



Preparedness and response  
to the cyclones and floods

in Madagascar

a concrete progress





*From the Prime Minister Head of Government,  
Minister of Interior and Decentralization*

*Madagascar is the most exposed country to cyclone in Africa and the third most vulnerable to climate change in the World. An annual average of 1 to 2 cyclones directly strike the country, causing immediate and long-term direct consequences. They weaken both the affected households and the economy of the country. The economic losses caused by a strong cyclone are typically around 4% of the national Gross Domestic Product.*

*Fully aware of this real and permanent threat, the Malagasy Government, with the support of all partners, has reinforced its efforts to strengthen resilience, reduce risks and prepare for disasters in Madagascar. Between 2015 and 2017, approximately \$US 30 million were invested in this area which targeted the most vulnerable regions to natural disasters. These efforts have obviously started to bear fruit if we refer to the results achieved when Intense Tropical Cyclone Enawo struck in March 2017. The resilience capacity of the community allowed to limit damages and losses incurred by the passage of this cyclone.*

*However, huge challenges are still eminent faced. The early warning system to floods does not cover all the cities at high risk; the search and rescue services do not reach all the districts yet; the majority of the regions do not have emergency operation centers, etc. Therefore, efforts will be done to apprehend the on-going and future cyclone seasons.*

*I would like to take this opportunity, on behalf of his Excellency Mr. Hery Rajaonarimampianina, President of the Republic of Madagascar, to sincerely thank all our partners for their support to the successful response to Enawo. I would particularly like to express my gratitude to the Humanitarian Country Team (HCT), under the leadership of the United Nations Resident Coordinator, for his unwavering support to the Government's actions.*

## Preparedness and response to cyclones and floods in Madagascar, a concrete progress

This report is based on the passage of Intense Tropical Cyclone Enawo which affected Madagascar in March 2017, the strongest cyclone experienced by the country over the last 10 years.

Cyclone Enawo came in through the North East of the country, at the level of Antalaha district, as a strong category 4 cyclone on Monday 06 March 2017 at night. Enawo then swept through the country striking the highlands and got out of the country on Thursday 09 March in the far South of the country.

Enawo brought extremely powerful winds over 230km/h when landing, then huge downpours in its wake. Half of the country was affected, that is 58 districts out of 119, but two districts namely Antalaha and Maroantsetra were the most affected. These districts recorded 283,000 affected people out of 434,000 at the national level, and approximately 90% of the damages identified in the country.



Sensitization at school level and with "Scouts" on the early warning system using color codes, BNGRC, 2016

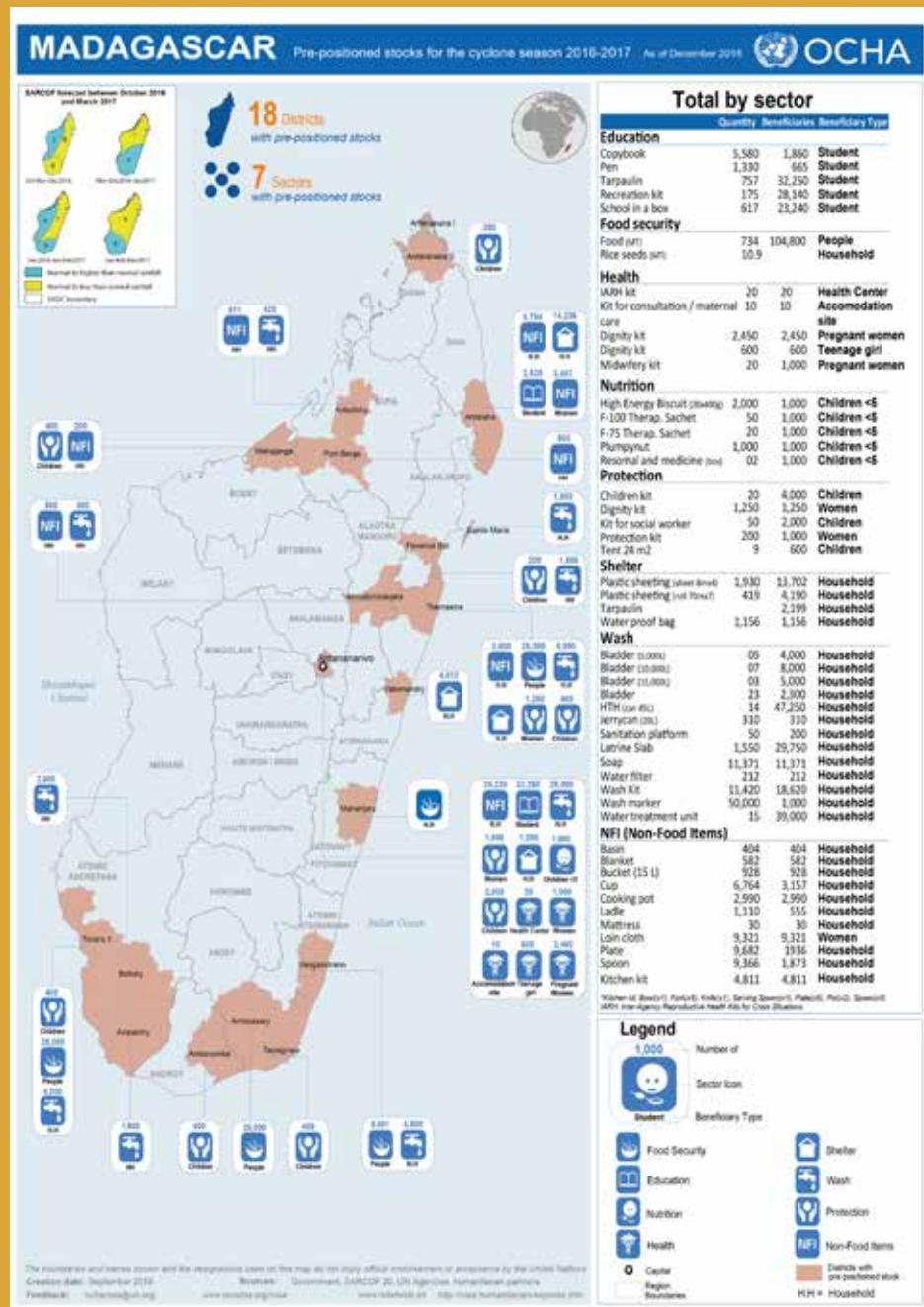


Simulation exercise in Fenerive Est district, CPC, November 2016

# 1. Good preparedness and crisis anticipation

For the 2016-2017 cyclone season in particular, the country was well-prepared through the following major activities, at the instigation of the Government and the Humanitarian Country Team (HCT)

- Updating contingency plans: 01 multi-risk for the national level, 12 for the local level
- Conducting 02 simulation exercises
- Establishing 04 evacuation plans in the major cities
- Mobilizing volunteers to sensitize population who live in the areas at risk, in case of evacuation in Grand Tana
- Retraining the evaluation team
- Setting up prepositioned stocks to cover 50,000 people
- Reinforcing partnership with the private sector
- Providing various thematic training to actors at national and local levels



# 2. Early Warning systems and evacuation plans allowed evacuation of the population on time

In 2016, a lot of efforts were made to reinforce the Early Warning Systems in order to activate the various evacuation plans on time.

SMS has been used from now to transmit cyclone alert to populations in the threatened areas. Sophisticated equipment was set up in the major rivers (the large rivers in the neighbourhood of Antananarivo the capital city, Fihirenana river in Toliary) to detect and automatically



Evacuation for precaution measure in Antananarivo. BNGRC – March 2017



Support to the evacuation temporary sites in Antananarivo. Red Cross – March 2017

send messages on the water level in case of floods. When the cyclone Enawo hit, this large warning dissemination allowed to activate and implement early evacuation plans.

- 247,000 people were evacuated on time all over the country
- The majority of these people then rapidly went back home after the flood waters had receded. Those who could not do so were accommodated in temporary displacement sites.



Monitoring of children situation by the « Child Protection Network» in a temporary site in Antananarivo. MPPSPF – March 2017

### 3. Damage limited despite the cyclone strength

The latest cyclone with the same intensity which hit relatively the same area (North East) is the intense tropical cyclone Ivan of February 2008. However, the results of disaster risks reduction activities and disasters preparedness have allowed to limit the damages caused by cyclone Enawo according to the comparison hereafter.

Intense tropical cyclon **IVAN 2008**



Intense tropical cyclon **ENAWO 2017**



Destructive landslide in Ambodiaramy village, Maroantsatra. CPC - April 2017

### 4. Coordinated post-disaster evaluations and rapid implementation of international support services

Before Enawo hit, the assessment process started as described in the national contingency plan. Under the coordination of the Bureau National de Gestion des Risques et Catastrophes (BNGRC), three teams were deployed in the most endangered districts. One of the teams was equipped with a drone to take and transmit pictures of the initial damages.

In addition, through the Office of the United Nations Resident Coordinator, the Government requested assistance of the international community. In response, United Nations System through OCHA deployed the United Nations Disaster Assessment and Coordination (UNDAC) team. Its deployment, the same day Enawo hit, included Telecom Sans Frontière (TSF), Map Action and United Nations Operational Satellite Applications Programme (UNOSAT). This team was based at BNGRC office and at the most affected two districts (Antalaha and Maroantsetra). UNOSAT provided remote data and satellite maps on the possible extent and evolution of damages before the cyclone, and during the two weeks after the cyclone.



UNDAC team based at BNGRC office in Antananarivo. BNGRC – March 2017

A multisector team of rapid evaluation, made up of the BNGRC, United Nations Resident Coordinator, Representatives of UNICEF and WFP, UNDAC, UNOCHA, FAO, Corps de Protection Civile, Malagasy Red Cross, and NGOs (MEDAIR, CARE, CRS), travelled to the field to collect the first data via aerial and field observations, and hold meetings with resource people and the community.

The Minister to the Presidency in charge of Mines and Oil (coach of the most affected region), the Minister of Public Health, the Minister of Higher Education and Scientific Research, with the WHO Resident Representative and UNICEF Deputy Representative, conducted a first assessment of the damages in the health and education sectors in the North and North East. Soon after, other sectorial assessments were carried out separately by the Ministries and partners to complete detailed needs in information.



Assistance by Telecom Sans Frontières in Maroantsetra. UNDAC – April 2017

Just four days after the passage of Enawo, the sectoral and inter-sector humanitarian needs for the six upcoming months were available, standing at USD 20.1 million (later on reviewed at USD 17.8 million). This was the basis of an international call made by the Government.



Temporary classroom in Maroantsetra.  
UNICEF – June 2017



Warehouse for humanitarian items in Maroantsetra.  
WFP – June 2017



Health free case management in Brickaville.  
WHO – March 2017



Cleaning of Irrigation Chanel (Sambatra) via Cash  
Transfer, BNGRC, March 2017

## 5. An anticipated and coordinated multi-sectorial response

Madagascar has an established mechanism for risk and disaster management already in place and operating at various levels: strategic and technical level, national and local level. The response to cyclone Enawo was directly managed through this mechanism. CRIC (Reflexion Committee of Actors intervening in Disaster) which is led by the Prime Minister at the strategic level and by the BNGRC Executive Secretary at the technical level, was convened before the cyclone hit. In the field, all the Risk and Disaster Management Local Committees were called upon and in permanent contact with BNGRC.

This mechanism run smoothly and the national leadership was key. Major decisions were made and the key activities listed below were carried out in a chronological way.

- Strategic meeting prior to the cyclone led by the Prime Minister who informed about the measures already made by the Government, the level of risks related to the cyclone and request for assistance to partners in case the needs should exceed the national capacity
- Activation of Risk and Disaster Management Local Committees
- Deployment of three BNGRC internal teams before the cyclone hit, and support to the implementation of Emergency Operation Centers at the local level.
- Rapid deployment of Civil Protection Teams to evacuate people and for search and rescue operations
- Declaration of an emergency situation by the Government
- Establishment of a six-month humanitarian response plan supported by an early recovery plan for twelve months
- Strong involvement of the private sector, including the private sector humanitarian platform.
- High level monitoring visits, jointly organized by the Government and the Humanitarian Country Team.

## 6. A good strategy of resources mobilization

Despite the significant efforts made by the national Authorities, the national response capacity could not cope with it and a resource mobilization process had to be initiated. The Government declared



Launch of the Flash appeal at the Ministry of Foreign Affairs.  
UNOCHA - 23 March 2017



Launch of the Flash Appeal at the United Nations Organization in  
New York. UNOCHA - 28 March 2017



United Nations Common House, participation of Madagascar via  
« vidéoconférence ». UNOCHA - 28 March 2017

a national emergency situation and called upon international assistance on 13 March 2017. A “Flash Appeal” budgeted at USD 20.1 million (later on reviewed at USD 17.8 million) was finalized just five days later and officially launched at two levels.

At the country level, on 23 March 2017 under the leadership of the Vice Minister of Foreign Affairs at the Ministry of Foreign Affairs, in the presence of Ambassadors, Representatives of donors and Cooperation Agencies present in Madagascar.

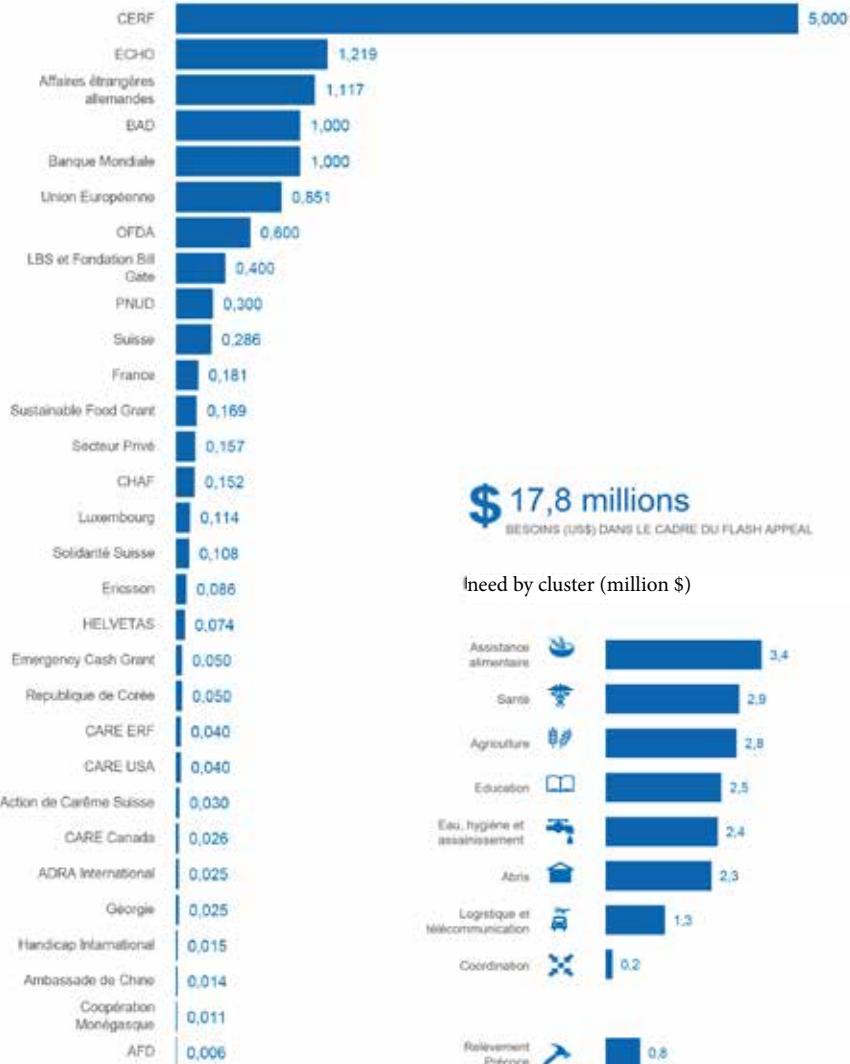
And at the Head Quarter of the United Nations Organization (UNO) in New York on 28 March 2017, presided by HE Madagascar Permanent Representative in the UNO and the United Nations Under-Secretary General in charge of Humanitarian Affairs and Emergency Relief Coordinator, with the participation by videoconference of HE the Malagasy Prime Minister Head of Government, the Resident Coordinator of the United Nations System in Madagascar, with the attendance of six Government Ministers. Members of the Humanitarian Country Team were also represented. A massive assistance of countries present within the UNO in New York marked this event, they offered their condolences and also congratulated the Malagasy Government for the timeliness of responses.

The Flash appeal was financed 100%, including 72% in cash and the remainder in kind. The private sector contributed up to \$300,000, and additional \$400,000 for total construction of 15 primary schools in the North East

Source of funds received as part of Flash Appeal

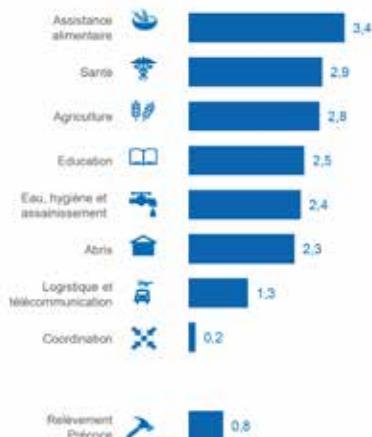
12,89 millions  
RECUS (US\$)

Funds received as part of Flash Appeal



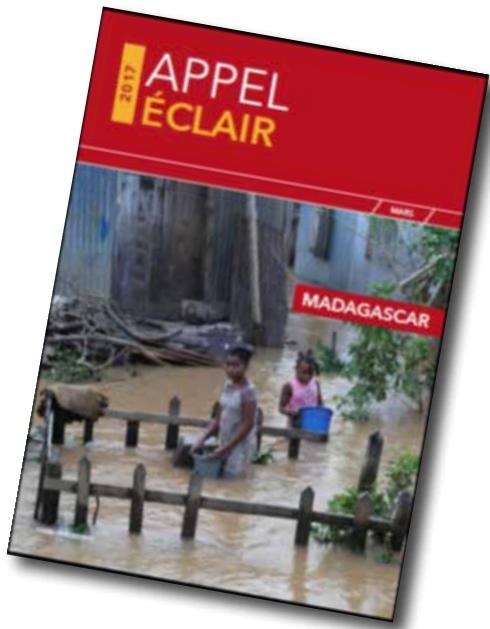
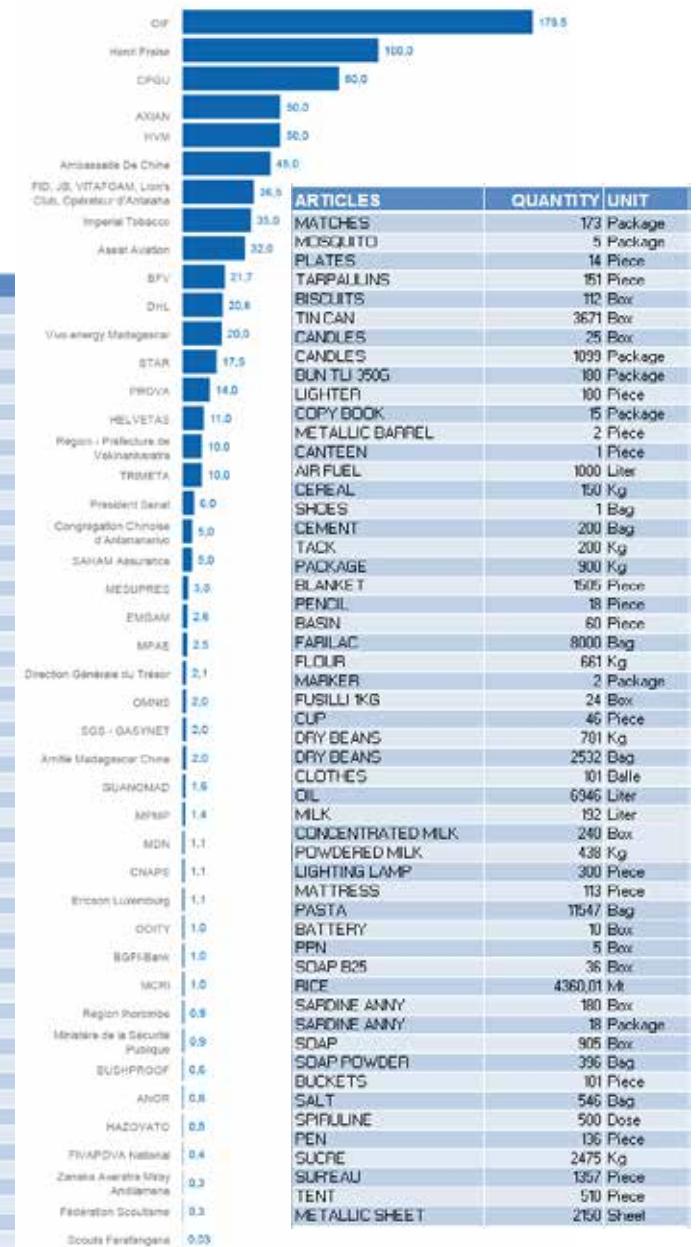
17,8 millions  
BESOINS (US\$) DANS LE CADRE DU FLASH APPEAL

Need by cluster (million \$)



Cash and in kind donations directly allocated to the BNGRC

777,8 million (Ariary)  
FUNDS RECEIVED BY THE BNGRC





## 7. Key multi-sectorial achievements and their impacts

**247.000 people were**

evacuated on time before cyclone Enawo struck, which allowed to save thousands of lives.



**395.000 people**

received the restauration of access to drinking water

**1,015 schools and 241 health centres**

have recovered hygiene and sanitation conditions, under the coordination of the Ministry of Energy, Water and Hydrocarbons and UNICEF, with the participation of RCM, MEDAIR, CRS, CARE International, ASOS, JIRAMA, SAMVA, HELVETAS and the private sector.



**913 provisional schoolrooms**

have been set up and others are in the process of being set up in the North East.



**323 school institutions**

were provided with recreation kits and another 365 with school kits, under the coordination of the Ministry of National Education and UNICEF, with the participation of the private sector.



**151,600 people**

benefitted from food assistance and support to agricultural relaunch, under the coordination of the Ministry of the Presidency in Charge of Agriculture and Livestock, FAO and WFP, with the participation of the BNGRC, Care International, CRS, WHH, CUA, private sector and various associations.



**74,575 children**

benefitted from nutrition-related activities, including the management of moderate acute malnutrition, and the distribution of protection rations, under the coordination of the National Office of Nutrition (ONN) and UNICEF, in collaboration with WFP, the Ministry of Public Health, with support from the World Bank and the African Development Bank.



**100,000 people**

were granted access to free healthcare services, including reproductive health, under the coordination of the Ministry of Public Health and WHO, and with the participation of UNICEF, UNFPA, CARE International, CRM and CRS.



**55,000 people**

received assistance in the rehabilitation of their houses, under the coordination of Cluster Shelter from the global level, with the support of IOM, Red Cross Movements, CARE International, CRS, ADRA and the private sector.



**830 mt tons of food**

and non-food assistance were transported with the mobilization of important logistic means to reach the two most affected districts (Antalaha and Maroantsetra), under the coordination of BNGRC, Cluster Logistics from the global level and WFP.



**4,000 people**

victims of gender-based violence, were assisted under the coordination of the Ministry of Population, Social Protection and Promotion of Women and CRS, and with the participation of UNICEF and UNFPA.



**12,245 households  
12.400 households**

could benefit from cash for work implemented by FID, CARE, WHH and SIF. have benefitted from unconditional cash from BNGRC, CARE, WFP and RCM, under the coordination of the Ministry of Population, Social Protection and Promotion of Women and BNGRC, supported by UNICEF.



**Around 30 daily information bulletin and 06 joint situation reports**

were realized under the coordination of BNGRC and OCHA during the first three months of the crisis to inform on the response achievement, non-covered needs and challenges to take up.

All these interventions enabled to:

- avoid worsening of the food and nutrition insecurity situation of children under 5 years;
- avoid disease outbreaks in the flooded areas;
- and enable the 44,700 pupils in primary schools to complete the school year in June 2017

## 8. Strong national leadership

Malagasy Authorities played an important leadership and commitment during the response to the cyclone Enawo. HE the Prime Minister Head of Government chaired a strategic information meeting the day before the passage of Enawo, BNGRC conducted daily meetings before, during and after the disaster; a similar situation in all the affected districts, under the coordination of the “Prefets des regions” and Chiefs of districts.

The day after the passage of Enawo, high level of visits were conducted by HE the President of the Republic, HE the Prime Minister and members of the Government, in the SAVA regions where cyclone Enawo landed. This enabled swift Government action and leadership in response.

The declaration of the national emergency situation was made a couple of days later, and the Government called on international assistance in a timely manner. The resource mobilization process was conducted under the leadership of the Government, both at the national and global levels.

All the involved Ministries ensured the lead for sectoral response. The Ministry of Population, Social Protection and Promotion of Women in particular, played a major role in providing psychosocial support to displaced people in temporary sites, both in Antananarivo and in the main affected districts.

The Government, via HE the Prime Minister, conducted joint monitoring missions of the situation of responses. On the one hand, five Ministers, namely the Minister of the Presidency in charge of Mines and Oil, the Minister of Water, Energy and Hydrocarbons, the Minister of Employment, Technical

Teaching and Vocational Training, the Secretary of State within the Ministry of National Defense in charge of the National Gendarmerie and the Executive Secretary of BNGRC; and on the other hand, the Humanitarian Country Team, led by the Resident Coordinator, and the representatives of the members namely, UN Agency Representatives (WHO, WFP, UNDP, UNICEF, and UNFPA), the National President of the Malagasy Red Cross, the Representatives of CARE and HELVETAS, have participated to this joint visit.



Presidency visit to the entry point of the cyclone in Antalaha. BNGRC - March 2017

This mission enabled to perceive that the affected communities are satisfied with the emergency responses provided, the major achievements have been detailed in the previous chapter.



Presidency and Government visits to the most affected districts. BNGRC - 10 March 2017

## 9. Accelerated recovery and rehabilitation after the emergency interventions

The same monitoring mission revealed that, according to the affected communities, the recovery phase requires more investment on the improvement of accessibility, sand removal in rice fields for the agricultural relaunch, rehabilitation of infrastructure such as health centers and schools, continuation of mobile health services, permanent supply of petrol for the continuation of the vaccination chain, and supply in drinking water in rural areas. HE the Prime Minister highlighted that the Government has already allocated a budget in order to contribute to this rehabilitation phase.

Indeed, an early recovery plan for a period of one year (from June 2017 to June 2018), under the coordination of BNGRC and with the UNDP support, aims at promoting activities relating to this rehabilitation phase. This plan was budgeted for \$US11 million. Many initiatives aim at supporting this rehabilitation phase.

- **7kms of beaches** were cleaned as an early recovery activity, under the coordination of local Authorities and UNDP. The activity mobilized 12,208 men-day (for 339 beneficiaries) and 30 cubic meters of non-degradable products were incinerated and buried.

- **World Bank has allocated \$U.S. 13 million** to support the reconstruction of infrastructures, through the Development Intervention Fund.

- **The Ministry of the Presidency**, in charge of Presidential Projects, Land Use Planning and Equipment (M2PATE), BNGRC, University of Antananarivo, have established a definitive relocation plan for 2,257 individuals (455 households) in the fokontany of Ambodiaramy (Commune of Ambinanitelo) and Antakotako, district of Maroantsetra.

- **Fondation Telma** has funded the construction of 15 public primary schools in the SAVA region, worth 400,000 U.S. dollars.



Desinfected well in Maroantsetra.  
UNOCHA – June 2017



Transportation of humanitarian items by water route in Maroantsetra, WFP - April 2017



Evacuation of population through local capacities. District of Maroantsetra – March 2017



Ambodiaramy village in Maroantsetra, destroyed by a post-Enawo important and deadly landslide. BNGRC - April 2017

## 10. Limits of the response to disaster in Madagascar, areas for future improvement

Despite actual advancements experienced in the response to cyclone and floods in Madagascar, there are some limits that impair the efficiency of humanitarian community efforts. Amongst these limits, we can mention:

**Accessibility.** Many areas at risk of cyclone and floods in Madagascar are located in very isolated zones, accessible by road only 6 months per year. This extreme isolation results in a major logistic challenge and has considerably increased the operational costs of the response, delay the collect of post-catastrophe data and access to information.

**Lack of means/equipment at local level.** Despite the proactive initiatives at local level, means and equipment are still lacking for saving lives. Out of the 119 districts of the country, only a dozen have fire rescue services. That is why partnership with the private sector has been considerably useful and developed. For instance, evacuation of 13,000 individuals for two days carried out in Maroantsetra, were managed through the maritime capacities of the local private sector. Recently, the Government has provided to the 22 regions of the country important search and rescue equipment.

**Effects of environmental degradation.** Despite the quick intervention of the search and rescue teams, acute environmental deterioration often causes unpredictable landslides several weeks after a cyclone, which could destroy totally a village. This is the case in Maroantsetra, in the village of Ambodiaramy, located at a day's distance by water route. In this type of situation, no rescue is possible on time and loss of lives is almost inevitable..



## Acknowledgements

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*To the civil society and all associations*

*To international and national media*

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Nations Unies

