

**WASH and overall Humanitarian needs in the province of  
Inhabane following the cyclone Dineo**

**1. Overall humanitarian needs and situation:**

Cyclone Dineo hit Imhabane Province on the night on the 15<sup>th</sup> to 16<sup>th</sup> of February 2017 affecting mainly coastal districts (Inhambane, Jangano, Homoine, Morrumbene and Massinga) as the cyclone dissipated quickly once on land. Rapid assessment was carried out with INGC team through the supervision of his Excellency the Governor of Imhabane province and technical provincial team.

Information was triangulated through field visits (Imhabane, Jangano, Maxixe and Morrumbene) and meeting with keys informant people (District Administrators, medical staffs, teachers and directors, AIAS, SDPIE, FIPAG, DPOPHRH ...).

Damages are important mainly on institutional buildings, businesses and private housing (estimated to 20.000 houses directly affected; INGC) due to roof being blown away (such 652.000 persons affected from which 130.000 are in need; INGC). It is rare to have all the building of one compound being completely damaged. Most affected people are staying in their building less impacted or staying with neighbours or relatives. From a rapid assessment made at community level by NGOs and UN agencies, humanitarian community should be able to have details information on number of families who have completely lost their houses (by 21.02.2017) but from field observation it is probably less 8.000 families (such less than 10% of the families).

Due to power cut limiting pumping, water supply has been a priority issue in the main cities but through quick response, water supply is now operational in 8 of those 9 cities.

From the the 18.02.2017 most of the needs identified are not anymore live-saving needs but recovery needs mainly related to education, health (impact on institutional buildings) and food security (impact on crop).



*Damages in the street of Inhambane and hospital of Jangano (17.02.2017) with damaged roof and windows*



## **2. WASH needs and situation:**

### **2.1. Water related issues in main cities:**

Few main cities of Inhambane province have faced difficulties to access water from the 16 to the 18 of February. The main issue is the pumping that require electricity to run huge pumps.

The cities facing such difficulties are:

- Inhambane
- Maxixe
- Massinga
- Homoine
- Inharrime
- Jangano
- Zavala/quissico
- Morrumbene
- Tofu

Most of those cities have back-up generator but limited availability of fuel (or funds to buy fuel) and some of the biggest generator consume up to 200 litres of fuel for 5 hours of pumping (in Inhambane and Maxixe). Moreover, some generators are old and maintenance is poor. Within the first 48hours, people affected in those cities have used rain water or had access to alternative water points with hand-pumps mostly in the suburbs. In most of those cities, electricity was back within the 24hours to 48hours allowing water pumping and delivery. Such event has highlighted the need to reinforce governmental partners to use alternative energy supply during an emergency.

On Sunday 19/02/2017, some difficulties remained in Massinga, Tofu and Inhambane cities. In Inhambane (where water station is 11kms away from the city) and Tofu, pumping stations are not yet supplied with electricity but the pumping is running on fuel. As fuel capacity expired on the 19/02. UNICEF provided 2.400 litres to support pumping for 3 days. In Massinga, the city is not yet supply with electricity and back-up generators are broken. Population is using private suppliers organising “water trucking” or from private “wells/boreholes”.

Limited damaged was reported on the water networks but, due to falling trees through their roots some secondary pipelines were broken in Inhambane and Morrumbene (cost: 250.000 Meticais; source: INGC). Such damaged were easily fixed within 24hours. Seven storage tanks were also reported partially damaged in Maxixe (estimated cost: 1.9 million of Meticais; source: INGC) which is disturbing the water supply (despite electricity supply).

## **Recommendations:**

### **Action (short-term): budget: 5.000 dollars**

- Advocate at provincial level to connect the water pumping stations of Inhambane, Tofu and Massinga ASAP with electric supply.
- Provide fuel to back-up generators of water pumping station

### **Action (medium-term): Estimated budget: 250.000 USD**

- Provide coastal main cities with back-up generators and fuel for 48h based on existing capacity and vulnerability (Emergency Preparedness)
- Encourage population to collect rainwater during heavy rain through campaign awareness as a resilience method to power cut during storm.
- Assess INGC capacity to provide water through water treatment units in emergency and support as requested.
- Provide support (especially to Maxixe's water plant) to rehabilitate damaged from the cyclone.

## **2.2. Water related issues in small villages:**

From initial information and assessments, villages using protected wells or boreholes with hand-pumps have not reported damaged.

Following heavy rainfalls (around 100mm in the province within Wednesday 15<sup>th</sup> and Thursday 16<sup>th</sup>), unprotected water sources provide turbid water. As a coping mechanism when it's raining, villagers fill-up their buckets/water containers with rainwater from the roof giving them one or two days of drinking water after the storm.

Some concerns remain on elevated solar water system or elevated tank more exposed to strong winds. No villages have reported damaged on their "systema multi-uso", however, in the primary school of Maxixe, the elevated tank was destroyed by a falling-tree (photo) but water remain accessible within the surrounding of the school as electricity is back in Maxixe.



*The fall of a tree (top right) has damaged the elevated tank (Maxixe primary school)*

## **Recommendations:**

### **Action (medium-term): Estimated budget: 150.000 USD**

- Provide support through recovery projects to fix damages from rural water supply units

### **2.3.Sanitation:**

As many infrastructures, roofs from latrines in institutions have been partially (30-40%) or totally damaged (10 to 20%) in the most affected districts along the coast.

Drainage canals have been blocked by debris and need to be cleaned to allow water flow and avoid stagnant grey-water.

Despite being weaker construction, private latrines have not been more affected than houses by the cyclone. Damage remain high as many roofs were blown away or damaged by falling trees (20-30% partially or totally damaged) and sometimes the overall infrastructures (<10%). Pits and sanitation platform seemed to have faced limited damaged (photo).



*Damages on institutional and private latrines in Jangano and Maxixe*

## **Recommendations:**

### **Action (medium-term): estimated budget for sanitation recovery: 150.000 USD**

- Provide support through recovery projects to fix damages on latrines
- Clean drainage channels from debris in main cities affected by the cyclone

## **2.4. WaSH NFIs:**

No major IDPs settlements have been reported, however, INGC have identify needs for logistical support with “certeza” (87.322 units), water containers (52.627 units), plastic rolls (9.256 units), HTH chlorine (500kg). Such needs are based on scenario (considering 15% of IDPs within the total population) and not on current needs.

Less than 1.000 IDPs have been identified in Maxixe in three transits centers but Government have asked them to return home or take shelter with families or neighbours due to valid historical reasons.

Humanitarian agencies are currently identifying number families who have totally lost their house (probably less than 8.000 families but such figures should be available by the 21<sup>st</sup> of February). Such vulnerable families could be targeted through WaSH NFIs. The most needed emergency WaSH items is hygiene kits. However, need for “certeza” is limited as water quality has not been impacted by the wind so distribution of “certeza” is not recommended to WaSH cluster members (please also refer to “shelter and NFIs” below).

## **Recommendations:**

### **Action (short-term): estimated budget: 180.000 USD**

- Support most vulnerable families (those who have completely lost their house) with basic hygiene kits (Assessment of number of families is on-going).
- Delivering of “certeza” is not recommended considering the type of needs identified.

## **3. Others sectors assessed:**

**Education:** One of the most affected sector which needs recovery support. It is estimated by INGC that 1.687 classrooms have been affected (25% of those being fully affected and 75% being partly affected). On short-term, 50% of zinc roof could be reused, however, any support needs provided need to lead to better and stronger infrastructures (through UNHABITAT guidelines).



*Primary schools in Jangano (left) and Maxixe (top)*

**Health:** One of the most affected sector which needs recovery support. Medical equipment (such laboratory items, medical beds), medicines, registers and sometimes ambulances have been damaged as a consequences of roofs damaged and trees falling. It is estimated that 70 health facilities have been affected by the cyclone (source: INGC, 19.02.2017). During this storm, 55 people were injured (including 4 seriously) and seven lost their live.



*Lost medical items and buildings due to strong winds in Jangano (left) and Morrumbene (right)*

**Food security:** According to INGC, this sector has been significantly affected with more than 29.000 ha partly lost (mainly corn) and 137.000 fruit trees (mainly coco trees). Such consequences could also impact on nutrition on medium-term or livelihoods (increase of market prices).

**Shelter and NFIs:** Humanitarian actors need to target the most vulnerable families who have lost completely their houses. Those vulnerable families are also often the poorest ones leaving in thatch or wooden houses. Targeting partially affected families is not possible and most of those families have already repairs the limited damage on their houses (despite increasing price of construction materials on the market).

It is not important not to provide tent as most vulnerable families are hosted with families or neighbours but to support them directly with reconstruction materiel (especially zinc roof) or tools kits.

Ideally, vulnerable people who have lost their house should receive “voucher” or “cash” to define by themselves what it’s most needed as NFIs (water containers? Zinc roof? Wood frame? Mattress?). Unfortunately, humanitarian expertise and capacity in Mozambique seems quite weak to carry-out quickly such project at the scale of few districts.

#### **4. Conclusion:**

Damages from cyclone Dineo are important and impressive mainly on buildings (estimated 20.000 houses and 652.000 persons directly affected leading to 130.000 people in need; INGC). Electricity cut have disorganised communication and water supply.

Through advocacy to supply electricity to water pumping stations or provision of fuel through back-up generators for the pumping most of the urban population has now access to safe water. The rural population using individual water points (wells, boreholes) has not really been affected by the cyclone from a WASH point of view.

Most vulnerable families who have lost their houses should be provided with hygienic kits on short-term (**Total WaSH emergency cost: 185.000 USD**) as recommended by INGC.

Currently, WASH needs are mostly recovery needs through rehabilitation of water supply units and latrines damaged during the cyclone (**Total WaSH recovery cost: 550.000 USD**).

Currently, most of the needs are related to recovery especially in Education, Health and Shelters sectors. If there is no more direct threat for human life on short-term, it will take time for the population to recover from Cyclone Dineo



*On-going rehabilitation works in Morrumbene (left) and Jangano (right)*