Emergency Preparedness Plan

Bangladesh 2011

Natural Disasters

Compiled by Flavio Salio

Introduzione

Il presente documento é parte del Piano di Risposta alle Emergenze da me realizzato durante la mia esperienza (che si estenderá fino al febbraio prossimo) in Bangladesh come capo missione per Medici senza Frontiere. Per motivi didattici il presente documento considera esclusivamente i disastri naturali come rischi e alcune tabelle non sono state incluse o solo citate per facilitare la comprensione del documento stesso. Inoltre, sempre per i motivi sopra citati, solo cinque attivitá (Valutazione Iniziale, Acqua Igiene e Sanificazione, Rifugi Insediamenti e Prodotti non alimentari, l'Accesso alle cure di base, Coordinazione con gli altri attori presenti) sono state descritte in dettaglio.

Il presente documento é valido esclusivamente ai fini del corso in Emergency Management.

Objective of an Emergency Preparedness Plan

Be ready to react quickly and adequately to the emergencies

↓

Reduce mortality and morbidity linked to the emergencies
and
Restore human dignity

For this we have to :

Identify the risks : hazards + vulnerability

↓

Develop an early warning system

↓

Decide on an intervention strategy

↓

Prepare a response plan based on the scenarios

But also

Train the human resources

+

Prepare the required tools

+

Have a medical and logistic eprep stock

And

Keep the spirit.... the emergency could happen tomorrow !!!!

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1. General Profile Bangladesh

Demographic, economic, social and cultural characteristics

Bangladesh is a unitary, independent and sovereign Republic known as the People's Republic of Bangladesh. Bangladesh emerged as an independent country on March 26, 1971. The war of liberation ended on 16 December 1971 with the victory of Bangladesh forces and the surrender of the occupying Pakistani Army. The area was under Muslim rule for five and a half centuries and passed into British rule in 1757 AD. During the British rule it was a part of the British Indian province of Bengal and Assam. In August 1947 it gained independence from British rule along with the rest of India and formed part of Pakistan known as East Pakistan until it became independent.

The country is an alluvial deltaic plain divided into three zones, namely hills, terraces, and flood plains. The country has an approximate area of 147,570 sq km bounded between India and Burma and bordering the Bay of Bengal. It has a unique geographical location on the lower part of the basins of three powerful rivers, the Padma, Brahmaputra, and Meghna.

The estimated population of Bangladesh is 162,220,760[1] which ranks Bangladesh 7th in the world. The country's population is almost evenly distributed throughout its 64 districts except for the three Hill Tracts districts which are rather sparsely inhabited. Regionally, the eastern districts have a slightly higher density than the western ones. On average, a district has a population of about 1.8 million, a thana 230,000, a union 25,000 and a village 2,000. There are 490 thanas, 4,451 unions and 59,990 villages. The number of households is about 20 million. On average, a household consists of 5.6 persons. Bangladesh's economy depends predominantly on agriculture, which has a strong linkage with seasonal weather systems. Many people are landless and are forced to live on and cultivate flood-prone land. Despite growth being a steady 5% for the past several years, Bangladesh remains poor and overpopulated. Even though half of the national GDP is generated through the service sector, nearly two-thirds of Bangladeshis are employed in the agriculture sector, with rice as the single-most important product. Major impediments to growth include frequent cyclones and floods, inadequate port facilities, and a rapidly growing labor force that cannot be absorbed by agriculture.

Administrative division

District	Population	Area(km.²)	District	Population	Area(km.²)
Bagerhat	1,515,815	3,959	Madaripur	1,137,008	1,145
Bandarban	292,900	4,479	Magura	811,160	1,049
Barguna	837,955	1,832	Manikganj	1,274,829	1,379
Barisal	2,330,960	2,791	Meherpur	579,531	716
Bhola	1,676,600	3,403	Moulvibazar	1,604,028	2,799
Bogra	2,988,567	2,920	Munshiganj	1,293,536	955
Brahmanbaria	2,365,880	1,927	Mymensingh	4,439,017	4,363
Chandpur	2,210,162	1,704	Naogaon	2,377,314	3,436
Chittagong	6,545,078	5,283	Narail	689,021	990
Chuadanga	987,382	1,158	Narayanganj	2,138,492	759
Comilla	4,586,879	3,085	Narsingdi	1,891,281	1,141
Cox's Bazar	1,757,321	2,492	Natore	1,521,359	1,896
Dhaka	8,575,533	1,464	Nawabganj	1,419,536	1,702
Dinajpur	2,617,942	3,438	Netrakona	1,937,794	2,810
Faridpur	1,719,496	2,073	Nilphamari	1,550,686	1,641
Feni	1,196,219	928	Noakhali	2,533,394	2,601
Gaibandha	2,117,959	2,179	Pabna	2,153,921	2,371
Gazipur	2,026,244	1,741	Panchagarh	829,374	1,405
Gopalganj	1,132,046	1,490	Parbattya Chattagram	507,180	6,116
Habiganj	1,757,331	2,637	Patuakhali	1,444,340	3,205
Jaipurhat	844,814	965	Pirojpur	1,126,525	1,308
Jamalpur	2,089,366	2,032	Rajbari	940,360	1,119

[1] World Bank, World Development Indicators

Jessore	2,440,693	2,567	Rajshahi	2,262,483	2,407
Jhalakati	696,055	758	Rangpur	2,534,365	2,306
Jhenaidah	1,554,514	1,961	Satkhira	1,843,194	3,858
Khagrachari	524,961	2,700	Shariatpur	1,057,181	1,181
Khulna	2,334,285	4,395	Sherpur	1,246,511	1,364
Kishoreganj	2,525,221	2,689	Sirajganj	2,707,011	2,498
Kurigram	1,782,277	2,296	Sunamganj	1,968,669	3,670
Kushtia	1,713,224	1,621	Sylhet	2,569,788	3,490
Lakshmipur	1,479,371	1,456	Tangail	3,253,961	3,414
Lalmonirhat	1,088,918	1,242	Thakurgaon	1,196,429	1,809

2. Disaster Profile

2.1 Natural Disasters

2.1.1 Natural disaster profiles

Cyclones and floods pose the greatest risk to Bangladesh on a national level. Sub nationally, the northern and eastern regions of the country are susceptible to earthquakes while the southeast is particularly vulnerable to cyclones, floods, droughts, and earthquake. Bangladesh is also vulnerable to other natural and manmade hazards, such as river bank erosion, tornadoes, tsunami, high arsenic contents in ground water, water logging, water and soil salinity, etc. Bangladesh is also at a great risk from global climate change impacts because of its low elevation and exposure to various climate related hazards. Although the magnitude of these changes may appear to be small, they could substantially increase the frequency and intensity of existing climatic events, such as floods, droughts, cyclones etc.

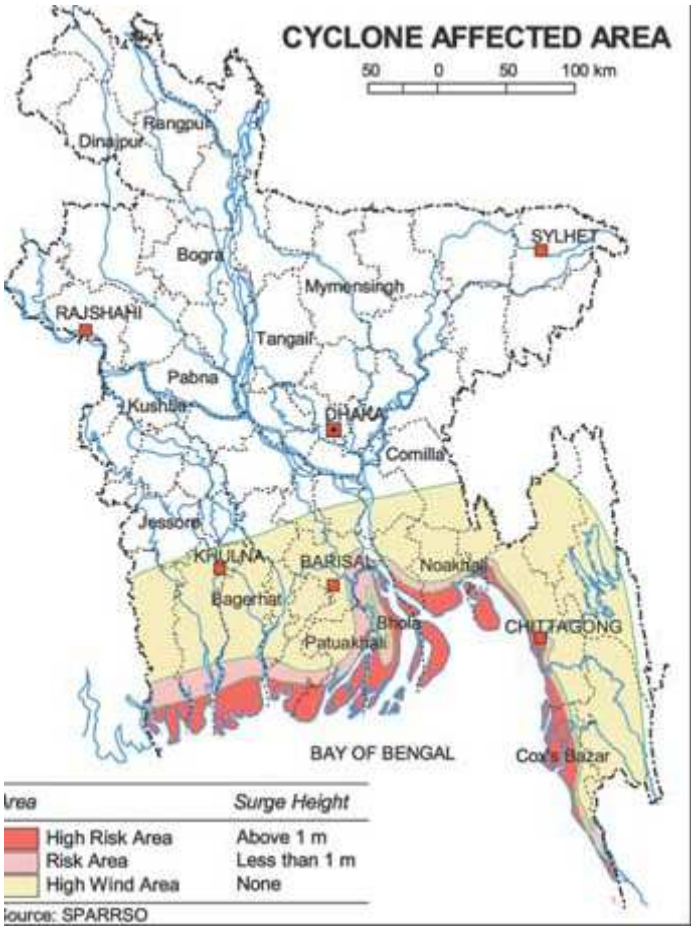
Annual disaster calendar												
Disaster type	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Cyclone				X	X				x	X	X	x
Tornado (major)			x	X	X	x						
Flood (major)							X	X	x			
Earthquake	(x)	(x)	(x)	(x)	(x)	(x)	(x)	(x)	(x)	(x)	(x)	(x)
Drought (major)			x	x	x							
Cold wave	x	x										x

Cyclone and storm surge

The Bay of Bengal is the breeding ground for tropical cyclones and Bangladesh is the worst victim in terms of fatalities and economic losses incurred. The global distribution of cyclones shows that only 1% of all the cyclones that form every year strike Bangladesh, but, unfortunately, the fatalities they cause are 53% of the whole world.

The high number of casualties is due to the fact that cyclones are always associated with storm surges. In the aftermath of cyclones, contamination of drinking water and worsened sanitation result in outbreaks of diarrhoea.

The following table lists a few of the devastating cyclones that have affected Bangladesh.



List main cyclones

Date	Nature of Phenomenon	Death toll
11.10.60	Severe Cyclone Storm	3000
31.10.60	Severe Cyclone Storm	5149
09.05.61	Severe Cyclone Storm	11468
28.05.63	Severe Cyclone Storm	11520
11.05.65	Severe Cyclone Storm	17279
05.11.65	Severe Cyclone Storm	873
01.11.66	Severe Cyclone Storm	850
12.11.70	Severe Cyclone Storm with a core of hurricane wind	200000
24.05.85	Severe Cyclone Storm	4264
29.11.88	Severe Cyclone Storm with a core of hurricane wind	6133
29.04.91	Severe Cyclone Storm with a core of hurricane wind	138882
19.05.97	Severe Cyclone Storm with a core of hurricane wind	155
15.11.07	Severe Cyclone Storm	3447
25.05.09	Severe Cyclone Storm	190

Source: Bangladesh Meteorological Department (BMD)

Tornado

Have been reported from almost all districts, they occur when the weather undergoes a phase of transition. In Bangladesh, severe local storms with a wind speed of over 100 miles/hour (160 km/hour) are considered tornadoes. Generally people die and suffer from physical injuries by being crushed or hit by flying debris or (branches of) trees. Cuts, wounds, lacerations, bruises and fractures (especially of the long bones) are the major physical injuries and sometimes mental health problems occur.

Date	Location	Death toll
11.04.64	Magura-Narail KhulnaDistricts	500
17.04.73	Dhaka Division	681
01.04.77	Madaripur-Shibchar, Dhaka Division	500
26.04.89	Daultipur-Salturia, Barisal Division	1300
13.05.96	Jamalpur-Tangail, Dhaka Division	700

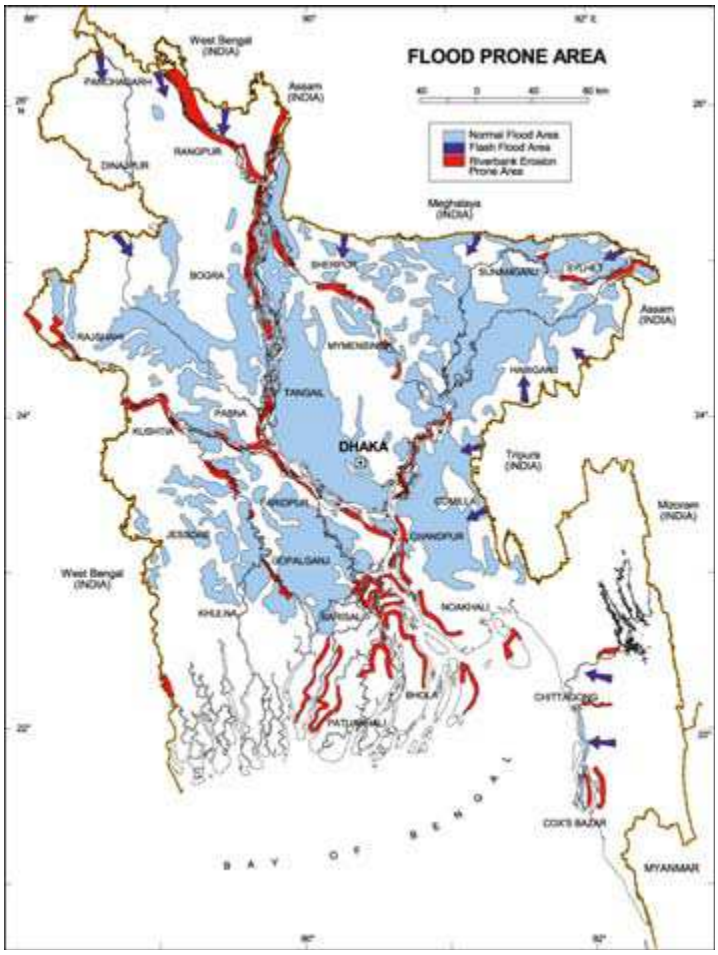
Source : wikipedia

Flood

Bangladesh is a low land country. Most of it is located within the flood plains of three great rivers, which is the Ganges, the Brahmaputra, and the Meghna, their tributaries, and distributaries. The river systems drain a total area of about 1.72 million square kilometers in India, China, Nepal, Bhutan, and Bangladesh. Only 8% of this area lies within Bangladesh.

As a result, huge inflows of water, which Bangladesh has no control, enter the country. The lack of control is a critical problem because Bangladesh has an agrarian economy dependent on water. At different times and in an unpredictable manner it has too much or too little water. The intricate network of alluvial rivers carries a huge annual discharge and sediment load, causing channel shifting and bank erosion. Withdrawals in upstream areas seriously affect socioeconomic growth, the environment, and the ecology. The habitat of fish, which is a major source of protein for the rural poor, is under threat from the increasing conversion of land to agricultural use. Inland navigation is hindered by blockages in the river delta. Meanwhile, the need for pure water is increasing along with the salinization of the coastal belt and the degradation of ecosystems.

The flood of 1988 during August-September inundated an area of 89,000 sq km of 52 districts of the country and caused a loss of 1,517 human lives. The 1998 flood in Bangladesh with an unprecedented duration of 65 days inundated 53 districts, covering about 100,000 sq km, and took the lives of 918 people. Beside this, the severe floods of 1822, 1854, 1922, 1955, 1966, 1974, 1987, and 2002 are worth mentioning



Earthquake

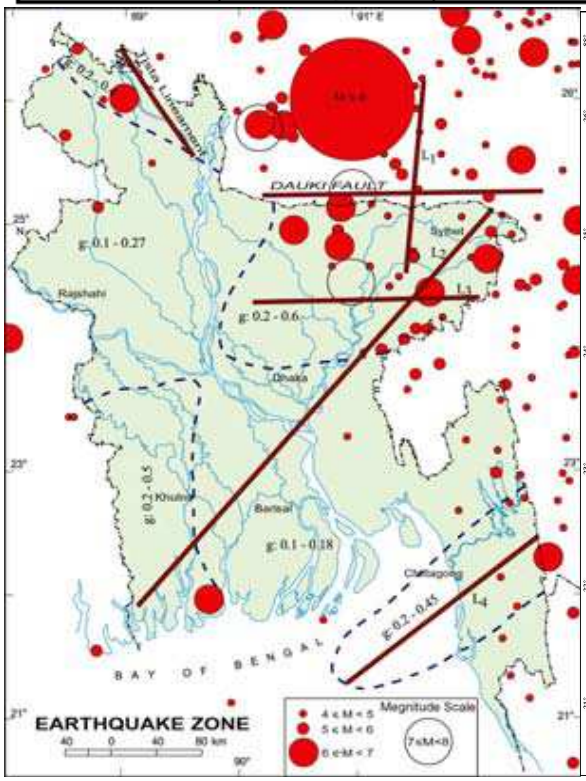
Bangladesh lies in the Burma basin, which was formed by the continent collision of India to the north, and subduction of ocean crust beneath the Burma continental crust to the east. Bangladesh is surrounded by regions of high seismicity, which include the Himalayan Arc and Shillong Plateau in the north, the Burmese Arc, Arakan Yoma anticlinorium in the east, and complex Naga Disang-Haflong thrust zone in the northeast.

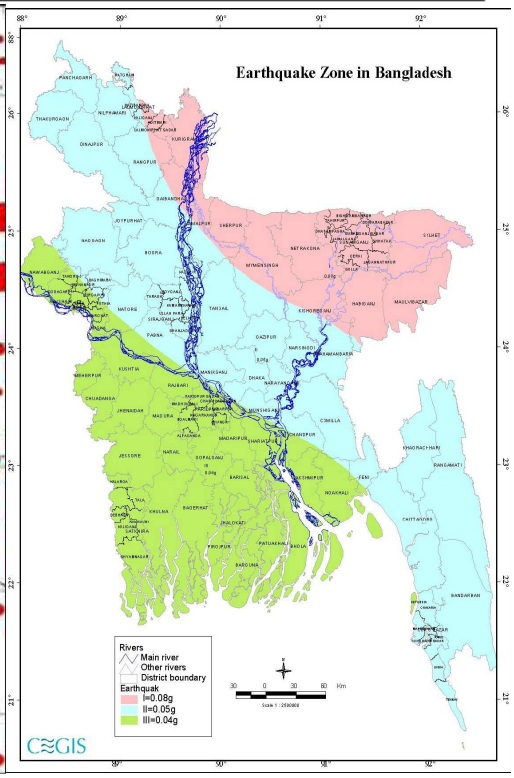
The country has a long history of seismic activity related to its proximity to the Himalayas. Three great earthquakes of magnitudes exceeding 8 were felt in 1897, 1934, and 1950, and another four earthquakes exceeding magnitude 7 were felt between 1869 and 1950. Major seismic sources are the Meghalaya (8.0), Tripura (7.0), Sub-Dauki (7.3), and Bogra (7.0), all of them with associated earthquakes of expected magnitudes higher or equal to 7.0

Main casualties are expected to happen in the major cities, due to destruction of (high rise) buildings. Experts are apprehensive of a severe earthquake in Dhaka and Chittagong cities after observing the quake in Moheshkahli Thana of Cox's Bazar in August 1999.

List of Major Earthquakes Affecting Bangladesh

Date	Name of Earthquake	Magnitude (Richter)	Intensity at Dhaka (EMS)	Epicentral Distance from Dhaka (km)
10 January, 1869	Cachar Earthquake	7.5	V	250
14 July, 1885	Bengal Earthquake	7.0	VII	170
12 June, 1897	Great Indian Earthquake	8.7*	VIII+	230
8 July, 1918	Srimongal Earthquake	7.6	VI	150
2 July, 1930	Dhubri Earthquake	7.1	V+	250
15 January, 1934	Bihar-Nepal Earthquake	8.3	IV	510
15 August, 1950	Assam Earthquake	8.5	IV	780





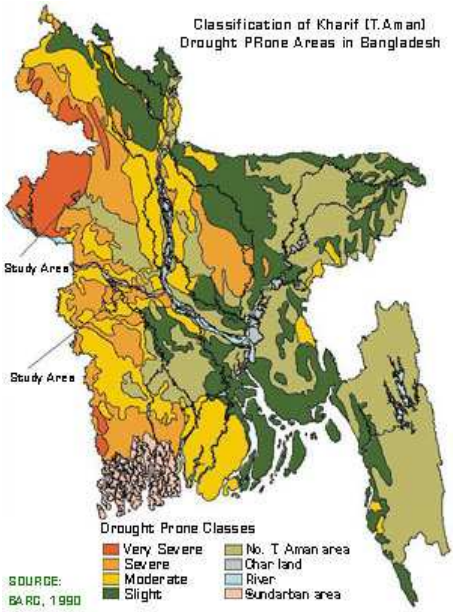
Tsunami

Tsunamis also known as seismic sea waves are a series of enormous waves created by an underwater disturbance such as an earthquake, landslide, volcanic eruption, or meteorite. A tsunami can move hundreds of miles per hour in the open ocean and smash into land with waves as high as 100 feet or more.

The most at risk area of Bangladesh is the costal area on the Bay of Bengal.

Drought

A drought is an extended period of months or years when a region notes a deficiency in its water supply.
Generally, rainfall is related to the amount of water vapor in the atmosphere, combined with the upward forcing of the air mass containing that water vapor.
Is more and more a chronic problem in Bangladesh due the clime variability and non-availability of surface water resources.
Localised diarrhoeal outbreak occurs due to scarcity of safe drinking water (shallow tube wells are dry, people have to use surface water).
Major droughts of 1973/74, 1978/79, 1981/82, 1989, 1992 and 1994/95



Cold wave

Cold wave in Bangladesh is caused by the cold wind coming from Himalaya. The north-west of the country is usually the most effected during the months of December, January and February. The temperature can drop to 8-9 degree Celsius. In 2002 700 people died (International Disaster Database), in 2004 around 150, in 2010 around 40 people died in different part of the country.
People suffer from coldness due to insufficient clothing and housing.

2.1.2 Main consequences of natural disasters

Medical/humanitarian consequences :

Immediate consequences

	Dead	Wounded	Homeless	Psychological Trauma
Earthquake	High	High	High	High
Tsunami	High	Low	High	High
Severe Drought	**High**	**0**	**0 ***	Low to Medium
Flash floods/Cyclone	Medium	Medium	**High**	High/Medium
Riverine floods	Low	Low	Medium	Low to Medium

** but drought can cause IDP as people are trying fo find a place where they could find food and land to cultivate.*

In the following days or weeks

- Pathologies resulting from trauma *(e.g. tetanus).*

- Minor trauma linked to cleaning up, reconstructing, etc. *(walking on debris, etc.).*
- Pathologies linked to water *(ecological changes affecting water sources).*
- Pathologies linked to precarious living conditions *(respiratory infections, skin diseases, burns following improvised means of heating/cooking in shelters such as tents).*
- Pathologies with epidemic potential linked to the regroupment of the homeless population *(and not to the disaster itself or the presence of numerous dead bodies as the media often wrongly portrays).*
- Pathologies linked to the rise in vectors *(rats, mosquitoes, etc. but NB sometimes the opposite is initially true, i.e. the number of vectors decreases because they too have been affected by the disaster)*.
- Pathologies linked to the destruction of wild animals' habitats *(e.g. snake bites)*
- Everyday pathologies that are left untreated due to the breakdown of basic health services.
- Nutritional crisis if no assistance

Consequences that will affect the relief work :

Access

- Due to the collapse of buildings, roads, bridges,... and landslide or mudslide, the access to the affected area can be very difficult and request extraordinary means *(helicopters, boat,...)*

Security

- Risks linked to the disaster which has taken place : a second wave of the disaster, landslides, collapsing buildings or roads, water contamination, fires or explosions following damage to the electricity or gas network, epidemics, etc.

Destruction of infrastructure *(electricity, water supply, sewerage,...)*

Disruption of services *(no shops, no any resources on the spot,...)*

3. Scenario Natural Disaster

Triggering event : Earthquake – Cyclone – Flash Flood	
Possible results	- Dead (huge number in case of earthquake in urban centre such as Dhaka) - Wounded - Homeless - Psychological trauma - No access to health because health structures not functioning anymore *(structures collapsed or flooded, staff among the victims,...* - Houses, buildings flooded collapsed - Road, bridges,.... destroyed → problem of access - Public infrastructures destroyed *(water system, electricity,...)* - Outbreak of infectious diseases - Lack of food
Target population	- 50.000 up to 100.000
General objective	- Reduce mortality and morbidity among victims of the natural disaster by providing medical and humanitarian assistance to the wounded and the homeless

Activities	Our Preparedness [1]
1. Initial assessment	
2. Water, hygiene and sanitation	Strategies for : - Villages - Collective centres *(in schools, public buildings,...)* - 2 sites or camps of 5.000 people
3. Food	- Monitoring - Care for children suffering of malnutrition
4. Shelter and NFI	- 5.000 family kits *(= +/- 25.000 pers.)* in Eprep Stock

5. Health Care	- Primary health care : kit 10.000 pers./3 months = 30.000 pers./1 month
	  - Mobile clinics
	  - Referral system to health centre and hospital
	  - Support of health centre or set up of a health centre if needed
	- 2nd level of care : Kit Disaster
	  - Support to hospital or set up of a field hospital if needed

6. Mental Health support	
7. Coordination with other actors	

[1]Our preparedness = Number of beneficiaries and/our activities we can implement with the mission resources *(national and expatriates staff and Eprep stock)* in a very short time. If needed, according to the results of the initial assessment, the capacity will be increased with the support of additional staff locally recruited or sent by the HQ and equipment locally purchased.

3.1 Criteria of intervention

Floods

Normal seasonal floods (no extensive damages)	→ Information gathering → No intervention
Aila area (rain in the area together with high tide particularly)	→ Information gathering → Possible exploratory mission → Decision intervention
Major floods – Flash floods **or** **Report of outbreaks** of communicable diseases	→ Information gathering → Exploratory mission for initial assessment → Decision of intervention, depending on the results of the initial assessment

Earthquakes

Magnitude below 5.0	→ Information gathering → In principle no intervention of MSF as the Government or State should be able to cope with
Magnitude between 5.0 and 7.0	→ Information gathering → Exploratory mission for initial assessment → Decision of intervention, depending on the results of the explo mission
Magnitude above 7.0	→ Information gathering → Exploratory mission for initial assessment → First intervention team to be send asap *(= at the same time as the assessment team)*

Cyclones

Decision making tree based on the Safir/Simpson scale (international standard)

Scale 1	118-152 km/h	Minimum damage
Scale 2	153-176 km/h	Moderate damage
Scale 3	177-208 km/h	Significant damage
Scale 4	209-248 km/h	Extreme damage
Scale 5	> 249 km/h	Catastrophic damage

Cyclones scale 1 and 2 (except for Aila area)	→ Information gathering → No intervention
Cyclone scale 1 and 2 Aila area (still very weak the effect a small cyclone can be devastate)	→ Information gathering → Possible explo mission → Decision of intervention, depending on the results of the explo mission
Cyclones scale 3 to 5	→ Information gathering → Exploratory mission for initial assessment → Decision of intervention, depending on the results of the explo mission

3.2 Early Warning System

Earthquake are unpredictable. But in the case of a major earthquake (≥ 5) there are three good international website that gives information *(magnitude, maps,...)* in the minutes following an earthquake :
www.hewsweb.org
http://earthquake.usgs.gov/
http://www.hewsweb.org/seismic/default.asp?1737

Bangladesh Meteorological Department is tracing the last earthquake in the world and provide warning report in case of Tsunami but it's not always update.

It is to be noted that, in case of disasters, It takes often quite a lot of time to have reliable information from the media, especially if the disaster happened in a remote area.

Tsunami

International website
http://ioc3.unesco.org/itic/
http://www.prh.noaa.gov/ptwc/

Local website
www.bmd.gov.bd but not experience if very reliable

Flood and cyclone are more predictable :

International web site

http://www.tropicalstormrisk.com
http://www.meteo.fr/

These website are providing mapping and predict the storm activities worldwide.

Bangladesh Meteorological Department

www.bmd.gov.bd

It's responsible to provide weather forecast and level of precipitation but no the development of cyclones.
It's providing marine forecasts and inland river warning
Meteorological department follows international standard in terms of measurement; however even if the international scale is from 1 to 5 to measure cyclone intensity and strength, they also have at national level a smaller scale from 1 to 10 (1 is the lower risk for a small signal and closer and stronger the cyclone get to the coast and higher it is).

To compare : Aila cyclone was noted as 8/11 with winds between 70 to 100 km per hour. But on the international scale Aila was noted as 1/5.
During the monsoon, alert of 3 or 4/11 are common is this area

Bangladesh cyclone signal system

River ports

Signal Meaning	Signal Meaning
1 Alarming Signal	Possibility of Cyclone Be aware
2 Warning Signal	Wind speed is less than 61 Km Marine vessels less then 65 feet long should return to the safe zone

3 Danger Signal	Cyclone will strike soon Wind speed 62-87 Km
4 Danger signal – High degree	Cyclone will strike Marine vessels stay in safe zone Wind speed more than 87 Km

Sea-ports

Signal	Meaning
1 Far-away Signal	Possibility of Cyclone Be aware
2 Far-away Signal	Cyclone has already started
3 Far-away Signal	Sea port is under threat of heavy wind
4 Local warning signal	Cyclone will strike But it is not necessary to initiate emergency measure for Marine vessels
5 Danger signal	Small or Mid-level cyclone will keep the port unstable (Moving towards East of Mongla port/ South of Chittagong port)
6 Danger signal	Small or Mid-level cyclone will keep the port unstable (Moving towards West of Mongla port/ North of Chittagong port)
7 Danger signal	Small or Mid-level cyclone will keep the port unstable The cyclone will strike the Mongla port
8 Danger signal – High degree	Strong cyclone will keep the port unstable (Moving towards East of Mongla port/ South of Chittagong port) – and also cross the coastal area
9 Danger signal – High degree	Strong cyclone will keep the port unstable (Moving towards West of Mongla port/ North of Chittagong port) – and also cross the coastal area
10 Danger signal – High degree	The weather will be extremely dangerous and the cyclone will move through the port/coastal areas
11 Excommunicated signal	Every communication is out of contact

Important : During the full moon, (just 1 or 2 days per month) the tide is particularly high and the current is very strong; so in case of tropical storm or cyclone, the risk of flooding is higher and the movement more difficult.
In the other hand, during the black moon, the tide is particularly low.

Flood Forecasting and Warning Centre.

http://www.ffwc.gov.bd

Data collection and warning system to follow the flood situation around the country, it's also responsible to launch the alert.
The follow up is 24h a day and the river mapping system can show the level of risk on each big river or basin. The forecast system is up to 48h.
The water level table is also showing the danger level of each river and the status of the water level update every day at 6 am.

3.3 Assumptions

General

1. We have access to the affected area :
   - We are allow to go by the authorities
   - Security level is acceptable *(no major risk for the staff)*

- Physical access : we have the appropriate transportation means to access the affected area.

2. We have appropriate information about the affected area *(info collected at coordination level + initial assessment team) :* most affected place, number of people affected, needs,...
3. We have sufficient trained human resources *(medical and non medical)* to respond to the emergency
4. We have suppliers for all the drugs required
5. We have the equipment required to respond to the emergency.

Immunisation

6. A significant number of the affected population is gathered in collective centres, sites or camps, which increase the risk of outbreak

Watsan

7. Due to the disaster, the water and sanitation facilities are not functioning properly anymore.

Food

8. General food distribution is organised by the authorities, the Red Cross and/or local NGOs.
9. Due to the disaster, and despite the general food distribution, access to sufficient food in quantity and quality is still a problem for part of the population and some children *(often already suffering of chronic malnutrition)* could, quite quickly, suffer of acute malnutrition. (to monitoring closely)

Relief

10. The less accessible/visible and/or the most vulnerable are identified.

Health

11. Search and rescue activities are taken in charge by the army and the Bangaldesh Red Cross
12. If the number of wounded is huge *(earthquake)*, the hospital will not have the capacity to take them all in charge adequately.
13. We have the capacity to support an existing hospital or to take in charge the cases not requiring a surgical intervention or intensive care.
14. The public health system, that is supposed to guarantee a free access to health is not well functioning in normal situation and will be even less able to respond to the needs in case of disaster.
15. The affected population is psychologically affected by the disaster

Health surveillance

16. Due to the precarious living condition, there is a risk of increased morbidity/mortality and outbreaks of communicable diseases

Coordination

17. There is an important number of actors and we have to find out who is doing what to well target our intervention

4. Roles and Responsibilities

First collection of data

Collecting data from GoB	Central Room (MOH and MFDM) District Commissioner Civil Surgery Any local Ngo Media	HoM, MedCo Context Advisor
Collecting data and attend coordination meeting	INGO, IO	HoM

1) Human Resources

Activity	Responsible
Administrative issues like emergency project approval, networking at international level	HoM
Official and the administrative issues involved in recruitments, preparation of the Job Profiles, payment of salaries	HRCo
Identifying national staff that can be used for EPP scenarios	HoM, MedCo, LogCo, HRCo

2) Logistic

Activity	Responsible
Producing a list of requirement and where they are located	LogCo
Issuing purchase orders for all items that need to be bought	LogCo
Purchasing of logistic items	Supply Manager

3) Emergency supply and stock

Activity	Responsible
Producing the list of EPP supplies and stocks	LogCo/Medco
Issuing international purchase orders for items that need them	Logco
Identifying sources for local purchases, writing LPOs (not issued)	Logco

4) Finance

Activity	Responsible
Reviewing costs of EPP and formulating budget	HRCo
Ensuring cash available on top of usual security reserves	HRCo

5) Networking, Communication, Advocacy

Activity	Responsible
Ensuring MSF-OCB is on the mailing list for all relevant documents and liaison with actors	HoM
Ensuring that adequate identification material is available	LogCo
Ensuring that an up to date communication data base is available	HoM, Context Advisor

Activity 1 - Initial Assessment

Expected result

The coordination has the necessary information to take the decision to launch an intervention or not.

Activities

- Determine the impact of the disaster *(on population, infrastructures, health services, goods, ...)*
- Determine the needs and priorities for immediate emergency measures
- Determine the resources available and resources needed
- Determine the constraints we will have to face
- Plan intervention

Means – Equipment

Explo mission kit including *(see list in annex)* :

- Transport
- Means of communication
- Documentation
- Administration/Finance material
- Equipment for assessment
- Team life equipment

The equipment to take with you will have to be adapted according to the kind of emergency , the context *(rural area, winter, summer,...)* and the situation *(what is still functioning or not)*, and thus the information you will have collected before to leave on expo mission.

Never leave with “empty pockets”, assuming that you will find everything on the spot. In case of disaster, a second wave or disaster *(aftershock, landslide,...)* can happen while you are on the way. And we should also consider that the remaining facilities, if any *(houses, public buildings,...)* should be allocated first of all to the affected population and not to the NGOs! So we strongly suggest you to always have a minimum survival kit with you to be able to face any kind of situation.

Means – Human resources

- Assess impact on populations - Assess health structures - Define health needs and priorities	Med	1	
- Assess impact on infrastructures, housing and goods - Assess resources still available *(transport, communication, fuel,...)* - Identify constraints *(access, security,...)* - Define log needs and priorities - Assess the availability and quality of water - Assess the hygiene and sanitation conditions - Define watsan needs and priorities	Log/watsan	1	
- Drive the car	Driver	1	
- Translator	Liaison Officer	1	

Detailed list – Equipment

.....

Activity 2 – Water, hygiene and sanitation

Expected results

The essential requirements in water, hygiene and sanitation are covered *(see Pocket guide "The Priorities" p. 14)*

Indicators

1st phase

Total litres of drinking water provided / Total population	≥ 5 litres
Total population / Total numbers of latrines	≤ 100 users
Hand washing facilities at exit of latrines	In 100 % of the cases
Posters for the promotion of washing hands near the latrines	In 100 % of the cases

2nd phase

Total population / Total numbers of showers	≤ 40 users
N.B. The installation of showers is a huge job, not only for the showers themselves but also for the waste water system that has to be done.... So often it is not feasible for "short term" emergencies and will be taken in consideration for the set up of "longer term" IDPs camps.	
Number of storage equipment for waste at collective level : Number of drums / Number of families/10	100%

3d phase

- Number of posters for the promotion of proper waste disposal in the camp - Number of leaflet distributed/number of adult in the camp - Number of awareness sessions organised/group of population	- 100 % -
Total population / Total numbers of washing areas *(dishes/laundry)*	≤ 80 to 100 users
Same remark as for showers.	
- Number of collection of waste organised/week - Pit for final disposal is fenced and controlled	

According to the context

The measures of vector control against the identified vectors are in place	In 100 % of the cases

Strategies

According to the type of emergency, we will be confronted to different situations :

Natural disasters :

- IDPs are gathered in camps or sites where they will stay as long as they can not go back home. This can be quite short in case of flood *(some weeks up to 3 months),* but much longer in case of cyclone or earthquake with houses completely destroyed. In this case, we still will have to follow the proposed activities below, but maybe with less durable solution, especially for activities like “bathing facilities”, “washing facilities”,...

- IDPs will not settle in camps or sites but will remain in smaller group as near as possible of their house or village of origin. In this case we will have to install facilities in each villages.
- If it is not possible to install a water system in each villages one central village *(the most populated and the most central or the most “at risk”)* will be equipped. The inhabitants of the other villages will than have to come to this “central point” to take water ; of course, if it is possible, we will do water trucking to distribute water in the villages not equipped with a water system. (**This option has to be well evaluate and discuss with local communities. Feedback from past emergency are reporting lack of solidarity among different community and villages also during the emergency time.**)
- As soon as possible, to better help the people but also to make our work easier, we will have to try to restore the system that was in place before the disaster *(by providing pipes to restore the broken one, by cleaning the wells contaminated by the flood,...)*.

- For the excreta disposal in flood situation, we will have to be creative as it is not possible to dig in a flooded area.

  Never forget that, if access to drinking water is the first priority, excreta disposal facilities should be also quickly in place, because you can not avoid people to defecate, and when you have 5.000 people defecating at the same place it quickly becomes a public health problem !

  The problem is often the acceptance by the population of the facilities we are providing. We should try to understand what we could provide *(what is feasible for us and acceptable in term of hygiene)* that would be really be used by the population.

  N.B. Never set up a defecation area during the rainy season.

Activities 1st phase

Water	- Find water ! : well, natural source,... and bring it to the site : pipes, water trucking,... - If natural source check the quality (Arsenic test) - Install a water distribution system in order to provide a minimum of 5 L/drinking water/day the first days of the emergency, and more in the second stage of the emergency. - Ensure the maintenance of the system and a regular control of the quality of water.
Excreta disposal facilities (During the last intervention (Aila)sanitation was not consider as priority due the lack of space and because the people were defecated into the river were with high tide the disposal was wash away)	- Set up trench latrines the first days of the emergency. - Ensure separate facilities for men and women (depend on the space) - Install hand washing facilities at exit of latrines. - Ensure the maintenance of these facilities
Health promotion	- Install posters for the promotion of washing hands near the latrines.
Vector control *(according to the context)*	In area prone to vectors, provide appropriate vector control equipment and services : - Distribute 2 Long Lasting Insecticidal Net/family - Organise information session on the use of mosquitoes nets *(with demonstration)*

Activities 2nd phase

Excreta disposal facilities	- Set up improved trench latrines in the second stage of the emergency *(1/100 people, then 1/50 and final objective 1/20).* - Ensure separate facilities for men and women - Install hand washing facilities at exit of latrines. - Ensure the maintenance of these facilities - Because of land space it is not feasible to do a trench latrine but it is possible to setup latrines with concrete rings with a pipe that goes in the ring.
Bathing facilities	- Provide a min. of 1 shower/40 users - Ensure separate facilities for men and women - Don't forget the waste water disposal
Domestic waste disposal	- Provide appropriate waste disposal equipment and services - Distribute storage equipment at collective level *(1 drum 100L/10 families)* or at family level *(1 bucket 20L with lid/family)*

Activities 3^{d} phase

Health promotion	- Provide appropriate information *(poster, leaflet, awareness sessions)* on health promotion : - Install posters for the promotion of proper waste disposal - Distribute leaflet on the main messages in health promotion to all the adults. - Organise awareness session for the different groups of population *(including children)*
Washing area for dishes and laundry	- Provide 1 washing area/ 80 to 100 people - Don't forget the waste water disposal
Domestic waste disposal	- Provide appropriate waste disposal equipment and services : - Organise a daily collection of the waste *(or ask the families to do it if storage at family level)* - Install a fenced and controlled pit for final disposal of the domestic waste
Vector control	In area prone to vectors) provide appropriate vector control equipment and services : - Organise the Insecticidal residual spraying of dwellings - Destroy vector breeding sites in and around sites

Means – Human resources (for a camp/site of 5.000 people)

General			
Monitoring of the watsan activities	Watsan	1	
	As. watsan	1	
Water system			
Maintenance of the system + daily check of the quality of water	Daily worker	1	
Installation of the system	Daily workers	4	
Excreta disposal facilities			
Digging of the latrines	Daily workers	10	
Structure of the latrines	Daily workers	8	
Maintenance of the latrines	Cleaners	4	
Vector control			
Distribution of mosquitoes nets	Included in the NFI distribution *(Activity 5)*		
Destruction of the breeding sites	Cleaners	12	
Spraying of the dwellings	Cleaners	10	
Health promotion			
Supervision of the health promotion activities	Health promoter	1	
Can be linked with the “home visitors” activities *(see “Activity 8- Health Surveillance”)*	Assistants	5	
Bathing facilities			
Construction of the bathing facilities and washing areas	Mason		
Maintenance of the bathing facilities and washing areas	Cleaners		
Domestic waste disposal			
Digging of the pit for domestic waste	Daily workers	2	
Collection and final disposal of the domestic waste	Cleaners	2,5/1000 people	

Means - equipment

Watsan equipment includes equipment for :

- Water distribution
- Excreta disposal facilities
- Vector control
- Health promotion
- Bathing facilities
- Washing areas
- Domestic waste disposal
- Tools and material for watsan activities

Activity 3 – Shelter and NFI

Expected results

The Internal Displaced People (IDPs)/homeless have the material means to preserve their health and ensure their welfare, safety and dignity.

Indicators

Number of person that have the necessary items to cover their basic needs *(shelter, bedding equipment, hygiene kit, kitchen utensils)* / Number of IDPs/homeless	= 100 %

Source of verification

- Distribution report
- Family survey

Activities

- Asses what NFI the population has *(N.B. this will be done during the initial assessment – activity 1)*
- According to the result of the assessment, order the required NFI
- Prepare the distribution :
  - Registration of the families or distribution of NFI cards – see pocket guide "NFI Distribution" *(! don't forget people not with their family : widows, orphans,...)*
  - Choose the way to distribute *(per groups of family, per area in the camp, per villages,...)*
  - Choose the distribution point *(from the trucks when they arrive, from the warehouse,....)*
  - Recruit and train the staff
- When you are sure of the date of arrival of the NFI :
  - Inform the population
  - Install the distribution sites
- After the distribution make a survey in the families *(can be done with the help of the home visitors).*

Means – Human resources

Monitoring of the distribution	1 logistician	
	1 log assistant – *depending on the number of beneficiaries*	
Crowd control	4 minimum *(to be adapted according to the number of beneficiaries)*	Can be "respected" people from the community
Distribution of items	1 per item distributed	Local
Stock keeper at the distribution point	2 *(not necessary if you distribute directly from the trucks)*	Local
Unloading of the trucks	*(not necessary if you distribute directly from the trucks)*	Daily workers
Warehouse staff	*See below : "support to the programme"*	

Means - equipment

NFI distribution equipment *(see list in annex)* includes equipment for :

- Registration of the beneficiaries
- NFI
- Identification and communication material for the distribution team
- Logistic material for installation of the distribution point
- Building *(warehouse)*
- Transportation mean

Non Food Items		
Item	**Qty**	**Remark**
Kitchen utensils module	2.000 to 5.000	
Hygiene module		
Emergency shelter module		
Long Lasting Insecticidal Mosquitoes net		

Emergency shelter module	
Items	**Qty**
Blankets	2
Jerrycan 20 L, food grade plastic, screw cap	2
Plastic sheeting, 4 x 6 meter (24m2)	1
Rope, ∅ 8 mm. polypropylene, twisted, meter	14

In case of cold weather	
Blankets	5
Underlay insulating matt 4’ x 6’	3

Activity 4 – Health care

Strategies - Summary table

	Mobile Clinics	Support to a public or private Health Centre	MSF Health Centre
Primary Health Care	Always ▪ To give access to health to remote areas ▪ To do health surveillance	If needed ▪ Infrastructure and medical staff present but lack of drugs/equipment	Only if : ▪ Infrastructure not functioning *(destroyed, flooded,...)* and/or no medical staff

	Referral to a hospital	Support to a public or private Hospital	MSF Field Hospital *
Second Level of Care	Always ▪ If needed MSF will organise a referral system *(communication means, ambulances)*	If needed ▪ Infrastructure and medical staff present but lack of drugs/equipment ▪ Drugs/renew. supplies. for medical emergencies and wounded	Only if : ▪ No foreseen at the moment

Primary Health Care

Expected results

Primary health care services are in place and are well functioning.

Indicators

A health centre exist and is adequately equipped	
One or more mobile clinic are running to give access to health care to the remote areas	
$\frac{\text{Number of staff in the mobile clinic/health centre}}{\text{Number of staff required}}$	= 100%
% of staff trained	= 100%
Medical protocols properly used	In 100% of the cases
% of ruptures in medical material and drugs	= 0%
Number of info sessions organised for the beneficiaries	
Number of person that know the service	
$\frac{\text{Number of case referred to the 2nd level health structure}}{\text{Number of case requiring a referral}}$	= 100%

Source of verification

- Activity reports
- Structure: check-list evaluation of an health centre
- Staff : staff list
- Protocols : survey of the medical files
- Material & drugs : stock cards and statistics monthly consumptions
- Knowledge of the service : random survey
- Referral : medical files + logbook of the ambulance

Activities

- Detect the remote areas where people have no access to health
- Organise mobile clinics for these remote areas
- Refer patient for specialised consultation to the existing health centre
- Support the existing health centre if needed
- Set up an health centre if needed
- Recruit staff for mobile clinics and for health centre if needed
- Train and supervise staff
- Supply the required log and med equipment + drugs
- Inform the population on the service *(when, where, what, for free,...)*
- Identify an appropriate health structure for 2nd level of care
- Put in place a referral system
- If needed support this structure *(see activity 6b below)*
- If no existing health structure for 2nd level of care, set up a field hospital *(see activity 6b below)*

Means – Equipment

Primary health care equipment includes :

- Building/Tents *(if no existing health structure available)*
- Logistic equipment
- Watsan equipment
- Cleaning material
- Identification material
- Medical material and drugs: 4 First Aid Kits *(for mobile clinics)* and 3 Disaster kits

Means – Human resources for health centre

N.B. In the first phase of the emergency you will have difficulties to find all the staff required. Some positions could be combined, according to the number of patients/day.		
To install the health centre	1 logistician	
	4 daily workers	Local
Maintenance of the health centre	1 logistician	Local
To register the patients	1 registration officer	Local
To do the consultations	2 doctors *or* Medical Assistant	*(preferably 1 male and 1 female doctor)*
Emergency room, dressing and injection	1 nurse	
Observation room (+ delivery if necessary)	1 nurse + midwife	
Lab. exam. *(paracheck, urine test,...)*	1 health worker	Local
Pharmacy	1 drugs dispenser	Local
To carry the patient from the consultation/observation room to the ambulance	Stretcher bearers	From the community
To drive the ambulance	1 driver	Local
Referral/Follow up of the patient hospitalized and after discharge	1 nurse	
To guard the health centre	2 guards	Local

Activity 5 – Coordination with other actors

Expected result

All needs are covered through a clear task distribution *(no overlaps and gaps)*.

Indicators

- The list of actors is available
- Number of meetings with the different actors

Source of verification

- Activity report and/or sitrep

Activities

- Have regular contacts with the actors involved in the emergency relief for this area in order to share the plan of intervention : who is doing what, where, when, for how many people
  - Authorities
  - IDPs/Homeless representatives
  - UNHCR, and other UN agencies
  - Other NGOs *(national and international)*

Means – Human resources

- Field Coordinator or Emergency Coordinator

Annex 1 - Human Resources

An HR Emergency Pool has to be build gradually, made of people from the regular project and coordination.
An HR Emergency Pool has to be build with people that are readily available in case of an emergency and that have already worked in previous emergencies or projects + follow –up of their performance.

A network should be build in schools/ hospitals where we can recruit/ borrow/collaborate with for MDs and nurses.

For non-medical profiles, the website bdjobs has given quite good and fast results. It has shown to deliver good profiles within a few days time.

Activities

- Make the list of the activities to implement to respond to the emergency
- Define the task to be performed for each activity and the target population *(what for how many)*
- Identify the different categories of personnel required to execute these tasks
- Draw an organisation chart for each facility
- Make job-descriptions for each category of staff *(the standard one adapted to the context)*
- Have clear rules and regulations, adapted to an emergency situation, for the staff
- Recruit the appropriate staff
- Give to the staff the appropriate tools and equipment to perform the task
- For the staff that is delocalised, give appropriate living conditions
- Train, coach and supervise the staff
- Organise regular meetings with the staff to ensure a good information, exchange and feed-back on the activities and the context.

Summary table

Profile	Qty	Activities	Who
Medical or non medical profile			
Field coordinator	1	Coordination of the emergency programme	
		MoU with the hospital supported by the organization	
		Negotiation with Ministry of Health for intervention	
		Coordination with other actors	

Medical profiles			
Medical Coordinator	1	Initial Assessment	
		Medical focal point for the emergency	
		Analysis of the medical data	
		Supervision of the vaccination campaign	
Doctors	1	Assessment of the hospital supported by the organization	
		Follow-up of the patients in the hospital	
		Consultation in Mobile clinics	
	2	Consultations in Health Centre *(1 male and 1 female)*	
		Data collection in Health Centre	
Nurses	1	Go with the patients referred to the hospital	
		Follow-up of the patients in the hospital	
		Follow-up of the patients discharge from hospital	
		Follow-up of malnourished children referred to the hospital	
	1	E.R. + Dressing room in Health Centre	
		Data collection in Health Centre	

Non-medical profiles			
Admin/Fin	1	Admin/Fin management	
Log *(can be a log/watsan)*	1	Initial Assessment	
		Set up Mobile clinics	

		Cold chain vaccination campaign	
		Supply + sites vaccination campaign	
		Set up Health Centre	
		Organisation and monitoring of NFI distribution	
Log base		Organisation of office and house	
		Supply	
As. log		Cold chain vaccination campaign	
		Supply + sites vaccination campaign	
		Maintenance of the Health Centre	
Watsan *(can be a Log/watsan)*	1	Initial Assessment	
		Monitoring of the watsan activities	
As. Watsan	1	Assist the watsan in the monitoring of the watsan activities	
Health Promoter	1	Supervision of health promotion activities	
As. Health promoter	5	Implementation of health promotion activities	
		Assessment of the nutritional status of children < 5 years *(could also be done by home visitors)*	
Daily worker *(plumber)*	1	Maintenance of the water system	
		Daily check of the quality of water	
Daily worker *(carpenter)*		Construction of the latrines	
Daily worker *(mason)*		Construction of the bathing facilities and washing areas	
Cleaner for watsan		Cleaning of the latrines, bathing facilities and washing areas	Should be people from the community
		Destruction of the breeding sites	
		Spraying of the dwellings	
		Collection of domestic waste	
Daily workers		Help in set up watsan facilities	
		Maintenance of watsan facilities	
		Help in set up Health Centre	
		Unloading NFI from the trucks	
Home visitors	10	Assessment of the food availability	
		Assessment of the nutritional status of children < 5 years *(could also be done by health promoters)*	
		Data collection in the community *(birth, deaths, new arrival, departure,...)*	
Distribution team		Distribution of the NFI	
		Stock keeper on the spot	

Crowd controller		Crowd control	From the community
Registration officer		Registration of the patients in HC	Local
		Immunisation status survey of children coming to the health centre	
Stretcher bearers		Transport the patients	From the community
Store keeper		Organisation of warehouse	
Purchaser		Local purchase	Local
Drivers		Initial assessment	
		Mobile clinics	
		Ambulance service	
		For team	
		Etc….	
Cook	1	For office	Local
	1	For house	
Cleaners		For health structures, office, house and warehouse	Local
Guards		For health structures, office, house and warehouse	Local

Organisation chart

Annex 2 – Communication Database

The idea of the Emergency Communication Database is to compile all necessary contacts of the agencies, bodies, groups and faculties work during the emergency situation. Also put them in a chart base on their level of intervention. This will help to understand the support system and the level of responsibilities during the response in natural and man made disasters.

The database contains all the information, although these are available on website, telephone directory, policy papers, and strategy notes, etc. This is to ensure, rapid findings of the agencies during the emergency phase.