding opportunities; however focus should always be on countries needs and priorities. Additionally, the strategy behind funding should centre on preparedness instead of response, providing early warning systems to significantly reduce the impact of natural disasters.

## **2. ADOPTION OF THE AGENDA**

2.1. The meeting adopted the agenda as given in **Annex II**.

## **3. REPORT OF THE VCP AND VCP COORDINATED ACTIVITIES 2012**

3.1. The meeting was informed of the activities being supported at the national level in developing and least developed countries under the Voluntary Cooperation Programme including through the VCP Fund (F) and through activities coordinated through WMO VCP Equipment and Services (ES).

3.2. In 2012, a total of 30 new project requests were received throughout the year including 9 through the GCOS Secretariat. 10 were supported through the VCP-F and 16 through the VCP (ES) Coordinated process. 5 donor members (Netherlands, Russia, Japan, UK and Germany) offered equipment and/ or services through the VCP (ES). In total 80% of all new requests were supported and countries that received support included: Angola, Belarus, Cuba, Fiji, Madagascar, Maldives, Mexico, Moldova, Sudan, Tajikistan, Tanzania, Vanuatu and Zambia. 9 requests remain unmet at the end of 2012 (4 from 2012 and 5 from 2011). Additionally, six members made cash contributions to the VCP Fund (VCP (F)) amounting to approximately US\$ 148,696.

3.3. In addition to major regional development projects, some US \$ 31,400,400 equivalent in support was provided through the VCP. This was comprised of US\$ 263,325 from the VCP (F) and US\$ 1,972,268 in VCP (ES) (expert services, equipment and software, fellowships and training, project development, CDMS and climatological activities, and TV promotion and distribution. Full details are provided in **Annex III**. Additionally a large number of countries were also supported through bi-lateral arrangements with the total value equivalent of an estimated to US\$ 29,164,089.

3.4. 142 participants and experts from 32 countries were supported to attend 14 courses and workshops; 18 participants were from RA I, 12 from RA II, 1 from RA III, 2 from RA IV, 4 from RA V and 5 from RA VI.

3.5. The trends in contributions to VCP (F) and VCP (ES) over the past six years indicate a fairly constant and gradually increasing support of the VCP.

#### **4. OVERVIEW MEMBER TECHNICAL COOPERATION ACTIVITIES 2012 AND 2013**

4.1. The IPM members shared information on a broad range of development assistance being provided through bi-lateral means by Donor Members to improve the delivery of climate, weather and water related service in developing country member states including the efforts of Canada, China, Finland, France, Germany, Japan, Republic of Korea, Spain, United Kingdom and United States of America. The full details of these activities are provided in **Annex IV**.

4.2. The chair opened discussion to the group based on the presentations made by the Donor Members, especially in relation to the challenges and opportunities they are facing while implementing development projects. One widely-viewed challenge is the lack of readily available, up to date information on the needs of NMHSs (observation, telecommunication, modelling, forecasting and service, human resources and gaps to be filled). When Donor Members look for opportunities to fund national and regional projects, up to date information on any needs assessments already conducted on NMHSs needs to be available for reference. It was pointed out that the WMO Country Profile Database will serve as one tool that can be utilised for this purpose of uploading data and sharing information.

4.3. The Group recognized that the combined volume of VCP technical cooperation work being done by all donor countries is quite significant and having a strong positive impact to recipient countries. However, there can still be even more opportunity for increased collaboration amongst Donors. The IPM annual meeting serves as a good opportunity for discussion and review of current and pending projects but there could be other opportunities throughout the year for more interactive work. In this regard, the Group suggested that the IPM have a side meeting at the next Executive Council in May for those who are present to discuss more avenues for collaboration. Furthermore, to get a complete picture of all the work being done in so many of the same countries there was a recommendation to put together a country profile list of current and future VCP and major development projects.

#### **5. MAJOR DEVELOPMENT PROJECTS**

5.1. The Secretariat provided an overview of the significant strategic work being undertaken by the WMO Resource Mobilization Office, the Regional Offices and Technical Departments in respect of regional programmes for capacity enhancement of NMHS in Africa, South Eastern Europe, South and Central Asia, Pacific, Maghreb Region, Caribbean, Polar and Himalayas and the Americas in cooperation WMO Members (Canada, France, Finland, Greece, Italy, Ireland, Korea, Mexico, Norway, Spain, Switzerland, UK, US) and with major partners such as EU, World Bank, Rockefeller Foundation, and UN system partners UNISDR, UNDP and others (**Annex V**).

5.2. The meeting was informed of the establishment of the Project Coordination Unit within the WMO Resource Mobilization Office to coordinate across WMO Scientific and Technical Departments and Regional Offices the implementation of major projects and act as a liaison with respective donors such as the IPM members.

#### **6. EDUCATION AND TRAINING**

##### **WMO ETR: Working with WMO Members as partners: Maximising support for Capacity Development through education and training.**

6.1. The Director WMO ETR led a session focused on working with Donor Members as partners in order to maximise support for Capacity Development through education and training. Five key areas for capacity development were proposed: i) policy and legal frameworks; ii)

institutional structure; iii) infrastructure and facilities; iv) recruitment and sustaining staff; v) staff training and education;

6.2. The Secretariat presented as an example that China is annually running study tours that give participants insight into what CMA is doing in each of these areas. WMO has recently initiated with CMA to add a 3 to 5 day workshop prior to the study tour that provides a focus and bigger context for the participants during the subsequent tour.

6.3. WMO Secretariat has also been working with European groups such as EUMETSAT / EUMETCAL to collaborate on training initiatives for all RA VI countries and some Members outside of RA VI. There have also been some discussions with Members such as Finland, France the US, the UK and Norway about how the Secretariat can better work with them on various projects as well.

6.4. Going forward there is an opportunity for Donor members to collaborate with the Secretariat by advertising their courses through the Secretariat who can also assist with identifying external experts, helping contact applicants, potentially assisting some participants travel (VCP-F funds), providing advice and assistance with Course Management software, assisting with post course follow up and potentially assisting with logistics and communication. Donor Members subsequently can compliment these actions by letting the Secretariat know what they are planning and when, who they have trained and in what and if there are government or third party opportunities for fellowship funding in their countries.

#### **The Caribbean Institute for Meteorology and Hydrology (CIMH)**

6.5. The Caribbean Institute for Meteorology and Hydrology (CIMH) noted that securing funding for education of persons from RTC and the NMHSs in the Caribbean was challenges. In recognizing that all of the funding required for capacity development could not be sourced from WMO and, as a result, has begun sourcing support for capacity building through various arrangements. The CIMH representative noted that in the recent past the CIMH has been sourcing funding for training in the region through projects and programmes funded by donor countries, development banks and Caribbean institutions. These projects, programmes and institutions including the US Higher Education Development Programme, the USAID "Reducing the Risks to Human and Natural Assets Resulting from Climate Change (RRACC)", the Caribbean Catastrophe Risk Insurance Facility (CCRIF) and the Caribbean Community Climate Change Centre (CCCC) have provided various levels of support (including co-funding) for persons to receive long-term training (greater than 3 months) at either CIMH, the University of the West Indies or training institutions abroad. The representative noted that in some cases, governments in the region have embraced working with the WMO ETR to provide some level of co-funding for their students thereby reducing the financial burden on the WMO ETR. In addition, the CIMH through its various research partnerships has been able to arrange a series of long-term technical exchanges designed to build capacity in the region.

6.6. Continuing professional development for Meteorologists in the region has become an area of increasing need especially given the new Quality Management Systems being implemented in the region that require staff to demonstrate competency in various areas of meteorological and aeronautical forecasting. In this respect, the Institute has worked with COMET and the WMO ETR to develop a suite of online courses to support this growing need. Funding for this programme was provided by the US National Weather Service through the WMO. From 2013, the CIMH will offer two scholarships to students from the South Pacific and Africa to take part in the on-line programme as part of its ongoing commitment to supporting and establishing South-South partnerships.

6.7. Staff at the Institute continue to benefit from professional develop training opportunities funded by VCP partners. In particular, all staff in the Instruments Section at CIMH benefited from training and technical exchanges with the Finnish Meteorological Institute under the CARIC project which supported the implementation of a Quality Management programme to support CIMH's role

as the WMO Regional Instrument Centre for the Caribbean. Under this project, the CIMH also received several new instruments to support instrument calibration.

6.8. In 2011-2012, the CIMH provided Mid-Level Meteorological Technician training for four students from the South Pacific through a South-South partnership programme coordinated by the UNDP Regional Office for the South Pacific. On completion of this programme, the students participated in individualized training with staff to build their competency in specific areas of training, instrument management and maintenance and forecasting. It is expected that these students will form the nucleus of training programmes in the South Pacific. In addition, the partnership has benefited from technical exchanges between CIMH and other Institutions and Institutions in the South Pacific such as SOPAC and SPREP. These interactions have identified other areas of collaboration and training in such areas as water resources management and coastal zone management. To further advance the South-South partnership the CIMH is prepared to work with WMO and other partners to host other students from the South Pacific through a tuition waiver arrangement.

6.9. The CIMH representative noted that CIMH has submitted its application to be the WMO Regional Climate Centre for the Caribbean. The representative noted that the establishment of the RCC will benefit from a USD 4 million investment in CIMH from USAID which also support various upgrades at CIMH. The representative also noted the benefits to the region derived by recent JICA, DFID, Brazil and French investments in the region

## **7. WMO CAPACITY DEVELOPMENT STRATEGY IMPLEMENTATION PLAN**

7.1. The Secretariat presented an update on the WMO Capacity Development Strategy Implementation Plan (CDSIP). The Group was informed that the 2nd meeting of the EC Working Group on Capacity Development (ECWG-CD) was held earlier in the year in January and following the meeting some key modifications were made to the CDSIP draft including: adding an Executive Summary, new graphic for CD process (not circular), adding text from sub-groups on Priority Areas (Aviation, WIGOS/WIS, DRR) and GFCS IP, adding explanation of Categories by service levels, and moving 3.1 CDSIP Table to new Annex. The full report of the 2nd meeting of the ECWG-CD can be found at: [http://www.wmo.int/pages/prog/dra/documents/ECWG-CD\\_2013\\_Final\\_Report.doc](http://www.wmo.int/pages/prog/dra/documents/ECWG-CD_2013_Final_Report.doc)

7.2. The CDSIP is structured with key activities supporting the 16 strategic approaches under 6 Strategic Objectives: 1. Defining required capacities and identifying deficiencies; 2. Increasing visibility and national ownership; 3. Optimizing Knowledge Management; 4. Reinforcing Resource Mobilization and Project Management; 5. Strengthening Global, Regional and Sub-Regional Mechanism and; 6. Increasing Education and Research Opportunities. New areas of focus for CDSIP include:

- Building holistic view of WMO programme activities - CD Strategic Objectives
- Clarifying technical standards, guidelines, practices
- Cultivating “culture of compliance” and focus assistance on compliance (esp priority areas for LDCs/SIDS)
- Establishing mechanisms for gathering and monitoring NMHS development (Categories, CPDB, Survey)
- Establishing consolidated baseline information and list of gaps at national, regional, global levels
- Using new information in seeking National and partner support as well as in the development of new priorities/goals for 2016-2019
- Clarifying roles of WMO bodies and regional centers in CD
- Building strong project oversight (create PCU and Project Oversight Board)
- Strengthening regional offices: more staff in regions, regional economic groupings, regional organizations partnerships

7.3. In the ensuing discussion the Chair noted the successive refinements in the documentation and that he believed that the CDSIP as presented would be very useful for the Secretariat

7.4. Dr Albert A.E. Martis, Permanent Representative of Curacao and Saint Martin with WMO described how he has leveraged his PR status to engage with the various UN agencies in order to enhance ministerial engagement with the NMSs. He stated that this is important because having the right level of engagement with government officials is beneficial to project implementation and sustainability.

7.5. Dr. Martis further emphasized that there should be some effort to prioritize regulations and standards for NMHSs. Developing country member states should establish Quality Management System, combining infrastructure and human capacity of NMHSs, two essential pillars needed to develop and provide specific tailored weather and climate information. In pursuit of QMS, there needs to be a national and regional approach and leadership from the WMO Secretariat. The role of the Secretariat crucial as it has to find the right balance in helping to guide the Donor members and the resources they are offering and the needs of the developing country member states.

## **8. DISCUSSION AND RECOMMENDATIONS**

8.1. The group held extensive discussion on two topics that emerged as a result of the presentations and discussion on the first day of the meeting: measuring the sustainable investment of technical coordinated projects and project coordination.

8.2. The Group had an open discussion on how to sustainably develop capacity in NMHSs. Funding agencies always look to reduce the level of risk of their investment that is why they mostly take on small projects with life spans, despite the fact that they are trying to address generational challenges. The Group shared their experiences on how they reduce the level of risk whilst trying to increasing the level of sustainability in projects, this includes:

- Sharing the risk amongst multiple donors instead of burdening the risk on one donor;
- Writing 5-10 year business plan for NMHSs and adopting a business;
- Ensuring national ownership (eg, through National Development Plans);
- Building-in sustainability right at the conceptualization of Projects;
- Using the VCP coordinated process to tie-in sustainability as it has more flexibility;
- Improving compliance standards to WMO and International standards;
- Being more strategic with the initial country approach;
- Trying to fit the project timelines with that of the country and not that of the Donors;
- Tying new investments into previous investments;
- Finding a sustainable approach to working arrangements;
- Conducting feasibility studies of key issues;
- Using up to date country information when developing project proposals;
- Establishing a neutral platform for Donor engagement.
- Tying sustainability into education and training.
- Questioning, why a project is being done and how will it be made sustainable.
- Building maintenance needs into project development and national budgets
- Looking at resources based upon current and future goals
- Factoring-in geo-political stability and economic growth
- Establishing a business plan followed by a business model where NMHSs outsources its activity to private companies.
- Leveraging UNDP to enhance ministerial engagement with the NMHSs.

8.3. The IPM strongly endorsed the newly established WMO Project Coordination Unit. The PCU is seen as a vital component to the work of the Donor Members and the IPM strongly supports the ongoing establishment of the Unit. The Secretariat pointed out that the PCU will be

supported by project managers hired on short-term contracts for specific projects, as will be done with "Haiti Weather Systems Programme: Climate Services to Reduce Vulnerability in Haiti" project.

8.4. In summarising the meeting the Chair suggested the following recommendations:

- IPM members to provide details of proposed projects, training programs and those individuals they have trained.
- Use the opportunity of in-country visits to coordinate meetings between the UNDP Country Coordinators and the PRs to look at development issues
- WMO to push developing country member states to have up to date information on needs assessments conducted on NMHSs
- Develop a country profile list of current and future VCP and major development projects to be shared by the IPM group and WMO secretariat
- Hold a side meeting at the next Executive Council in May for those who are present to discuss more avenues for collaboration.
- WMO Secretariat to push NMHSs to develop 3-5 year business plans

## **9. ANY OTHER BUSINESS**

9.1. The Chair, Mr Jaakko Nuottokari of the Finnish Meteorological Institute used the opportunity to yield his Chairmanship of the IPM after serving 3 years. It was agreed by the Group that Mr Francisco Espejo, Agencia Estatal de Meteorología (AEMET) become the new Chair in 2014 and that 2013 serve as a transition year.

9.2. In summarising the meeting the Chair suggested the following recommendations:

- IPM members to provide details of proposed projects, training programs and those individuals they have trained;
- Use the opportunity of in-country visits to coordinate meetings between the UNDP Country Coordinators and the PRs to look at development issues;
- Develop a country profile list of current and future VCP and major development projects to be shared by the IPM group and WMO Secretariat;
- Hold a side meeting at the next Executive Council in May for those who are present to discuss more avenues for collaboration;
- WMO to advocate for and support NMHSs to develop 3-5 year business plans.

## **10. DATE AND PLACE OF THE NEXT IPM MEETING**

10.1. Next meeting will take place in Seoul, Korea. Date TBD.

## Annex I

### 2012 Informal Planning Meeting (IPM) on the Voluntary Co-operation Programme and related Technical Co-operation Programmes

(Willemstad, Curacao, 19 to 20 April 2013)

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## Annex II

WORLD METEOROLOGICAL ORGANIZATION

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IPM/2013/Doc. 1

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INFORMAL PLANNING MEETING OF THE  
VOLUNTARY COOPERATION PROGRAMME

ITEM: 1

Original: ENGLISH

Curacao  
19-20 April 2013

### PROVISIONAL ANNOTATED AGENDA

#### Friday 19th April

#### 1. OPENING OF THE MEETING

The meeting will open at 09:30 a.m. on 19<sup>th</sup> April 2013 in at the Willemstad, Curacao

##### **Opening Address:**

Mr Jaakko Nuottokari, Chair, Informal Planning Meeting of VCP (IPM)

#### 2. ADOPTION OF THE AGENDA

2.1. Adoption of the agenda

2.2. Working Arrangements of the meeting

#### 3. REPORT OF THE VCP 2012

##### 3.1. **Overview VCP and VCP Coordinated Activities 2012 (WMO VCP SEC).**

The meeting will be informed of the VCP and VCP Coordinated activities 2012.

##### 3.2. **Overview IPM Member Technical Cooperation Activities 2012 and planned for 2013.**

The Chairman will invite Member countries to inform the meeting on Related Technical Cooperation Activities carried out in 2012.

##### 3.3. **Discussion**

Discussion on priority areas for VCP and other mechanisms for 2013 taking into account 3.1 and 3.2.

#### 4. REGIONAL DEVELOPMENT PROJECTS

4.1. **Overview WMO Coordinated Regional Development Projects coordinated by WMO**

#### 5. WMO CAPACITY DEVELOPMENT STRATEGY

5.1. D/DRA will brief the participants on the WMO Capacity Development Strategy Implementation Plan

## **6. EDUCATION AND TRAINING**

6.1. WMO ETR: Working with WMO Members as partners: Maximising support for Capacity Development through education and training.

6.2. Caribbean Institute Meteorology and Hydrology

## **7. WEATHER AND CLIMATE SERVICES DEVELOPMENT PROJECTS IN RA IV**

7.1. Overview current and emerging major partnerships / Regional HydroMet Development Projects including major bi-lateral underway or planned WMO. (WMO SEC / IPM Chair / IPM).

## **8. ANY OTHER BUSINESS**

## **9. DATE AND PLACE OF THE NEXT MEETING OF THE IPM**

## Annex III

IPM/2013/Doc. 2

WORLD METEOROLOGICAL  
ORGANIZATION

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ITEM 2.1

Original: ENGLISH

INFORMAL PLANNING MEETING  
VOLUNTARY COOPERATION  
PROGRAMME

WILLEMSTAD, CURACAO  
19 - 20 APRIL 2013

### **VCP AND VCP COORDINATED ACTIVITIES 2012**

*(Submitted by the Secretary-General)*

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#### Summary and Purpose of Document

This document provides information on Voluntary Cooperation Programme Activities during 2012 including VCP Coordinated Programmes.

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#### ACTION PROPOSED

The meeting is invited to consider the information on VCP Activities during 2012 including VCP Coordinated Programmes as a guide to donor members in planning their support to VCP during 2013 and their technical assistance programmes more broadly.

## **1. Management of the Voluntary Cooperation Programme**

### **1.1 VCP Management Activities in 2012 focused on:**

- Enhancing the visibility of capacity development and VCP Programme, and ensuring the cost-effective and efficient management of the VCP Programme and the timely distribution of the relevant information to Members;
- More rapid response to VCP Members' requests for assistance using the VCP(F), the Emergency Fund or through the VCP Coordinated Programme;
- Retirement and / or supporting outstanding VCP requests;
- Strengthening working relationship with Scientific Departments and Regional Offices for support of VCP projects;
- Securing additional human resources support for RMO and VCP Programmes.
- Resourcing the Fellowship Fund

### **1.2 Report of the 2012 Informal Planning Meeting on the VCP and related Technical Cooperation and the Development Partners Round Table**

The 2012 Informal Planning Meeting (IPM) on the Voluntary Co-operation Programme (VCP) and related Technical Co-operation Programmes met in Mexico City, Mexico from 6 to 7 March 2012 under the chairmanship of Mr Jaakko Nuottokari (Finland). The meeting was attended by representatives of Argentina, Canada, China, Finland, Germany, Japan, Korea, Mexico, New Zealand, Spain, United Kingdom and USA. During the Development Partners Round Table, the meeting was also attended by representatives of ICAO, IDB, CIMH and World Bank.

The meeting centred on cooperation activities between NMHSs and their National Official Development Aid agencies to support hydrometeorological development projects in developing and least developed countries. Various Members shared their experience, best practices and lessons learnt. The meeting noted that the NMHSs have very different type of relationships with their respective national aid agencies, but in general more advocacy and closer cooperation with the national institutions is needed. Also, there is greater need for neutral and objective evaluations of the development projects and their impact. report of the meeting at [http://www.wmo.int/pages/prog/dra/vcp/documents/IPM\\_2012\\_DRAFT\\_Report\\_26052012.pdf](http://www.wmo.int/pages/prog/dra/vcp/documents/IPM_2012_DRAFT_Report_26052012.pdf)

## **2 WMO Voluntary Cooperation Programme – Activities supported**

In 2012, the VCP Secretariat received new requests for support from Armenia, Belarus, Cuba, Fiji, Ghana, Guyana, Kiribati, Mauritania, Moldova, Samoa, Sudan, Tajikistan, Uganda, Vanuatu and Zimbabwe. A total of **30 new project requests** were received throughout the year (Appendix 1) including 9 through the GCOS Secretariat. Ten were supported through the VCP-F as they fitted within the VCP-F guidelines. The remaining 20 were posted to the web and circulated among the potential donors and IPM members through VCP (ES) Coordinated process. Of these **16 projects** were supported with additional support from GCOS. In total 80% of all new requests were supported. Countries that received support included: Angola, Belarus, Cuba, Fiji, Madagascar, Maldives, Mexico, Moldova, Sudan, Tajikistan, Tanzania, Vanuatu and Zambia. For an overview of on-going projects, outstanding requests and links to partners and donors, please check our website at <http://www.wmo.int/pages/prog/dra/vcp/on-going.php>

### **2.1 VCP (F) Supported Activities**

A wide range of activities were supported through the **VCP-F** in 2012 including:

### Expert Missions and services

- Expert mission to Kiribati to update the Meteorological Service Strategic Plan 2012 – 2018
- Expert Mission to Samoa to conduct QMS training, 24-28 September
- Expert services for Drafting of Meteorology Bill for the Kingdom of Tonga
- Expert mission to Fiji to support training workshop on Meteorological equipment and instruments maintenance, Calibration and repair (with JICA)
- Fact-finding mission to the State Hydrometeorological Administration Pyongyang, DPRK
- Expert mission in Seychelles for the installation of Automatic Weather Stations
- Expert Mission in Suriname to diagnose a EEC Weather Radar (Type WR100-5), Suriname, 14-18 February 2011

### Training (see also 2.8)

- Financial assistance to attend the WMO (SDS-WAS) hands-on training workshop on dust modelling, Belgrade, Serbia
- International Training course on “Climatology, a step towards climate services”, Toulouse France 11-12 June 2012
- Financial assistance to attend the Steering Group- SWFDP project, Geneva , Switzerland
- Financial assistance to attend Workshop on Aeronautical meteorology on east and central Africa, Ethiopia, 8-12 October

### Support to CDMS and Climatological Activities

- LoA with Meteo-France- WMO`s contribution to implementation of Project on rescue of climatological data in Madagascar including rehabilitation of the CliSys system.

### VCP Equipment

- Financial support towards the “Provision of Hg barometers to Latin American and Caribbean NHMSs (Letter of Agreement between WMO and the DWD)
- Financial support towards infrastructure procurement and activities for the “ Transformation from WAFS Satellite to WAFS Internet Reception”
- Financial support to purchase the hydrometeorological thermometers for the Republic of Armenia

### Public Weather Service

- Support to reinforcing the equipment of Mauritania National Meteorological Office for the publication on meteorological bulletins on Mauritania TV
- Upgrading and strengthening of the Public Weather Services presentation NMA, Ethiopia

### Project Development

- Expert mission to Mauritania, 16-20 September, 2012 to develop full proposal for Climate Investment Fund

## **2.2 VCP- F Expenditure for 2012**

Full details on VCP-F expenditure for 2012 are provided in **Appendix 2** and summarized in **Table 1** below. **Table 2** indicates expenditure trends over the period 2008 to 2012.

<b>Table 1 - VCP (F) Activities Supported in 2012 (incl. requisitions)</b>		<b>USD</b>
1	Expert services	52,541
2	Fellowships & Training activities	105,474
3	Equipment and software	52,908
4	Project Development	2,422
5	Support to CDMS and CLIMATOLOGICAL Activities	7,485
6	TV Promotion and Distribution	42,495
	<b>TOTAL</b>	<b>263,325</b>

**Table - 2 VCP(F) Expenditure 2008-2012 (USD)**

	<b>Activity Area</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>
	Project Development Activities		34,648	4,236		2,422
	VCP spares/shipping/equipment	147,267	281,782	64,255	39,076	52,908
	Expert services	16,528	33,342	52,407	61,819	52,541
	Short-term fellowships	106,570	133,530	62,928	94,930	92,097
	Group Training Activities	20,999			27,775	
	TCDC activities					
	Improvement of GTS					
	Improvement of GTS Asia/Pacific					
	Improvement of GTS Africa					
	Improvement of GTS South America					
	Improvement of GTS South-East RA VI					
	Improvement of GTS Central & Eastern Euro	3,238				
	Improvement of upper-air observing systems	28,688				
	Upper-air stations & GCOS		18,851			
	Improvement of GDPS					
	Agricultural meteorology activities					
	Support to CLICOM & climatological activities	4,490	38,472	62,774		7,485
	Mitigation of natural disasters					
	Emergency disaster assistance			218,741		
	ACMAD					
	EAMAC					
	Operational hydrology activities					
	Improvement of satellite reception					
	Internet capabilities	13,916	6,257	11,815	9,763	
	Long-term fellowships			4,233	29,948	13,377
	Support to LDCs					
	Public Weather Services			25,276		42,495
	Training activities by ETR					
	VCP Management		17,288	29,006	10,979	
	<b>Total</b>	<b>341,696</b>	<b>564,173</b>	<b>535,671</b>	<b>274,290</b>	<b>263,325</b>

### 2.3 VCP (ES) Coordinated

In 2012, **4 donor Members** offered equipment and / or expert services within the framework of the VCP Equipment and Services Programme (VCP-ES) including for outstanding requests carried over from previous years. **16 projects** were supported in 2012 (Table 3) with additional support from GCOS.

Similar to 2011, project requests were mainly aimed at strengthening surface observing stations, strengthening communications systems, and improving meteorological applications. Some requests concerning TV weather presentation and expert services for legislative purposes were also received.



Additionally, a few requests were received for upgrading of database software and climate data processing systems.

At the end of 2012 **10 VCP requests remained unmet** in the system (including 6 requests from 2011).

**Table 3 - VCP Coordinated Projects supported in 2012**

<b>Members support</b>				
	<b>Requesting Country</b>	<b>Focus</b>	<b>Supporting country</b>	<b>Amount (estimates)</b>
1	Angola	Instruments for 8 GSN stations	KNMI(Netherlands) (GCOS)	CHF 19,979.71
2	Armenia	Shipping of instruments for 4 GSN stations to Armenia	(GCOS)	CHF 20,585.05
3	Armenia	Supply of 500 radiosondes closed	Japan (GCOS)	CHF 51,330.38
4	Armenia	The installation of the CLIWARE climate data processing system	Russia	USD 5,000
5	Belarus	Delivery of technical equipment and software of the combined technology MITRA-GIS Meteo	Russia	USD 25, 812
6	Democratic Republic of Congo	Fixing of microwave radio-link including lightning protection	(GCOS)	CHF 140,785.12
7	Ethiopia	Upgrading and strengthening of the Public Weather Services presentation on NMA, Ethiopia	UK	CHF19,208
8	Madagascar	Renovation of 11 GSN stations in Madagascar	KNMI (Netherlands) (GCOS)	CHF 25,000
9	Maldives	Supply of 800 radiosondes (Eur 65,000.00) + 800 balloons (US\$ 5,200.00)	(GCOS)	CHF 83,216.74
10	Mauritania	Provision of a TV weather presentation system	UK	CHF 23,287
11	Mexico	GCOS support to acquisition of radiosondes for stations in Mexico in 2012	(GCOS)	CHF 209,749
12	Moldova	The installation of the CLIWARE climate data processing system	Russia	USD 5,000
13	Sudan	Supply of 400 radiosondes (no GUAN Stations)	Japan (GCOS)	USD 43,085.21
14	Tajikistan	The installation of the CLIWARE climate data processing system	Russia	USD 5,000
15	Tanzania	Supply of radiosondes	Japan (GCOS)	USD 40,000
16	Zambia	Automatic Message Switching System (AMSS) for use as Global Telecommunications System (GTS)	KNMI (Netherlands) (GCOS)	CHF 63,150.32

#### **2.4 Emergency Assistance (in combination with Emergency Assistance Fund)**

**Table 4 – Emergency Assistance activities supported during 2012**

<b>Country</b>	<b>Description</b>	<b>Donor</b>
<b>Haiti</b>	<b>Expert mission</b>	<b>VCP Emergency Assistance Fund</b>

<b>Fiji</b>	<b>Emergency Disaster Assistance.</b>	<b>VCP Emergency Assistance Fund</b>
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## 2.5 Members Related Technical Cooperation Activities

See IPM/2013/Doc. 3 for a full inventory of Members bi-lateral cooperation activities.

Key Highlights include:

- Spain continued to finance the activities of the “Program of Cooperation for Ibero American NMHSs” and the activities of “West Africa Cooperation Program”.
- Canada provided funding for a multi-year project in Haiti which aims for the rehabilitation of all aspects of the Met Services for immediate benefit to the population, establishment of sustainable infrastructure and the establishment of robust information dissemination mechanisms based on sound observations and good service delivery.
- Canada also provided additional funding to support the GFCS Secretariat and also funds a GFCS Implementation Project across several Regions.
- Korea Meteorological Administration signed a Memorandum of Understanding with the WMO related to the provision of a World Calibration Centre (WCC) for Sulphur Hexafluoride (SF6) to the WMO Global Atmosphere Watch (GAW) programme and has also established a GFCS Trust Fund.
- Japan continues to operate a trust fund for Global Frameworks 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.
- Norway GFCS for Africa programme continues and a new GFCS Partnership Project with WFP and WHO is under development. Support for the GFCS Partnership Project was launched by the Minister of International Development in February 2013, a total of about 10 million USD (60 mill NOK) over 3 years to a partnership program, including WFP, WHO, CGIAR and RCCC in addition to WMO, who we have asked to take a coordinating role. The program will focus on Africa, and three of the prioritized GFCS areas; health, food/nutrition security and Disaster Risk Reduction. World Bank involvement in this programme has been discussed, but is still under consideration.
- The AMCOMET<sup>1</sup> African Strategy for Meteorology – Weather and Climate Services has been included in the TICAD (Japan-Africa Development) Action Plan 2012-2017 and will be eligible for funding.
- USA also operates an individual VCP Trust Fund that supports a range of Technical Cooperation Activities through WMO technical Departments and direct assistance to countries. USAID-OFDA Disaster Risk Management Programme continues.

## 2.6 WMO Voluntary Cooperation Programme – 2012 Financial Contributions

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<sup>1</sup> African Council of Ministers for Meteorology

The total Members' contributions to the WMO Voluntary Co-operation Programme in 2012 are shown in **Table 5** in terms of VCP (ES) and VCP (F) and reported bi-lateral support.

In 2012, 6 Members (Australia, China, Japan, Korea, Maldives and Mauritius) made cash contributions to the VCP Fund (VCP(F)), amounting to approximately **USD 144,696** while **USD 2,162,821** and equivalent support was provided to VCP Coordinated Projects through WMO and some **USD 28,829,089** equivalent through bi-lateral arrangements for a total investment of **USD 31,136,606**<sup>2</sup>. Reported bi-lateral figures are of course very indicative. There are some difficulties with representing "Reported" figures and it is likely that not all IPM members have reported similar activities under this section.

<b>Table 5 - Total VCP Contributions in 2012 (USD)</b>					
<b>Member</b>	<b>VCP(F)</b>	<b>VCP(ES) Equipment and Services through WMO</b>	<b>Bi-Lateral As Reported</b>		<b>Total</b>
			<b>Equip &amp; Services</b>	<b>Fellowships &amp; Training</b>	
<b>Argentina</b>				<b>8,300</b>	<b>8,300</b>
<b>Australia</b>	<b>52,022</b>		<b>5,416,978</b>		<b>5,469,000</b>
<b>Canada</b>			<b>3,755,000</b>	<b>642,500</b>	<b>4,397,500</b>
<b>China</b>	<b>10,000</b>	<b>145,000</b>	<b>228,000</b>	<b>1,458,511</b>	<b>1,831,512</b>
<b>Hong Kong</b>				<b>30,800</b>	<b>30,800</b>
<b>Finland</b>		<b>263,750</b>	<b>1,859,925</b>		<b>2,123,675</b>
<b>France</b>			<b>1,479,756</b>	<b>606,244</b>	<b>2,086,000</b>
<b>Germany</b>		<b>38,700</b>	<b>2,799,960</b>	<b>514,840</b>	<b>3,353,500</b>
<b>Indonesia</b>				<b>70,945</b>	<b>70,945</b>
<b>Japan</b>	<b>50,000</b>	<b>524,472</b>	<b>unknown</b>		<b>547,424</b>
<b>Maldives</b>	<b>1,000</b>				<b>1,000</b>
<b>Mauritius</b>	<b>1,674</b>				<b>1,674</b>
<b>Netherlands</b>		<b>133,000</b>			<b>133,000</b>
<b>New Zealand</b>			<b>333,000</b>		<b>333,000</b>
<b>Norway</b>			<b>2,500,000</b>		<b>2,500,000</b>
<b>Republic of Korea</b>	<b>30,000</b>	<b>335,000</b>	<b>1,320,094</b>		<b>1,685,094</b>
<b>Russia</b>		<b>25, 812</b>	<b>unknown</b>		<b>25, 812</b>
<b>Spain</b>			<b>300,000</b>		<b>300,000</b>
<b>Switzerland</b>			<b>2,393,200</b>		<b>2,393,200</b>
<b>UK</b>			<b>1,718,126</b>		<b>1,718,126</b>
<b>USA</b>		<b>697,087</b>	<b>1,392,910</b>		<b>2,090,000</b>
<b>Total</b>	<b>144,696</b>	<b>2,162,821</b>	<b>28,829,089</b>		<b>31,136,606</b>

## **2.7 Trends in Contributions to WMO VCP Programme**

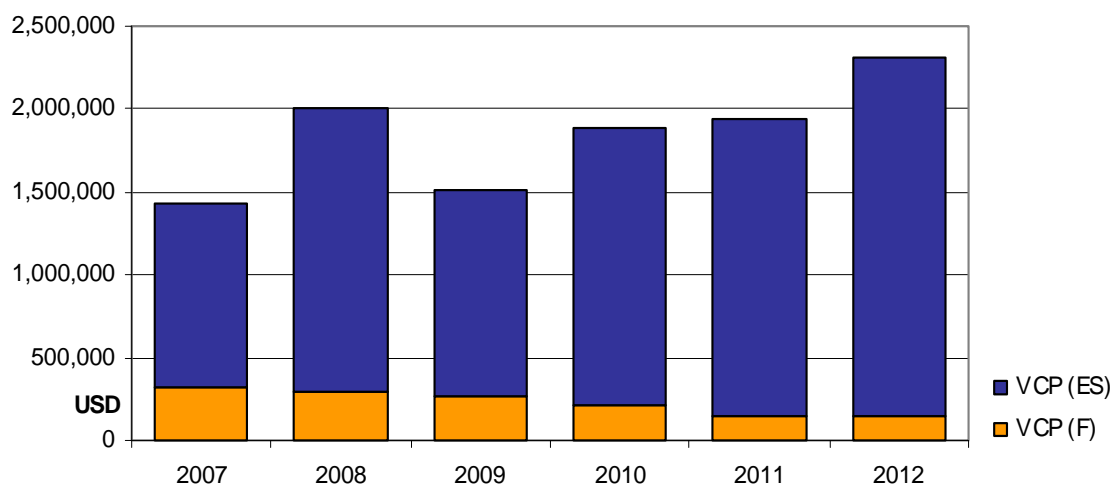
<sup>2</sup> This does not represent full value of WMO inter-member cooperation support but only as reported to WMO Secretariat by members-

The trends in contributions to VCP (F) over the past six years indicate a fairly constant support of the VCP(F) and of VCP ES through the WMO (Table 6). This is illustrated below in Figure 1.

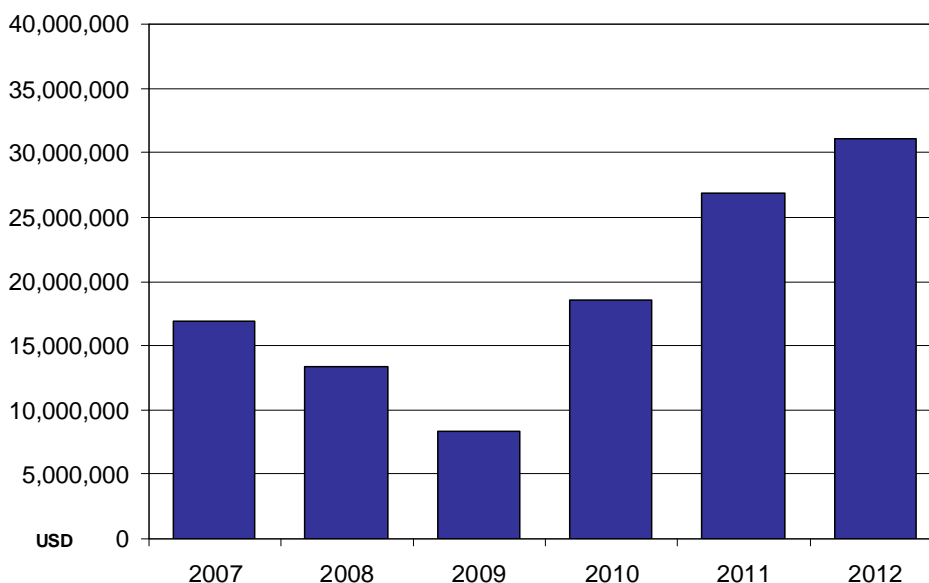
Overall in any given year, four to five countries account for over 90% of the VCP-Funds contribution as illustrated in Table 6 below. This poses the risk of over reliance on a small number of donors, which may impact on overall delivery objectives for VCP. An increased participation from other countries to diversify the base of the programme is highly desirable.

However, this is compensated to an extent by the very positive move towards support by members for major development programmes and a generally increasing trend in other technical cooperation trust funds. WMO overall voluntary contributions (extra-budgetary funding) for 2012 was 43.5M CHF received by WMO equalling some 42 % of total annual budget. In addition some 23,398 M CHF in concrete pledges (Norway, Canada and others) are also in the system

**Figure 1. Contributions to VCP (F&ES) 2007 – 2012**



**Figure 2. Total investment (VCP (F&ES) and bilateral activities) 2007 - 2012**



**Table 6 - VCP-F and VCP Financing 2007 to 2012**

Donor Member	2012			2011			2010			2009			2008		
	VCP(F)	VCP(ES)	Total	VCP(F)	VCP(ES)	Total	VCP(F)	VCP(ES)	Total	VCP(F)	VCP(ES)	Total	VCP(F)	VCP(ES)	Total
		Equipment & Services through WMO			Equipment & Services through WMO			Equipment & Services through WMO			Equipment & Services through WMO			Equipment & Services through WMO	
Australia	52,022		51,774	51,774		51,774	41,731		41,731	50,000	147,700	197,700	50,000	87,000	137,000
China	10,000.00	145,000	155,000	10,000	107,754	117,754	10,000	27,000	37,000	10,000		10,000	37,000	47,148	20,000
Finland		263,750	263,750		150,000	150,000					7,343	7,343			
France											4,479	4,479			
Germany		38,700	38,700		40,800	40,800									
Ireland										9,555		9,555	8,760		8,760
Italy															
Japan	50,000	524,472	574,472	54,230	608,663	662,893	128,000	514,300	642,300	91,000	105,000	196,000	106,000	22,000	128,000
Kenya															
Kingdom of Saudi Arabia														13,579	13,579
Maldives	1,000		1,000	1,000		1,000	1,000		1,000	10,000		10,000	1,000		1,000
Mauritius	1,674		1,674	1,674		1,674	1,537		1,537	1,460		1,460	2,685		2,685
Myanmar							486		486				972		972
Netherlands		133,000	133,000		270,000	270,000		133,620	133,620						
Norway										70,000		70,000	54,852		54,852
Pakistan													978		978
Republic of Korea	30,000	335,000	30,000	30,000		30,000	30,000		30,000	27,700		27,700	27,500		27,500
Russian Federation		25,812	25,812					40,000	40,000					10,000	10,000
Spain								53,448	53,448		243,500	243,500		443,312	443,312
Switzerland					200,000	200,000		53,448	53,448		9,734	9,734			
UK								38,701	38,701		71,000	71,000			
USA		697,087	697,087		410,867	410,867		812,606	812,606		654,912	654,912		1,096,180	1,096,180
<b>Total</b>	144,696	2,162,821	1,972,268	148,678	1,788,084	1,936,762	212,754	1,673,123	1,885,877	269,715	1,243,668	1,513,383	289,747	1,719,219	1,944,818

## 2.8 Education and Training Fellowship Activities

### 2.8.1 Training

VCP(F) funds continue to be used to support very short-term training activities offered by WMO RTCs and Member countries in areas such as WMO Information System (WIS), tropical cyclones, agricultural meteorology, aeronautical meteorology, climate analysis and applications, numerical weather prediction, weather modification, and climate prediction. In 2012, 42 participants from 32 countries were supported to attend 14 courses and workshops; and USD 71,398 was used.

<b>Table 7: Training events and participants supported using the VCP(F) in 2012</b>			
<b>Event Title</b>	<b>Countries Supported</b>	<b>Nr. of Participants</b>	<b>VCP (F) (USD)</b>
International Training Seminar on "Methods for Short-term Climate Prediction", Nanjing, Beijing, China, 26 March to 7 April 2012	Uzbekistan	1	1429
Operational Aeronautical Meteorology, Uni. La Molina, WMO RTC, Lima, Peru, 23-27 April 2012	Dominica	1	1971
International Training Course on "Radar Meteorology", to be held from 11 to 22 June 2012, in the RTC Nanjing, China.	Kenya, Sierra Leone, Kenya, Uzbekistan, Congo, Zimbabwe, Moldova, Egypt, Mali	9	18033
Intl School on Data Assimilation (EISDA 2012), Seoul, Rep. of Korea, 22-24 Aug 2012	Viet Nam, Malaysia	2	3189
Intl Training Course on Nowcasting, Beijing, China, 3-14 Sept 2012	Tadjikistan, Tanzania, Philippines, Seychelles, USA	5	7511
Intl Training Course on Reg. Climate Prediction & Drought Monitoring & Warning, Beijing, 17-27 Sept 2012	Tajikistan, Hungary, Central African Rep, Burundi, Indonesia	5	7726
6th International Training Course on Weather radars, 8-12 October 2012, Marmaris, Muglia, Turkey	Uzbekistan, Burkina Faso, Hungary	2	4611
ECMWF Training Course use and interpretation of ECMW products in national meteorological and hydrological services, Course code OP_WMO, 8-12 October 2012, UK, Reading	Indonesia	1	1500
6th Intl Training Course on Télécommunication météorologique et le système d'information de l'OMM, Antalya, Turkey, 1-6 Oct 2012	Czech Republic, Germany, Congo	3	3280
3rd International Training Course on "Upper Air Observing Systems", Istanbul, Turkey, 15-19 October 2012	Hungary	1	500
International Training Course on "Application of Meteorological Satellites in Disaster Mitigation and Environmental Studies, 22 Oct. - 2 Nov. 2012, Beijing, China	Tajikistan, Kenya, Philippines Tanzania, Madagascar	4	7199
Workshop on Competence Assessment of Aviation Forecasters and Observers, Israel, 29 October to 2 November 2012	Papua New Guinea, Senegal, Thailand, Myanmar, Paraguay	5	11983
International Training Course on "Prévisions météorologiques dans les régions des latitudes moyennes, 13 -23 Novembre 2012, Toulouse, France	DR Congo	2	2149
International Training Workshop on Implementing Competency Assessment for Aeronautical Meteorological Personnel, 5-9 December 2011, Hong Kong, China	Solomon Islands	1	317
<b>TOTAL</b>		<b>42</b>	<b>71398</b>

NMHSs in Hong Kong China, the Islamic Republic of Iran, the People's Republic of China, Turkey, the United Kingdom of Great Britain and Northern Ireland, and the United States of America assisted Members by developing and running the above workshops. Other Members such as Canada, Finland, France, Germany and Switzerland have provided training opportunities to staff from Member countries without requesting assistance from the WMO Secretariat.

## 2.8.2 Fellowships

During 2012, the VCP arrangement with partners enabled WMO to support a total of 34 fellowships from 23 countries to participate in short term training. In particular, the provision of VCP Fund from USA allowed WMO to facilitate the training of 27 experts from 23 countries at National Oceanic and Atmospheric Administration (NOAA).

<b>Beneficiary</b>	<b>2012</b>	<b>Budget</b>	<b>Fund</b>
Argentina	1	6,188	USA VCP
Bolivia	1	6,166	USA VCP
Bolivia	1	1,371	VCP (F)
Brazil	1	5,780	USA VCP
Burkina Faso	1	8,936	USA VCP
Colombia	1	6,143	USA VCP
Congo	1	2,025	VCP (F)
Costa Rica	1	6,015	USA VCP
Cote d'Ivoire	1	8,710	USA VCP
Dominican	2	8,686	USA VCP
DR Congo	1	8,863	USA VCP
Ecuador	1	5,564	USA VCP
Egypt	2	12,530	USA VCP
Egypt	2	2,779	VCP (F)
El Salvador	2	12,288	USA VCP
Gambia	1	8,813	USA VCP
Honduras	1	5,567	USA VCP
Kenya	1	7,428	USA VCP
Liberia	1	7,647	USA VCP
Mali	1	2,185	VCP (F)
Mexico	2	3,518	USA VCP
Moldova	1	2,314	VCP (F)
Mozambique	1	8,617	USA VCP
Niger	1	10,036	USA VCP
Nigeria	1	9,124	USA VCP
Peru	1	6,582	USA VCP
Uganda	1	8,112	USA VCP
Uruguay	1	5,830	USA VCP
Zimbabwe	1	2,702	VCP (F)
<b>TOTAL</b>	<b>34</b>	<b>193,279</b>	

USA VCP	# of	Contribution	
	27	179,902	
VCP (F)	7	13,377	

**Table 8:** Fellows supported by the VCP Fund by beneficiary and the total budget

The US VCP training took the form of on-the-job training at African Desk, South American and Tropical Desk or National Hurricane Center and has provided not only hands-on learning experience on the day-to-day operation at NOAA, but also opportunities for the fellows to establish the professional network. This kind of network would go a long way in fulfilling the purposes of WMO regarding international collaboration in the area of weather, climate and water. This unique experience has shown that short term training through attachment is effective and should be further encouraged for experts from the NMHSs of developing countries, particularly LDCs and SIDSs. Support through VCP is desirable, so as to reduce the burden on regular budget, which is normally targeted at long term training.

For wider reference, Table 9 shows fellows supported by the WMO regular budget and bilateral arrangements. A total of 62 new fellows from 47 countries have benefited from the WMO Fellowship Programme (regular budget) during 2012.

COUNTRY	2012	COUNTRY	2012
Antigua & Barbuda	1	Malawi	2
Belize	2	Mali	1
Benin	2	Mauritania	2
Burundi	2	Myanmar	1
Chad	1	Papua New Guinea	1
Colombia	1	Samoa	1
Comoros	1	Sri Lanka	1
Congo, DR	1	St Lucia	2
Djibouti	1	Swaziland	1
Gambia	1	Tanzania	2
Guinea Bissau	1	Tajikistan	1
Jamaica	1	Thailand	1
Kazakhstan	4	Uzbekistan	2
Kenya	1		
Lithuania	1		
Malaysia	1	<b>TOTAL</b>	<b>40</b>

**Table 9: Fellows supported by the WMO regular budget by beneficiaries in 2012**

The Fellows shown in Table 9 includes 12 fellows who commenced their training in China in 2011, and 6 Fellows who started their degree programme in Russia in the same year under bilateral arrangements between WMO and the People’s Republic of China and Russia respectively. The UK Met Office contributed towards the support for 6 Fellows undertaking study in the United Kingdom and the Australian Bureau of Meteorology contributed towards the costs of students undertaking study in Australia.



### **2.8.3 Fellowship Fund**

The Fellowship Fund was established and launched on World Met Day 2011 to accept private donations in support of Fellowships. While success with respect to private donations has been minimal to date the inclusion of a Fellowship component in all major projects for fellow participating in project areas adds a new source of financing to the Fellowship Programme. Canada, Korea and Norway have already committed resources towards fellowships in 2012, thus leading to further increase in the number of development partners supporting the programme. These fellows will be managed through the usual FelCom mechanism to ensure transparency in application of these funds.

### **2.9 Enhancement of VCP Coordination**

Mr Al-Hamndou Dorsouma recently joined WMO as Senior Programme Manager with the Resource Mobilization Office. He is trained as Geographer and Environmentalist, with extensive experience on the global environment, climate change, resource mobilization and project/ programme management. Before joining WMO, Mr. Dorsouma worked as Environment Specialist with the Observatory of Sahara and Sahel (OSS) and as Principal Climate Change Specialist with the African Development Bank (AfDB). He will manage the WMO VCP Programme.

Finland will provide a new JPO for the VCP and Project Coordination Unit support by mid 2013. The PCU will also benefit from a JPO from Norway.

It has been a busy year for the VCP programme as can be seen in the 2012 News Letter Highlights at Appendix 3.

## **3. Development Activities Update Highlights (see also IPM/2013/Doc. 24)**

### **3.1 Norway GFCS Programme for Africa**

“Global Framework for Climate Services: (GFCS) Adaptation and Disaster Risk Reduction in Africa”. The Goal of this Programme is amelioration of weather and climate related disasters and to climate change adaptation through operationalizing the WMO GFCS. Norway MFA’s contribution is NOK 56.8 M (approx. USD 10 M) for the period 2011-2015.

For 2012 there were four components to the project:

1. Support for Global Framework for Climate Services Secretariat
2. Support for African Ministerial Conference on Meteorology (AMCOMET)
3. Severe weather forecasting development programme (SWFDP)
4. Developing climate-related services for agriculture in Africa (METAGRI-OPS)

#### **Highlights from 2012:**

- Establishing the GFCS Secretariat in Geneva. Norway led the way supporting GFCS 2012.
- Establishing AMCOMET as a high-level mechanism for the strategic development of weather and climate services in Africa.
- Building capacity and resilience around the prediction of severe weather across East and Southern Africa: (a) strengthen the capacity to weather forecasting and the delivery of warning services; (b) increase lead-time of alerts and warnings; (c) stakeholders’ engagement; (d) monitoring and evaluation; and (e) WMO strategy for service delivery.

- Continuing the successful work of building resilience to climate impacts on food security. Extension of this work across 15 countries in West and North Africa.

### **3.2 USAID-OFDA - Hydrometeorological Disaster Impact Mitigation Projects**

USAID-OFDA<sup>3</sup> supported the programme (7M USD) “Hydrometeorological Disaster Impact Mitigation Projects”. The purpose of the programme to implement activities that lessen the impact of hydrometeorological hazards (floods, cyclones, droughts and disasters) globally.

#### **Project Components**

##### **1. Floods**

- a. Building and strengthening Flash Flood Guidance Systems
- b. Large river flood mitigation projects in river basins to be agreed.
- c. Flood risk management support activities within the context of the Associated Programme on Flood Management.

##### **2. Climate Applications**

- a. Regional Climate Outlook For a (RCOFs) across various disciplines such as agriculture, water management and health.
- b. The development of Regional Climate Centres.

##### **3. Drought Monitoring**

##### **4. Severe Weather Impacts**

- a. Early warning systems (EWSs) in the Pacific, Indian Oceans and Caribbean.

##### **5. Capacity Development**

- a. Cross cutting capacity development to support NMHSs in agreed regions under the themes above.

In 2012 most activity focused on Component 1. The further implementation of the project on “Development and Implementation of International regional Flash Flood Guidance and Early Warning systems”, activities undertaken by HRC and WMO during the reporting period focussed on *FFG System Standardization; Global HydroEstimator (GHE) Adjustment using CMORPH Data; development of Educational and Training Materials* - Flash Flood Guidance-specific courses currently completed included

- Elements of Hydrology
- GIS basics
- Flash Flood Guidance Products
- CAFFG Products

### **3.3 National GFCS pilot projects in West Africa**

The Global Framework for Climate Services (GFCS) piloted three important activities to achieve a more effective and equal climate service system in West Africa: the National Early Warning > Early Action Workshops, to set up a Frameworks for Climate Services at the National level in Burkina Faso, Niger and Mali. All countries are highly vulnerable to changes in the climate, and frequently have to deal with droughts. The Meteorological Services of the 3 countries were supported to carry out their own stakeholder mapping at the national level and reach out to key individuals and organizations across climate-sensitive sectors in the country. Climate-sensitive sectors included: agriculture, food security, disaster management, health, water, infrastructure and transport as well as energy. The national

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<sup>3</sup> USAID-OFDA - United States Agency for International Development \_ Office of Foreign Disaster Assistance

workshops brought together over fifty representatives from climate-sensitive sectors in each country, as well as farmers, herders and community spokespersons, and representatives from boundary organizations such as communicators, rural radios, farmer platforms, and community-based organizations. At the end of the workshop, roadmaps to build National Frameworks for Climate Services in Burkina Faso, Niger and Mali were developed.

### **3.4 Mobile weather service improves safety of fishermen in Uganda**

The Uganda Department of Meteorology, World Meteorological Organization, The Norwegian Ministry of Foreign Affairs, MTN, Ericsson, National Lake Rescue Institute and the Kalangala Fishing community continue to work together in a unique partnership, and combined mobile technology, weather forecasting expertise and local know-how, to provide a localised weather alert service to fishing villages on Lake Victoria. The service has been tested by over 1000 fishermen on Lake Victoria and is now due to be up-scaled and made more widely available in the next three months. The free-of-charge weather information service will enable fishermen and traders to make informed decisions on, for example, when and where to fish in Lake Victoria, helping to save lives and preserve livelihoods. Lake Victoria is the world's second-largest freshwater lake, provides a livelihood, directly and indirectly, to over 3.5 million people. The lake supports Africa's largest inland fishery and produces over 800,000 tons of fish annually, currently worth about USD 600,000,000, and reported estimates indicate that as many as 5,000 fishers die in boating accidents in the lake each year because they are unprepared for bad weather conditions.

### **3.5 Climate Services to reduce vulnerability in Haiti**

The World Meteorological Organisation (WMO) and Environment Canada (EC) signed a grant agreement of USD 6.5 million in November for the project titled “Haiti Weather Systems Programme: Climate Services to Reduce Vulnerability in Haiti”. This 5-year project aims at providing essential support to re-establish weather, climate and hydrology forecasting activities in Haiti under the coordination and management of WMO.

The Project has four main focus areas:

- Constructing a building to house the National Hydro-Meteorological Service (NMHS) of Haiti. The building will be Net-Zero Energy, as well as earthquake and hurricane proof;
- Undertaking capacity building including training of both scientific and technical personnel and developing a business plan for the NMHS taking into account all aspects of developing a functioning and modern weather, climate and hydrology service;
- Re-establishing the climatological and hydrological observing networks and implementing a data management system;
- Developing a wide-reaching dissemination system, to inform stakeholders and the general population of climate related risks.

### **3.5 CLIMANDES: Climate services for the Alps and Andes**

WMO and the NMHS of Peru and Switzerland launched an innovative partnership to strengthen climate services in the Andean nation, building on the scientific knowledge and experience of the Alpine country. Although geographically distant, Peru and Switzerland share the same challenges as a result of their mountainous terrain. High mountains have a significant influence over local weather and climate conditions in both countries. Both are frontline witnesses to the impact of climate change on shrinking glaciers. Peru and Switzerland have united under the umbrella of the Global Framework for Climate Services

(GFCS) to launch the project CLIMANDES (Servicios climaticos con enfasis en los Ande en apoyo a las decisions). This GFCS twinning activity seeks to improve climate services for the Peruvian region and to facilitate their incorporation into decision-making. This 3.5 M USD project is funded by Swiss Development Cooperation through the WMO.

### **3.7 Irish Aid**

A Memorandum of Understanding was signed between Irish Aid and the WMO World concerning cooperation on Food Security in the context of Global Framework for Climate Services (GFCS). The Goal of the Programme is: to strengthen the operational resources of National Meteorological Services to further provide weather / climate information and services to rural farmers and strengthen early warning systems for weather and climate risk management in the agricultural sector. The initial focus will be on AgMet Services in Ethiopia

### **3.8 Korea Meteorological Administration and Korea International Cooperation Agency (KOICA)**

In mid to late 2012 funding was secured from KOICA for the Coastal Inundation Forecasting Project in Fiji - one of three CIFDP Pilots. (Bangladesh is supported by USAID-OFDA and Haiti / Dominican Rep. CIFDP by Canada). KMA has also provided funds for procurement of SAT COMMs system for Lao People's Democratic Republic.

More information on these activities is found in 2012 News Letter Highlights at Appendix 3.

## Appendix 1

VCP requests received in 2012			
COUNTRY	INDICATOR	PROJECT TITLE	REQUESTED ITEMS
ANGOLA		Instruments for 8 GSN stations	Instruments for 8 GSN stations
ARMENIA	ARM/2012	Shipping of instruments for 4 GSN stations to Armenia	Shipping of instruments for 4 GSN stations to Armenia
ARMENIA	ARM/2012/WCP/2/2/1	The installation of the CLIWARE climate data processing system	Cliware Software (Russian version)
ARMENIA	ARM/2012/	Supply of 500 radiosondes	Supply of 500 radiosondes
BELARUS	BY/2012/HY/3/1	Hardware/software complex for the visualization of meteorological data and presentation of specific messages to users of hydrometeorological information	Personal Computer and software
BELARUS	BY/2012/OB/11/2	Delivery of technical equipment and software of the combined technology MITRA-GIS Meteo	technical equipment and software of the combined technology MITRA-GIS Meteo
DEMOCRATIC REPUBLIC OF CONGO		Fixing of microwave radio-link including lightning protection	Fixing of microwave radio-link including lightning protection
CUBA	CU/2012/OB/2/2/2	Upgrade of meteorological 4 stations	Upgrade of meteorological 4 stations
FIJI	FJ/2012/HY/6/1	Emergency Disaster Assistance	
GHANA	GHA/2012/AEM/EX	Implementation of Quality Management Systems based on ISO 9001: 2008 Standards for the Ghana Meteorological Agency	Provision of Technical support (Experts and Equipment) 1. Experts on Quality Management Systems 2. Equipment (Hardware and Software) -Computers - Calibration -Software
GUYANA	GY/2012/WCP/2/1	Acquisition of CLICOM database software and computer	Licences and services, Travel costs and Training, Other Software
KIRIBATI	KI/2009/PWS/EX/1	Development of a Strategic Plan for Kiribati Meteorological Service	financial and technical assistance through an expert/consultant and a national workshop to develop a Strategic Action Plan
KIRIBATI	KI/2010/OB/2/2	Installation of internet equipment at synoptic and meteorological stations in the Republic of Kiribati.	- SYNOP / Met Stations Equipment - Logistic and Installation - Airfare and Boatfare
MADAGASCAR		Renovation of 11 GSN stations in Madagascar	Renovation of 11 GSN stations
MALDIVES		Supply of 800 radiosondes and 800 balloons	Supply of 800 radiosondes (Eur 65,000.00) + 800 balloons (US\$ 5,200.00)
MAURITANIA	MR/2012/PWS/1/1/2	Provision of a TV Weather Presentation System	Equipment and software for TV studio
MEXICO		GCOS support for acquisition of radiosondes for stations in Mexico in 2012	Support to acquisition of radiosondes
MOLDOVA	MDA/2012/WCP/2/2/1	The installation of the CLIWARE climate data processing system	Cliware Software (Russian version)
SAMOA	WS/2012/AEM/EX	Expert Services to assist establishing the Meteorology Division Quality Management System (QMS) for aviation services	Airfare, DSA
SUDAN	SD/2012/OB/1/2/17	Radiosonde transmitters and balloons	Supply of 400 radiosondes (no GUAN Stations)
TAJIKISTAN	TJK/2012/WCP/2/2/1	The installation of the CLIWARE climate data processing system	Cliware Software (Russian version)
TANZANIA		Supply of radiosondes	
UGANDA	UG/2012/OB/1/2/7	Upgrade of the Upper Air Station in Entebbe	equipment, installation, training

<b>URUGUAY</b>	EC/2012/AEM/EX	Support for the Implementation of Quality Management System in the aeronautical meteorological service.”	WMO expert Uruguay, stay 15 days,
<b>VANUATU</b>	VU/2012/OB/2/2/1	Rehabilitation of Aneityum Meteorological Station	New meteorological instruments
<b>VANUATU</b>	VU/2012/OB/2/2/2	Rehabilitation of Whitegrass (Tanna) Meteorological Station	New meteorological instruments
<b>VANUATU</b>	VU/2012/AEM/EX	Expert services to conduct auditing of Vanuatu Meteorology and Geohazard Department Quality Management System for Aviation Services	Travel and DSA
<b>VANUATU</b>	VU/2012/TE/1/1/3	Improvement of meteorological telecommunications systems	Equipment (remote SSb/digital VHF radio systems), installation of the equipment
<b>ZAMBIA</b>		Automatic Message Switching System (AMSS) for use as Global Telecommunications System (GTS)	
<b>ZIMBABWE</b>	ZW/2012/OB/2/2/1	Replacement of standard instruments on 10 GSN stations	Instruments at 10 GSN stations need to be replaced

## Appendix 2

### VCP (F) Activities Expenditure 2012

VCP (F) Activities Supported in 2011		USD
<b>1</b>	<b>Expert Services</b>	<b>53,858</b>
	Expert mission to Kiribati to update the Meteorological Service Strategic Plan 2012 - 2018	5,657
	Expert Mission to Samoa to conduct QMS training, 24-28 September	7,334
	Expert services for Drafting of Meteorology Bill for the Kingdom of Tonga	14,623
	Expert mission to Fiji to attend training workshop on Meteorological equipment and instruments maintenance, Calibration and repair	2,623
	Expert services to Uganda for Met Office upgrades.	2,296
	Expert services to conduct External Audits for Aviation Services, Solomon Islands 23-27 July 2012	3,258
	Expert services to conduct External Audits for Aviation Services, Vanuatu 2-6 July 2012	1,631
	Support to the 39 <sup>th</sup> Session of WMO/ESCAP Panel on Tropical Cyclones, Myanmar 5-9 March	1,512
	Expert mission to attend Site Acceptance Test for a Doppler Weather Radar	868
	Expert Mission to BMD, Dhaka Bangladesh, 8 – 12 January 2012	12,739
<b>2</b>	<b>Project Development</b>	<b>2,422</b>
	Expert mission to Mauritania, 16-20 September	2,422
<b>3</b>	<b>Fellowships and Training activities</b>	
	Fellowship for Ms Cristina Maria Chirinos from Bolivia to undertake a 4 month training at the South American Tropical Desk from 1 August to 28 November, 2012	1,371
	Financial assistance to attend the Steering Group - SWFDP project, Geneva , Switzerland	5,869
	International Training course on “Climatology, a step towards climate services”, Toulouse France 11-12 June 2012	11,006
	Financial assistance to attend the WMO (SDS-WAS) hands-on training workshop on dust modelling, Belgrade, Serbia	1,000
	Financial assistance to attend Workshop on Aeronautical meteorology on east and central Africa, Etiopía, 8-12 October	14,830
	International Training Seminar on "Methods for Short-term Climate Predication", Nanjing, Beijing, China, 26 March to 7 April 2012	1429
	Operational Aeronautical Meteorology, Uni. La Molina, WMO RTC, Lima, Peru, 23-27 April 2012	1971
	International Training Course on “Radar Meteorology”, to be held from 11 to 22 June 2012, in the RTC Nanjing, China.	18033
	Intl School on Data Assimilation (EISDA 2012), Seoul, Rep. of Korea, 22-24 Aug 2012	3189
	Intl Training Course on Nowcasting, Beijing, China, 3-14 Sept 2012	7511
	Intl Training Course on Reg. Climate Prediction & Drought Monitoring & Warning, Beijing, China, 17-27 Sept 2012	7726

	6th International Training Course on Weather radars, 8-12 October 2012, Marmaris, Muglia, Turkey	4611
	ECMWF Training Course use and interpretation of ECMW products in national meteorological and hydrological services, Course code OP_WMO, 8-12 October 2012, UK, Reading	1500
	6th Intl Training Course on Télécommunication météorologique et le système d'information de l'OMM, Antalya, Turkey, 1-6 Oct 2012	3280
	3rd International Training Course on "Upper Air Observing Systems", Istanbul, Turkey, 15-19 October 2012	500
	International Training Course on "Application of Meteorological Satellites in Disaster Mitigation and Environmental Studies, 22 Oct. - 2 Nov. 2012, Beijing, China	7199
	Workshop on Competence Assessment of Aviation Forecasters and Observers, Israel, 29 October to 2 November 2012	11983
	International Training Course on "Prévisions météorologiques dans les régions des latitudes moyennes, 13 -23 Novembre 2012, Toulouse, France	2149
	International Training Workshop on Implementing Competency Assessment for Aeronautical Meteorological Personnel, 5-9 December 2011, Hong Kong, China	317
<b>5</b>	<b>VCP Spares/shipping of equipment</b>	<b>52,908</b>
	Financial support towards the "Provision of Hg barometers to Latin American and Caribbean NHMSs (Letter of Agreement between WMO and the DWD)	17,943
	Financial support towards infrastructure procurement and activities for the " Transformation from WAFS Satellite to WAFS Internet Reception"	22,680
	Financial support to purchase the hydrometeorological thermometers for the Republic of Armenia	12,285
<b>6</b>	<b>Support to CDMS and CLIMATOLOGICAL Activities</b>	<b>7,485</b>
	LoA with Meteo-France- WMO's contribution to implementation of Project on rescue of climatological data in Madagascar including rehabilitation of the CliSys system.	7,485
<b>7</b>	<b>TV Promotion and Distribution</b>	<b>42,495</b>
	Support to reinforcing the equipment of Mauritania National Meteorological Office for the publication on meteorological bulletins on Mauritania TV	23,287
	Upgrading and strengthening of the Public Weather Services presentation on NMA, Ethiopia	19,208
	<b>TOTAL</b>	<b>258,723</b>



# WMO Voluntary Cooperation Programme & Development and Regional Activities

January – December 2012

## Happy New Year

The VCP Team wishes you a happy new year and all the best for 2013. We would like to thank you all for your involvement in 2012 and we are looking forward to continue working with you this year.



## VCP Projects

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### Requests for VCP assistance received in 2012

In 2012, the VCP Secretariat received new requests for support from Armenia, Belarus, Cuba, Fiji, Ghana, Guyana, Kiribati, Mauritania, Moldova, Samoa, Sudan, Tajikistan, Uganda, Vanuatu and Zimbabwe. A total of 21 requests were received in 2012 and of these we were able to find sponsorship for 17 projects, which is 80% of all requests. At the beginning of 2013, there are still 4 outstanding requests from 2012, and 6 from 2011.

### Key projects and activities from 2012

- Emergency Disaster Assistance to Fiji for following severe flooding in early 2012
- Expert mission to Kiribati to update the Meteorological Service Strategic Plan
- Support to reinforcing the NMS of Mauritania and Ethiopia for broadcasting meteorological bulletins on local TV.
- Expert mission to Samoa to conduct QMS training for aviation services
- Expert services provided for Drafting of Meteorology Bill for the Kingdom of Tonga, Niue and Vanuatu
- Expert mission in Seychelles for the installation of two Automatic Weather Stations
- LoA with Meteo-France- WMO`s contribution to implementation of Project on rescue of climatological data in Madagascar including rehabilitation of the CliSys system.

Other countries that received support; included, Angola, Belarus, Cuba, Fiji, Madagascar, Maldives, Mexico, Moldova, Sudan, Tajikistan, Tanzania, Vanuatu and Zambia. For an overview of on-going projects, outstanding requests and links to partners and donors, please check our website at <http://www.wmo.int/pages/prog/dra/vcp/on-going.php>

**We welcome offers of support for unmet outstanding requests!**

## VCP News Highlights

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### Next IPM Meeting

The next Informal Planning Meeting (IPM) of major donors to the VCP will be held from 18-19 April 2013 in Curaçao immediately following the Sixteenth Session of Regional Association IV (RA IV-16) meeting, as requested by many of you. Apologies to our Japanese colleagues that we were unable to take up their offer to host the meeting in Tokyo due to constraints on travel of many members. As mentioned by the IPM Chair, Mr. Jaakko Nuottokari, please confirm your participation to the meeting and send us the requested information as soon as possible.

### Staff Update



**Mr. Al-Hamndou Dorsouma** recently joined WMO as Senior Programme Manager with the Resource Mobilization Office. He is trained as Geographer and Environmentalist, with extensive experience on the global environment, climate change, resource mobilization and project/ programme management. Before joining WMO, Mr. Dorsouma worked as Environment Specialist with the Observatory of Sahara and Sahel (OSS) and as Principal Climate Change Specialist with the African Development Bank (AfDB).

### Upgrading and strengthening the Public Weather Services presentation of NMA, Ethiopia

The UK Met Office sent a media designer and technician to Addis for 10 days to help with the upgrading and strengthening of the Public Weather Services presentation at NMA. Ethiopia was the first NMS to receive the 'mini-studio' nearly 20 years ago. The new digital TV kit delivered by the UKMO in collaboration with the VCP is a significant step up from the old equipment. NMA also received some training on their presentation skills and graphics.



New Studio Camera & monitor



Ethiopia handover ceremony

Broadcasts can now be archived for training and resource purposes and there is a possibility for producing a lunchtime weather broadcast for the National TV station, as the digital transfer time allows for the possibility to record much nearer the broadcast time.

## VCP News Highlights

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### WMO VCP Expert Mission to Bangladesh Meteorological Department (BMD), Dhaka, Bangladesh 8 – 12 January 2012

At the request from Ms Arjumand Habib, Director of BMD and Permanent Representative of Bangladesh with WMO, an expert mission to BMD was carried out from 8 to 12 January 2012 within the framework of the WMO Voluntary Cooperation Programme (VCP), by experts from the Japan Meteorological Agency (JMA), the Japan Broadcasting Corporation (NHK) and Oriental Electronics, Inc. The goal of the mission was to assess the current status of meteorological services and to formulate appropriate recommendations in order for BMD to strengthen its capabilities focusing on the enhancement of access to data and products via the GTS, the improvement of weather analysis including extensive use of tool software and the improvement of TV weather presentation capability.



Discussions at the Bangladesh Telecommunications Company on the present situation and the future plan of the network in Bangladesh.

Discussion at the Bangladesh Television on possibilities for a TV weather broadcasting system.



Recording video content at Storm Warning Center for a weather program on the TV

WMO Secretary General, accompanied by Director Resource Mobilization later made a visit to People's Republic of Bangladesh for high level talks to strengthen government support to the BMD. Significant discussions were had with high level government representatives including Her Excellency, Madam Sheikh Hasina, and Prime Minister.

In late 2012 funding was secured from USAID-OFDA for implementation of the Coastal Inundation Forecasting Project in Bangladesh, one of three CIFDP Pilots. (Fiji CIFDP is funded by Korea International Cooperation Agency (KOICA) and Haiti / Dominican Rep. CIFDP by Canada.

## VCP News Highlights

### Letter of Appreciation- Mr. Arif Mahmood, Director General, Pakistan Meteorological Department



**PMD**  
Tel: + (92-51) 9250367  
Fax: + (92-51) 9250368

No. Co (Isb)-3(3)/WMO/VCP/2010/  
Government of Pakistan  
Ministry of Defence  
Pakistan Meteorological Department  
Headquarters Office  
Sector H-8/2  
Islamabad - 44000  
Website: [www.pakmet.com.pk](http://www.pakmet.com.pk)  
Email: [Pakmet\\_islamabad@yahoo.com](mailto:Pakmet_islamabad@yahoo.com)

Dated: 10<sup>th</sup> December, 2012

The Secretary General,  
World Meteorological Organization,  
7 bis, avenue de la Paix,  
Case postale 2300,  
CH 1211, Geneva 2,  
Switzerland  
Fax: +41 22 730 8181

**Subject: Donation of 10 AWS Stations to PMD by the Government of Finland /  
Finnish Meteorological Institute**

Dear Sir,

I feel great pleasure in acknowledging the delivery of ten (10) Automatic Weather Stations (AWSs) as donation by the Government of Finland through their Ministry of Foreign Affairs and the Finnish Meteorological Institute (FMI) under WMO Voluntary Cooperation Programme (VCP) framework.

The whole credit concerning to the delivery of AWSs to PMD goes to the WMO for their remarkable efforts and excellent coordination among the NMHSs around the globe especially in wake of Super Floods-2010 in Pakistan. No doubt, the addition of 10 AWSs will further denser the hydrometeorological observational network of PMD and will greatly improve the flood monitoring / forecasting capabilities of PMD for effectively addressing the hydrometeorological disaster risk reduction challenges in the country in future.

Availing this opportunity, I wish to extend my sincere appreciation to WMO for their valuable support in perspective of emergency disaster assistance to Pakistan and I also look forward for WMO's continued support to PMD for the strengthening and development of its capacities in meteorology and related disciplines.

With best regards

Yours sincerely

  
(ARIF MAHMOOD)  
Director General, PMD



## Development Activities Update

### Norway GFCS Programme for Africa

“Global Framework for Climate Services: (GFCS) Adaptation and Disaster Risk Reduction in Africa”. The Goal of this Programme is amelioration of weather and climate related disasters and to climate change adaptation through operationalizing the WMO GFCS. Norway MFA’s contribution is NOK 56.8 M (approx. USD 10 M) for the period 2011-2015.



For 2012 there were four components to the project:

1. Support for Global Framework for Climate Services Secretariat
2. Support for African Ministerial Conference on Meteorology (AMCOMET)
3. Severe weather forecasting development programme (SWFDP)
4. Developing climate-related services for agriculture in Africa (METAGRI-OPS)

### Highlights from 2012:

- Establishing the GFCS Secretariat in Geneva. Norway led the way supporting GFCS 2012.
- Establishing AMCOMET as a high-level mechanism for the strategic development of weather and climate services in Africa.
- Building capacity and resilience around the prediction of severe weather across East and Southern Africa: (a) strengthen the capacity to weather forecasting and the delivery of warning services; (b) increase lead-time of alerts and warnings; (c) stakeholders’ engagement; (d) monitoring and evaluation; and (e) WMO strategy for service delivery.
- Continuing the successful work of building resilience to climate impacts on food security. Extension of this work across 15 countries in West and North Africa.

### Plan for 2013

For the second year we have continued work in the original components and extended the programme into 3 other areas; the creation of a Norwegian Fellowship Programme, Climate and Health activities to support the outcomes from GFCS Extraordinary Congress and improvements to the Public Weather Services in countries where the SWFDP has already begun to strengthen forecast capability.



1. Global Framework for Climate Services (GFCS) – maintaining the secretariat for the development of the strategy.
2. African Ministerial Conference on Meteorology (AMCOMET) – further support to continue the work from Victoria Falls.
3. Severe weather forecasting development programme (SWFDP).
4. Public Weather Service (PWS)
5. Developing weather and climate services for 2 of the 4 priority areas of GFCS.
  - a. Developing climate-related services for Agriculture
  - b. Developing climate-related services in Climate and Health
6. Norwegian Fellowships Fund: 4 to 6 new African fellowships at Masters Level in meteorology, hydrology or climatology with links to climate service

## Development Activities Update

### USAID-OFDA - Hydrometeorological Disaster Impact Mitigation Projects

USAID-OFDA<sup>4</sup> supported the programme (7M USD) “Hydrometeorological Disaster Impact Mitigation Projects”. The purpose of the programme to implement activities that lessen the impact of hydrometeorological hazards (floods, cyclones, droughts and disasters) globally.

#### Project Components

1. **Floods**
  - b. Building and strengthening Flash Flood Guidance Systems
  - c. Large river flood mitigation projects in river basins to be agreed.
  - d. Flood risk management support activities within the context of the Associated Programme on Flood Management.
2. **Climate Applications**
  - e. Regional Climate Outlook For a (RCOFs) across various disciplines such as agriculture, water management and health.
  - f. The development of Regional Climate Centres.
3. **Drought Monitoring**
4. **Severe Weather Impacts**
  - g. Early warning systems (EWSs) in the Pacific, Indian Oceans and Caribbean.
5. **Capacity Development**
  - h. Cross cutting capacity development to support NMHSs in agreed regions under the themes above.

In 2012 most activity focused on Component 1. The further implementation of the project on “Development and Implementation of International regional Flash Flood Guidance and Early Warning systems”, activities undertaken by HRC and WMO during the reporting period focussed on *FFG System Standardization; Global HydroEstimator (GHE) Adjustment using CMORPH Data; development of Educational and Training Materials* - Flash Flood Guidance-specific courses currently completed included

- Elements of Hydrology
- GIS basics
- Flash Flood Guidance Products
- CAFFG Products

#### And *Development of new FFG project components:*

- Supporting documents were developed to conduct planning meetings for the foreseen new project components in South Asia and South East Europe.
- The South Asia FFG (SAsia-FFG) planning meeting has been successfully conducted from 26-28 November 2012 at ICIMOD in Kathmandu, Nepal. All foreseen participating countries were present with the exception of Afghanistan that had however voiced its interest in the project. The draft meeting report has been compiled and sent for comment to participants.
- South East Europe FFG (SEE-FFG) have been developed, participants are being invited and the meeting will be held in Ankara from 22-24 January 2013.

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<sup>4</sup> USAID-OFDA - United States Agency for International Development \_ Office of Foreign Disaster Assistance

## Development Activities Update

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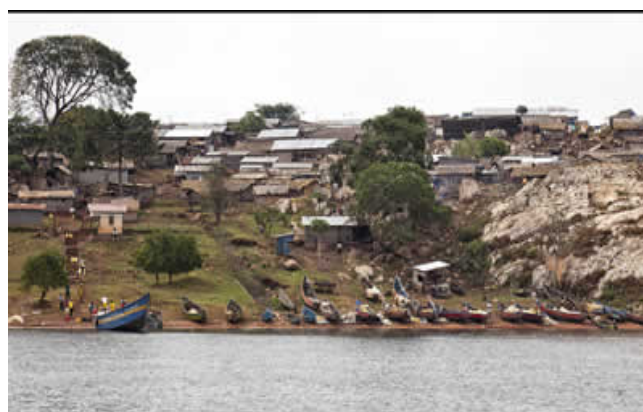
### National GFCS pilot projects in West Africa

The Global Framework for Climate Services (GFCS) piloted three important activities to achieve a more effective and equal climate service system in West Africa: the National Early Warning > Early Action Workshops, to set up a Frameworks for Climate Services at the National level in Burkina Faso, Niger and Mali. All countries are highly vulnerable to changes in the climate, and frequently have to deal with droughts. The Meteorological Services of the 3 countries were supported to carry out their own stakeholder mapping at the national level and reach out to key individuals and organizations across climate-sensitive sectors in the country. Climate-sensitive sectors included: agriculture, food security, disaster management, health, water, infrastructure and transport as well as energy. The national workshops brought together over fifty representatives from climate-sensitive sectors in each country, as well as farmers, herders and community spokespersons, and representatives from boundary organizations such as communicators, rural radios, farmer platforms, and community-based organizations. At the end of the workshop, roadmaps to build National Frameworks for Climate Services in Burkina Faso, Niger and Mali were developed.



### Mobile weather service improves safety of fishermen in Uganda

The Uganda Department of Meteorology, World Meteorological Organization, The Norwegian Ministry of Foreign Affairs, MTN, Ericsson, National Lake Rescue Institute and the Kalangala Fishing community have come together in a unique partnership, and combined mobile technology, weather forecasting expertise and local know-how, to provide a localised weather alert service to fishing villages on Lake Victoria. The service has been tested by over 1000 fishermen on Lake Victoria and is now due to be up-scaled and made more



widely available in the next three months. The free-of-charge weather information service will enable fishermen and traders to make informed decisions on, for example, when and where to fish in Lake Victoria, helping to save lives and preserve livelihoods. Lake Victoria is the world's second-largest freshwater lake, provides a livelihood, directly and indirectly, to over 3.5 million people. The lake supports Africa's largest inland fishery and produces over 800,000 tons of fish annually, currently worth about USD 600,000,000, and reported estimates indicate that as many as 5,000 fishers die in boating accidents in the lake each year because they are unprepared for bad weather conditions.

## Development Activities – New Funding Agreements

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### Climate Services to Reduce Vulnerability in Haiti (Canada and WMO)

The World Meteorological Organisation (WMO) and Environment Canada (EC) signed a grant agreement of USD 6.5 million in November for the project titled “Haiti Weather Systems Programme: Climate Services to Reduce Vulnerability in Haiti”. This 5-year project aims at providing essential support to re-establish weather, climate and hydrology forecasting activities in Haiti under the coordination and management of WMO.

The Project has four main focus areas:

- Constructing a building to house the National Hydro-Meteorological Service (NMHS) of Haiti. The building will be Net-Zero Energy, as well as earthquake and hurricane proof;
- Undertaking capacity building including training of both scientific and technical personnel and developing a business plan for the NMHS taking into account all aspects of developing a functioning and modern weather, climate and hydrology service;
- Re-establishing the climatological and hydrological observing networks and implementing a data management system;
- Developing a wide-reaching dissemination system, to inform stakeholders and the general population of climate related risks.

### CLIMANDES: Climate services for the Alps and Andes

WMO and the NMHS of Peru and Switzerland launched an innovative partnership to strengthen climate services in the Andean nation, building on the scientific knowledge and experience of the Alpine country. Although geographically distant, Peru and Switzerland share the same challenges as a result of their mountainous terrain. High mountains have a significant influence over local weather and climate conditions in both countries. Both are frontline witnesses to the impact of climate change on shrinking glaciers. Peru and Switzerland have united under the umbrella of the Global Framework for Climate Services (GFCS) to launch the project CLIMANDES (Servicios climaticos con enfasis en los Andes en apoyo a las decisiones). This GFCS twinning activity seeks to improve climate services for the Peruvian region and to facilitate their incorporation into decision-making. This 3.5 M USD project is funded by Swiss Development Cooperation through the WMO.



**Launch. MOU Signature**

### Irish Aid

A Memorandum of Understanding was signed between Irish Aid and the WMO World concerning cooperation on Food Security in the context of Global Framework for Climate Services (GFCS). The Goal of the Programme is: to strengthen the operational resources of National Meteorological Services to further provide weather / climate information and services to rural farmers and strengthen early warning systems for weather and climate risk management in the agricultural sector. The initial focus will be on AgMet Services in Ethiopia

### Korea Meteorological Administration (KMA) and Korea International Cooperation Agency (KOICA)

In mid to late 2012 funding was secured from KOICA for the Coastal Inundation Forecasting Project in Fiji - one of three CIFDP Pilots. (Bangladesh is supported by USAID-OFDA and



Haiti / Dominican Rep. CIFDP by Canada). KMA has also provided funds for procurement of SAT COMMs system for Lao People's Democratic Republic.

## Important meetings in 2012

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### Extraordinary Session of the World Meteorological Congress (October 29th -31st)



After 3 days of deliberations, debates and discussions the 129 countries present reached consensus on three resolutions – namely on the implementation plan, the governance structure and the budgetary provisions for the Global Framework for Climate Services. All approved documents can be found on the Congress Webpage. Very strong opening statements of support and commitment were made by the heads of the four lead partner organizations (FAO, UNESCO, UNISDR, WHO), all calling for partnerships and immediate action.

### AMCOMET - Second Session of the African Ministerial Conference on Meteorology



The 2nd African Ministerial Conference on Meteorology adopted an Integrated African Strategy for Meteorology that seeks to address the challenges posed by climate change and extreme weather hazards. The ministerial conference, which took place from 15-19 October 2012, in Victoria Falls, Zimbabwe, organized with the African Union Commission (AU) and the Government of Zimbabwe focused on how to improve weather and climate services for sustainable development, particularly for agriculture, water, health, disaster risk reduction (DRR) and transport. Conference participants noted that many National Meteorological and Hydrological Services (NMHSs) in Africa operate with poor infrastructure and limited capability.

The Integrated African Strategy on Meteorology (Weather and Climate Services) adopted at the conclusion of the conference, and more recently endorsed by the African Union XXII Summit in Feb 2013, aims to, inter alia: increase political support and recognition of NMHSs and related Regional Climate Centres; support the provision of weather and climate services for climate change adaptation and mitigation; and strengthen partnerships with relevant institutions and funding mechanisms. The Strategy will enhance cooperation among African countries and improve the capacity of NMHSs to implement the Global Framework for Climate Services (GFCS), which is being developed by WMO and its UN partners to improve climate services, especially for the most vulnerable.

### The TICAD V Preparatory Senior Officials' Meeting (SOM), Burkina Faso

TICAD, the “Tokyo International Conference on African Development”. was launched in 1993 to promote high-level policy dialogue between African leaders and development partners. TICAD has since evolved into a major global framework to facilitate the implementation of initiatives for promoting African development under the dual principle of African “ownership” and international “partnership”. The TICAD V Preparatory Meeting in Ouagadougou November 15 -17 aimed to advance preparation for TICAD V, which will be held from June 1 to 3 in Yokohama, Japan. WMO has been invited to submit priorities for inclusion in TICAD V Action Plan. Support for the implementation of the Integrated African Strategy on Meteorology (Weather and Climate Services) has been proposed as the main focus for TICAD V.

### **Second Conference on Climate Change and Development in Africa (CCDA-II)**

The participants of the Second Conference on Climate Change and Development in Africa (CCDA-II) October 2012 called the conference the African climate change event of the year. A cross section of participants, including negotiators, academicians, policy-makers, scientists and the media all agreed that the conference had been a huge success in terms of content and organization. In a statement read at the end of the conference, participants adopted a number of recommendations on climate service delivery; sustainable energy access for all Africans by 2030; and on outstanding issues in climate negotiations, especially as they relate to Africa.

## Important meetings in 2012

### WMO Regional Association for Asia Agrees Priority work Areas

About 90 delegates from WMO's Regional Association for Asia (RAII) met 13-19 December in Doha, Qatar, to agree on priority work areas for the next three years to strengthen weather, climate and water services. Ahmed Abdullah Mohamed, the Permanent Representative of Qatar to WMO, was elected as the new president. Dr Qamar-uz Zaman Chaudhry, Permanent Representative of Pakistan, was re-elected as Vice President. RA II groups 35 countries spread across a large geographical zone and impacted by diverse hazards including sand and dust storms, droughts,



heat and cold waves, tropical cyclones, floods and air pollution. The meeting adopted a new strategic operational plan for 2012-2015. Its priorities include:

- Further improvement of service delivery capacity at national and regional level;
- Implementation of the Global Framework for Climate Services recently approved by the Extraordinary World Meteorological Congress ;
- Enhanced national and regional multi-hazard disaster risk reduction, including for regional-specific problems like sand and dust storms;
- Regional development of WMO Integrated Global Observing System and regional implementation of the WMO Information System (WIS), to improve and expand the current exchange of weather, climate and water data, and cut the costs involved;
- Strengthening of aeronautical and marine meteorological services.

### GCOS 1992-2012 - 20 Years in Service for Climate Observations

The year 2012 marked the 20th anniversary of the Global Climate Observing System (GCOS), the system dedicated to ensuring provision of the observational data and information that is the foundation for decisions on climate. The GCOS Programme formally celebrated the 20th anniversary of the Global Climate Observing System on Friday, 29 June 2012 during the 64th WMO Executive Council meeting in Geneva. The celebration provided an opportunity to review the origins of the GCOS, to take stock of the accomplishments of GCOS in the first twenty years of its existence, and to think ahead about new opportunities and challenges for GCOS. VCP works very closely with GCOS for installation and / or rehabilitation of the GCOS priority network.

### Doha Climate Change Conference

The 18th session of the Conference of the Parties to the UNFCCC and the 8th session of the Conference of the Parties serving as the Meeting of the Parties to the Kyoto Protocol opened on Monday, 26 November and continued until Saturday, 8 December 2012 at the Qatar National Convention Centre in Doha.



### The CIF 2012 Partnership Forum

WMO, (DSG and D/RMO) participated in the Climate Investment Funds 2012 Partnership Forum, in Istanbul in November where DSG provided a statement on the GFCS and the role of NMHS in climate resilience. The Forum, co-hosted by World Bank, Regional Development Banks and the European Bank for Reconstruction and Development (EBRD), provided a opportunity for diverse stakeholders – governments, civil society, indigenous peoples, private sector, and others – to contribute to understand the linkages between climate change and development as they have been addressed within the context of the Climate Investment Funds (CIF). As all CIF programs (on clean technology, forest investments, climate resilience and scaling up renewable energy in low income countries) are moving into implementation of investments at the country level, the Forum focused on effective on-the-ground implementation, knowledge-building and sharing of lessons.

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## Annex IV

WORLD METEOROLOGICAL ORGANIZATION

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IPM/2013/Doc. 3

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INFORMAL PLANNING MEETING OF THE  
VOLUNTARY COOPERATION PROGRAMME

ITEM:3.2

WILLEMSTAD, CURACAO  
19 - 20 APRIL 2013

Original: ENGLISH

### REPORTED BILATERAL TECHNICAL COOPERATION ACTIVITIES IN 2012

*(Submitted by WMO Members)*

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#### Summary and Purpose of Document

This document provides information on Member bilateral cooperation activities during 2012 including VCP Coordinated Programmes.

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#### ACTION PROPOSED

The meeting is invited to consider the information on the activities of the Members in bilateral cooperation during 2012 to inform and guide donor Members in planning their technical assistance support to VCP during 2013.

The reports provided vary significantly in detail in terms of activities and budget. The meeting may wish to consider establishing guidelines on reporting on cooperation activities and related financial investment reporting to facilitate tracking of trends over time.



## ARGENTINA

In 2012, Argentina continued its activities as a donor to the Spanish-speaking Countries of Regions III and IV.

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	
Argentina				USD 8300.		

### The following co-operation activities were carried out:

- “VAAC Best Practice Seminar”, Montreal – Canada, 13 - 14 feb. - - 1 participant - USD 983
- WCRP Global Drought Information System Workshop. (Apr, Italy) – 1 participant - USD 470
- Second Vaac Best Practices Seminar, Second Meeting: Montreal – Canada, 12 - 13 June. - 1 participant - USD 837
- 22nd GAWTEC Training Course: Munich, Zugspitze, Germany – June 24 to July 7 – 1 participant - USD 429
- Regional Training Seminar for National Instructors of AR III & AR IV .06-17 Aug, Lima Perú, 52 students from Barbados, Australia, Suiza, Paraguay, Bolivia, Perú, Ecuador, Venezuela, Costa Rica, Chile, Argentina) – 1 participant - USD 545
- 4º International Training Workshop of Climatic Change and Variability. 08/17 Aug, San José de Costa Rica , Costa Rica – 1 participant - USD 464
- South American Desk. Internship, 01Oct-31Jan, Washington D.C., U.S.A. – 1 participant - USD 2035
- E-Learning Course: “Satellite Meteorology applied to Hydrology” by DSA/CPTEC, National Space Investigation Institute. 30/Jul-01Aug, Cachoeira Paulista, Brasil – 2 participant - USD 1063
- 6º ICTP of theory and use of regionals climatic models workshop. May, Italy – USD 522
- The importance of the correct service and communication of products and services to farmers and extension service. (May, Brasil) – USD 532
- Climatic Variability and its problems: health impacts in latin-american cities. BS AS., CHILE, SALTO Y MANOS – USD 420
- South American Desk – Washington – USA: 1 - 31 January 2013 – 1 participant – USD 2035

### Missions by Argentine experts to other NMHSs:

- “Use of Agrometeorological Information and Risk management”: San Lorenzo – Rep. Del Paraguay, 18 -22 may, - 1 participant
- “3er WMO/WWRP International Symposium On Nowcasting And Very Short Range Forecasting”: Ciudad de Río de Janeiro, Brazil, 6- 10 august. – 1 participant
- WMO Technical Conference (TECO) and “Meeting of the Management Group of WMO Instruments and Observation Methods Comission: Bruselas –Belgium, 16-18 October 2012, - 1 participant

- 6th Meeting of the WMO/CGMS Virtual Laboratory (VLab) for Education and Training in Satellite Meteorology Management Group (VLMG-6). 8 -11 October San Jose Dos Campos – Brazil, 1 participant
- “Satellite Meteorology applied to Hydrology”. Distance learning Cachoeira Paulista, Brazil, 30-1 august, - 1 participant

### **Component II National Meteorological Service**

- Seminar of Geomagnetism and Space Climatology. (21-24 May, 32 students)
- 1º Capture, Processing, Analysis and Dissemination/Broadcasting of Geospatial Information Congress. (07-08 Jun, Buenos Aires, Argentina)
- Antarctic Observations Training Course. (15-16 Oct, 16 students)
- Introductory workshop to the evaluation of solar radiation. 19-22 Nov, 21 students
- E-learning course: “Quality Management System Applied to the Provision of Meteorological Services for Air Navigation – ISO Standards”.(29/10 al 2/11, 105 students)
- Conference: “RMTC – AR III Instructors and Educational Quality Standards: the 2013 OMM objectives” (06 Nov, 15 students)
- Contrast and calibration tasks of meteorological instruments for the Meteorological Service of Paraguay.
- Training on maintenance and care of the instruments for Inspectors (2) of the Meteorological Service of Paraguay.
- Climate Service is on the National Meteorological Service web since January, 2013.- The information received and processed by the Department of Teledetection and Environmental Applications (HRPT) is used by scientific researchers worldwide, and clients .

### **During 2013 the expected training activities, in RMTC Buenos Aires, are:**

- During 2012 the Training Department of SMN has been reorganized and new staff incorporated forming a team made up of 3 Meteorologists and trainers, 1 Professional expert in distant education (Moodle), 1 Tech Meteorologist, 3 Auxiliary Trainers
- March, 2013 Implementation of Meteorological Observer Course 2013 as distance learning on Moodle.
- We are ready to provide new activities which could be useful to other Members of Region III, particularly a training courses on Solar radiation and Energy Use, Earth’s Magnetic Field and Space Weather Interaction. We are preparing other courses on the following topics: Hydrology, Agrometeorology and Meteorological Data Management.
- Argentina along with Brazil are implementing the Regional Climate Centre (RCC) for South America. rcc is projected in a training area specific thematic

#### **2013 Courses:**

1. Surface Meteorological Observers (long term)
2. Radiosonde Observer (long term)
3. Quality Management System Applied to Meteorological Srvicios Supply for Air Navigation - ISO Standards ":
4. Geomagnetism and Space Weather ( short term)
5. Geomagnetic Operator (short term)
6. Introduction to Solar Radiation (short term).
7. Workshop “Meteorological Observation in Antarctica”:



**Annex - COMPONENT II - NATIONAL METEOROLOGICAL SERVICE - ARGENTINA**

**\* Student's participation in Education Programmes/Training courses delivered from 01 January 2012 to 31 December 2012 by RTCs**

<b>Title of the delivered Programme/Course</b>	<b>Expected Qualification</b>	<b>Target Audience</b>	<b>Start Date</b>	<b>End Date</b>	<b># of Local Students</b>	<b># of Foreign Students</b>	<b>Country of Origin</b>
Surface Meteorological Observer (regular)			Mar 19 / 2012	ongoing	60	0	-
Surface Meteorological Observer (intensive)			Mar 19 / 2012	Dec 18 / 2012	30	0	-
Seminar of Geomagnetism and Space Climatology		Graduated Surface Meteorological Observers	May 21 / 2012	May 24 / 2012	32	0	-
Introductory workshop to the evaluation of solar radiation		Graduated Surface Meteorological Observers	Nov 19 / 2012	Nov 22 / 2012	21	0	-
Antarctic Surface Observations Training Course	To increase qualifications about meteorological observations in Antarctica		Oct 15 / 2012	Oct 16 / 2012	16	0	-
Internship at the Instrumental Meteorological Laboratory	Calibration the barometers	For Technical	Nov 27/2012	Nov 30/2012		3	Paraguay
Regional Seminar for national instructors of AR III & AR IV	Aptitude evaluation	Meteorological Instructors	Aug 6 / 2012	Aug 17 / 2012	2	50	Barbados, Paraguay, Bolivia, Peru, Ecuador, Venezuela, Costa Rica, Chile / Instructors: Australia, Suiza

<b>Australia</b>	
<b>2. Overall national contribution in 2012 (estimate in USD)</b>	<b>3. Overall estimated national contribution in 2013 (in USD)</b>
\$5.469M	\$6M
<b>4. List of Activities / Projects / Events in 2012 related to contribution</b>	<b>5. Sources of Funding</b>
Climate and Oceans Support Program for the Pacific (COSPPac), 4-year program (\$2.140M)	National Government – AusAID
Pacific-Australia Climate Change Science and Adaptation Planning Program (PACCSAP), final year of 4-year program (\$3.127M)	National Government – AusAID
VCP(F) (\$52.22K)	National Government – BoM funds
BMTC radar training, 3 month course for overseas students (\$16.06K)	National Government – BoM funds
BMTC Diploma of Meteorology course for overseas student (\$33.42K)	National Government – BoM funds
RANET support, annual contribution to NZ/UZ program (\$8.03K)	National Government – BoM funds
Tsunami training course for Pacific NMS (\$92.21K)	National Government – AusAID
<b>6. Challenges in Resource Mobilization for your Activities / Projects / Events</b>	<b>7. Opportunities for Increased Activity for your Activities / Projects / Events</b>
<p>Main challenge relates to activities funded directly from the Bureau of Meteorology's appropriation (core budget) which is under increasing pressure due to Whole of Government efficiency measures. On the other hand, Australia's overseas aid budget has grown, leading to historically high levels of aid funding for capacity development in the region, particularly in relation to climate (services, adaptation and climate change science).</p> <p>Another challenge is the difficulty of securing technical experts to undertake international projects whilst maintaining adequate staffing for existing domestic programs.</p>	<ul style="list-style-type: none"> <li>• In 2012, two major aid-funded programs commenced – COSPPac and PACCSAP. No <u>additional</u> activity in these areas is envisaged.</li> <li>• Two new AusAID funded initiatives are being delivered in 2013: (i) QMS-certification training for Pacific Islands met services (workshop, plus practical QMS audit exercise in BoM); (ii) WIS implementation training workshop for Pacific Islands met services</li> <li>• Other VCP support to be maintained at current levels (BMTC training courses, VCP(F))</li> </ul>
<b>8. Opportunities for more cooperation with other members / organisations</b>	
<p>Australia currently works closely with regional and national partner organisations, including SPREP, SOPAC and national meteorological services. Australia supports the initiative by SPREP to establish a Pacific Meteorological Desk Partnership at its headquarters in Apia, Samoa, which aims to strengthen institutional arrangements for coordination of meteorological activities in the region and to act as a focal point through which donors, partners and recipients can share information and harmonise their activities.</p>	

<b>CANADA</b>	
<b>2. Overall national contribution in 2012/2013</b>	<b>3. Overall estimated national contribution in 2013/2014 (in USD)</b>
4,397,500 USD	Canada's goal is to maintain the 2012/2013 national contribution.
<b>4. List of Activities / Projects / Events in 2012/2013 related to contribution</b>	<b>5. Source of Funding: Environment Canada (USD)</b>
<b>Project 1: Contributions to WMO Trust Funds to engage scientists and technologists from developing countries</b>	
Support for the WMO Secretariat for the Global Framework for Climate Services (GFCS)	200,000
Aircraft Meteorological Data Relay (AMDAR)	11,500
Executive Council Panel of Experts on Polar Observations, Research and Services (EC-PORS)  To support the implementation of PORS-led activities such as: the Global Cryosphere Watch (GCW), International Polar Initiative (IPI) and the Global Integrated Polar Prediction System (GIPPS).	50,000
Brewer Ozone Spectrophotometer	24,500
The Observing System Research and Predictability Experiment (THORPEX)	45,000 (TBC)
<b>Project 2: Group on Earth Observations (GEO) activities to engage scientists and technologists from developing countries</b>	
Funds to support the GEO Secretariat	88,000
<b>Project 3: Institutional Capacity Development for CNM (Haiti)</b>	
Haiti Weather System Program: Climate Services to Reduce Vulnerability in Haiti (6,500,000 over 5 years)	\$1,200,000 (Notional Figure)
Participation as a member of the Project Board for the "Haiti Weather System Program: Climate Services to Reduce Vulnerability in Haiti" Project	11,500
In-kind support for Canadian forecasters/manager to help Haiti with interim forecast services in Martinique	10,000
	18,000
Maintenance of Haiti National Meteorological	

Services' website	
<b>Project 4: Development of Quality Management Systems for NMHS with emphasis on aviation</b>	
Expert training provided at several workshops for Competency Assessment for Aeronautical Meteorological Personnel: Russia, South Africa & Israel	16,000
Expert training provided for CALMet.	8,000
Document and process development, coaching services, on-site training and audits, as well as follow-up coaching support for the implementation of QMS for developing countries (Bahamas-Curacao). Services provided by casual employee.	47,000
Support from MSC Quality Management Office for QMS implementation in the Bahamas. This included providing strategic approaches and tactical application to QMS implementation and coaching of QMS manager in Bahamas.	10,000
Provision of printed materials (ISO 9001:2008 implementation guides and Memory Joggers) for QMS implementation in the Bahamas.	1,000
<b>Miscellaneous</b>	
To implement GFCS at regional and national scales (6,138,000 over 4 years) <i>**note: explained in further detail under opportunities</i>	1,534,500 (Notional Figure)
ODA portion of WMO assessed contribution (4%)	88,000
Contribution to the IPCC Trust Fund directed toward supporting participants from DC/EIT countries to travel to IPCC meetings	150,000
The InterAmerican Institute for Global Change Research (IAI), which is an organization that supports global change research and capacity building in the Americas. Our contribution supports the operations and staff of the IAI Directorate.	175,000
2013 Canada-China Internship Programme's Orientation Session.	5,000
WMO GAW (Global Atmosphere Watch) Urban Research Meteorology and Environment (GURME) and Megacities program.	20,000
Co-operative program for Operational Meteorological Education and Training (COMET): develop education and training materials and courses.	368,500

Contribution to the World Climate Research Programme (WCRP)	16,000
Contribution to a training workshop in Nov 2012 on climate model analysis, applications and tools and through advancing the development of a weather and climate vigilance approach for the health sector in Niger under the IRIACC-FACE (International Research Initiative on Adaptation to Climate Change-Faire Face aux Changements Ensemble) project.	250,000
Global Integrated Polar Prediction System Trust Fund (GIPPS)	50,000 (TBC)
<b>6. Challenges in Resource Mobilization for your Activities / Projects / Events</b>	<b>7. Opportunities for Increased Activity for your Activities / Projects / Events</b>
<ul style="list-style-type: none"> <li>• Environment Canada does not have a mandate to provide overseas development assistance.</li> <li>• Environment Canada's relationship with the Canadian International Development Agency (CIDA), the federal department that has the mandate to provide overseas development assistance needs to be strengthened.</li> <li>• Due to the need to focus on domestic priorities, experts may have budget and time constraints.</li> <li>• Overall, resource mobilization is constrained by the Government of Canada's focus on deficit reduction.</li> <li>• Amount of time it takes to complete the paperwork and seek approval of grants and contributions.</li> </ul>	<ul style="list-style-type: none"> <li>• Environment Canada is exploring ways to improve our relationship with CIDA. This includes briefing them on capacity development opportunities in the WMO, having the WMO brief them on the files, or having other international development agencies provide background on why they are engaged with the WMO.</li> </ul>
<b>8. Opportunities for more cooperation with other Members / organizations</b>	
<p>Canada continues to advance long term approaches to capacity development;</p> <ul style="list-style-type: none"> <li>• Canada has engaged in a dialogue with the African Center of Meteorological Application for Development (ACMAD), a WMO funded Institute to explore opportunities of collaboration in the areas of risk communications and early notifications systems where there are opportunities to share best practices. ACMAD carries out its mission through capacity-building for the 53 National Meteorological Services (NMSs) of Africa in: weather prediction, climate monitoring (extreme events), transfer of technology (telecommunications, computing and rural communication) and in research.</li> </ul> <p>A Memorandum of Understanding (MOU) with the ACMAD was signed in December 2012 by D. Grimes. The MOU has the objective to create collaboration opportunities to develop and strengthen Climate Services and other related subjects such as the improvement and implementation of early notification systems and warnings applied to hydro-climatic variability and extremes. A proposition for was offered to ACMAD in January 2013 and would allow us to explore mutual expertise and experience in early notifications systems and risk communications in order to build capacity; ex. Gestion Intégrée du Risque Climatique en Afrique (ViGIRisC-Afrique) and MSC Vigilance approach under development.</p>	

- Canada has continued to engage in discussions with the AGRHYMET Regional Centre (a specialized institute of the Permanent Interstate Committee for Drought Control in the Sahel (CILSS) composed of nine member States) to advance the development of climate services. This dialogue follows a long standing relationship where EC contributed to develop a framework to analyze the vulnerabilities of the populations exposed to a changing climate (2002-2010).
- Canada has contributed 6.138 million over three years to implement the GFCS in four targeted regions (Arctic, Caribbean, South Asia including the 3<sup>rd</sup> Pole and and South West Pacific) to increase capacity within social, economic and environmental systems to understand, anticipate, prepare for and cope with the negative impacts of natural hazards, to increase the resilience of the target regions to climate variability and change and to better enable decision makers to routinely use climate information and services for operations and planning purposes.

There will be opportunities for further cooperation in identifying how best to deploy these funds to advance the GFCS and improve climate services and frameworks in the four regions. In addition, outcomes of this initiative are expected to improve Global Action on Integrated Drought Management and support the World Weather Open Science Conference.

CHINA

## Summary of China's Contribution Through WMO VCP Programme and Bilateral Arrangements in 2012

Item	Descriptions of Projects		Total cost (USD)
1	Study Tours	41 <sup>st</sup> China Study Tour and WMO Workshop on Human Resources Development for NMHSs in Developing Countries(8 to 18 May 2012, for RA I English- Speaking countries)	83910
		42 <sup>nd</sup> China Study Tour and WMO Workshop on Human Resources Development for NMHSs in Developing Countries(7 to 17 August 2012,for RA I French- Speaking countries)	124422
2	Short-term Training* and long term fellowships	International Training Seminar on Methods for Short-term Climate Prediction (Nanjing, 26 March to 7 April 2012)	61111
		International Training Course on Agrometeorology (Nanjing, 10 to 30 May 2012)	170952
		International Training Course on Radar Meteorology (Nanjing, 11 to 22 June 2012)	52381
		Training Course on Climate Change and Climate Information Service for Developing Countries (Nanjing, 29 August to 18 September 2012)	126825
		International Training Course on Weather Forecast (Nanjing, 17 to 28 September 2012)	78571
		Training Course on Meteorological Hazards Early Warning (Nanjing, 12 October to 1 November 2012)	116508
		Training Seminar on Meteorological Satellite and its application in disaster prevention, mitigation and environmental area(Nanjing, 2 to 22 November 2012)	128889
		Training Seminar on Meteorological Risk Management And Emergency Meteorological Information Service(Nanjing, 3 to 23 December 2012)	122698
		Second International Training Course on McIDAS-V Software Application to Satellite Meteorology(Beijing, 11 to 21 June 2012)	34921
		International Training Course on Severe Weather Nowcast (Beijing, 3 to 14 September 2012)	43651
		International Training Course on Regional Drought Monitoring and Prediction and Climate Change Adaptation (Beijing, 17 to 27 September 2012)	48889
		International Training Course on Application of Meteorological Satellite Data and Products in Weather Forecast and Typhoon Warning (Beijing, 22 October to 2 November 2012)	40159
		Annual support to the WMO/China Long-Term Scholarship students	203772
		Pre-job Training for New Weather Forecasters for four African graduates(Beijing, August to November 2012)	20952
5	Donation Of Instruments and Equipment By Bilateral Arrangements	Donation of one Automatic Weather Station and one GPS/MET station to the Department of Meteorology and Hydrology of Lao People's Democratic Republic, including installation and on-site training	132841
		Donation of two Automatic Weather Stations to the State Hydrometeorological Administration of Lao People's Democratic Republic, including installation and on-site training	95159

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Item	Descriptions of Projects		Total cost (USD)
6	VCP(F)	VCP (F),GFCS Trust Fund, IPCC Trust Fund, WIS Trust Fund and THORPEX Trust Fund	145000
	Total		1831512

\*In 2012, a total number of 282 foreign experts participated in the short-term training courses organized by WMO Regional Training Centers in Nanjing and Beijing. There were 63 WMO/China joint scholarship students studying in China.



**Annex 2:****Expected Contributions of China  
to the WMO VCP in 2013****(a) Study Tour**

- 43<sup>rd</sup> China Study Tour will be organized for PRs or senior officials mainly from the NMHSs of Small Island Developing States and other developing countries in July/August 2013

**(b) Training and Fellowships**

1. International Training Seminar on Methods for Short-term Climate Prediction (RTC-Nanjing, 1 to 10 April 2013)
2. Training Course on Climate Change and Climate Information Service (RTC-Nanjing, 25 April to 16 May 2013)
3. Training Course on Radar Meteorology (RTC-Nanjing, 17 May to 6 June 2013)
4. Training Seminar on Management for Meteorological Officials from Developing Countries (RTC-Nanjing, 11 June to 1 July 2013)
5. International Training Course on Meteorological Instruments (RTC-Nanjing, 12 to 25 September 2013)
6. International Training Course on Tropical Cyclone Forecast (RTC-Nanjing, 14 to 25 October 2013)
7. International Training Course on Agrometeorology (RTC-Nanjing, 28 October to 8 November 2013)
8. International Training Course on Aeronautical Meteorology Service (Beijing Component of RTC-Nanjing, 9 to 19 April 2013)
9. International Training Course on Nowcasting (Beijing Component of RTC-Nanjing, 7 to 17 May 2013)
10. International Training Course on Satellite Meteorology (Beijing Component of RTC-Nanjing, September 2013)
11. International Training Course on Climate Prediction and Drought Monitoring and Early Warning (Beijing Component of RTC-Nanjing, October 2013)

A long-term Post Doctor scholarship will be offered to Pakistan Meteorological Department under bilateral agreement.

Provision of long-term scholarships will continue under the MoU between the Ministry of Education of China and WMO and MoU between RTC-Nanjing and WMO.

Support the graduated WMO scholarship students from RTC-Nanjing to participate

In the Pre-job Training Course for New Weather Forecasters organized by CMA Training Centre(Beijing Component of RTC-Nanjing) from August to November 2013, in consultation with their PRs and WMO Secretariat.

**(c) Donation of Instruments and Equipment**

1. Donation of an Integrated CMACast and MICAPS system to Iran Meteorological Organization.
2. Donation of a weather studio to Guinean Meteorological Department
3. Installation of MICAPS systems in the NMHSs of Togo and Côte d'Ivoire

**(d) Donation of fund**

1. CHF100,000 to GFCS Trust Fund
2. USD10,000 to IPCC Trust Fund
3. USD10,000 to WMO Trust Fund for Voluntary Cooperation Program
4. USD12,000 to WMO THORPEX Fund
5. USD5,000 to WMO WIS Trust Fund

FINLAND	
2. Overall national contribution in 2012 (estimate in USD)	3. Overall estimated national contribution in 2013 (in USD)
\$2,123,675 (EUR 1,610,315)	\$ 2,800,000
4. List of Activities / Projects / Events in 2012 related to contribution	5. Sources of Funding
Peru, Aug 2009 – Apr 2012, Capacity Development to support modernization of the NMHS of Peru, total 500k€	Ministry for Foreign Affairs of Finland
Nepal, Feb 2010 – Dec 2012, Capacity Development to support modernization of observation networks and management of NMHS, total 500k€	Ministry for Foreign Affairs of Finland
Kosovo, Oct 2010 – Oct 2012, Air Quality monitoring	EU
Central Asia, Aug 2011 – Dec 2013, Regional cooperation through capacity development at the WMO RTC Tashkent, total 500k€	Ministry for Foreign Affairs of Finland
Hindu Kush-Himalaya, May 2012 – Jun 2013, Technical Assistance in quality management for the regional flood information project HKH-HYCOS	ICIMOD
Caribbean SIDS, Jan 2011 – Dec 2012, Regional DRR planning and development & QMS with ACS, total 500k€	Ministry for Foreign Affairs of Finland
Vietnam, May 2010 – Dec 2012, Observation network, weather radar products and modernization of the NMHS, 500k€	Ministry for Foreign Affairs of Finland
FYROM (Macedonia), Aug 2010 – Aug 2012, Air Quality monitoring network and legislation, total 2M€	EU
Colombia, Feb 2012 – Dec 2013, Observation network, weather radar products and modernization of the NMHS, 250k€	Ministry for Foreign Affairs of Finland
Ecuador, Feb 2012 – Dec 2013, Observation network, weather radar products and modernization of the NMHS, 250k€	Ministry for Foreign Affairs of Finland
Pakistan, Jun 2011 – Dec 2012, Restoration of 10 AWSs according to VCP request, 200k€	Ministry for Foreign Affairs of Finland
Central Asia, May 2011 – May 2012, GCOM downscaling for decision making in the water sector in Central Asia, total 40k€	Asian Development Bank
Western Balkans, Jun 2012 – May 2014, Project Management for EU DRR project with WMO/UNISDR, 180k€	EU
Sudan, Jul 2011 – Dec 2013, Institutional capacity development in Khartoum and Juba, establishment of Juba	Ministry for Foreign Affairs of

meteorological office, total 500k€	Finland
<b>6. Challenges in Resource Mobilization for your Activities / Projects / Events</b>	<b>7. Opportunities for Increased Activity for your Activities / Projects / Events</b>
<p>Support for the development activities in the weather, climate and water services sector remains strong despite the ongoing reduction of embassies and resources at the MFA Finland. Focus in 2012 has shifted to regional multilateral project with regional organizations such as ACS, SPREP and CIIFEN. The role of FMI in these projects is shifting from direct project implementing agency towards a technical assistance role where the regional partner takes overall responsibility.</p> <p>Cooperation with the Red Cross and the Red Cross Climate Centre has increased dramatically in 2012 and is expected to grow especially in Africa and the Pacific. The Red Cross has taken a keen interest in hydrometeorological services as a way to improve climate resilience of the end users and their own operations. Cooperation with the World Bank has increased and is expected to grow in 2013.</p>	<p>New funding opportunities lie with the World Bank and other global/regional funding mechanisms. The current level of MFA funding for our sector is at the maximum possible in the near future and we do not expect to grow further until next elections are held.</p>
<b>8. Opportunities for more cooperation with other members / organisations</b>	
<p>New initiatives in the Pacific, Caribbean, Andean region, Western Balkans, Central Asia and the Mekong river call for even greater coordination with other members. Especially the Andean region projects will benefit from improved cooperation with Switzerland and Spain. Cooperation with France, UK, USA, Australia and New Zealand are crucial for the success of the project in the Pacific.</p> <p>Finland remains committed to the Junior Professional Officer (JPO) programme and will fund a new JPO at the GFDRR department at the World Bank where Ms Lisa Haga from FMI will be appointed to work with the NMHSs for two years starting in Spring 2013. A new JPO will also be funded for WMO to replace Ms Salla Himberg who has returned to Finland and is currently employed by the Finnish Red Cross.</p> <p>FMI is also looking more into scientific work in development cooperation in weather, climate and water. FMI currently has two development research projects in implementation with funding from the Academy of Finland, one in Peru and the other in Malawi &amp; Zambia. Both project aim to provide research insight into improving early warning information from climate and severe weather events. A third proposal for Kenya for seasonal climate models is currently in appraisal.</p>	

FRANCE	
2. Overall national contribution in 2012 (estimate in USD)	
3. Overall estimated national contribution in 2013 (in USD)	
2,086,000USD (1,600,000 €)	Unknown
4. List of Activities / Projects / Events in 2012 related to contribution	5. Sources of Funding
<p><b>Equipment upgrade at Madagascar:</b>  Upgrade of CLYSIS Climate Data Management System installed in Madagascar since 2004:</p> <ul style="list-style-type: none"> <li>- Data rescue from the old hardware server in Toulouse</li> <li>- Delivery of a new hardware server and installation of a new version of Cylsis by MFI in November 2012</li> <li>- 10-day training on the use of the new system, carried out in Madagascar by 2 experts from the Météo-France Department of Climatology in November 2012.</li> </ul> <p>Cost for Météo-France:45 k€</p>	Météo-France/MFI/WMO
<p><b>Equipment upgrade for the countries of the Indian Ocean Commission:</b>  Upgrade of the meteorological telecommunication and forecasting systems in Madagascar, Mauritius, Seychelles and Comoros. Hardware delivery in 2012.</p> <p>Cost (266 k€) declared in 2011 contribution</p>	French Ministry of Foreign Affairs
<p><b>Support to the ACMAD Centre</b></p> <ul style="list-style-type: none"> <li>- Support to the executive management including the funding of a Technical Assistant and a contribution to the operating Budget</li> <li>- installation of a SYNERGIE forecasting workstation</li> </ul> <p>Cost for Ministry of Foreign Affairs: 160 k€  Cost for Météo-France: 20 k€</p>	French Ministry of Foreign Affairs/ Météo-France
<p><b>Training of Haitian meteorological Technicians</b>  In 2012, 7 haitian forecasters worked on a roster basis with Météo-France forecasters in La Martinique in order to maintain their forecasting skills until the CNM infrastructure is rebuilt. The arrangements for the work of the 7 forecasters in la Martinique from January to June 2012 were funded by France during the first semester and by Canada during the second semester. Météo-France provided accommodation for the whole year.</p> <p>Cost: 21 k€</p>	French Ministry of Foreign Affairs
<p><b>SWIOCOF</b> (within ACClimate project)  1<sup>st</sup> South West Indian Ocean Climate Outlook forum held in La Réunion from 24 september to 2 october 2012. Main objectives:</p> <ul style="list-style-type: none"> <li>- capacity building of the climatologists in the region</li> <li>- dialogue between the users and providers of seasonal forecasts</li> </ul> <p>Cost for Météo-France: 60 k€  Cost for FFEM: 20k€</p>	Météo-France /FFEM/WMO

<p><b>ViGIRisc</b>  Support to the implementation of Early Warning Systems against climatic hazards in African countries:  - 5 studies have been submitted in summer 2012  - identification of demonstration projects based upon these studies  ViGIRisc will be extended for 1 year. 3 new projects related to: a) storm surge in coastal area in central Africa, b) food security in eastern Africa and c) Extreme or high impact events in western Africa should be launched.</p> <p>Cost: 650 000 € (FFEM) + 150 000 € (Ministry of Foreign Affairs)</p>	<p>FFEM/ French Ministry of Foreign Affairs</p>
<p><b>Training in Vanuatu, Solomon, Samoa on aeronautical meteorology:</b>  Audits and training events on quality management systems</p> <p>Cost for Météo-France: 9 k€</p>	<p>WMO/Météo-France</p>
<p><b>Experts Service and Fellowships through bilateral cooperation</b>  - several training seminars at the Ecole Nationale de la Meteorology (ex: satellite meteorology, climate services, ...) and the Centre Nationale de Recherche Météorologique (CNRM)  - training on nowcasting in Moroccan NMS  - training on commercial activities in Moroccan NMS</p> <p><b>Highlights on a training course: “Climatology, a step towards climate services”</b>  This 2-week training session aims to update the knowledge to carry out various operational tasks of a national climate office in a context of climate change. The topics covered in this course follow the guidelines of the WMO with a focus on climate data management (acquisition, control, generation).</p> <p>Cost for Météo-France/French Embassies: 465 k€</p>	<p>Météo-France/WMO/French Embassies</p>
<p><b>6. Challenges in Resource Mobilization for your Activities / Projects / Events</b></p>	<p><b>7. Opportunities for Increased Activity for your Activities / Projects / Events</b></p>
<p>General budgetary reductions will impact the level of investment of France in WMO VCP.</p> <p>The Green climate Fund is affected by global economic crisis.</p>	<p>SHERPA project in the Caribbean region</p>
<p><b>8. Opportunities for more cooperation with other members / organisations</b></p>	
<p>1/ The 1<sup>st</sup> SWIOCOF has reached all its objectives. It offers the following perspectives:  - implementation of models designed to respond to specific needs from the health, agriculture or DRR sectors. Contacts have been made with ARS, CIRAD, TEREOS, Red Cross , EDF)  -possible implantation of a project funded by the European Union and Région Réunion (~10M€) to support the COF, implement a portal for climate services within COI and strengthen the means of meteorological services in the region  - contribution to implement the GFCS in the region</p>	

2/ Implementation of Severe Weather Forecast Demonstration Projects in la Réunion, French West Indies and New Caledonia: NWS from neighbour countries can access, through dedicated websites, to products related to tropical cyclone, intense rainfall and strong wind forecast.

3/ COF in eastern Europe, Africa and Asia in 2013.

## GERMANY

<b>1. Country</b>	
Germany	
<b>2. Overall national contribution in 2012 (estimate in USD)</b>	
Total: 3,353,500 \$	
Equip & Services through WMO: 38,700 \$	
Equip & Services bilat: 2,799,960 \$	
Fellowships & Training: 514,840 \$	
<b>3. Overall estimated national contribution in 2013 (in USD)</b>	
[unknown]	
<b>4. List of Activities / Projects / Events in 2012 related to contribution</b>	
<b>5. Sources of Funding (*)</b>	
In order to support NMHSs of developing countries in the introduction of regional numerical weather prediction, the DWD carried out once again a two-week Regional <b>NWP</b> Training Workshop in July 2012. The DWD supported 23 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. [ongoing] 121,000 \$	DWD
Establishment of an additional <b>academic post</b> at DWD [2011-2013] for providing technical assistance to NMHSs (especially in developing countries) in the field of regional numerical weather prediction. 63,000 \$	DWD
For all seminars held at the DWD Meteorological Training and Conference Centre or at the DWD headquarters, <b>accommodation expenses</b> are reduced for participants from developing countries and countries with economies in transition. [ongoing]. 40,000 \$	DWD
DWD continued to offer <b>training programmes/fellowships at DWD</b> offices or abroad for staff members of NMHSs of developing countries. [ongoing].	DWD
Provision of <b>Hg barometers</b> to Latin American and Caribbean NMHSs	DWD (with WMO)
<b>Project „Data and Information Management for Adaptation to Climate Change” (DATACLIM) [2011 – 2013]</b> Objective: To significantly improve the climate services of the Indonesian NMS BMKG in the field of adaptation to climate change through the introduction of a web-based information system: <ul style="list-style-type: none"> <li>• Recovery and digitalization of historical climate data and establishing of a metadata system for the management of meteorological stations</li> <li>• Establishment of IT-based data workflows for historical and real time data input including a helpdesk</li> <li>• Establishment of a web-based climate information system for adaptation planning</li> <li>• Capacity development for climate analysis. 982,000 \$</li> </ul>	DWD/GIZ (BMU)
<b>GIZ project "Adaptation of agriculture and agricultural water use to climate change in the Andes":</b> The project was part of the International Leadership Training (ILT) programme of the GIZ. From May to December, eleven scientists from Bolivia, Colombia, Ecuador and Peru received theoretical and practical training at the DWD particularly in the area of Agrometeorology [2012]	DWD / GIZ (BMZ)



<p>Germany continued to support the <b>WMO RA VI Regional Dobson Calibration Centre</b> at Hohenpeißenberg. Germany contributed to the continuous quality assurance program of the WMO by supporting the <b>GAWTEC</b> (Global Atmosphere Watch Training and Education Centre), [ongoing]. Two courses were financed during 2012 to provide technical assistance and training to station personnel and central facilities. (Most trainees came from countries in the WMO regions Africa, Asia and South America.) 146,000 \$</p>	<p>DWD BMU / DWD / StMUG</p>
<p><b>Project SASSCAL:</b> The DWD was involved in the preparation of the German Initiative SASSCAL (“Southern African Science Service Centre for Climate Change and Adaptive Land Management”). SASSCAL is a joint initiative of Angola, Botswana, Namibia, South Africa, Zambia and Germany in response to the challenges of global change. The aim of SASSCAL is to conduct problem-oriented research in the area of adaptation to climate change and sustainable land management and provide evidence-based advice for all decision-makers and stakeholders to improve the livelihoods of people in the region and to contribute to the creation of an African knowledge-based society.[2012 - 2016]</p>	<p>DWD / BMBF</p>
<p><b>Trilateral Cooperation Programme Brazil-Mozambique-Germany [2011-2012]</b> Implementation of an automated early warning system for disaster risk reduction in the Búzi and Save River Basins. Important partners of the project: the German Meteorological Service (DWD), the Mozambican National Institute for Meteorology (INAM) and the Brazilian Institute for Meteorology (INMET) Support to INAM for improvement of hydro-meteorological services (regional weather forecasts for early warning and agriculture, wave and storm forecasts for coastal regions); In 18 workshops, technical staff members from INAM and other institutes were trained in the collection, processing and use of new data sources as well as in the installation and maintenance of the equipment. Installation of 5 additional climate stations in Central Mozambique with the assistance of Cologne University for Applied Sciences, reaching a total of 13 stations at the end of 2012 (8 stations had been installed in 2011). Simultaneous setting up of data server and telemetric systems for the climate stations (at present, data are measured fully automatically every 10 min.). Calibration of the systems on the advice of Cologne University for Applied Sciences. First models were developed on the basis of automatic data collection in order to compare the results of new data sources with manually collected data. 735,000 \$ Germany also supported the next phase of the establishment of a simple flood warning system for the rivers Rio Save and Búzi in Mozambique; in 2012, the system was handed over to local government authorities. (National ownership.) Construction of a simple flood warning system for the city of Beira, Mozambique: "Early Warning in Urban Areas". 258,000 \$</p>	<p>GIZ (BMZ) / Cologne Uni. of Applied Sciences / DWD Munich Re foundation</p>
<p><b>KfW project Ecuador:</b> The Program includes a component for the establishment of hydrological and meteorological stations in the province. In the field of data recording and periodical evaluation the Provincial Government cooperates with the national meteorological institute (INAHMI). 323,000 \$</p>	<p>KfW</p>
<p><b>GIZ project Uganda:</b> Collaboration with the Department of Meteorology - Ministry of Water and Environment (UNMA) in the field of adaptation to climate change and improvement of monitoring systems. 129,000 \$</p>	<p>GIZ / BMZ</p>
<p><b>CAWa Project [2008-2013]:</b> “Research Network Water in Central Asia (CAWa)”. Two training courses on “Use of Remote Sensing Techniques in Hydrometeorology ” and “Use of GIS Techniques in Natural Resources Management” for specialists of Central Asian NMHSs and Afghan institutions. Three additional automated hydrometeorological monitoring stations have</p>	

<p>been installed in Tajikistan (Dupuli and Ayvaj) and Uzbekistan (Maidanak) as part of the regional hydrometeorological monitoring network. At the end of 2012, a total of 9 stations were in operation as part of the CAWa monitoring network and provide standard meteorological data.</p>	<p>GFZ (AA)</p> <p>213,000 \$</p>
<p><b>6. Challenges in Resource Mobilization for your Activities / Projects / Events</b></p>	<p><b>7. Opportunities for Increased Activity for your Activities / Projects / Events</b></p>
<ul style="list-style-type: none"> <li>- Closer collaboration of DWD with GIZ as a development cooperation organization of the Federal Republic of Germany; use of mutual benefits, common projects in several countries.</li> <li>- Implementation of activities and projects through several organisations; communication between national donor organisations in need of improvement.</li> <li>- Lack of human resources in donor NMHS makes technical cooperation activities such as expert assignments in developing countries more and more difficult.</li> <li>- Lack of awareness by some national donors of the importance of strengthening the capacity of NMHSs in developing countries to provide the necessary weather and climate services in their country. Lack of understanding of the necessity of an efficient meteorological infrastructure for successful implementation of service provision projects.</li> <li>- Project proposals must receive sufficient support from the recipient side (NMHS, government).</li> </ul>	<p>In general, there are opportunities for increased activity through making use of the increased investments in climate change-related projects by combining them with cooperation projects for the NMHS of developing countries.</p> <p>Concretely, closer collaboration of DWD with GIZ as a development cooperation organization of the Federal Republic of Germany; use of mutual benefits, common projects in several countries.</p> <p>→ <i>DWD and GIZ intend to continue their collaboration with BMKG Indonesia - Establishment of a climate information system.</i></p> <p>→ <i>DWD and GIZ plan to support the Modernization Project (MoMet) of the NMS Mexico SMN with their expertise and training (in NWP and use of climate information for adaptation/climate services).</i></p> <p><b>Activities in 2013 will mostly cover the same areas and involve the same amounts as in 2012, <u>increased activity</u> is possible in the following areas:</b></p> <ul style="list-style-type: none"> <li>- SASSCAL: During the first tranche of funding of BMBF in 2013, DWD will support the NMHSs in their climate data management activities and climate data rescue. Additional capacity development activities have been proposed (climate monitoring products and capacity building in the application of satellite products).</li> <li>- Zambia: [2013 – 2017] Climate Monitoring and Early Warning System for Weather-related Disasters: German Development System Cooperation has been requested by the Government of Zambia to support the establishment of an Integrated Water Resources Management Information System (IWRMIS). Funds will come from the German Energy and Climate fund (BMU and BMZ). Measures: modernization and extension of rain gauging network to around 500 stations, data transmission facilities at meteorological stations, training, digitalization and quality control of historical met. data (ZMD is involved).</li> </ul>
<p><b>8. Opportunities for more cooperation with other members / organizations</b></p>	

- With other members: identification of similar activities in one area by exchange of information and analysis of the Activity reports (e.g. evaluation of the Activity report templates by supported country). Establishment of contacts with stakeholders in order to take advantage of synergies.
- With other organizations: regular national round table discussions with several donor institutions to identify projects and activities and discuss possible cooperation.

## HONG KONG, CHINA

<b>1. Country</b>	
Hong Kong, China	
<b>2. Overall national contribution in 2012 (estimate in USD)</b>	
30,800.00 USD	
<b>3. Overall estimated national contribution in 2013 (in USD)</b>	
30,000.00 USD	
<b>4. List of Activities / Projects / Events in 2012 related to contribution</b>	
(I) Training Workshop on the Latest Developments on the Use and Interpretation of Numerical Weather Prediction (NWP) Models, 3-7 December 2012, as part of the RAI pilot project to develop support for NMHSs in numerical weather prediction.	<b>5. Sources of Funding</b> Government of Hong Kong Special Administrative Region (HKSARG)
(II) Assisted in preparing guidelines on participation of NMHSs in the World Weather Information Service (WWIS).	
(III) Proposed three pilot projects for RAI to : (a) Develop Support for NMHSs in the Collection and Application of Aircraft Meteorological Data Relay (AMDAR) Data; (b) Sustain and Enhance the Capacity of NMHSs in the Provision of Official Weather Forecasts for the Medium Range; and (c) Enhance the Seamless Provision of Regional Severe Weather Warnings and Advisories.	
<b>6. Challenges in Resource Mobilization for your Activities / Projects / Events</b>	
<b>7. Opportunities for Increased Activity for your Activities / Projects / Events</b>	

Hong Kong, China will continue its contribution to VCP. We welcome collaboration with the Resource Mobilization Office of WMO to seek additional funding for assisting members in participating in the pilot projects, if required, including the VCP courses on the Design and Operation of Meteorological Warning Systems, Automated Weather Station Network and Marine Services in the next few years.

Hong Kong, China will continue to take forward pilot projects and relevant training/workshops to assist developing countries.

**8. Opportunities for more cooperation with other members / organisations**

Hong Kong, China welcomes greater participation of other members in the pilot projects, WWIS and Severe Weather Information Centre (SWIC) to develop the capacity of members in need in the provision of public weather services.

Annex I

2012

No	Events	Date	Place	Form of support
1.	International Training Course on Satellite and Radar Data Interpretation (ASEAN), cooperation between BMKG and Eumetsat	21-25 May 2012	Regional Training Center, Citeko	- RAV Participants Travel Cost (Timor Leste and Phillipine) : ~ US\$2400 - Other costs for holding the training: US\$ 37640
2.	Seventh Tropical Cyclone RSMC/TCWC Technical Coordination Meeting	12-16 November 2012	Regional Training Center, Citeko	Total cost to hold the meeting: US\$ 30905

2013

No	Events	Date	Place	Form of support
1.	WMO Regional Seminar Training for National Trainers of RA II and RA V	26 February 2012 – 7 March 2013	Regional Training Center, Citeko	- Travel Cost for participants from RA-V (Fiji, Solomon, Cook Island, and Philippines): US\$ 2640 - Other costs to support the holding of the meeting: US\$ 61811
2.	Workshop International Expert on Volcanic Ash Modeling	11-15 March 2013	Regional Training Center, Citeko	Total cost to hold the meeting: US\$ 103018

## JAPAN

### 1. Overall Japan's Contribution

In 2012, through the Japan Trust Fund for Global Frameworks established in 2010 as Japan's financial contribution to a broad range of WMO programmes and projects, Japan made a cash contribution of US\$ 280,832 (after deducting 10% as WMO support cost), including US\$ 50,000 to the VCP (F). Also, Japan provided training courses/workshops and fellowships equivalent to US\$ 284,440 and several types of in-kind support by a Japanese manufacturer during the year. In addition, Japan's bilateral ODA projects for National Meteorological and Hydrological Services (NMHSs) of developing countries were implemented, mainly in Southeast Asia and Pacific islands.

### 2. Training Issues

#### 2.1 Organization of Training Courses/Workshops

- In March 2012, the Japan Meteorological Agency (JMA) hosted *the 4th GRUAN Implementation and Coordination Meeting (ICM-4)*, and *the third Meeting of the Regional Steering Group of WMO SDS-WAS Region for Asia*.
- Also in March 2012, JMA hosted a training course *Seminar on Meteorological Services for Disaster-prevention and Crisis-management Operations after the Great East Japan Earthquake on Mach 2011* with funding support from the Japan International Cooperation Agency (JICA). The training course aimed at sharing lessons learnt from JMA's emergency response to the Great East Japan Earthquake in 2011, highlighting the importance of multi-hazard risk management. Senior staff members from NMHSs of 11 countries (Bangladesh; Cambodia; Fiji; Indonesia; Lao P.D.R.; Malaysia; Myanmar; Sri Lanka; Thailand; the Philippines and Vietnam) participated in this course.
- In July 2012, on-the-job training for typhoon forecasters, funded by the Typhoon Committee (TC), was offered to two forecasters from the Philippines and Vietnam at RSMC Tokyo - Typhoon Centre.
- From September to December 2012, JMA conducted a three-month Group Training Course *Reinforcement of Meteorological Services* with funding support from JICA. The course was attended by eight participants from seven countries (Fiji, Lao P.D.R.; Myanmar; Republic of Ghana; Republic of Mauritius; Republic of Zimbabwe; Sri Lanka and Tonga). This course aimed at reinforcement of meteorological services of the participating NMHSs by applying meteorological data/products such as numerical weather prediction, satellite images, and climate information to their services.
- In October 2012, *JMA Workshop on WMO Information System (WIS) Implementation* was organized by the Global Information System Centre (GISC) Tokyo operated by JMA at JMA Headquarters in Tokyo for effective implementation of WIS through capacity development of NMHSs of developing countries. It was attended by 16 participants from eight NMHSs in Bangladesh, Cambodia, Laos, Myanmar, the Philippines, Sri Lanka, Thailand and Viet Nam.
- In November 2012, *JMA Tokyo Climate Centre (TCC) Training Seminar on Climate Analysis Information* was held by Tokyo Climate Centre to improve skills in climate system monitoring and to prepare climate analysis information on extreme climate events. It was attended by 13 participants from 13 Members (Bangladesh; Cambodia; Hong Kong, China; Indonesia; Lao P.D.R.; Malaysia; Mongolia; Myanmar; Pakistan; the Philippines; Sri Lanka; Thailand and Viet Nam).

- Also in November 2012, JMA held a training course for two experts from Thailand Meteorological Department as part of the activities of the project, Development of Regional Radar Network endorsed during the 44th TC session in November 2011.
- In November 2012, Regional Instrument Centre (RIC) Tsukuba operated by JMA conducted a comparison study and calibration of BMKG standard equipments.

## **2.2 Fellowship**

In 2012, Kyoto University offered WMO short-term fellowship opportunities to two staff members from the Department of Meteorology and Hydrology, Myanmar, and the Tanzania Meteorological Agency, as part of the Kyoto University's Global Centres of Excellence (GCOE) programme on *Sustainability/Survivability Science for a Resilient Society Adaptable to Extreme Weather Conditions*. It provided the two participating fellows with coursework trainings as well as intensive research opportunities under the supervision of the GCOE faculty of Kyoto University from July 2012 to January 2013.

## **2.3 Expert Missions**

In 2012, JMA organized the following expert missions to NMHSs of developing countries for technology transfer and/or capacity development.

- Expert mission to Vietnam to give lectures on Interactive Tool for Analysis of the Climate System (ITACS) for climate services in March 2012, and NWP techniques and typhoon analysis using a software SATAID in June 2012.
- Expert mission to Lao P.D.R. to give lectures on typhoon analysis using SATAID and ITACS for climate services in March 2012.

## **3. Japan's Official Development Assistance (ODA)**

### **3.1 Grant Aid Projects**

- Grant Aid Project (total: US\$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.
- Grant Aid Project (total: US\$25 million) was launched in 2011 in Vietnam for the enhancement of flood forecasting skills and thus strengthening disaster prevention measures implemented by the Government of Vietnam. The project provides Vietnam with two Doppler radars and other meteorological equipments in the northern part of the country.

### **3.2 Technical Cooperation Projects**

- Technical Cooperation Project in Bangladesh on development of human capacity on operation of weather analysis and forecasting was launched in 2009 as follow-up activities to the Grant Aid Projects for the improvement of the meteorological radar system. In 2012, as part of this project, Bangladesh Meteorological Department (BMD) experts visited JMA including RIC Tsukuba and the Meteorological Research Institute.
- Technical Cooperation Project titled *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.
- Technical Cooperation Project was implemented at the Department of Meteorology and Hydrology in Myanmar from 2009 to 2012 for developing early warning systems for Cyclone Nargis affected areas. Under this project, two technical missions by JMA experts were



conducted in January and March 2011, to enhance its capacity for disseminating cyclone advisories and warnings as well as storm surge and wave forecasting.

- Technical Cooperation Project for Meteorology Training for Fiji and neighboring countries was launched in 2009. In August 2012, a training course on meteorological instrument maintenance and calibration was conducted in Fiji by JICA and a JMA expert from RIC Tsukuba.

#### **4. Contributions of Private Sector**

In January 2012, the WMO VCP expert mission, consisting of experts from Oriental Electronics, Inc. Japan, NHK (Japan Broadcasting Corporation) and JMA, to Bangladesh was carried out to assess the current status of meteorological services in Bangladesh and to make recommendations for BMD to strengthen its capacity for accessing data and products via GTS, weather analysis including use of tool software such as SATAID, and TV weather program production and presentation.

#### **5. Plans for 2013**

In 2013, in addition to the direct financial contribution to WMO activities through the Japan Trust Fund for Global Frameworks, JMA will make contribution to capacity developments of developing countries' NMHSs, through organizing trainings/workshops and expert missions including JMA/WMO training workshop on calibration and maintenance of meteorological instruments in RA II held in February 2013, as well as the Group Training Course *Reinforcement of Meteorological Services* in cooperation with JICA to be held from September to December 2013. Several expert missions to investigate feasibility and/or to develop Japan's ODA (Grant Aid or Technical Cooperation) Projects for developing countries' NMHSs are being planned or planned to be implemented not only in Southeast/South Asia and Pacific islands, but also in Africa. The second JICA-JMA-WMO meeting (the first one was held in March 2012) was held to share relevant information and exchange views at the working level for the enhancement of synergies between Japan's ODA projects and WMO activities.

<b>1. Country</b>			
Japan			
<b>2. Overall national contribution in 2012 (estimate in US\$)</b>		<b>3. Overall estimated national contribution in 2012 (in US\$)</b>	
VCP(F)	<b>US\$ 50,000</b>	Unknown	
VCP(ES)	<b>US\$ 524,472</b>		
VCP(ES)	Bilateral arrangement <b>unknown</b>		
<b>4. List of Activities / Projects / Events in 2012 related to contribution</b>		<b>5. Sources of Funding</b>	
Voluntary Cooperation Program Fund <b>CHF 50,000 (US\$ 50,000)</b>		Japan Trust Fund for Global Frameworks	
RA II Activities(e.g. Technical Conference) <b>CHF 30,000 (US\$ 30,000)</b>		Japan Trust Fund for Global Frameworks	
The third session of South Asia Climate Outlook Forum (SASCOF-3) <b>CHF 10,000 (US\$ 10,000)</b>		Japan Trust Fund for Global Frameworks	
RSMC meeting and training activities for SWFDP in South-east Asia		Japan Trust Fund for Global Frameworks	

<b>CHF 20,000 (US\$ 20,000)</b>	
WMO ESCAP Typhoon Committee Trust Fund <b>US\$ 12,000</b>	Japan Trust Fund for Global Frameworks
GCOS Cooperation Mechanism <b>CHF 150,000 (US\$ 150,000)</b>	Japan Trust Fund for Global Frameworks
Emergency Assistance Fund <b>CHF 8,832 (US\$ 8,832)</b>	Japan Trust Fund for Global Frameworks
Group Training Course: Reinforcement of Meteorological Services (Fiji, Lao P.D.R.; Myanmar; Republic of Ghana; Republic of Mauritius; Republic of Zimbabwe; Sri Lanka and Tonga), Tokyo, Japan, September to December 2012 <b>JPY 10,554,000 (US\$ 105,540)</b>	JICA
A training course on lessons learnt from JMA's emergency response to the Great East Japan Earthquake in 2011 (Bangladesh; Cambodia; Fiji; Indonesia; Lao P.D.R.; Malaysia; Myanmar; Sri Lanka; Thailand; the Philippines and Vietnam), Sendai and Tokyo, Japan, March 2012 <b>JPY 3,848,000 (US\$ 38,480)</b>	JICA
On-the-job training for typhoon forecasters, 2 weeks, (Vietnam and the Philippines), Tokyo, Japan, July 2012	World Meteorological Organization
JMA Tokyo Climate Centre (TCC) Training Seminar on Climate Analysis Information (Bangladesh; Cambodia; Hong Kong, China; Indonesia; Lao P.D.R. ; Malaysia; Mongolia; Myanmar; Pakistan; the Philippines; Sri Lanka; Thailand and Viet Nam), Tokyo, Japan, November 2012 <b>JPY 3,770,000 (US\$ 37,700)</b>	JMA
JMA Workshop on WMO Information System Implementation (Bangladesh; Cambodia; Laos; Myanmar; the Philippines; Sri Lanka; Thailand and Viet Nam), Tokyo, Japan, October 2012 <b>JPY 4,500,000 (US\$ 45,000)</b>	JMA
4th GRUAN Implementation and Coordination Meeting (ICM-4), Tokyo, Japan, March 2012 <b>JPY 1,250,000 (US\$ 12,500)</b>	JMA
Third Meeting of the Regional Steering Group, WMO SDS-WAS Region for Asia, Tokyo, Japan, March 2012 <b>JPY 1,650,000 (US\$ 16,500)</b>	JMA
A training course on radar composite map for Thailand Meteorological Department under ESCAP/WMO Typhoon Committee, Tokyo, Japan, November 2012	ESCAP/WMO Typhoon Committee
WMO/Kyoto University short-term fellowship (Myanmar and Tanzania) <b>JPY 2,872,000 (US\$ 28,720)</b>	Kyoto University
Grant Aid Project for improvement of the meteorological radar system, 2009-2014, the Philippines	JICA
Grant Aid Project for improving the weather forecasting system and meteorological warning facilities, 2010-, Vietnam	JICA
Technical Cooperation Project on development of human capacity on operation of weather analysis and forecasting, 2009-2013, Bangladesh	JICA
Technical Cooperation Project, <i>Disaster Management Capacity Enhancement Project Adaptable to Climate Change</i> , 2010-2013, Sri Lanka	JICA
Technical Cooperation Project for Meteorology training for Fiji and neighboring countries, 2010-2012, Fiji (training workshop on meteorological instrument and calibration was conducted in	JICA

2012)	
Technical Cooperation Project for Developing Early Warning Systems for Cyclone Nargis affected areas, 2009-2012, Myanmar	JICA
VCP Expert Mission to Bangladesh (Oriental Electronics, Inc. Japan, NHK and JMA) <b>JPY 920,000 (US\$ 9,200)</b>	WMO and Japan
<b>6. Challenges in Resource Mobilization for your Activities / Projects / Events</b>	<b>7. Opportunities for Increased Activity for your Activities / Projects / Events</b>
<ul style="list-style-type: none"> <li>- Insufficient available experts to dispatch developing countries' NMHSs for implementation of ODA technical cooperation projects</li> <li>- Need more regular communication between JMA and the donor agency to develop effective and efficient ODA projects</li> <li>- Need mechanisms to share information on developing countries' NMHSs between JMA and the donor agency</li> <li>- Need more communication with recipient NMHSs to identify their needs</li> </ul>	<p>JMA will</p> <ul style="list-style-type: none"> <li>- organize trainings/workshops regularly, and</li> <li>- promote informal discussion with the donor agency to enhance synergies between JMA's activities, ODA projects and WMO activities.</li> </ul>
<b>8. Opportunities for more cooperation with other members / organizations</b>	
<p>IPM could be a good opportunity to explore possible cooperation with other Members/organizations if more funding agencies can participate in IPM to share their activities with WMO and developed countries' NMHSs.</p>	

(1 US\$ = 1 CHF = 100 JPY)

## KOREA

<b>1. Country</b>	
KOREA	
<b>2. Overall national contribution in 2012 (estimate in USD)</b>	
1,685,094.00 USD	
<b>3. Overall estimated national contribution in 2013 (in USD)</b>	
5,120,000.00 USD	
<b>4. List of Activities / Projects / Events in 2012 related to contribution</b>	
<b>5. Sources of Funding</b>	
Establishment of Early Warning and Response System for Disaster Mitigation, 2011-2012, 3M USD	KOICA, ROK
Real-time Receiving and Analysis System of COMS Satellite, 2011-2012, 2M USD	KOICA, ROK
Feasibility study in 6 projects, 2012, 210,000 USD	KMA, ROK
Establishment of COMS data receiving system through WMO, 2012, 335,000 USD	KMA, ROK
International Training Course on Weather Radar Operation and Data Utilization, 2012, 90,000 USD	KMA, ROK
Dispatch experienced retirees to NHMSs, 2012, 77,000 USD	WFK, ROK
Information and Communication Technologies for Meteorological Services, 2012, 100,000 USD	KOICA, ROK
Improvement of Meteorological Disaster Responsiveness for African Countries, 2012, 100,000 USD	KOICA, ROK
Advanced Analysis of COMS Data, 2012, 100,000 USD	KOICA, ROK
<b>6. Challenges in Resource Mobilization for your Activities / Projects / Events</b>	
<b>7. Opportunities for Increased Activity for your Activities / Projects / Events</b>	
Difficulty of secure the budget from KOICA, Government of Korea.  Collaboration of development countries	Cooperation with a meteorology business cop.
<b>8. Opportunities for more cooperation with other members / organisations</b>	
WMO, WB etc.	

## NEW ZEALAND

<b>1. Country</b>	
New Zealand	
<b>2. Overall national contribution in 2012 (estimate in USD)</b>	
<b>333,000 USD</b>	<b>3. Overall estimated national contribution in 2013 (in USD)</b>
In this report, the identification of activities that constitute a New Zealand national VCP contribution are based on criteria that differ from those used in previous years. The criteria are somewhat more restrictive, resulting in a total national contribution that is significantly lower than that reported for 2011. This is simply a change in reporting methodology, and does <u>not</u> reflect any change in level of activity.	<b>333,000 USD</b>
<b>4. List of Activities / Projects / Events in 2012 related to contribution</b>	
<b>5. Sources of Funding</b>	
<b>Observing Programme Support for Pacific Island Countries &amp; Territories</b> Provision of programme management, technical consultancy and engineering support, on a multi-lateral basis in conjunction with the US NOAA PI-GCOS support programme and the UK Met Office Pacific Fund programme. Includes technical support and advice via remote and in-country visits to Cook Islands, Kiribati, Niue, Tonga, Samoa, Tuvalu, Tokelau, Papua New Guinea, and the Solomon Islands US\$85k	MetService
<b>Severe Weather Forecasting and Disaster Risk Reduction Demonstration Project (SWFDDP)</b> – regional coordination by RSMC Wellington, including maintaining the MetConnect Pacific website. US\$34k	MetService
<b>SWFDDP in-country training</b> – delivered to nine participating PICTs (Samoa, Fiji, Kiribati, Cook Islands, Tuvalu, Tonga, Solomon Islands, Vanuatu & Niue). Included capacity building of NMHSs and multi-agency Disaster Risk Reduction workshops. US\$53k from MetService. <i>[NB: MfE contributed US\$77k, as reported in NZ VCP 2012 report; not included in the 'Overall national contribution' for this report.]</i>	NZ Ministry for the Environment (MfE) & MetService
<b>10<sup>th</sup> ICSHMO</b> – support for the participation of two scientists from Marshall Islands and PNG at the 10th International Conference on Southern Hemisphere Meteorology and Oceanography, April 2012, New Caledonia. US\$17k.	NZ MfE
<b>APN contributing to CAPaBLE</b> - Assistance to the Asia-Pacific Network for Global Change Research (APN) contributing to the Capacity Development and Enhancement for Sustainable Development in Developing Countries Programme (CAPaBLE). CAPaBLE builds and 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. US\$25k	NZ MfE

<p><b>UNFCCC workshop support</b> - Providing funding to support a UNFCCC workshop for small island developing states on approaches to address loss and damage associated with the adverse affects of climate change, including impacts related to extreme weather events and slow onset events. US\$43k</p>	<p>NZ MfE</p>
<p><b>IPCC/SREX</b> - Presentation and discussion of Pacific-relevant findings from the IPCC Special Report on Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation (SREX), at meetings in the Pacific. This covered joint support (with Australia) for a side-event at the SPREP Governing Council Meeting in Noumea in September 2012, and a session at the Pacific Platform for Disaster Risk Management meeting (also in Noumea in September 2012).US\$25k</p>	<p>NZ MfE</p>
<p>Technical support to Tokelau to draft the Tokelau Climate Change Strategy US\$4k</p>	<p>NIWA</p>
<p><b>Cook Islands cyclone model</b> - Development of a new statistical cyclone model, coupled to a storm surge and wave model and applied to the Cook Islands. This has furthered ability to model extreme coastal events and derived improved probabilistic information to support coastal infrastructure design and coastal disaster risk reduction activities US\$26k.</p>	<p>NIWA</p>
<p>Underpinning ongoing ad hoc advice and collegial support to Pacific Island technical staff involved in meteorological and hydrological monitoring in Samoa, Fiji, Cook Island, Solomon Island, PNG and Micronesia. US\$21k</p>	<p>NIWA</p>
<p><b>6. Challenges in Resource Mobilization for your Activities / Projects / Events</b></p>	<p><b>7. Opportunities for Increased Activity for your Activities / Projects / Events</b></p>
<p>Budget restrictions within New Zealand government agencies will continue to put pressure on funding for voluntary support programmes.</p>	<p>Cooperation with the World Bank may result in new opportunities within the Southwest Pacific.</p>
<p><b>8. Opportunities for more cooperation with other members / organisations</b></p>	
<p>New Zealand and its partners expect to maintain the current level of funding and related support for VCP activities in 2013. MetService will conduct a review of its VCP engagement in 2013, with the aim of identifying ways of improving our contribution within ongoing resource constraints.</p>	

## SPAIN

<b>1. Country</b>	
SPAIN	
<b>2. Overall national contribution in 2012 (estimate in USD)</b>	
(300,000 USD)	
<b>3. Overall estimated national contribution in 2013 (in USD)</b>	
(250,000 USD)	
<b>4. List of Activities / Projects / Events in 2012 related to contribution</b>	
<p><b>AFRIMET</b> (cooperation programme with NW African NMHSs)</p> <p>Capacity development in applied meteorology projects:</p> <ul style="list-style-type: none"> <li>– MARINEMET Project: <ul style="list-style-type: none"> <li>○ Visit to RMSC-Dakar staff to the Canary Is. (Spain)</li> <li>○ Acquisition and delivery of computers, software and manuals to the participant countries</li> <li>○ Installation and starting up of the tide meters and AWS to the countries (7/10 are currently working and transmitting)</li> <li>○ Training on operation and maintenance of equipment</li> <li>○ Securing of the transmission links Spain-Africa</li> <li>○ Securing of transmission of the boundary conditions for deep-water modellisation</li> <li>○ Modellisation of deep waters around RMSC-Dakar</li> <li>○ Application of modellisation to Senegal, Mauritania and Cape Verde seaports</li> <li>○ Training to the users of the modellisation applications and ocean outputs from the participant countries' focal points. Las Palmas (Canary Is., Spain)</li> <li>○ Routine distribution of remote sensing products to the participant countries</li> <li>○ Support to the tasks of the consultants (from Spanish Port Authority and the University of Las Palmas)</li> <li>○ Delivery of products in the webpage <a href="http://www.afrimet.org/marinemet/">http://www.afrimet.org/marinemet/</a> and its maintenance</li> </ul> </li> <li>– METAGRI Project: <ul style="list-style-type: none"> <li>○ 159 Roving seminars in 16 African countries</li> <li>○ Consolidation of the operational METAGRI continuation project (4)</li> </ul> </li> <li>– HEALTHMET Project: <ul style="list-style-type: none"> <li>○ Training on SDS-WAS products through a fellowship to attend specific workshop co-sponsored by EUMETSAT and WMO. Support to 1 Gambian participant.</li> <li>○ Consolidation of the Climate&amp;Health WGs in Mauritania and Burkina Faso (5)</li> </ul> </li> </ul> <p>Capacity development in management and other tasks:</p> <ul style="list-style-type: none"> <li>– Conference of NW African NMHS Directors in Madrid (Spain), Oct 12.</li> <li>– Support to the attendance of the NW African NMHS Directors to the Extraordinary Session of WMO Congress. Geneva (Switzerland), Oct 12.</li> <li>– Support to the Meteo-Media workshop on the relation of NMHS and media in Dakar (Senegal), Dec 12 (4)</li> <li>– Offer to particular NMHSs the possibility of using their own space in the AFRIMET</li> </ul>	

webpage ([www.afrimet.org](http://www.afrimet.org)) to enhance their visibility

### **CIMHET** (cooperation programme with Ibero American NMHSs)

#### – Meetings

- 10<sup>th</sup> CIMHET General Meeting. Madrid (Spain), Oct 12
- Support to the attendance of Ibero-American PRs to the Extraordinary Session of WMO Congress. Geneva (Switzerland), Oct 12.
- Support to PROHIMET Workshop on “Challenges of Hydrometeorology before climate variations and extreme events”. Santo Domingo (Dominican Rep.), May 12
- Support to climate fora in Central and South America (COF-like activities)
- Support to the attendance of the PRs of Colombia, Bolivia, Ecuador and Paraguay to the GCOS workshop for South America. Guayaquil (Ecuador), Mar 12
- Support to the meeting on the implementation of the Climate Services Centre for Meso-America and the Caribbean. Mexico City (Mexico), Apr 12
- Support to the regional workshop for the implementation of WIS/WIGOS. San Jose (Costa Rica), Nov 12

#### – Training activities

- Course on Application of Satellite Meteorology to tropical-latitudes. Boca Chica (Dominican Rep.), Oct 12 (2)
- Course on Application of ECMWF Global Model to mid-latitudes meteorology. Montevideo (Uruguay), Nov 12 (3)
- Workshop on handling, homogenisation and regionalisation of climate data. Antigua (Guatemala), Oct 12 (1)
- Advanced course on management and supervision of automatic hydro-meteorological stations. Bogota (Colombia), Sep 12

#### – Other activities / Support to horizontal cooperation

- Implementation of the MCH database management system in Paraguay, Honduras, Ecuador, Venezuela and CIIFEN
- Internship of a SMN officer (Costa Rica) in AEMET HQs (Madrid) officer for data handling and processing. Nov 12
- Internship of two DMC officers (Chile) at DMH (Paraguay) to support the implementation process of a QMS for aeronautical meteorology. Sep 12.
- Internship of an AEMET officer at DNM (Uruguay) to support the institutional development. Jan 13.

#### – Image and promotion

- Maintenance of the CIMHET webpage (<http://www.cimhet.org>)

### **SDS-WAS and GAW activities**

- Installation of Cimel station in Ouarzazate (Morocco), Feb 12.
- Support to the SDS-Africa and GAW-Sahara Projects (1)

## **5. Sources of Funding**

All activities have been funded by the Trust Funds that AEMET keeps within WMO.

Notes:

- (1) In cooperation with AECID (International Development Agency of Spain)
- (2) In cooperation with EUMETSAT
- (3) In cooperation with ECMWF
- (4) In cooperation with Norway



(5) In cooperation with Greece

<b>6. Challenges in Resource Mobilization for your Activities / Projects / Events</b>		<b>7. Opportunities for Increased Activity for your Activities / Projects / Events</b>	
Difficulties in keeping the same level of investment in the future from AEMET budget because of the current budgetary reductions in Spain. AEMET legislative capacity to handle resources from third parties for development purposes.		Alignments with other developed countries (i.e. Norway or Greece) for cost-sharing Strategic partnerships with funding bodies (WB, EU, regional development banks) Better coordination/alignment with the environmental policies of the International Development Agency of Spain in order to leverage the expenses for the development of NMHSs Enhancement of horizontal cooperation between regional powerful NMHSs and the rest (case of Ibero America)	
<b>8. Opportunities for more cooperation with other members / organizations</b>			
Alignments with other donor countries / funding bodies Reinforcement of bilateral cooperation for development Institutional alliances (within Spain) to avoid legislative barriers at AEMET			

## SWITZERLAND



Schweizerische Eidgenossenschaft  
Confédération suisse  
Confederazione Svizzera  
Confederaziun svizra

Swiss Confederation

Federal Department of Home Affairs FDHA  
Federal Office of Meteorology and Climatology MeteoSwiss

# Report on Swiss contributions to the WMO Voluntary Cooperation Programme (VCP) and related Technical Cooperation Programmes

## Swiss contributions in 2012 and planned Swiss contributions for 2013

	USD 2012*	USD* 2013, Planned
Voluntary cash contribution to the international part of the GAW Programme:		
Quality Assurance and Science Activity Centre (QA/SAC) for ozone, carbon dioxide and methane	94'400	98'800
World Calibration Centre (WCC) for ozone, carbon monoxide and methane	277'800	290'500
GAW Station Mount Kenya, Equipment and personnel expenses including Kenya-Switzerland Trust fund	168'800	105'400
World Radiation Centre (PMOD/WRC), including World Infrared Calibration Centre, World Optical Depth Research and Calibration Centre, and World UV Calibration Center	1'518'800	1'518'800
Voluntary cash contribution to the WMO RAVI Conference on Social and Economic Benefits of Weather, Climate and Water Services	0	22'200
World Climate Conference III follow up, Global Framework for Climate Services (GFCS)	166'700	111'100
SPARC International Project Office	55'600	55'600
WMO-different contribution, CIMO Trust Fund, Regional Office Europe	111'100	111'000
<b>Total contributions</b>	<b>2'393'200</b>	<b>2'504'300</b>

\* Exchange rate: 1 USD = 0.90 CHF

## Switzerland continued

### Report on the VCP and related co-operation activities in 2012 and outlook 2013

- ▶ 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, trainings 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 global GAW stations.
  - A calibration centre for infrared radiation is maintained at the World Radiation Centre (Davos).
  - World UV Calibration Centre at the World Radiation Centre (Davos).
- ▶ Following a renewed decision of the Swiss Federal Government in 2011, Switzerland will continue its involvement with the World Radiation Centre Davos. 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.
- ▶ MeteoSwiss and EMPA regularly provide capacity building and consumables to the global GAW station in Kenya. In addition to that, Switzerland contributed to the WMO-GAW Kenya Trust Fund in 2012.
- ▶ Switzerland contributed to the Secretariat of the Global Framework for Climate Services (GFCS) at WMO. So far, this annual contribution will be continued until the World Meteorological Congress in 2015.
- ▶ The Swiss voluntary contributions for 2013 will be in approximately the same order as for 2012.
  
- CATCOS (Capacity and Twinning of Climate Observing Systems): this project (Sep 2011 - Dec 2013) is financed by the Swiss Development and Cooperation Agency (SDC), total 2.3 Mio CHF, and supports the enhancement of greenhouse gases, aerosol and glacier measurements in 7 countries worldwide. Countries: Kenya (aerosols), Indonesia (aerosols), Vietnam (GHGs, aerosols), Chile (GHGs, aerosols), Ecuador (glaciers), Colombia (glaciers), Kirgistan (glaciers). In 2012, the MOUs with Kenya, Indonesia, Ecuador, Kyrgyzstan and Colombia have been signed; implementation in Indonesia (aerosols) was successfully completed; first implementation in Kyrgyzstan (glaciers) successful, further work in summer 2013; CATCOS brochure and webpage completed and published.
- CLIMANDES: project between SENAMHI Peru and MeteoSwiss approved (Sep 2012 - Aug 2015), financed by SDC, with 2 modules: 1) support of WMO Regional Training Centre (RTC) at La Molina University, 2) improvement of climate services (GFCS twinning). Overall coordination: WMO. Successful Kick-off meeting of the project in Lima, Peru, in August 2012; successful Launch Event and MOU signature during WMO Extra Congress in October 2012.

## UNITED KINGDOM

<b>1. Country</b>	
United Kingdom	
<b>2. Overall national contribution in 2012 (estimate in USD)</b>	
~\$1,718,126 (Converted from GBP @ year average 1GBP:1.58507USD )	
<b>3. Overall estimated national contribution in 2013 (in USD)</b>	
~\$1,605,478	
<b>4. List of Activities / Projects in 2012 related to contribution</b>	
<p><b>Funding overview:</b> The main UK contribution to WMO VCP is funded as part of the UK Public Weather Service (PWS) which sets some priorities:</p> <ul style="list-style-type: none"> <li>• 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).</li> <li>• Sustained, and optimally improved, levels of observation data available on the WMO Information System.</li> <li>• Ensure the continued unrestricted exchange of data and products, and effective results of WMO Programmes.</li> </ul> <p>In addition, we seek to mobilise resources from other donors, where possible (Additional sources of funding are noted along with the activities highlighted below)</p> <p><b><u>Projects highlights from 2012:</u></b></p> <p><b>Project area - Observations</b></p> <ul style="list-style-type: none"> <li>• 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 and Tarawa) and the GSN station at Pitcairn, through the 'Pacific Fund', managed by MetService New Zealand. Additional consumables were also supplied to the GUAN station at Gan, Maldives, via GCOS.</li> <li>• UK VCP continues to support the GUAN station at St Helena and, as part of this support, replaced the Hydrogen Generator in 2012 ensuring the sustainability of the upper air observations. There are plans to install a new MMS (Met. Monitoring System) in 2013.</li> </ul> <p>UK VCP has continued to assist with a GCOS funded project in Madagascar. 11 AWSs have now been installed across the country. The Minister from the Ministry of Public Works, alongside two staff from Meteo Madagascar (funded by UK VCP), visited the Met Office in February in support of the ongoing project</p> <p><b>Project Area – Forecasting &amp; NWP</b></p> <ul style="list-style-type: none"> <li>• Continued support was provided to the WMO SWFDP through the continued delivery of Global Centre products to the Southern Africa, Eastern Africa and Pacific projects.</li> <li>• Forecaster training was provided for both the SWFDP East-Africa and Southern-Africa, given by Paul Davies from the Met Office Operations Centre - followed by a week of Public Weather Service training for attendees, designed and delivered by one of the Met Office 'PWS Advisors'.</li> <li>• UK VCP is currently working on the provision of lake surface temperature measurements on Lake Victoria to help improve the modelling in the Lake Victoria Region, which aims to assist</li> </ul>	

regional forecasting activities in the East Africa Area.

- The Met Office Africa LAM (running at 12km resolution) continues to be disseminated in graphical form via the website (alongside the 4km Lake Victoria model and ATD lightning product <http://www.metoffice.gov.uk/weather/africa/lam/index.html>). A 'cutout' from the Global model (25km) for the whole of Africa is also transmitted as GRIB data via EUMETCAST. Following user feedback from the EUMETSAT RA1 Users Forum additional fields have been added and will be transmitted by EUMETSAT soon.
- ATD lightning data is now also being provided to EUMETSAT (however visualization at the NMHSs is dependent on the local workstation system which is awaiting updating via EUMETSAT)
- In addition, work is currently ongoing through UK VCP in partnership with SAWS to develop a new website to enhance the access to model fields from the Africa LAM, 4km Lake Victoria model, SAWS 12km and ATD lightning information. The website is based on the SATREP/EUMETRAIN website and will allow more interaction by the forecasters in Africa e.g. overlaying products, compared to the static graphics currently available on our website (due to be launched summer 2013).
- The annual Met Office/WMO Aviation Seminar was developed and delivered to ~ 20 delegates at RTC Pretoria, South Africa, in October, with logistical support provided by SAWS. The training was based on providing guidance and practical example of best practice implementation and assessment of the new Aeronautical Meteorological Personnel (AMP) Competence Standards.

In partnership with WMO an evaluation of the Lake Victoria 4km model was undertaken, using Met Office scientists and in consultation with one of our MSc fellows Khalid Muwembe from Uganda (see below). This research paper is due to be published soon in the journal 'Meteorological Applications'

#### **Project area – Climate Services, IT and Communications**

- The "localisation" project has continued in Zambia, implemented using Climsoft on second-user PCs supplied by Computer Aid International. UK VCP provided additional software to be installed on the PCs donated by Computer Aid.

UK VCP funding enabled a representative from KMD to assist the Rwanda Met. Agency with the implementation of automatic communications of observational data and their transmission as TDCF onto the WIS, and also to enable automatic ingestion into the Climsoft Climate Data Management System. Several follow up visits have also been arranged in conjunction with ongoing Met Office work with Rwanda Met. Agency.

#### **Project area - Service Delivery**

- Support has continued for TV weather presentation delivery by NMHSs. This includes the ongoing development and contributions to our e-learning support website at [www.met-elearning.org/moodle](http://www.met-elearning.org/moodle) which provides advice and discussion forums on all aspects of the media studios including the use of WeatherEye-PC, the TV graphics package provided free from the UK to developing country NMHSs.
- Hardware components were replaced at a number of sites including Guinea Conakry, Rwanda, Malawi, DR Congo, Djibouti, Senegal, Maldives and Congo Brazzaville.
- UK VCP, with equipment funded through FCO, was able to provide 28 developing country NMHSs with digital hard drive recorders to improve the efficiency of the media studios. Rather than delivering video tapes by hand to the TV station, this has provided the ability to send presentations electronically to the TV stations for broadcast. At NMHSs where this has already been installed this has allowed much wider distribution of weather forecasts to more TV stations and significantly reduce the production time.
- In partnership with WMO VCP, the Media studio at the Ethiopia National Met Agency (NMA) was upgraded by Met Office staff during a two week visit in November. Along with new studio equipment and software training, a digital recorder was provided which has saved a daily 200km round-trip to one of the TV stations.
- A consultant from KMD travelled to the Comoros Islands in March to install a new TV media

studio at their newly constructed building. This month-long visit was undertaken in partnership with (and funding from) WMO VCP.

- Through UK VCP the consultant from KMD was also able to successfully install a new media studio at Meteo Madagascar.
- Following delivery of equipment provided by UK VCP, Kenya Met Department have also now been able to reinstate their media studio. This was needed following a building fire which, unfortunately, badly damaged the existing equipment.

Following a request from Mozambique, two Met Office trainers were also able to visit and assist with training in the WeatherEye-PC software. Presentations are now created using this improved software package

### **Project area - Human Resources Development**

- The six students (from Zimbabwe, Lesotho, Cameroon, Uganda, Trinidad & Tobago and Bhutan) ,sponsored by UK VCP and WMO ETR, successfully completed their “MSc in Applied Meteorology and Climate with Management” at Reading University in September. Good feedback has been received - for example, Zimbabwe Meteorological Department has indicated that the NMHS has begun the process of developing a Climate Change Division with the Zimbabwean Fellow acting as a focal point for this Department.
- Six students (from Kenya, Swaziland, Samoa, Antigua&Barbuda, Malaysia and Papua New Guinea) are currently undertaking this MSc course, sponsored again by UK VCP and WMO ETR.
- UK VCP arranged for two forecasters from the Rwandan Met Agency to visit the UK Met Office to assist with the ongoing developments in service delivery at RMA.
- In partnership with WMO AeMP, UK VCP supported the translation of the WMO QMS guides. UK VCP has also developed an online e-learning QMS training course which is available to all NMHSs, free of charge, on the moodle website: [http://www.met-elearning.org/moodle\\_v2/](http://www.met-elearning.org/moodle_v2/) . with the aim of supporting the development and implementation of Quality Management Systems in developing country NMHSs.
- Following good feedback, UK VCP again ran the facilitated, online management training course, “Essentials of Management” in Feb 2012. 28 students completed this course and provided good feedback. Several have since requested to participate in the discussion forum of the next course (which has now just begun) to help share their learning.

### **Others**

- UK VCP has been pleased to support the secondment of Wayne Elliot to the WMO Resource Mobilisation Office for a second year.

## USA

<b>1. Country</b>	
USA	
<b>2. Overall national contribution in 2012 (estimate in USD)</b>	<b>3. Overall estimated national contribution in 2013 (in USD)</b>
[2,090,000.00 USD]	[unknown given budget uncertainties]
<b>4. List of Activities / Projects / Events in 2011 related to contribution</b>	<b>5. Sources of Funding</b>
Spanish Translation of COMET MetEd Modules	US Department of State
Critical Aviation e-Learning Programs (year 4)	US Department of State
International Hydrology Courses	US Department of State
Online Degree: Climatology and Climate (year 1)	US Department of State
Critical Training Materials for RAV	US Department of State
Expanded Volcanic Ash Distance Learning	US Department of State
Tropical Synoptic Course Workshop	US Department of State
iMet-1500C Training Class (CHUAS)	US Department of State
African Training Desk and NCEP Trainer	US Department of State
Training (Desk) for International Monsoon	US Department of State
Tropical / South America Desk	US Department of State
ITIC Training Program on Tsunami Warning	US Department of State
RAV SWFDDP - Full Demonstration Phase	US Department of State
Mexico - Rio Grande Flood Forecast Up-grade	US Department of State
El Salvador Strengthening Hydraulic	US Department of State
American Meteorological Society Annual Meeting	US Department of State
Pacific Desk	US Department of State
Farm-Weather Radio in Zambezi River Basin	US Department of State
Purchase and Installation of GEONETCast	US Department of State
Support to the CIMO WMO Trust Fund	US Department of State
Support to EC PORS WMO Trust Fund (GIPPS)	US Department of State
South Pacific Digital HF Network Refresh and Hub Move	US Department of State
Central America FFG Follow up	US Department of State
Caribbean Regional Climate Outlook Forum (CariCOF)	US Department of State
RAIV Task Teams	US Department of State
Support to WMO's VLab	US Department of State
ESCAP	US Department of State
<b>6. Challenges in Resource Mobilization for your Activities / Projects / Events</b>	<b>7. Opportunities for Increased Activity for your Activities / Projects / Events</b>

Pending major government budget cuts	Almost zero
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**8. Opportunities for more cooperation with other members / organisations**

For the past 7years, NWS has had an agreement with USAID to provide technical and scientific resources to meet OFDA’s objectives regarding preparedness for hydro-meteorological disasters, such as floods, droughts, cyclones/hurricanes, other extreme climate/weather related events, and geophysical disasters such as tsunami. This parallels an agreement that USAID has with WMO.



## **Annex V**

WORLD METEOROLOGICAL ORGANIZATION

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INFORMAL PLANNING MEETING  
VOLUNTARY COOPERATION PROGRAMME

WILLEMSTAD, CURACAO  
19 - 20 APRIL 2013

IPM/(2013)/Doc. 4

ITEM 2.1

Original: ENGLISH

### **OVERVIEW OF CURRENT AND EMERGING MAJOR PARTNERSHIPS / REGIONAL HYDROMET DEVELOPMENT PROJECTS**

*(Submitted by the Secretary-General)*

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#### Summary and Purpose of Document

This document provides information on initiation and progress of Regional Development Programmes facilitated by the Development and Regional Activities Department Resource Mobilization Office and Regional Offices

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## Strategic Partnerships and Major Development Projects

### Strategic Partnerships

1. The Resource Mobilization Office is focusing strongly on enhancing its strategic partnerships with key organizations such as World Bank (WB), various Directorates of the European Commission, UN System Partners in particular UNISDR, FAO, WFP, and UNDP, Rockefeller Foundation and Regional Economic Groupings and also with WMO Members for delivery of regional scale development programmes and projects.
2. Significant work is being undertaken in respect of regional programmes for capacity enhancement of NMHS in East and West Africa, South Eastern Europe, Central Asia, the S. Asia, Caribbean and Pacific and the Americas. This capacity enhancement is in cooperation with WMO Members and with the major partners mentioned above, noting that more than US\$40 million was directed to development programmes during the period from 2007 to 2010 through various modalities and partnerships
3. The regional and partnership oriented approach to development assistance for improvement of weather, water and climate services will continue as it has proven to be an effective approach encouraging other WMO members to consider supporting such regional development projects through the WMO and or bi-lateral or other mechanisms.
4. In 2012, 43.5 M CHF of voluntary contributions were receipted by WMO equaling some 42 % of total annual budget putting WMO on target for the financial period<sup>5</sup>. In addition some 23,398 CHF in concrete pledges (Switzerland, Norway, Canada and others) are also in the system

### Summary Major Programmes / Ongoing Projects Below – Others in Appendix 1

5. An agreement was signed in December 2011 in Durban between the Norwegian Ministry of Foreign Affairs WMO, regarding financial assistance to the programme “Global Framework for Climate Services – (GFCS) Adaptation and Disaster Risk Reduction in Africa”. Norway MFA’s contribution is NOK 56.8 M (approx. USD 10 M) for the period 2011-2015. Highlights from 2012 include: establishing the GFCS Secretariat in Geneva; establishing AMCOMET as a high-level mechanism for the strategic development of weather and climate services in Africa; building capacity and resilience around the prediction of severe weather across East and Southern Africa; and continuing the successful work of building resilience to climate impacts on food security across 15 countries in West and North Africa.
6. The Government of Greece has established a Trust Fund of 2M€ in collaboration with WMO to support Climate Change Adaptation in East and Central Africa (Burkina Faso, Chad, Mali, Niger, Sudan and Uganda) through improvement of climate and weather monitoring networks and enhancement of capacity for development and dissemination of climate information services to support adaptation across economic sectors, especially agriculture, water, and health.

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<sup>5</sup> It is relevant to note that Cg-XVI (Resolution 37) “authorizes the Executive Council, during the 16<sup>th</sup> financial period, to incur expenditure from budget funded from Voluntary Contributions estimated at **175 M CHF**, made up of 142 M CHF requested by WMO Budget Office and the WMO Technical Programmes for activities (Project Compendium 2012-2015) and an anticipated 33 M CHF for joint cooperation programmes (such as JCOMM, GCOS, WCRP),

7. Resulting from the Greek Trust Fund, The Global Framework for Climate Services (GFCS) piloted three important activities to achieve a more effective and equal climate service system in West Africa: the National Early Warning > Early Action Workshops, to set up a Frameworks for Climate Services at the National level in Burkina Faso, Niger and Mali. The Meteorological Services of the 3 countries were supported to carry out their own stakeholder mapping at the national level and reach out to key individuals and organizations across climate-sensitive sectors in the country. Climate-sensitive sectors included: agriculture, food security, disaster management, health, water, infrastructure and transport as well as energy. The national workshops brought together over fifty representatives from climate-sensitive sectors in each country, as well as farmers, herders and community spokespersons, and representatives from boundary organizations such as communicators, rural radios, farmer platforms, and community-based organizations. At the end of the workshop, roadmaps to build National Frameworks for Climate Services in Burkina Faso, Niger and Mali were developed.
8. The World Bank is supporting a 3 year programme for Lake Victoria Region (Uganda, Kenya and Tanzania) "Weather and Climate Service Delivery in the Lake Victoria Region. The focus is on agricultural meteorology and improved early warnings for maritime safety (fishers) as the fatality rate on the lake amongst fishing community is disastrously high (6-8,000 per year). This is predominantly seed funding for the SWFDP for Lake Victoria. This project links to plans for development of a Maritime Communications Centre and Search and Research Service on the Lake.
9. Regarding the above and more generally The Uganda Department of Meteorology, WMO The Norwegian Ministry of Foreign Affairs, MTN Mobile, Ericsson Communications, National Lake Rescue Institute and the Kalangala Fishing community have come together in a unique partnership, and combined mobile technology, weather forecasting expertise and local know-how, to provide a localised weather alert service to fishing villages on Lake Victoria. The service has been tested by over 1000 fishermen on Lake Victoria and is now due to be up-scaled and made more widely available in the next three months. The free-of-charge weather information service will enable fishermen and traders to make informed decisions on, for example, when and where to fish in Lake Victoria, helping to save lives and preserve livelihoods. Reported estimates indicate that as many as 5,000 fishers die in boating accidents on the lake each year because they are unprepared for bad weather conditions.
10. In February 2012, the Ugandan Department of Meteorology launched the agricultural component of the Mobile Weather Alert pilot project in Kasese District in close collaboration with the Grameen Foundation and WMO. The project aims to enhance end-to-end process in agro-meteorological services and to deliver agricultural advisories in conjunction with 10 day, monthly and seasonal forecast more directly to farmers in Kasese District through Community Knowledge Workers. The project will widen out across Uganda.
11. The Rockefeller Foundation is supporting a programme to improve integration of weather information in agricultural extension services in Ethiopia. This is their first engagement with WMO but will hopefully be the commencement of a strong partnership as RF has very active programme in East Africa in support of agricultural development and Risk Index Insurance for farmers. Phase II of this project is being taken up by Irish Aid
12. USAID - OFDA 1 is supporting the programme (7M USD) "Hydrometeorological Disaster Impact Mitigation Projects". The purpose of the programme is to implement activities that lessen the impact of hydrometeorological hazards (floods, cyclones, droughts and disasters) globally. In 2012 most activity focused on the further implementation of the project on "Development and Implementation of International regional Flash Flood Guidance and Early Warning systems", activities undertaken by HRC and WMO during

the reporting and development of new FFG project components: (1) Supporting documents were developed to conduct planning meetings for the foreseen new project components in South Asia and South East Europe; (2) The South Asia FFG (SAsia-FFG) planning meeting has been successfully conducted from 26-28 November 2012 at ICIMOD in Kathmandu, Nepal; (3) and South East Europe FFG (SEE-FFG) have been developed, participants are being invited and the meeting was held in Ankara from 22-24 January 2013.

13. WMO and the NMHS of Peru and Switzerland launched an innovative partnership to strengthen climate services in the Andean nation, building on the scientific knowledge and experience of the Alpine country. Although geographically distant, Peru and Switzerland share the same challenges as a result of their mountainous terrain. High mountains have a significant influence over local weather and climate conditions in both countries. Both are frontline witnesses to the impact of climate change on shrinking glaciers. Peru and Switzerland have united under the umbrella of the Global Framework for Climate Services (GFCS) to launch the project CLIMANDES (Servicios climaticos con enfasis en los Ande en apoyo a las decisiones). This GFCS twinning activity seeks to improve climate services for the Peruvian region and to facilitate their incorporation into decision-making. This 3.5 M USD project is funded by Swiss Development Cooperation through the WMO.
14. In October 2012, The Swiss Agency for Development and Cooperation (SDC) and WMO signed an agreement regarding the “Blue Peace –Water Security ‘in the Middle East: Strategic Management of Hydrological and Meteorological Data and Information Product Generation” project. The overall goal to which this project contributes is to strengthen the delivery of weather, water, and climate services in Middle East countries, to support economic development in agriculture, water resources, energy, and transport sectors throughout the region, manage consequences of climate variability and reduce human and economic losses from hazardous weather events notably floods and droughts. To this end, the project in its initial pilot phase will help key national stakeholders to develop an action plan to improve hydrometeorological standards, processes and capacities, both in-situ and through innovative technologies.
15. A Memorandum of Understanding was signed between Irish Aid and the WMO World concerning cooperation on Food Security in the context of Global Framework for Climate Services (GFCS). The Goal of the Programme is: to strengthen the operational resources of National Meteorological Services to further provide weather / climate information and services to rural farmers and strengthen early warning systems for weather and climate risk management in the agricultural sector. The initial focus will be on AgMet Services in Ethiopia.
16. Environment Canada (EC) and the WMO signed a grant agreement of USD 6.5 million in November for the project titled “Haiti Weather Systems Programme: Climate Services to Reduce Vulnerability in Haiti”. This 5-year project aims at providing essential support to re-establish weather, climate and hydrology forecasting activities in Haiti under the coordination and management of WMO. The Project has four main focus areas: Constructing a building to house the National Hydro-Meteorological Service (NMHS) of Haiti; Undertaking capacity building including training of both scientific and technical personnel and developing a business plan for the NMHS taking into account all aspects of developing a functioning and modern weather, climate and hydrology service; Re-establishing the climatological and hydrological observing networks and implementing a data management system; Developing a wide-reaching dissemination system, to inform stakeholders and the general population of climate related risks.
17. In mid to late 2012 funding was secured from KOICA for the Coastal Inundation Forecasting Project in Fiji - one of three CIFDP Pilots. (Bangladesh is supported by USAID-OFDA and Haiti / Dominican Rep. CIFDP by Canada). KMA has also provided

funds for procurement of SAT COMMs system for Lao People's Democratic Republic, period focussed on FFG System Standardization; Global HydroEstimator (GHE) Adjustment using CMORPH Data; development of Educational and Training Materials - Flash Flood Guidance-specific courses currently completed included: Elements of Hydrology; GIS basics; Flash Flood Guidance Products; CAFFG Products.

18. WMO and Environment Canada signed an agreement of CAD 6.138 million in February 2013 for the project titled "Programme for Implementing the Global Framework for Climate Services (GFCS) at Regional and National Scales". The components of this project will build resilience to climate variability and climate change through the development of Regional and National Frameworks for Climate Services under the GFCS. These are vital activities that will allow the benefits of establishing a global consensus on the need and mechanism for framework for climate services to be felt at national decision-making levels. The project will run from April 2013 to December 2016.
19. The Spanish Programme of Cooperation for West African countries has continued its implementation. The focus of activities is on marine meteorology, agricultural meteorology, health and climate, development financing for countries emerging from conflict or disasters (Sierra Leone, Liberia, Guinea, Guinea Bissau, Togo and Ivory Coast), capacity building in political advocacy and resource mobilization and other activities as agreed between participant countries and the donor. The Programme is managed jointly by the Regional Office for Africa and AEMET.
20. WMO-RIMES Project on "Reducing Risks of Tsunami, Storm Surges, Large Waves and Other Natural Hazards in Low Elevation Coastal Zones": is funded by the UN-ESCAP Trust Fund for Tsunami, Disaster and Climate Preparedness in Indian Ocean and Southeast Asian countries and in-kind and cash contributions from WMO and Regional Integrated Multi-Hazard Early Warning System for Africa and Asia (RIMES) for a total amount of 3,206,414 USD over 24 months starting in May 2011. This project involves capacity building of the NMHSs and other stakeholders in South Asia. Beneficiary countries include Bangladesh, India, Maldives, Myanmar, Sri Lanka, and Thailand. A Working Arrangement was signed between WMO and RIMES in November 2011 for joint implementation of this project.
21. The Korea ODA Agency (KOICA) project<sup>6</sup> commenced in 2009 and has also already resulted in increased support to IGAD Region and ICPAC with the recent signing at the African Ministerial Conference of an MOU between ICPAC and KMA for an ongoing programme of expertise and technology transfer to develop ICPAC further as a Regional Climate Centre. This MOU was signed between ICPAC, KMA and the PRs of IGAD countries (Uganda, Tanzania, Eritrea and Ethiopia). Phase II of this project is now under discussion with KOICA.
22. AECID (Spain) is supporting the SDS and GAW projects in Northern Africa and indicated interest in supporting projects on disaster risk management and climate change in the Americas and West Africa regions. AEMET, Spain is actively involved in discussions with AECID are underway seeking support to projects of NMHSs of countries in West Africa and the Americas region.
23. US NWS continued its capacity building programme through WMO covering a range of existing and new activities; Training Desks; Fellowships; support to WIS; Socio-economic benefit areas; Climate Data Recovery programmes etc.
24. The Spanish support to the Programme of Cooperation for the NMHSs of Ibero American countries has continued. In the last meeting of Directors held in Chile in

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<sup>6</sup> "Regional Climate Framework in Eastern Africa to Support Adaptation to Climate Change" and "Weather and Climate Impact on Community Health and Public Health Services".

2010 the programme was reviewed and an Action Plan for 2011-2013 was approved with an allocation of about 2.0 million US\$. The action plan includes four strategic lines: Institutional strengthening and resource mobilization for NMHS, Development of Climate Services, Education and training, and Development of virtual centres for prevention and of extreme events.

25. The National Meteorological Service (NMS) of Mexico began in 2010 the execution of a Strategic Plan aimed at modernizing the NMS in a 10-year implementation plan based on an assessment made with the assistance of WMO in 2009. Furthermore, in order to take advantage of WMO programmes added value to the implementation of the Strategic Plan, the NMS of Mexico and WMO signed an agreement of cooperation to strengthen the support from WMO to this project. The Plan includes four strategic lines of action: 1) *institutional development*; 2) *strengthening of meteorological observing networks*; 3) *development of products and meteorological services*; and 4) *development of infrastructure for climate services*. The Strategic Plan includes an implementation plan with an estimated budget of 100 USD million. The Government of Mexico is supporting the implementation of the Plan recommended by WMO with an initial allocation of 14 USD million in 2010.
26. A new Capacity Building project in support to NMHSs of the Caribbean in partnership with the Association of Caribbean States is ongoing with support of Finland (SHOCs II).
27. Phase II of the joint initiative with UNISDR for S. Eastern Europe implemented by Office for Europe in partnership with UNISDR (each responsible for 1.2M€ of funds).
28. Similarly like in SEE, a Phase 1 Assessment was completed for Central Asia and Caucuses Region funded by the WB Global Facility for DRR. WB and Finland Foreign Affairs has already committed to some investments in the region pending these assessments. UNDP has initiated a 6M Climate Risk Management Programme in the Region and WMO will partner on this. WB is investing 25M.

## Appendix I

### REGIONAL DEVELOPMENT PROJECTS IN PROCESS

Activity/Project	Beneficiary Country/Region	Amount	Funding Agency	Remarks
1. Programme for Implementing the Global Framework for Climate Services (GFCS) at Regional and National Scales.	Caribbean, Pacific, S Asia, Polar and Himalaya	6.138,000 CAD	Govt Canada	Agreement signed March 12
2. Development of Meteorological and Hydrological Services in Haiti in support of Social and Economic Sectors. Project proposal for Medium Term Needs	Haiti	6.500,000 CAD	Govt Canada	Agreement signed Dec 12
3. Implementing the Global Framework for Climate Services (GFCS) – Secretariat Support	Global	1,000,000 CAD	Govt Canada	
4. Implementing the Global Framework for Climate Services (GFCS) – Secretariat Support		400,000 BP	Govt UK	
5. Implementing the Global Framework for Climate Services (GFCS) – Africa	Africa	10,000,000 USD	Norway	Year 2
6. Implementing the Global Framework for Climate Services (GFCS) – Food Security and Health	Africa	10,000,000 USD	Norway	Under development with WHO, WFP, IFRC, CMI, CCAFS/CGIAR
7. East Africa IGAD HyCOS	Uganda, Tanzania, Kenya, Rwanda, Burundi, Ethiopia, Eritrea	5,000,000 €	EU ACP	
8. Climate Services the Andean Region in the context of The Global Framework for Climate Services (GFCS)	Andean	3,300,000 CHF	Swiss Development Cooperation	

<b>Activity/Project</b>	<b>Beneficiary Country/Region</b>	<b>Amount</b>	<b>Funding Agency</b>	<b>Remarks</b>
9. <i>Regional Cooperation in South Eastern Europe for meteorological, hydrological and climate data management and exchange to support Disaster Risk Reduction</i>	Croatia, Turkey FYR Macedonia, Albania, Bosnia and Herzegovina, Montenegro, Serbia	2,200,000€	EU-COM DG- Enlargement	Phase I 2M € (WMO and UNDP.)  Phase II 2.4M € (WMO and UNISDR.)
10. <i>Rehabilitation of the Iraqi Meteorological Organization</i>	Iraq	5,285,000€	Government of Italy	5M€ Soft Loan to Iraqi government. 285,000€ to WMO for Tech Support  ON HOLD
11. <i>Programme for Disaster Risk Reduction (Floods / Drought)</i>	Various Regions	7,000,000	USAID-OFDA	
12. <i>Conference of Directors of the Ibero American Meteorological and Hydrological Services</i>			AECID	
13. <i>Afrimet: Conference of Directors of the West African National Meteorological and Hydrological Services</i>	West Africa Marine Countries Emerging from Conflict and Natural Disasters Project (Guinea-Bissau, Liberia, Sierra Leone, Ivory Coast and Togo) Management		AECID	
14. <i>Global Atmospheric Watch in the Magreb-Sahara Region</i>	Magreb-Sahara Region	340,000 €	AECID	
15. <i>Sand and dust Storm (SDS) Early Warning System in the West Asia Region</i>	Middle East / West Asia	700,000 CHF	Swiss Development Cooperation	



<b>Activity/Project</b>	<b>Beneficiary Country/Region</b>	<b>Amount</b>	<b>Funding Agency</b>	<b>Remarks</b>
16. <i>Sand and dust Storm (SDS) Early Warning System in the Magreb Region</i>	Magreb Region	184,000 €	AECID	
17. <i>Pilot Project for the Implementation of an Early Warning System to contributes to disaster risk reduction in Bolivia</i>	Bolivia	415,000 €	AECID	Funds secured by RMO transferred to to SENAMHI and Min. of Planning provided by AECID. Administered by UNDP Bolivia.
18. <i>Food Security project in Africa- Flood and Drought</i>	Mali	300,000 €	Government of Italy	
7. <i>Coastal Inundation Forecasting and Related Warning Services in the Area Served by the Fiji Meteorological Service (CIFDP)</i>	Pacific Region	300,000 USD	KOICA	
8. <i>Understanding the Findings of the IPCC Fourth Assessment Report "Climate Change 2007" – Integrating Climate Change Adaptation and Mitigation in Development Planning</i>	Africa	1,000,000€	EU-COM DG Environment	Implemented by IPCC-WMO
10. <i>Regional Climate Centres and Climate and Health</i>	East Africa	600,000 USD	KOICA Korea Int.	Projects under implementation. Second phase is being negotiated.
11. <i>Assessment of NMHS Capacity in Central Asia and Caucuses meteorological, hydrological and climate data management and exchange to support Disaster Risk Reduction</i>	Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan, Armenia, Azerbaijan, and Georgia	150,00 €	GFDRR / UNISDR / Finland	Now 25M Project Implemented by World Bank
12. <i>FinPac Enhancement of Weather and Hydrometeorological Services in Pacific Islands Region</i>	Pacific Islands	2 M€	Gov. Finland	FMI/ SPREP/WMO
14. <i>Strategic Plan for development of the National Meteorological Service of Mexico</i>	Mexico	14,000,000	Gov. of Mexico	A Cooperation Agreement was signed between Mexico and WMO to assist the

Activity/Project	<b>Beneficiary Country/Region</b>	<b>Amount</b>	<b>Funding Agency</b>	<b>Remarks</b>
		USD		NMS in the implementation of the ten year Strategic Plan
16. <i>SCHOCs II - Strengthening hydrometeorological operations and services in the Caribbean SIDS (SHOCS)</i>	Caribbean NMHSs	500,000 Euros	Gov. of Finland	FMI/ACS/WMO
17. <i>Institutional development of the NMS for improvement of the meteorological services and information in support of socioeconomic sectors of Uruguay</i>	Uruguay	500,000 USD	Gov. of Uruguay	Funds provided by Gov. of Uruguay to NMS to implement part of project. Rest being sought with AECID.
18. <i>Regional Framework for Weather and Climate Services for food aid, food security, maritime transport safety contributing to disaster risk reduction In Lake Victoria region</i>	Uganda, Tanzania, Kenya	750,000 USD	World Bank	
19. <i>Climate Change Adaptation and Improved Climate Services in Sub-Saharan Africa</i>	Sudan, Niger, Burkina Faso, Uganda, Mali	1,000,000 €	Gov. of Greece	
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