

WORLD METEOROLOGICAL ORGANIZATION

**WMO SEVERE WEATHER FORECASTING
DEMONSTRATION PROJECT (SWFDP) MISSION
TO THE RWANDA METEOROLOGICAL AGENCY (RMA)**

KIGALI, RWANDA, 23-25 APRIL 2012



FINAL REPORT

1. INTRODUCTION

At the kind invitation of the Government of Rwanda, through the Permanent Representative of Rwanda with WMO, Mr John Ntaganda SEMAFARA, a WMO mission to the Rwanda Meteorological Agency (RMA) took place in Kigali, Rwanda, from 23 to 25 April 2012. WMO was represented at the mission by Mr Peter Chen (Chief, Global Data Processing and Forecasting Systems (C/DPFS)), Mr Samuel Muchemi (Scientific Officer, Public Weather Services Division (SO/PWS)), and Mr Mohamed Matitu, a WMO Consultant. The aim of the mission was to meet the relevant staff of the RMA in relation to forecasting and public weather services in order to plan how the Severe Weather Forecasting Demonstration Project (SWFDP) would be effectively implemented in Rwanda. This is the report of the mission and its outcomes. The "List of Participants" of this mission is contained under Annex I to this report.

1.1 *The SWFDP*

The SWFDP is aimed at enhancing the use and application of the products currently available from Numerical Weather Prediction (NWP) centres, or products, which could be readily made available through WMO's Global Data-Processing and Forecasting System (GDPFS) network of meteorological centres. The goal is to improve severe weather forecasting in countries where sophisticated model outputs are not currently used; and, to deliver warning services through the Public Weather Services (PWS) of National Meteorological and Hydrological Centres (NMHSs). The Project focuses mainly on heavy precipitation that could cause serious flooding, and strong damaging winds. The Project applies the concept of a cascading forecasting process to provide greater lead-time for alerting of severe weather. At the same time, the Project will contribute to capacity development in a wide range of forecasting and service delivery functions at the NMHS, and should improve important links of NMHSs with Disaster Management and Civil Protection Authorities (DMCPAs), and the media.

The Commission for Basic Systems (CBS), during its Thirteenth session (CBS-XIII, St. Petersburg, Russian Federation, 23 February - 3 March 2005), defined the goals of the SWFDP as follows:

- to improve the ability of NMHSs to forecast severe weather events;
- to improve the lead time of alerting these events;
- to improve the interaction of NMHSs with DMCPAs before and during events;
- to identify gaps and areas for improvements; and,
- to improve the skill of products from GDPFS centres through feedback from NMHSs.

The 2006 Extraordinary session of CBS (CBS-Ext.(06), Seoul, Republic of Korea, 9-16 November 2006), stressed the need to work with civil protection authorities and media organizations to improve delivery of severe weather warning services to end users. Subsequently, PWS and Disaster Risk Reduction (DRR) aspects have been integrated into the SWFDP.

One of the objectives of the mission to Rwanda was to understand the warning programme implemented at the RMA, including the production of forecasts and warnings, issuing of alerts, advisories and severe weather warnings. Reviewing procedures in liaising with the DMCPA and the media will contribute to the evaluation of the Project.

The SWFDP in the Eastern Africa region was developed throughout 2010/2011, and commenced its demonstration phase in September 2011. Rwanda, through the RMA, is one of six participating countries. The Project is managed by a Regional Subproject Management

Team (RSMT), which is responsible for the project implementation, as specified and guided by the Regional Subproject Implementation Plan (RSIP). The RSIP has been approved by all the Permanent Representatives (PRs) of the participating countries with WMO, and is a tool for managing the accountability of the PR-appointed representatives to the RSMT relative to their respective agreed roles and responsibilities for the Project.

Through the experience of SWFDP regional subprojects that have preceded the SWFDP in the Eastern Africa region, the SWFDP is exploring an additional project management instrument for participating countries where the NMHS is low in capacity and / or small in staff numbers. The idea is to develop country-specific implementation plans that provide the additional details needed by these NMHSs to participate more effectively in the SWFDP. The Rwanda SWFDP Implementation Plan (IP) should account for severe weather hazards of the country, the forecasting infrastructure at the RMA, the capacity of the forecasting and service delivery personnel, and the status of its relationships with and the needs of users of warning services in the country. The country-specific IP is intended to be an extension to the RSIP, and will be approved by the PR with WMO of the respective country. This concept is being explored first with Rwanda and the RMA.

1.2 *The Cascading Forecasting Process*

According to the conclusions of CBS-XIII, the SWFDP is an excellent way to apply the cascading approach for forecasting severe weather. Generally, for Rwanda, the cascading forecasting process will function as follows:

- Three (3) global NWP centres (Met Office UK; NCEP USA; and ECMWF) are providing NWP products, including in the form of probabilities;
- Two (2) regional centres (RSMC Nairobi and RFSC Dar Es Salaam) are interpreting information received from global NWP centres, running limited area models to refine products, and liaising with the RMA; and,
- The RMA is to issue alerts, advisories, severe weather warnings; to liaise with the DMCPAs and the media, and to contribute to the evaluation of the Project.

1.3 *The PWS component of SWFDP*

The CBS had stressed the need to work with civil protection authorities and media organizations to improve delivery of severe weather warning services to end users. Subsequently, PWS became a major component of the SWFDP. The role of the PWS component of the SWFDP is to improve delivery of forecast-, alert and warning services to the public and other users. The main focus of the visit to Rwanda, as regards the PWS component of the Project, was to assist the RMA in developing the capacity to deliver services by taking the following actions:

- a) Identifying a team to carry out PWS activities and availing them the opportunity to train on service delivery skills such as:
 - Criteria for issuing warnings and alerts;
 - How to formulate a warning, including the essential attributes of a warning message;
 - Effective use of the different dissemination channels for warnings (e.g., television (TV), radio, mobile technology, RANET, etc.);
 - Using the website to the best effect in severe weather-related services;
 - Working with the media;

- Working with the disaster community;
 - Building a severe weather database, including actions taken by the RMA and the feedback from users; and,
 - Public education and outreach.
- b) Engaging users:
- Identifying users and making contacts to establish a dialogue;
 - Establishing user needs; and,
 - Responding to user needs in the generation of products and delivery of services.
- c) Monitoring and Evaluation (M&E). M&E is important in ensuring continuous improvement and it involves the following actions:
- Building feedback mechanisms to inform a Meteorological Service how products and services are put to use, and their impacts;
 - Carrying out surveys to establish the level of satisfaction of the users;
 - Reviewing the service delivery process with a view to applying lessons learnt to future processes; and,
 - Compiling quarterly reports using the template provided under the Project.

1.4 *The Agricultural Meteorology (AgMet) component of the SWFDP*

Agriculture is a dominant activity in many developing countries and in some developed ones alike. Consequently, the provision of services to agriculture is a very high priority for many NMHSs. Although much of the information of value to the agricultural community is somewhat specialized, NMHSs in highly agriculture dependant countries commonly treat applications of meteorology to this sector as part of their PWS programmes, and often supply very detailed and specialized products freely to the agricultural or rural community.

For Eastern Africa, Rwanda inclusive, more than 80% depend on agriculture for their livelihoods. Agriculture also plays an important part in contributing to the Gross Domestic Product (GDP). Hence SWFDP products, notably weather forecasts from one (1) to ten (10) days can provide useful information to farmers, agricultural extension officers, wildlife managers, fisheries and forestry. Improved NWP guidance from the SWFDP Project will be used to improve agricultural weather forecasts and advisories in the future.

2. JUSTIFICATION FOR THE WMO MISSION TO RWANDA

Rwanda is one of the Eastern African countries participating in the SWFDP which also include Burundi; Ethiopia; Kenya; Uganda and United Republic of Tanzania. It was, however, recognized that, in order to ensure a successful implementation of the Project in all countries, especially those of lowest capacities, it would be necessary to visit all of the Meteorological Services involved in SWFDP, including the RMA, to see how some of the challenges they face could be dealt with in order to ensure a successful implementation of SWFDP. Such challenges include a limited staff complement and insufficient skills necessary for the successful implementation of the Project. It was for this reason that the visit was planned.

2.1 Areas covered during the visit

The visit started with a meeting with the PR of Rwanda with WMO and senior staff of the RMA. The purpose and expected outcomes of mission were discussed. These included a general introduction of SWFDP, as well as the intension to develop an IP for the Project, which was specific to Rwanda's needs. The other areas covered during the 3-day visit included:

- Introduction of the WMO team to Rwanda Met operations, including data collection and transmission, and forecasting;
- A session on establishing the status of the current forecasting capabilities and delivery of PWS;
- A brief demonstration on the use of the RSMC Web Portal;
- A session on how to develop and communicate warnings;
- Consideration of various communication channels open to the RMA;
- A session on user engagement with participants, including representatives from the media and the disaster community;
- The functions of the PWS Team;
- An introduction to the agricultural component of the SWFDP; and,
- A review session on how to use event table and feedback report form.

Details of the areas covered during the visit are contained in the "Mission Programme" is contained under Annex II to this report.

3. INTRODUCTION OF THE WMO TEAM TO RWANDA MET OPERATIONS

3.1 Staff

It was noted that at present, the staff complement is low. There are currently two (2) WMO Class I Forecasters and four (4) Class II Forecasters. All needed further training on the use of many new forecasting guidance products that are made available through the SWFDP. Four (4) staff, who are primarily TV announcers with no formal technical training in forecasting, had been identified to carry out PWS work. The forecasting and PWS units are currently headed by Mr Anthony Twahirwa, who is also one of the forecasters. There are eleven BSc students training in meteorology, of which eight (8) are at the University of Nairobi under care of the Ministry of Infrastructure, and three (3) in China, under WMO sponsorship. There are plans to engage 23 post graduate diploma candidates.

3.2 Weather observation and transmission of data

- There are nine (9) Agromet stations and five (5) synoptic stations. There are ten (10) automatic stations (five (5) of them reporting automatically every 10 minutes) co-located with observing stations. There are 130 volunteer observers who record weather data on forms which they send to the RMA by post. The RMA observations network plan targets to have 235 stations in total, most of them being rainfall stations. The RMA is poised to use the fiber optic capillary that has been installed in the country for data transmission. Only the airport station is manned 24 hours.

- Data transmission to the Regional Telecommunication Hub (RTH) in Nairobi is done through an e-mail data connection, as there is no automatic switching system. They load only four (4) stations into Global Telecommunication System (GTS). A problem in up-linking Rwanda data from Toulouse is normally experienced. WMO was requested to see whether the opportunity of implementation of SWFDP in Rwanda could be used to alleviate this data communication problem.
- It was noted that there was a cooperative network of observations carried out by other organizations such as the Ministry of Agriculture, tea plantations, hydrological service and local government, which collect and provide weather data. There are 11 automatic stations in the health sector. The RMA trains the staff of the cooperative network.

4. FORECASTING AND DISSEMINATION OF WEATHER FORECASTS

4.1 Forecasting

- One-day forecasts are produced twice daily, every day. In the morning, the forecaster updates the forecast that would have been issued the previous day in the afternoon (the office closes 1700 hours). These forecasts consist of predictions of temperatures and weather for 13 city locations. There are also 3-day and 10-day forecasts, as well as monthly and seasonal forecasts. The 3-day forecasts are done twice per week, on Mondays and Wednesdays, so there are no forecasts for Sundays. Forecasts are also done upon request.
- During the discussions, it was suggested that the RMA adopt a user oriented forecasting procedure in which the 3-day forecasts would be updated every day. It was agreed to start doing weekly forecasts as well.
- There was a problem connected to forecasting in that, during the weekends, SWFDP products were sometimes not available to the forecasters on the SWFDP Website, which is coordinated from Nairobi. In some cases, it was not possible to get connected to SWFDP Web Portal. This problem was being addressed.
- It was agreed to have a forecaster attachment desk at a Regional Centre of the SWFDP such as Nairobi, where staff from the RMA and other National Meteorological Centres (NMCs) could exchange knowledge and skills with forecasters with regional responsibility.
- The RMA needs modernization in terms of working tools. They have one Preparation for the Use of METEOSAT Second Generation in Africa (PUMA) station, which give them access to latest satellite images and products and some global model outputs. They also have access to weather data and computer model forecasts from Global and Regional centres (e.g., Cooperative Programme for Operational Meteorology Education and Training (COSMO), UK Met Office and Weather Research Forecast (WRF) models) through the SWFDP. However, its slow internet connection has, in many cases, made access to these products difficult. Efforts are being made to rectify this.
- The RMA is in the process of acquiring a forecasting system and weather radar. This is expected to improve forecasting capability at the RMA as well as improving warning services.

- The RMA needs training to improve understanding of its forecasters to tropical systems that cause convective activities in the region. Forecasters need specialized training in the interpretation of satellites images and NWP products from Global and Regional centres.
- The aeronautical meteorology office at Kigali airport, which now falls within the responsibility of the RMA, is not sufficiently staffed despite its advantage of working for 24 hours, as this office is working on aeronautical services only.
- The RMA plans are to have a fully-fledged 24 hours forecasting office that will also take care of warning services.

4.2 Public Weather Services

- It was noted that the RMA had established a PWS capability and was delivering services to the public through TV and radio. TV weather forecasts covered 24 hours. TV weather bulletins are recorded and sent to TV stations using FTP.
- It was noted that in most cases severe weather based on daily and 3-day forecasts were not captured and hence warnings were not commonly issued. It was also noted that there was a need to develop further the warning service capabilities of the RMA.
- The RMA was working with some radio stations but there was a great potential to work with more.
- There is a need to train the PWS staff in many areas such as working with media, writing press releases, carrying out user satisfaction surveys, etc.
- The RMA did not have an operational website and this was recognized as a need that should be addressed urgently. It was reported that a website had been under development for a few months, but the process of commissioning the website was slow due to contractual issues. It was suggested that the Met staff (with the assistance of WMO, if required) could design and launch a basic website which would carry essential web based services such as forecasts and warnings. This website would be replaced by the one currently under development when it gets ready.
- A need was established to develop the necessary capacities and skills to identify, approach, and engage users, especially for the delivery of services associated with extreme weather. This includes skills to develop Memoranda of Understanding (MoUs) and Standard Operating Procedures (SOPs) between the RMA and users such as the media and the DMCPAs.

4.3 Agromet Services

- Agriculture is one the dominant activities in Rwanda.
- As it is understood that the objective of SWFDP is to develop and enhance dissemination systems to improve delivery of products and services to the general public, disaster management with a particular focus on agricultural activities and food security, and safety of fishing vessels. This activity was therefore introduced to the Agency during the mission. A brief discussion was made to introduce the document that came out of the Entebbe Agromet meeting and its recommendations. Rwanda was not represented at the Entebbe meeting.

- The discussions looked into the importance of the RMA to make use of SWFDP products to provide useful guidance to agricultural communities by informing them of expected weather conditions in time to schedule farming operations. Likewise, public forecasts or warnings should be sent to fishermen so that decisions can be made whether or not to go fishing.
- Finally the discussions were concluded by looking at benefits that agricultural activities will get out of the SWFDP. These are as follows:
 - i. Useful guidance to agricultural communities by informing them of expected weather conditions in time to schedule farming operations;
 - ii. Similarly, upon receiving public forecasts or warnings, fishers can make informed decisions; and,
 - iii. Within SWFDP activities, PWS can often supply very detailed and specialized products to the agricultural or rural community.

5. SESSION ON HOW TO DEVELOP AND COMMUNICATE WARNINGS

5.1 *Communicating warnings*

A session on how to develop and communicate warnings was held and the following points were noted:

- Emphasis was laid on the need for forecasters and the PWS staff to appreciate the importance of issuing alerts and warnings, since saving lives and property is the primary role of a National Meteorological Service (NMS).
- Criteria for issuing warnings, based on intensity thresholds of weather and on probable impacts, were also discussed.
- The importance of laying down a process which would link forecasters who monitor weather systems and the RMA authorities who make the decision to issue a warning was discussed and agreed upon.
- The attributes of a good warning message in terms of its title, content, attribution of origin, the period of validity, expected intensity, location, and advice to users on the actions they could take were emphasized upon.
- Despite the fact that as at that time warnings on extreme weather events were not always detected, and hence alerts and warnings were not always issued when extreme weather occurred, it was observed that there was a real potential to improve this situation. In this regard, an encouraging example of a warning which had been issued by the RMA and circulated to the media and the disaster community in the month of April 2012 was presented (see Annex III to this report). This example was discussed and areas for improvement were suggested.

5.2 *The RMA Warning Service*

The participants resolved to develop the “RMA Warning Service”. In this regard, the “RMA Warning Services Action Plan” was drafted during this session. The Plan contains actions that the RMA intends to take in the development of the Warning Service in relation to the following areas: strengthening of PWS capacity within the RMA to deliver services; user engagement; and, monitoring and evaluation of services. The Plan defines the strategies adopted, actions corresponding to the strategies and timelines, as contained in the table below:

The Rwanda Meteorological Agency (RMA) Warning Services Action Plan			
Objective	Strategy	Action taken or to be taken:	Timeline
Establish or strengthen PWS capacity within an NMS to deliver services	Identify a core PWS Team	Names to be included here	Done
		To be discussed further at the RMA to ensure a sustainable programme	April/May 2012
	Have the PWS Team trained so that they can have the necessary skills	WMO SWFDP training in 2012	November 2012
		RMA to organize an internal workshop	December 2012
		To investigate possibility for WMO to assist organize training for weather presenters (English/French)	October 2012
		The RMA PWS Team to apply guidance material on WMO PWS Publications (available on the WMO Website at the following web-link: http://www.wmo.int/pages/prog/amp/pwsp/publications_en.htm)	Continuous
	Establish an NMS website (if there is none) and provide a “warnings” link on the home page	To establish an RMA website (WMO to assist, if requested)	June 2012
		To ensure warnings link is included on the homepage	
Engage users	Identify users and the products and services each user would require	<ol style="list-style-type: none"> 1. RMA to organize a workshop with potential users (including media and disaster community); 2. Develop impact-based criteria for severe weather; 3. Develop an Action Plan with the identified users and develop feedback mechanisms; and, 4. Develop MoUs and SOPs, including post event surveys 	May 2012
	Focus on enhancing public weather warning services through the Media	<ol style="list-style-type: none"> 1. Hold a media workshop on communications and working with the media; 2. Agree on dissemination channels; and, 3. Exchange focal point contact information 	August 2012
Monitoring and Evaluation	Conduct self assessment surveys	Develop survey questionnaire on user satisfaction and test it	March 2013
		Send out the survey	April 2013
		Analyse the survey	May 2013
	Review service delivery process with a view to factor in lessons learnt in future processes	Hold an internal meeting of the RMA and users, and agree on how to enhance service delivery	July 2013

6. COMMUNICATION CHANNELS OPEN TO THE RMA

Discussions were held with the participants regarding various communication channels for forecasts, alerts and warnings.

6.1 TV

Most of the people living in urban areas of Rwanda have access to TV. TV is therefore an important channel of communication of forecasts and warnings in Rwanda. As mentioned above, the RMA has a TV weather studio where weather bulletins are recorded and sent via FTP to TV stations for airing. However, there is a need to train the weather presenters further so that they can possess the necessary skills to communicate warnings on TV effectively. Participants requested that WMO consider, through the SWFDP, to arrange for a TV weather presenters' course.

6.2 Radio

There is a dense network of radio stations in Rwanda. Most of these were commercial radio stations, although there are also national and community stations as well. While some radio stations are using weather forecasts provided by the RMA, there were many sourcing information directly from the internet. There is, therefore, a lot of work to do to educate stations on the importance of using the more accurate forecasts from the RMA. There is also a huge potential of working with radio stations to disseminate official forecasts. The challenge experienced in this respect is that some radio stations would expect the Met Service to pay for air time.

6.3 Mobile technology

In recognition of the dominance of the mobile technology for communication in rural areas of Rwanda, it was agreed to investigate the different communication options that could be beneficial to the RMA. This included:

- Developing website layouts adapted for use on ordinary (non-smart) mobile phones and also for smart mobile phone platforms. It was recognized that it was likely that smart phones possession rate in Rwanda was likely to grow quite fast, hence, it was necessary for the RMA to ready itself to serve the need this technology will generate in the future. In this regard, the development of an application for smart phones should be kept in view, in the medium-term,
- The use of SMS technology; and,
- The use of social media, including Twitter, Facebook and YouTube was discussed and considered as the way to go in the near future.

6.4 Website

As pointed out above, at present, the RMA does not have a functional website. However, once action has been taken as indicated above, and a website is realized, it was agreed that in addition to uploading forecasts on the site, that the RMA would provide a prominent "Alerts" link. The link would provide:

- an easy access to any alerts and warnings issued;
- information on what the alerts and warnings mean in terms of how they are presented, both as text and as colour coded icons depicting expected intensities; and,

- general advice on what actions users could take in response to the different possible warnings that could be issued.

6.5 RANET

The RANET Project provides communication solutions to rural and other isolated communities. It was noted that Rwanda, through the RMA, had joined the RANET Project initiative, which would add a new channel of communication for the rural community. When established, RANET would be used for warning services in addition to the other functions of communicating weather and climate information to users.

7. USER ENGAGEMENT SESSION

A session was held on user engagement, which included the staff of the RMA, and participants from the media and the disaster community. It was a very lively session in which there was a healthy exchange of ideas on how the RMA could better serve the media and the disaster community alike. The representative of the disaster community, Mr Jean Bosco Nkusi of the Rwanda Red Cross, expressed the wish for improvement in the way information was communicated to the disaster actors to ensure that they received information in a timely manner, and in a format they could easily understand. A need was expressed to establish a feedback mechanism for informing the RMA how the Red Cross Society had used warnings and other information received from RMA, and the impact it had caused. Other points that emerged from the session may be summarized as follows:

- The RMA should organize meetings and training events aimed at enhancing delivery of warning services to the DMCPAs and the media;
- The RMA and the DMCPAs on the one hand, and the RMA and the media organizations on the other, should formalize collaborative relations through signing MoUs, defining the responsibilities of the parties, the products, training, etc.;
- It would be essential to develop SOPs between the RMA and users, which would define the procedures to follow when warnings were issued;
- It was found necessary to hold cross-training sessions between the RMA and the media. This would equip the RMA staff with skills on how to work effectively with the media in, for example, writing press releases, organizing press conferences and handling press interviews. The media would understand forecasts better and thus be able to communicate weather information more accurately; and,
- It was found necessary for the RMA to assess, through periodic surveys, the level of satisfaction of the media and the DMCPAs, with the services the RMA delivered to them, so that the RMA could use results of the assessments to improve service delivery and products.



Jean Bosco Nkusi (Rwanda Red Cross) stresses a point as Anthony Twahirwa (RMA) (Centre) and Jean Baptiste Nsengiyumva (MIDIMAR) listen keenly. The lively consultation took place immediately after the User Engagement Session

8. FUNCTIONS OF THE PWS TEAM

Discussions were held on the duties of the PWS Team of the SWFDP. It was understood that they were expected to carry out the following functions:

- Ensure issuance of warnings to specific users (media, emergency responders, etc.);
 - Develop a severe weather database, including a record of:
 - severe weather events and the warnings issued (location, severity, intensity);
 - severe weather events, even if no warnings had been issued;
 - outcomes of warnings (did the severe weather occur (yes/no)), intensity, etc.;
 - Participate in the development of MoUs between the RMA and users;
 - Participate in the development of internal SOPs streamlining the warning procedures within the the RMA;
 - Participate in the development of SOPs, linking the RMA to users;
 - Carry out user satisfaction surveys;
 - Respond to user needs in terms of new products and changes in service delivery;
 - Complete all the parts relevant to PWS of the “Quarterly Report of the SWFDP SubProject” template, which is provided on the SWFDP Website managed from Nairobi, Kenya. This information may be accessed at: <http://www.meteo.go.ke/rsmc/index.php> .
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LIST OF PARTICIPANTS

NO.	NAME:	INSTITUTION / ORGANIZATION:	TEL. NUMBER AND E-MAIL ADDRESS:
1.	SEMAFARA, Ntaganda John	RMA	+250 788 532 913 johnntaganda@yahoo.com
2.	MUSONI, Didas	RMA	+250 782 536 496 mdidace@hotmail.com
3.	TWAHIRWA, Anthony	RMA	+250 788 484 636 twahirwa_anthony@yahoo.com
4.	NKUSI, Jean Bosco	Rwanda Red Cross	+250 788 485 028 bosco.nkusi@rwandaredcross.org / nkusigi1@yahoo.fr
5.	NSENGIYUMVA, Jean Baptiste	MIDIMAR	+250 782 169 601 ibatigol@yahoo.com / n.jeanbaptiste@midimar.gov.rw
6.	GISA, Fausta M.	Amazing Grace Christian Radio	+250 788 805 554 / +250 785 310 257 gisafausta@yahoo.fr
7.	NGIRIMANA, Aimable	RMA	+250 788 570 642 aimablengi@yahoo.com
8.	TWAHIRWA FAUSTIN, K.	RMA	+250 788 357 171 twahf@yahoo.com
9.	ZIRORE MUMBA	RMA	+250 782 521 299 zmumba@gmail.com
10.	UMUBYEYI, Carine	RMA	+250 788 485 393 carinesta01@yahoo.fr
11.	UMURANGAMIRWA, Sylvie	RMA	+250 785 025 854 kanasyvie31@yaoo.com
12.	MUKAMANA, Blandine	RMA	+250 788 650 567 mublandy@yahoo.fr
13.	UWERA, Aline	RMA	+250 788 288 842 jrugaju@yahoo.com
14.	HABIMANA, Marcellin	RMA	+250 788 740 275 nhmarcellino@yahoo.fr
15.	CHEN, Peter	WMO	+41 22 730 8231 pchen@wmo.int
16.	MUCHEMI, Samuel	WMO	+41 22 730 8137 smuchemi@wmo.int
17.	MATITU, Mohamed R.	WMO	+255 784 674 576 mmatitu@wmo.int

MISSION PROGRAMME

23 April 2012: Morning (900 – 1230)

1. Meet the Permanent Representative of Rwanda with WMO
 - a. Discussion on purpose of visit and expected results
 - b. General introduction of SWFDP to forecasting and staff carrying out PWS duties
 - c. Country specific implementation plan for Rwanda
2. Introduction to Rwanda Met operations
 - a. Observing and telecommunications system
 - b. Forecasting systems (demonstration of the forecasting process)
 - c. Identification of gaps
3. Practical session on forecasting and weather dissemination: Discussion on status of forecasting and improvements needed in the operations, forecast lead times and developing warnings etc

23 April 2012: Afternoon (1400 – 1730)

1. (Continued) Practical session on forecasting and weather dissemination: Discussion on status of forecasting and improvements needed in the operations, forecast lead-time and developing warnings etc
2. Establishing service delivery baseline: Current status of disseminating of forecasts, alerts and warnings and verification.
3. The PWS Implementation Plan for SWFDP

4. Developing and communicating warnings
 - a. Criteria for issuing a warning (thresholds)
 - b. Meteorological hazards and warning structure
 - c. Essential elements of an effective warning including issuing advise
5. Communication channels
 - a. Website
 - b. TV and Radio
 - c. Mobile phone
 - d. RANET

24 April 2012: Morning (900 – 1230)

1. Session on user engagement (interactive). To enact a step by step implementation of procedures for working with the media, the disaster community and the general public. Participants to include:
 - a. Senior Met management
 - b. Forecasters
 - c. PWS staff
 - d. disaster managers and
 - e. the media

24 April 2012: Afternoon (1400 – 1730)

1. Duties and expectations:
 - a. The role of forecasters in SWFDP
 - b. The role PWS staff
 - i. Communicating forecasts
 - ii. Keeping the extreme events database
 - iii. Public education
 - iv. Carrying out surveys
2. Discussion on the way forward

25 April 2012 (all day)

Additional discussions

Monday, 16 April 2012 - 1000LT

FLOOD ALERT MESSAGE

Alert Level



Issued by Rwanda Meteorological Agency

FOR DISASTER RISK REDUCTION

WEATHER SITUATION – IN THE PAST 24 HOURS RAIN HAS AFFECTED ALL AREAS OF RWANDA, WITH SOME AREAS, ESPECIALLY IN NORTHERN AND WESTERN PROVINCES REPORTING EXCESSIVELY HEAVY RAINFALL. RUSIZI HAS RECORDED 116MM OF RAINFALL OVER THREE DAYS FROM 13TH TO 15TH APRIL.

RAIN IS FORECAST TO CONTINUE FOR THE NEXT 48-72 HOURS OVER THE WHOLE COUNTRY. THIS CONTINUED RAIN CAN CAUSE FLOODING IN LOW LYING AND POORLY DRAINED AREAS.





THE FOLLOWING ARE THE FLOOD RISK LEVELS FOR THE COUNTRY:

HIGH RISK NORTHERN, WESTERN PROVINCES PROVINCE

MEDIUM RISK EASTERN, SOUTHERN PROVINCES

THE MIDMAR, MINALOC AND OTHER AUTHORITIES ARE HEREBY ADVISED TO KEEP WATCH OF THE SITUATION AND BE READY TO ASSIST THE POPULATIONS WHERE THERE MAY BE NEED.

ALL CONCERNED ARE ADVISED TO:

-  NOT DRIVE VEHICLES INTO AREAS WHERE THE WATER COVERS THE ROADWAY IN AREAS PRONE TO FLOODING;
-  MOVE TO HIGHER GROUND AS SOON AS SIGNS INDICATE IMMINENT DANGER OF FLOODING;
-  TAKE APPROPRIATE PROTECTIVE MEASURES AGAINST LIGHTENING STRIKES (AVOID LARGE OPEN SPACES WHERE YOU ARE THE TALLEST OBJECT, AVOID TAKING SHELTER UNDER TREES OR OTHER TALL ISOLATED OBJECTS, AVOID BEING IN WATER, IF YOU SHELTER IN A CAR AVOID TOUCHING THE DOORS);
-  REPORT CASES OF OBSERVED FLOODING OR OTHER EXTREME WEATHER TO THE RWANDA METEOROLOGICAL AGENCY, Mobile 078

THE NATIONAL WEATHER SERVICE WILL CONTINUE MONITORING THE SITUATION AND WILL UPDATE THIS MESSAGE AS NECESSARY.