

**“Learning through Doing” Pilot Project Proposal**  
**(Madagascar)**

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## **“Learning Through Doing” Pilot Project - Madagascar**

### **1. Introduction**

To assist WMO Members, particularly developing countries, in enhancing their Public Weather Services (PWS) capabilities, the Implementation and Coordination Team (ICT) of the Open Programme Area Group (OPAG) on Public Weather Services (PWS) formulated a proposal to develop pilot projects based on the work of various expert teams of the OPAG on PWS and the Madrid Action Plan (MAP). The objective of the pilot projects is to assist NMHSs of the participating Members to improve their communication with users in selected target sectors, and to develop and deliver an improved range of products and services which would enhance the socio-economic benefits provided through the NMHSs to Members. This proposal was further discussed at the Second Meeting of the Task Force on Socio-Economic Applications of Meteorological and Hydrological Services (renamed as “WMO Forum: Social and Economic Applications and Benefits of Weather, Climate and Water services”) held in Geneva (11-13 July 2007), and was supported by the Forum for implementation. Given the needs of the health services in Africa and the best management practices shown by Ethiopia in creating a cooperative partnership between the National Meteorological Service and the health sector, it is proposed to extend this model to other African countries.

The first country where the project will be implemented is Madagascar. This project will be in line with the Madagascar Action Plan (see below). In addition to malaria specified in the Plan below, consideration of Plague and Rift Valley Fever will also be included in the project. Details of realization of the pilot project, including the planning, implementation and review processes, are also described below.

### **2. Madagascar Action Plan**

The Madagascar Action Plan is a bold, five year plan which establishes direction and priorities for the 2007 to 2012 period. It states the commitments, strategies and actions that will encourage rapid growth, lead to the reduction of poverty, and ensure that the country develops in response to the challenges of globalization and in accordance with the national vision – Madagascar Naturally and the UN Millennium Development Goals.

The eradication of major diseases such as malaria and endemic epidemic diseases is the challenge 2 of the 5th commitment stated in the Madagascar Action Plan, that is Health, Family Planning and the Fight Against HIV/AIDS, to ensure that all of Malagasy people are healthy and can contribute productively to the development of the country and lead long and fruitful lives. For the case of malaria, one of the strategies is to ensure 100% coverage for malaria prevention through the implementation of all available services for effective control. The Madagascar Action Plan aim is to reduce the number of presumed malaria cases from 1 234 500 (2005) to 320.000 (2012) and the percentage of malaria mortality in hospital from 17;5( 2005) to 9 (2012).

### **3. The WMO Madrid Conference and Madrid Action Plan (MAP)**

The WMO International Conference on “Secure and Sustainable Living: Social and Economic Benefits of Weather, Climate and Water services” took place in Madrid, Spain from 19-22 March 2007. The Conference endorsed a Madrid Action Plan (MAP), with the overall objective of achieving, within five years, a major enhancement of the value to society of weather, climate and water information and services in response to the critical challenges represented by rapid urbanization, economic globalization, environmental degradation, natural hazards, and the threats from climate change.

The main recommendation of MAP is that NMHSs would need to enhance their efforts to make potential users – including their governments – aware of the range of products and services,

including potential new products and services, and their expected benefits for users. This should lead to a dialogue with the users so that the users can specify their requirements and respective service level agreements can be concluded to maximize the benefits provided by the meteorological and hydrological community.

The pilot project “Learning Through Doing” is an integral part of the follow-up actions arising from the MAP, and also takes into account contributions from Regional workshops which preceded it. The Actions from MAP that have direct relevance to the mandate of the PWS Programme of WMO are as follows:

**Action 3:** Embark on capacity-building endeavours through the creation of education and training opportunities for both users and providers of weather, climate and water information in order to increase awareness of users to the opportunities afforded by weather, climate and water services and to assist the providers of these services to understand more fully user requirements.

**Action 7:** Facilitate and strengthen dialogue and collaboration between providers and users of weather, climate and water information and services through international, regional and national platforms and programmes, and through the development of appropriate tools and methods.

**Action 9:** Strengthen existing, and establish new, operating partnerships between users and providers of weather, climate and water services to share responsibility for effective delivery of services, and evaluate their performance.

**Action 10:** Facilitate and strengthen the ability of NMHSs to effectively communicate weather services and products, through all forms of media, in such a manner as to maximize the benefits provided to society by the meteorological and hydrological community.

**Action 11:** Encourage the NMHSs and the social science research community to develop knowledge and methodologies for quantifying the benefits of the services provided by NMHSs within the various socio-economic sectors, in particular:

- Develop new economic assessment techniques including especially techniques of economic assessments for developing and least developed countries;
- Develop WMO guidelines on operational use of economic assessment techniques.

#### **4. World Health Assembly Resolution**

The 61<sup>st</sup> World Health Assembly reinforced the need for countries to develop health measures and integrate them in to plans for adaptation to climate; to strengthen the capacity of the health systems for monitoring and minimizing the public health impacts of climate change through adequate preventative measures, preparedness, timely response and effective management of natural disasters; and for the health sector to effectively engage with all of the relevant sectors, agencies and key partners at the national and global levels in order to reduce the current and projected health risks from climate change.

#### **5. Regional Workshops**

As part of the process leading up to the Madrid Conference, a series of seven regional and sub-regional workshops were organized by WMO during the period November 2005 to February 2007 in the Philippines, Mali, Brazil, Kenya, Tanzania, Kuwait and Croatia. The main goal of these workshops was to provide a forum for promoting interdisciplinary assessment of socio-economic benefits of meteorological and hydrological services involving service providers and users.

The overall findings from the workshops identified the following areas of concern:

- Inadequate understanding of user needs for information and services;
- Lack of awareness of users of the available and potential services;
- The difficulty of integrating Weather, Climate and Water Services into national development strategies and priorities;
- Lack of capacities and competencies in NMHSs to deliver services to meet user needs;
- Inadequate communication between NMHSs and users.

## 6. Outline Project Plan

### a. Madagascar background

#### Malaria

Malaria remains the major public health problem in Madagascar. Apart from the Central Highlands, more than one consultation out of five is regarded as related to malaria and thus treated such. The knowledge of malaria situation in Madagascar is mainly based on reported presumed malaria, 1 141 568 and 1 388 263 presumed malaria cases were reported in health centres during the years 1999 and 2000 respectively. Central highlands and the southern region of Madagascar constitute epidemic-prone areas. In Sub-arid regions like the southern part of Madagascar, malaria is influenced by climate, as rainfall is very important to assess availability of mosquito breeding sites. Malaria prevails mainly during February to April (wet season) in all districts of the island. The area of the Central Highlands has a very marked seasonality with an almost total absence of malaria during the winter period (July to November). Fever surveillance, including malaria were performed since 2007 in thirteen sites of Madagascar and climate variability information will be helpful for understanding the distribution of malaria cases.

#### Plague

From 1957 to 2001, 20 900 suspect cases of plague were notified in Madagascar including 4473 confirmed or probable bacteriological (21,4%). The evolution of the national incidence is marked by two important increases. The first between 1985 and 1990 is related to plague reappearance in several districts. This recrudescence is explained partly by socio-economic difficulties of the country, supporting the contacts of the population with the reserves and the vectors of the plague. The second increase from 1994 to 1997 is partly due to the improvement of the epidemiologic monitoring system and to the reappearance of the plague in the port of Mahajanga. Existing throughout the year, plague endemic is characterized by a seasonal recrudescence of the transmission, which is spread from September to March (hot and wet season) and July at November (fresh and dry season) respectively in the highlands and Mahajanga. This confirms the importance of climate component in plague surveillance.

#### Rift Valley Fever

Rift Valley Fever (RVF) is a viral anthroponosis transmitted by mosquitoes, principally from the *Aedes* and *Culex* genera. The circulation of the virus during inter-epizootic periods is not well understood and few data are available on the virus reservoir (s) and the impact of the climate or environmental change on this reservoir. The presence of Rift Valley Fever virus (RVFV) in Madagascar was demonstrated in 1979 by isolations from mosquitoes captured in the primary rain forest of Perinet, Moramanga district (130 km east of Antananarivo). Other epidemic outbreak were detected in Madagascar in March 1990 when outbreaks were reported in human and animals from East part of the island. Between February and April 1991, unusual numbers of bovine abortion due to RVFV were detected around Antananarivo. These two outbreaks occurred during the rainy season. Recent disease outbreak in cattle population was reported in April 2008. Epidemics of RVFV were linked to climate changes and ecological perturbations caused by humans favoring the population dynamic of the mosquito vectors and the transmission of the virus. Its impact is socially and economically important because it affect both cattle and human population.

## **b. Project Objective**

The objective of the “Learning through Doing” Pilot Project –Madagascar is to assist Madagascar, through learning by doing, and through maximizing existing capabilities, to make existing and potential end-users aware of the range of both available and potential new products and services, and the benefits for users; and to enhance the capacities of the NMHSs to effectively disseminate and deliver such products and services. In Madagascar the focus will be on the use of weather and climate information in support of health services.

## **c. Key outcomes**

- i. Improved service delivery (to the benefit of health services and the participating NMHS);
- ii. Enhanced capacity in the NMHS; and
- iii. Enhanced capacity to use weather and climate services in the health sector.

## **d. Exclusions**

Since this is a pilot project, it is envisaged that the lifetime of the project will not exceed two years. A key output of the project, in this regard, will be to identify the potential of sustaining the activity as a permanent collaboration between the national meteorological service and the health sector; and to increase collaboration between the health sector and meteorological services in other countries in Africa.

## **e. Project Scope**

The pilot project comprises three stages: Planning, Implementation and Review, as described below. The activities, key deliverables and milestones are included in the description of each stage.

### **Stage I: Planning**

1. Preliminary assessment of capacity and need for cooperation between National Meteorological Service and the Ministry of Health, and other health organizations in Madagascar. **(Ongoing - will be completed by end of July 2008)**
2. A national workshop, with selected international participation, to develop the scope and outline the terms of reference for a standing Working Group on Climate and Health with membership drawn from all of the interested national organizations and cooperating international organizations. **(October 2008)**
3. The workshop, scope of work, and formation of the working group would constitute the key deliverables of Stage I.

### **Stage II: Implementation**

1. Formalize membership and organization of the Climate and Health Working Group as a standing organization. The working group will be responsible for finalizing its terms of reference and establishing its working arrangements. The working group will focus initially on building the capacity of its members to understand the needs of the health sector and the capacity of the meteorological services to meet those needs. **(December 2008)**

2. The Climate and Health Working Group will build its capacity through the process of developing a business plan to be able to:
  - i. Identify the weather and climate data, information and service needs of the health sector; gaps in current data, information and service delivery; and recommendations for filling these gaps, including enhanced observing networks, decision support tools.
  - ii. Identify gaps and problems which constrain the routine use of weather and climate information by the health sector, and identify and pursue the means to overcome them.
  - iii. Formulate institutional data sharing among the sectors.
  - iv. Identify research needs on climate and health.
  - v. Identify education and training needs across the sectors.
  - vi. Facilitate access to tools of climate and weather for the health sector
  - vii. Enhance the use of early warning systems for climate-sensitive diseases including malaria and plague
  - viii. Build the capacity of national, local and community based organizations to widen and strengthen their services in this area.
  - ix. Organize and present to decision-makers scientific evidence on the impact of climate variability and climate change on health.
  - x. Organize an annual workshop on weather/climate and health issues.
  - xi. Collaborate with similar entities throughout the region to share experiences and build on each other's skills
  - xii. Mobilize resources to ensure the sustainability of this venture **(June 2009)**
3. The business plan will be put into action. The improved and/or new products and services will be applied to the areas as identified and the outcome of the business plan will be monitored in a systematic way by the Working Group **(July 2009-December 2010)**
4. The business plan and the outcome monitoring plan will be the key deliverables of the Implementation Stage.

### **Stage III: Review**

1. At the end of the pilot phase of implementation (December 2010), an independent review of the implementation of business plan will be conducted to assess the improved PWS and its impact on the health sector. A key metric will be the measureable benefit of the new working methods to the health sector in terms of access to, and use of, weather and climate data and information. **(March 2011)**
2. An overall evaluation report will be the key deliverables of this stage.

## **7. Review and Evaluation**

In order to easily assess the success made in the implementation phase of the project, a procedure for ongoing documentation of results will be built into the project.

### **Note on the selection of Madagascar as a candidate Member**

- The NMHS Madagascar has an operational forecast office and produces an adequate suite of products and services.
- The NMHS Madagascar has demonstrated level of commitment – both infrastructure and support from the management.
- The NMHS Madagascar and health services are already cooperating and will benefit from greater collaboration.