STANDARD OPERATING PROCEDURES

for BRAC's Emergency Response in Bangladesh

January 2013

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Acronyms

ADPC	Asian Disaster Preparedness Centre
AM	Area Manager
BRCS	Bangladesh Red Crescent Society
BEP	BRAC Education Programme
BLD	BRAC Learning Division
BWDB	Bangladesh Water Development Board
BARC	Bangladesh Agricultural Research Council
BARI	Bangladesh Agricultural Research Institute
BRRI	Bangladesh Rice Research Institute
BMD	Bangladesh Meteorological Department
BM	Branch Manager
BLC	BRAC Learning Centre
CDMP	Comprehensive Disaster Management Programme
CE	Community Empowerment
CPP	Cyclone Preparedness Programme
CWC	Central Water Commission
CRH	Climate Resilient House
CEP	Community Empowerment Programme
CBDRR	Community Based Disaster Risk Reduction
CEGIS	Centre for Environmental Geographic Information Services
DAE	Department of Agricultural Extension
DBR	District BRAC Representative
DC	Deputy Commissioner
DDMC	District Disaster Management Committee
DECC	Disaster Environment and Climate Change
DER	Disaster and Emergency Response
DL	Danger Level
DM	District Manager
DDM	Department of Disaster Management
DMIC	Disaster Management Information Centre
DRRO	District Relief and Rehabilitation Officer
EOC	Emergency Operations Centre
EW	Early Warning
ECMWF	European Centre for Medium-Range Weather Forecasts
FFWC	Flood Forecasting and Warning Centre
GoB	Government of Bangladesh
HF	High Frequency
HNPP	Health, Nutrition and Population Programme

HRLS	Human Rights and Legal Aid Services
HO	Head Office
ICS	Incident Command System
IC	Incident Commander
IAP	Incident Action Plan
ICP	Incident Command Post
IMD	Indian Meteorological Department
IMT	Incident Management Team
IMDMCC	Inter Ministerial Disaster Management Coordination Committee
ICIMOD	International Centre for Integrated Mountain Development
INGO	International Non-Government Organisation
MoFDM	Ministry of Food and Disaster Management
M	Magnitude
M&E	Monitoring and Evaluation
MoU	Memorandum of Understanding
MAC	Multi-Agency Coordinator
MF	Microfinance
MSL	Mean Sea Level
NDMC	National Disaster Management Council
NE	North-eastern
NFI	Non Food Item
NOAA	National Oceanic and Atmospheric Administration
NW	Nor'wester
NGO	Non-Government Organisation
ORS	Oral Rehydration Solution
OSC	Operation Section Chief
PH	Programme Head
PIO	Project Implementation Officer
PM	Programme Manager
PSC	Planning Section Chief
PLA	Participatory Learning and Action
PWD	Public Works Datum
PA	Programme Assistant
PRA	Participatory Rural Appraisal
RAT	Rapid Assessment Tool
RIMES	Regional Integrated Multi Hazard Early Warning System
RIR	Rapid Initial Report
RM	Regional Manager

RSS	Regional Sector Specialist
SOP	Standard Operating Procedures
SOD	Standing Orders on Disaster
SPARRSO	Space Research and Remote Sensing Organisation
SS	Sector Specialist
SSS	Senior Sector Specialist
SW	South-western
SWC	Storm Warning Centre
SAAO	Sub Assistant Agriculture Officer
UDMC	Union Disaster Management Committee
UDMT	Upazila Disaster Management Team
UNICEF	United Nations Children's Fund
UNO	Upazila Nirbahi Officer
UzDMC	Upazila (Sub District) Disaster Management Committee
UM	Upazila Manager
UNESCO	United Nations Educational, Scientific and Cultural Organisation
UAO	Upazila Agriculture Officer
UFO	Upazila Fisheries Officer
UP	Upazila Parisad
VHF	Very High Frequency
VO	Village Organisation
WASH	Water, Sanitation and Hygiene
WATSAN	Water and Sanitation
WL	Water Level
WMO	World Meteorological Organisation

1. Introduction

The ever-increasing vulnerability of society to various natural hazards is a serious concern for a low-lying country like Bangladesh. Population growth, technological advancements, infrastructural development, risks of global diseases, the emerging energy crisis, climate change, unstable regional security, changing geopolitical trends and the threat of terrorism add to the complexities of preparing adequate disaster mitigation and response strategies. In various international and national forums, there has been a constant realisation that effective and holistic disaster mitigation requires greater multi-sectoral collaboration. Tackling complex disaster situations have raised the need for effective participation from Non-Government Organisations (NGOs) in any disaster management. To avoid these critical challenges, an organisation should have written guidelines that define precisely how operations should be conducted. These guidelines, often called Standard Operating Procedures, or SOP, are "organisational directives that establish a standard course of action." In other words, SOP are written guidelines that explain what is expected and required of the disaster response personnel in performing their jobs. A comprehensive set of SOP define in significant details how the organisation intends to operate.

On January 2010, Asian Disaster Preparedness Centre (ADPC) signed an agreement with BRAC USA to support the Disaster, Environment and Climate Change (DECC) programme of BRAC Bangladesh to develop and implement the formulation of the Standard Operating Procedures (SOP) for disaster management. This SOP for BRAC Bangladesh is a set of protocols that shall be followed before, during and after disaster for different hazards. The purpose of these set of guidelines is to target the maximisation of efficiency and effectiveness of all necessary actions across different phases of a disaster. It also aims at the maximisation of resources in addressing issues and concerns on disaster management.

The purpose of this document is to provide BRAC a Standard Operating Procedures and corresponding information so as to govern the organisation's emergency response system. It is intended to be a ready reference desktop tool that will provide the staff with an understanding of the organisation, delineation of authority, and appropriate response processes. It will cover the general work flow and provide the basic knowledge needed for BRAC staff to operate on a routine basis and to activate the emergency operations in the event of an incident. Additionally, it will provide an overview of procedures and methodology that are used within the broader context of BRAC operations. It is a fluid, evolving document and will be updated as frequently as necessary.

During the compilation of BRAC's SOP, an assessment of its programmes had been undertaken to find opportunities for improvement and come up with a holistic approach to disaster and climate risk management. The assessment was conducted through field visits, interviews and focus group discussions with programme stakeholders, including programme implementers and beneficiaries.

2. BRAC Profile

BRAC is a development organisation dedicated to alleviating poverty by empowering the poor to bring about change in their own lives. Since its birth in 1972, BRAC has evolved into a world renowned model of community development, working in 70,000 out of 80,000 villages in the country. BRAC's various activities are imbedded in its following key programmes:

- Microfinance
- Education
- Health, Nutrition and Population
- Community Empowerment
- Human Rights and Legal Aid Services
- WASH
- DECC
- Agriculture and Food Security
- Gender, Justice and Diversity
- BRAC Learning Division (BLD)

BRAC's extensive work in community development is largely concentrated at the grassroots level, helping people alleviate their standard of living. In the entire country, BRAC has a total of 62 regional offices, broken down into 2,659 area/branch offices of which 345 offices are situated in disaster prone areas. Furthermore, the organisation has a total staff base of approximately 50,000.

BRAC plays a key role in rural development in Bangladesh. In disaster-prone communities, BRAC's role encompasses various activities from warning dissemination, emergency response, to rehabilitation and long-term recovery. Having offices, staff and volunteers in 345 disaster prone communities, BRAC is among the first responders to emergency and disaster situations.

In 2008, the Disaster, Environment and Climate Change (DECC) Programme was created within BRAC. The creation of the DECC programme is BRAC's way of professionalising a more proactive disaster risk management system, encompassing disaster mitigation as well as preparedness instead of just focusing on disaster response, rehabilitation and recovery.

In the preview of proactive disaster risk management, the DECC Programme builds on establishing a protocol of actions before, during and after disasters, or its Standard Operating Procedures (SOP). This SOP will be the guidelines for all BRAC staff in implementing initiatives that edounds to better community and individual preparedness, mitigation of disaster impacts, and management of resources.

2.1 BRAC Programme Activities

The following BRAC programmes have been briefly described in correspondence to the relevance of their current activities to DECC objectives and initiatives. For individual programmes to better understand their respective operational and programmatic challenges and future crisis in terms of climate change, DECC has scope to implement its strategies and actions in the stated programme components.

2.1.1 Microfinance

One of the oldest initiatives of its kind in Bangladesh and BRAC's largest programme, it covers all 64 districts of the country. The programme provides access to financial services to the poor, who are unable to obtain credit from mainstream banks due to lack of necessary assets and referrals. The borrowers, most of whom are women, use these loans to engage in various income generating activities to improve their socio-economic status.

BRAC's approach to microfinance involves providing collateral free credit and savings services at the doorsteps of our target population – the landless poor, marginal farmers and vulnerable small entrepreneurs. It recognises the heterogeneity among the poor and focuses on careful targetting and development of customised financial products and services that best meet their varying needs. A distinctive aspect of the Microfinance Programme is the credit-plus approach – in addition to providing loans and training, an integrated set of services have been developed that works to strengthen the supply chains of the enterprises that the programme's invest in, giving them access to quality inputs and support in marketing their products. These services are provided by BRAC's social enterprises.

Village organisations form another important component of the programme. The programme's Village Organisations (VOs), act as platforms for poor women to come together, access services such as microfinance, exchange information and raise awareness on social, legal and other services concerning their daily lives. Currently, BRAC has reached out to approximately 10 million poor people, mostly women, by providing loans and technical assistance to improve their standard of living. Furthermore, over 200,000 VO members have received training on Community Based Disaster Management till date and 4,218 of its staff members have participated in Organisational Level Disaster Preparedness (OLDP) training for risk reduction.

2.1.2 Education

The goal of the BRAC Education Programme (BEP) is to make a significant contribution to the achievement of education for all in Bangladesh. BEP focuses on increasing access to basic education to underserved population in unreachable areas, improving quality in formal education system and supporting the government in achieving the Millennium Development Goal 2 - Education for All by 2015.

Its five main units are Pre-primary Education; Primary Education; Support to Formal Schooling; Adolescent Development and Multi-purpose Community Learning Centres. Its three other small units include: Social and Financial Empowerment of Adolescents; Scholarship Programme (Medhabikash), and Aflatoun.

In sheer size, BRAC operates the largest private school system in the world: 1.1 million students (70% of them are girls) are enrolled at present in 37,000 BRAC schools that provide four years of non-formal

primary education. So far, almost five million children have already graduated from primary school level, 95% of who have enrolled to secondary schools. BEP also works with secondary schools to support government efforts in improving quality of secondary education, teaching quality and school management system.

Over 40,000 BRAC schoolteachers have received Community Based Risk Reduction training so far. Being important instruments of social change and information gatekeepers in their communities, BRAC schoolteachers are an important medium for DECC to spread its messages to BRAC school students and their families. 2, 029 BEP staffs have received OLDP training till date.

2.1.3 Health, Nutrition and Population

The two major objectives of BRAC Health, Nutrition and Population Programme (or HNPP) formerly known as BRAC Health Programme (BHP), are to improve maternal, neonatal and child health, and to reduce vulnerability to communicable diseases and common ailments. The programme is a combination of preventive, curative, rehabilitative and promotional health services.

Under HNPP, BRAC has about 80,000 community volunteers, who are volunteering within the communities themselves, and approximately 15 medical teams, each team is composed of one doctor and two paramedics, which are deployed to areas hit by disasters. One health volunteer, or shasthya shebika, is working in each village. Community volunteers give health related information to the public, treat minor ailments and help disease-afflicted individuals go to the hospital, if necessary. In pre-disaster period, community volunteers work on preventive as well as remedial health care. During and after disasters, community volunteers render services to assuage both the physical and mental trauma inflicted to the members of the community. Almost 80,000 Health Volunteers have received training on Community Based Disaster Management and emergency first aid techniques.

BRAC doctors and medical teams are working in different areas. In deployment to disaster-hit areas, doctors/medical teams situated nearest to the area of disasters are deployed thereat to render medical services. When needed, BRAC temporarily hires additional doctors to address the health demands in disaster-affected areas. Till date, 1,830 HNPP staffs have received OLDP training.

2.1.4 Community Empowerment

BRAC's Community Empowerment Programme (CEP) aims at achieving socio-political empowerment of the rural poor, particularly women, by enabling them to build, secure and use socio-political assets to improve their wellbeing, exercise their rights, take advantage of new opportunities and play a more active role in public life. CEP reaches more than 950,000 rural women through a set of programmatic interventions in the areas of Community Institution Building; Strengthening Local Governance; Access to Information; and Addressing Violence against Women.

CEP organises rural communities into democratic institutions, called Polli Shomaj, through creating awareness and building capacity for women's political participation, collective action against social injustice and exploitation, engaging with local government and improved access to resources. The programme also utilises folk art forms such as popular theatre to disseminate social messages to rural communities and mobilise them on a wide range of issues that affect their lives. At the same time, CEP helps strengthen local government capacity through training, gender sensitisation and formation of forums of elected female representatives from all levels. The programme's objective is to help local

government to become more transparent and responsive to the needs of the poorest. The programme also emphasises the increasing engagement of men in the process of women's empowerment and to prevent violence against women.

DECC leverages on CEP's popular theatre network to disseminate its own messages on disaster awareness. Moreover, DECC has trained over 50,000 Community Leaders on Community Based Disaster Management and 109 of its staff members have received OLDP training till date.

2.1.5 Human Rights and Legal Aid Services

BRAC's Human Rights and Legal Aid Services (HRLS) programme is dedicated to protecting and promoting human rights of the poor and marginalised through legal empowerment. Its various initiatives help spread the awareness needed to mobilise communities to raise their voices against injustices, discrimination and exploitation – whether at the individual or collective level. The programme creates an enabling environment for the poor and marginalised to seek equitable justice through formal and informal systems.

HRLS operates 517 Legal Aid Clinics in 61 of 64 districts across Bangladesh and is the largest NGO-led legal aid programme in the world. Its work is premised on a rights based approach to human development. The programme's activities include legal education, legal aid service provision via Legal Aid Clinics, which includes an Alternative Dispute Resolution (ADR) mechanism, rescue operational support, counselling, and legal referrals, staff training and capacity building. Its 'Barefoot Lawyers' impart legal literacy and spur sustainable social change by raising awareness and informing people of their rights. They operate on a 3P model of 'Prevent-Protest-Protect' and are usually the initial contact points in their communities when human rights violations occur.

Networking and strengthening partnerships is among its core areas of work. Alongside providing direct service, HRLS is able to assist in the conduction of Writ Petitions, and Public Interest Litigations (PILs). In addition, it also engages in knowledge-generating sessions to collaboratively achieve mutual strategies that directly impact the lives of vulnerable communities. Till date, about 185 HRLS staffs have received DECC's OLDP training.

2.1.6 Water, Sanitation and Hygiene

Building on its long experience of providing water and sanitation services to communities, BRAC started its Water, Sanitation and Hygiene (WASH) programme in 2006 in partnership with the Government of Bangladesh. BRAC's WASH programme, which has reached over 38 million people, is aimed at achieving the seventh Millennium Development Goal (MDG) of reducing the proportion of people without access to safe drinking water and basic sanitation by half.

WASH aims to ensure sustainable access to sanitation, water and hygiene in hard-to-reach areas and for the underserved people of Bangladesh. The programme scaled-up to provide software support in the form of awareness, training, education, advocacy and community empowerment for sustainability and low cost hardware support by providing access to clean water, sanitation and entrepreneurship development by sanitary latrine production for equitable development. The programme is also an active part of the government's National Sanitation Task Force, it is represented in the Government's Water and Sanitation committees at District, Upazila and Union levels that are organised by the local government institutions. Its services in rural and isolated areas break the cycle of contamination caused

by unsanitary latrines, contaminated water, and unsafe hygiene practices. The programme ensures sustainability of these interventions by encouraging community ownership, developing linkages with local governments, and encouraging local entrepreneurs to supply low cost hardware.

Till date, 38.8 million people have been given hygiene education, 1.78 million people across Bangladesh have been given access to safe water and 25.6 million people received access to sanitation facilities. WASH has played an integral role in its sector in Bangladesh and is now the largest programme of its kind in the world. About 40,000 Village WASH Committee members have received training on Community Based Disaster Management and 516 of its staffs have received OLDP training.

2.1.7 Disaster, Environment and Climate Change

The DECC programme aims for a holistic approach to disaster and climate risk management. Under it, BRAC has introduced various climate change adaptation initiatives in disaster-prone communities. Its main objectives are to enhance BRAC's institutional capacity to respond to natural disasters; build capacity at community level on disaster risk reduction; and to increase adaptability and coping ability in natural disasters, conducting predictive research, information transfer and education in relation to environment, climate change and natural disasters.

A Standard Operating Procedures (SOP) has been developed after carrying out several simulations to help organise and streamline BRAC's rapid response to disasters. The procedures include operational instructions to enable BRAC staff and community members to respond quickly during various phases of a disaster scenario.

DECC has already provided training to the community to strengthen their efforts for preparedness and disaster response to raise awareness in parallel to capacity development. DECC provided training to hundreds of thousands of participants from the BRAC network to be the first responders of an emergency. Their trainings feature lessons on disaster risk reduction, preparedness, trauma handling and reducing dependency on external aid.

As a part of economic recovery, DECC worked with the Aila-affected communities to rebuild livelihoods through the adoption of new technologies. Initially, DECC provided financial and technical support to enhance food availability which included alternative livelihood opportunities in the affected areas. To deal with salinity in the soil, BRAC introduced new varieties of high yielding saline tolerant rice and maize in this region to restore food security and social safety nets. DECC programme provided support for fish farming and crab fattening to restore their livelihoods. These alternative livelihoods help people to restore income generation well as contribute to the development process. Moreover, BRAC is now constructing Climate Resilient Houses (CRH) in the southern part of Bangladesh by using local materials and indigenous knowledge. Though construction of community shelters is an option to reduce loss of lives, individual CRH will not only save lives but also ensure protection of assets.

2.1.8 Agriculture and Food Security

The overall approach of BRAC's Agriculture programme is to increase crop production while ensuring environmental sustainability, adaptability to climate change and affordability for marginal and small farmers. The key to our approach is ensuring that improved inputs and technologies are taken to the poor farmers and the experience of farmers is brought back to the laboratories.

BRAC has initiated research on the agronomic management of hybrid rice to expedite its extension in unfavourable environments. As part of the innovative research, the effects of high temperature stress on hybrid rice are studied to understand the impact of rising global temperatures. The programme is also involved in the development of short-duration, inbred rice varieties needed to intensify crop production for food security and conservation of local germplasm for maintaining biodiversity. Another concern of climate change is the projected increase of sea water levels. Research on the performance of hybrid rice under continuously water-logged conditions to mitigate the effects of impending climate change is also being conducted.

2.1.9 Gender, Justice and Diversity

In order to change attitudes about gender roles and relations in a male-dominated society, a broad consensus including both men and women must be built, to promote a changed mindset through education as well as legal and advocacy programmes.

It works to prevent gender-based discrimination and violence by increasing understanding through discussions, workshops and the media. It provides technical support and training to organisations that promote the rights of socially marginalised groups, such as transgenders, sex workers and HIV/AIDS sufferers. Within BRAC, the programme works to improve gender relations through training on gender sensitisation and analysis, development of policies such as the Gender Policy and Sexual Harassment Elimination Policy and creation of staff forums and alliances such as the Gender Equality and Diversity Team and the network of Gender Focal Points.

BRAC builds a broad consensus that includes both men and women to promote a changed mindset through education as well as legal and advocacy programmes. The goal of Gender Justice and Diversity work is to mainstream gender equality and diversity within BRAC and to improve gender relations and build gender sensitivity at home and in places of learning.

2.1.10 BRAC Learning Division (BLD)

BRAC believes that training is a key element of the development approach which focuses on people and their participation. Training has been introduced as an essential element of BRAC's intervention strategy. Realising the importance of training, BRAC has developed a learning division to address its own training needs as well as that of government and other non-government organisations. It has 22 residential Learning Centres (BLCs) in different parts of Bangladesh. In addition, two international standard learning centres, called BRAC Centre for Development Management (BCDM) have been established in Rajendrapur and Savar to cater to BRAC's own demands and needs, and also to those of other organisations. BCDM offers appropriate training facilities in a rural & natural setting for the development and continuing education of managers involved in development programmes.

The BLD is the training arm of BRAC and conducts about 150 training courses annually which all BRAC staffs undergo. Refresher courses for teachers, community workers and health workers are also conducted by BLD.

3. Current Disaster Management System of BRAC

Although BRAC works in partnership with the government in disseminating warning information before cyclones, and giving instructions to the community to go to the cyclone shelter during cyclones and floods, the bulk of its disaster management activities are still focused on post-disaster response. These activities are undertaken in communities by BRAC staffs and volunteers through its different programmes. BRAC volunteers conduct damage assessment to report the state of the community after a disaster to local BRAC offices as well as the Head Office.

BRAC HO convenes a Disaster Management Committee, composed of the directors of its different programmes during disaster times to discuss and decide on the kind of activities that have to be implemented in disaster-affected areas. Decisions are then communicated to BRAC regional offices and lower level BRAC offices for implementation.

BRAC sits in the Government Committees as a member at different Upazila levels represented by its local/district representatives. Its presence in the government committee makes coordination with the government effective. The Upazila managers coordinate with BRAC head office and the government.

As mentioned in the outset, BRAC has community volunteers and health workers in almost all of the villages in Bangladesh. In times of disasters, BRAC community volunteers and health workers start working in the communities without waiting for instruction from the national office. They are among the first responders, giving medicines to the affected victims and assisting those who are injured to go to the hospital.

Upon receipt of report from its volunteers on the field, BRAC headquarter procures food and other items needed by the people in affected communities. The procured items are then sent to communities for distribution.

Within 24 to 72 hours, BRAC, in coordination with the government, sends medical teams to areas where they are needed. BRAC has about 15 medical teams[1] . During disasters, BRAC's offices that were not affected can lend support to the other offices which are affected.

Post-disaster rehabilitation work is conducted by BRAC through the provision of livelihood assistance to disaster-affected communities. These assistances come in the form of saline-resistant rice seeds, fish culture and crab fattening, among others.

[1] Each medical team is composed of 1 doctor and 2 paramedics

4. Risk Profile of Bangladesh

Bangladesh is largely vulnerable to several natural disasters, and every year, natural calamities affect people's lives in some parts of the country. The major disasters of concern here are the occurrences of flood, cyclone and storm surge, flash flood, drought, tornado, riverbank erosion and landslide. These extreme natural events are termed as disasters when they adversely affect the whole environment, including human beings, their shelters, or the resources essential for their livelihoods.

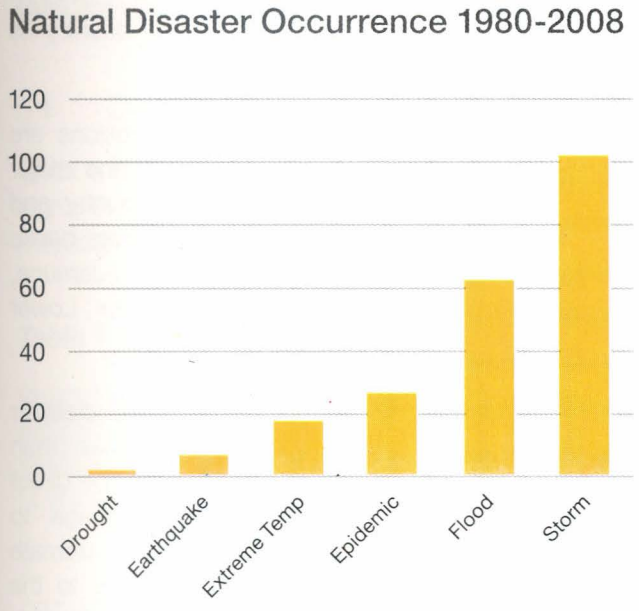


Figure 1: Natural Disaster Occurrence in Bangladesh

The geographical setting of Bangladesh makes the country vulnerable to natural disasters. The mountains and hills bordering almost three-fourths of the country, along with the funnel shaped Bay of Bengal in the south, have not only made the country a meeting place of life-giving monsoon rains, but also abnormal rainfall and earthquakes in the adjacent Himalayan range add to the disaster situation.

Flood is a recurring phenomenon in the country, locally termed as *bonna* or *borsha* based on the intensity of monsoon rain, magnitude and time of occurrence. When the floodwaters damage resources, and disrupt communication and livelihood systems, it is called bonna. Bangladesh gets devastating floods, like those of 1988, 1998, 2004 and 2007 that brought untold sufferings to millions of people and resulted in human deaths, loss of livestock, spread of diseases and hunger, damage to standing crops and destruction of physical and economic infrastructures, as well as fish and shrimp ponds and hatcheries.

Cyclone and storm surges occur frequently and cause significant destruction in coastal areas of the country. Nor'westers and tornadoes also frequently hit different places. The Bay of Bengal is one of the regions in the world, which is frequently affected by storm surges associated with tropical cyclones. Statistics show that about 5% of the global tropical cyclones form over the Bay of Bengal. Figure 1 shows the natural disaster occurrences from 1980-2008 in Bangladesh. On an average, five to six storms form in this region every year.

Casualties here, is 80% of the global casualties. Loss of life and property is mainly attributed to the storm surge. Bangladesh is situated at the northern tip of the Bay of Bengal. Long continental shelf, shallow bathymetry in the North Bay of Bengal, the Northward-converging nature of the Bay, complex coastal geometry with many kinks and islands, high astronomical tides and long tidal range between east and west coasts of Bangladesh are the main causes of the highest storm surge and of the longest duration in this region. The cyclones usually originate in the southern parts of the Bay of Bengal or

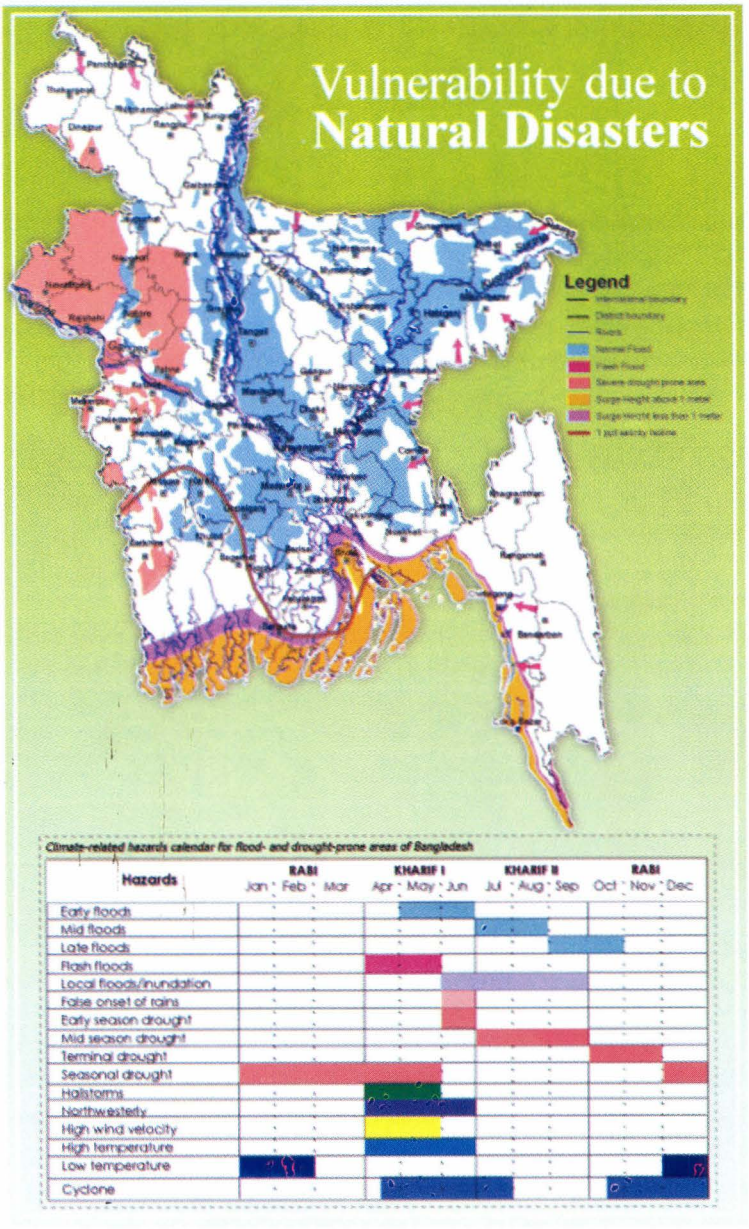


Figure 2: Vulnerability due to disaster and disaster calendar

in the Andaman Sea, from where they move towards the west before curving to the north and northeast. The Great Killer Cyclone of 12 November 1970 took away lives of 300,000 people.

Although this country with monsoon climate has enough rain, droughts frequently take a significant portion out of the agricultural economy of Bangladesh, causing hunger, instability and insecurity. The north-western part of the country is vulnerable to drought.

Disastrous riverbank erosions are mainly associated with the major river systems of the country and are seen along these river banks i.e., the Brahmaputra-Jamuna, the Ganges-Padma, the Lower Meghna and other rivers.

The effects of a natural disaster or a combination of more than one natural disaster may be direct loss of life, severe damage to physical properties and ultimate unfavourable consequence to the livelihoods and poverty situation of the people of Bangladesh. The vulnerability due to natural disasters and disaster calendar are shown in Figure 2. A glossary of disaster terminology is also summarised in Annex 1.

5. Existing Early Warning System

Early warning is a key element of disaster preparedness in terms of building a response system. In this section, existing early warning system for major hazards (cyclone/storm surge, flood and earthquake) will be reviewed. The reviews are based primarily on the secondary sources of the respective institutional documentations, project documents and/or research outputs. The institutionally shared information through our outreach and discussions with respective sources agencies such as Bangladesh Meteorological Department (BMD), Flood Forecasting and Warning Centre (FFWC), Cyclone Preparedness Programme (CPP), Department of Disaster Management (DDM) and so forth, were carried out to collect more context based documentations.

5.1 Cyclone/Storm Surge Early Warning System

BMD is the authorised agency for the cyclone and storm surge warning. Warning and maritime signal thresholds are based on the intensity and impact of the hazard. The lead time of the warning messages are given below in Table 1.

Table 1: Hazard warning products and their issuance time

Warning products		Issued at or before			
		As needed	24 hrs	18 hrs	10 hrs
Cyclone	Alert	x			
	Warnings		x		
	Danger			x	
	Great Danger				x
Storm Surge				x	x

The signal systems for the cyclone and storm surge early warning signals are shown in Table 2.

Table 2: Bangladesh Cyclone Signals System

Name of Signal	Description	Stage of cyclone	Actions by GoB/BDRCS
Distant Cautionary Signal 1	There is a region of squally weather in the distant sea where a storm may form.	Depression	• Publicity through word of mouth. • Information to fisherman community. • Hoisting of one signal flag. • Remain alert for next Weather bulletin. Listen to radio, Television and other media.
Distant Warning Signal 2	A storm has formed in the distant sea.	Deep Depression	
Local Cautionary Signal 3	The port is threatened by squally weather.		

Name of Signal	Description	Stage of cyclone	Actions by GoB/BDRCS
Local Warning Signal 4	The port is threatened by a storm but it does not appear that the danger is yet sufficiently great to justify extreme precautionary measures.	Cyclone	• Hoisting of two signal flags. • Wide publicity by mike, megaphone, Drum-beating etc. • Arrange cyclone co-ordination committee meetings at all levels, e.g, national, district, upazila, union and ward level.
Danger Signal 6	The port will experience severe weather from a storm of slight or moderate intensity. It is expected to cross the coast to the north of the port for Chittagong and Cox's Bazar and to the south of the port for Mongla.		 **SIGNAL NO 4-6**
Great Danger Signal 8	The port will experience severe weather from a storm of great intensity. It is expected to cross the coast to the south of the port for Chittagong and Cox's Bazar and to the east of the port for Mongla.	Super Cyclone	• Hoist three signal flags. • Wide publicity and siren signals. • Evacuate people from vulnerable areas. • Shelter people in cyclone shelters and safe places. • Rescue and first aid.
Great Danger Signal 9	The port will experience severe weather from a storm of great intensity. It is expected to cross the coast to the north of the port for Chittagong and Cox's Bazar and to the south of the port for Mongla.		
Great Danger Signal 10	The port will experience severe weather from a storm of great intensity. It is expected to cross the coast at or near the port.		 **SIGNAL NO 8-10**

The warning system is a continuous process of improvement. Over the years, through experience, there is an evolution in the development of warning messages. The warning bulletins in present times are very much different from what it was in the seventies (Figure 3). Although the main information depicting the nature of the cyclone and signals remain the same, the advisory part is more elaborate now than it previously was. The types of information generally included in the content are:

- Severity
- Wind speed within the cyclone
- Speed of the cyclone
- Direction
- Distance from the coast
- Signal
- Possible areas to be inundated by tides and surges

SPECIAL WEATHER BULLETIN (November 14, 2007 at 0830)

THE SEVERE CYCLONIC STORM "SIDR" (ECP 968 HPA) WITH A CORE OF HURRICANE WINDS OVER EAST CENTRAL BAY AND ADJOINING SOUTH EAST BAY MOVED SLIGHTLY NORTHWARDS AND NOW LIES OVER EAST CENTRAL BAY AND ADJOINING AREA WAS CENTERED AT 06 AM TODAY (NOVEMBER 14, 2007) ABOUT 960 KMS SOUTH-SOUTHWEST OF CHITTAGONG PORT, 880 KMS SOUTH-SOUTHWEST OF COX'S BAZAR PORT AND 925 KMS SOUTH OF MONGLA PORT (NEAR LAT 14.0^{0} N & LONG 89.2^{0} E). IT IS LIKELY TO INTENSIFY FURTHER AND MOVE IN A NORTHLY DIRECTION.

MAXIMUM SUSTAINED WIND SPEED WITHIN 74 KMS OF THE STORM CENTER IS ABOUT 165 KPH RISING TO 185 KPH IN GUSTS /SQUALLS. SEA WILL REMAIN VERY HIGH.

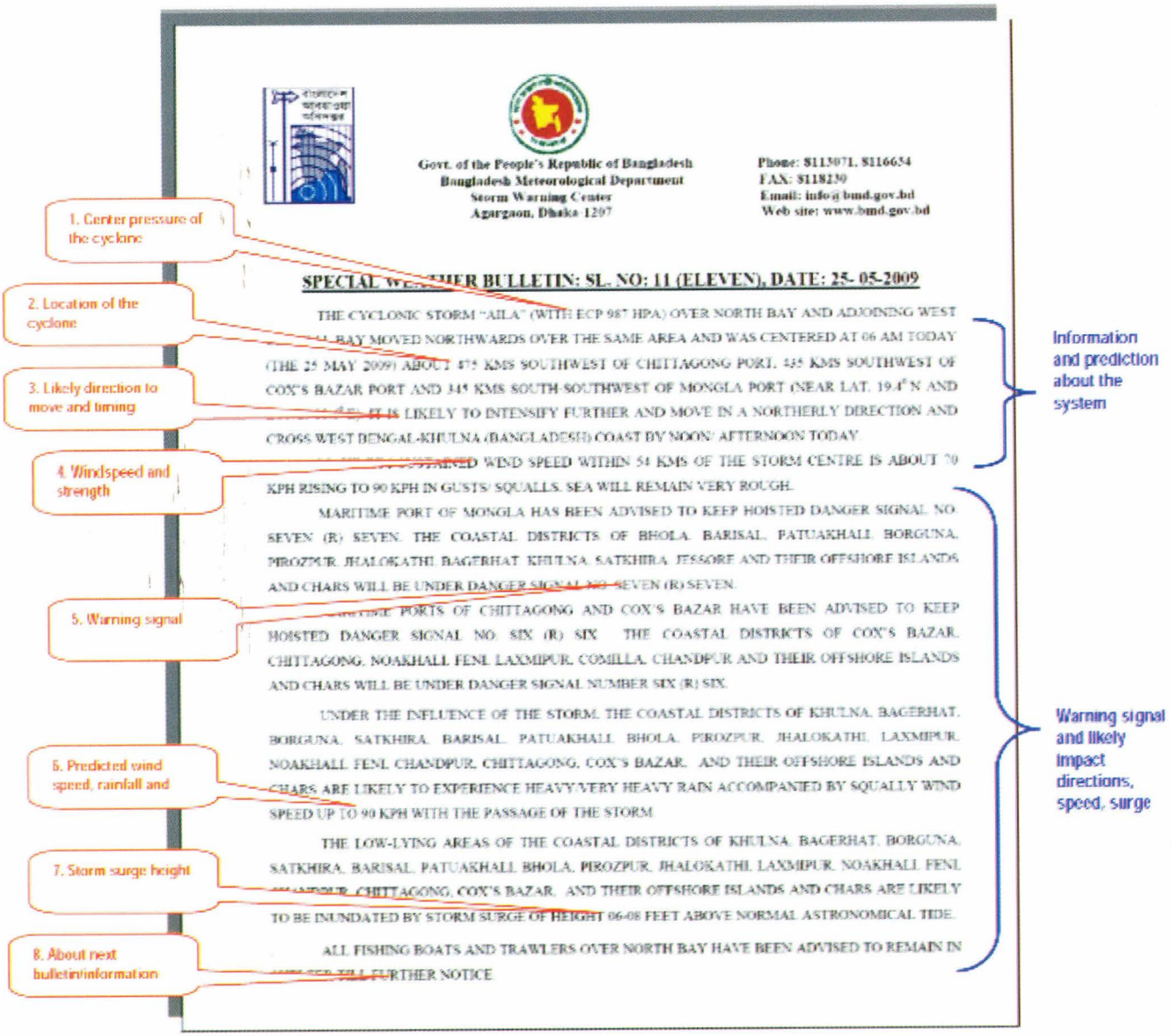
MARITIME PORTS OF CHITTAGONG, COX'S BAZAR AND MONGLA HAVE BEEN ADVISED TO KEEP HOISTED WARNING SIGNAL NUMBER FOUR (R) FOUR.

ALL FISHING BOATS AND TRAWLERS OVER NORTH BAY HAVE BEEN ADVISED TO REMAIN IN SHELTER TILL FURTHER NOTICE.

[**Source**: Bangladesh Meteorological Department – BMD]

Figure 3: Cyclone bulletin contents

A typical Special Weather Bulletin issued by BMD contains almost following eight types of information (shown in the following diagram in red colour).



The BMD circulated Special Weather Bulletin (Figure 3). On receiving the BMD special weather bulletin, usually the central CPP headquarters issues the VHF message to the respective CPP field offices and the field office message receiver usually transcribes the message upon receiving the message.

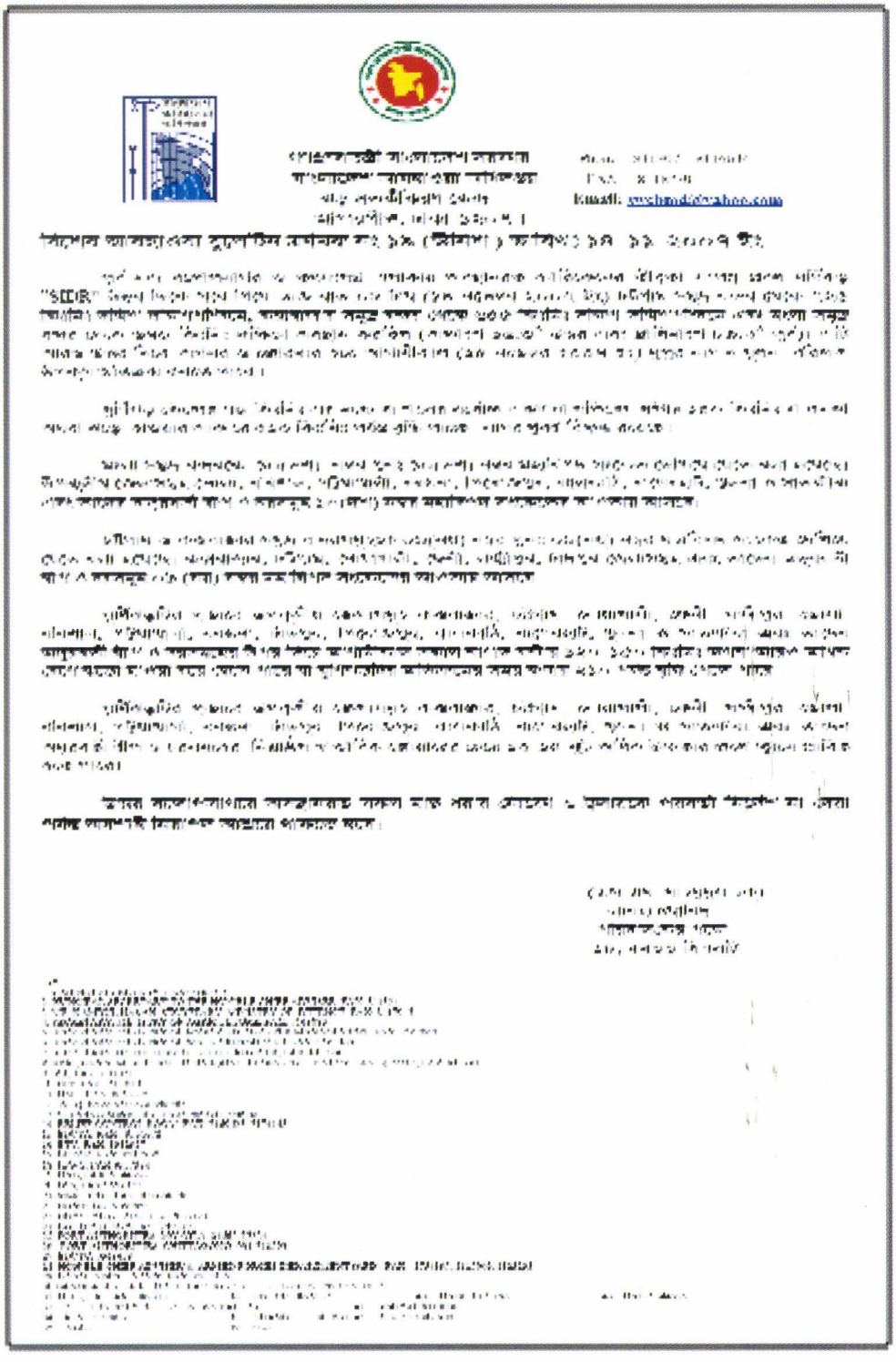


Figure 4: BMD bulletin of SIDR and CPP VHF message hand written transmission document

5.1.1 Warning dissemination mechanisms

As per the protocol of Bangladesh Government, there are two stages to the cyclone/storm surge warning system:

Alert Stage

a) Issue as soon as possible the alert warning signals of cyclone, at least 36 hours ahead of formation of depression in the Bay of Bengal.
b) Supply information through fax/telephone/teleprinter to Cyclone Preparedness Programme (CPP) about the formation of depression in Bay of Bengal so as to allow CPP to take appropriate actions including dissemination of information to all concerned.
c) Issue warning signals code 'Whirlwind' to all concerned officials through telephone, teleprinter, telegram, fax and email etc.
d) Prepare and submit Special Weather Bulletin and broadcast/publicise the same through national news media, such as all the stations of radio and television and national newspapers, for the benefit of the general people. In case of Local Cautionary Signal no. 3, arrange for adequate and full time coordination between SWC of the Meteorological Department, Bangladesh Betar and Bangladesh Television for publicity beyond normal broadcasting hours.
e) Send Special Weather Bulletins to EOC at the Ministry of Disaster Management and Relief, the Directorate of Relief and Rehabilitation, the Cyclone Preparedness Programme and Bangladesh Red Crescent Society for undertaking adequate arrangements.

Warning Stage

Publicise warning signals at each of the following specified stages:

a) Warning 24 hours before disaster
b) Danger at least 18 hours before disaster
c) Great Danger at least 10 hours before disaster

The same warning signals are to be repeated to the Emergency Operations Centre (EOC) at the Ministry of Disaster Management and Relief, Control Room of the Department of Disaster Management, the Directorate of Relief and Rehabilitation, the Cyclone Preparedness Programme and the Bangladesh Red Crescent Society. The hazard information dissemination system for different hazards from source to destination is summarised in Annex 4. The following information should be mentioned in the signals to be disseminated. Figure 5 shows the cyclone warning dissemination of BMD.

a) Position of the storm centre
b) Velocity and direction of the storm
c) Mention the thanas of the districts likely to be affected, if possible.
d) Appropriate time of commencement of gale wind at different places (Velocity above 32 miles/hour or 51.84 km/hour).

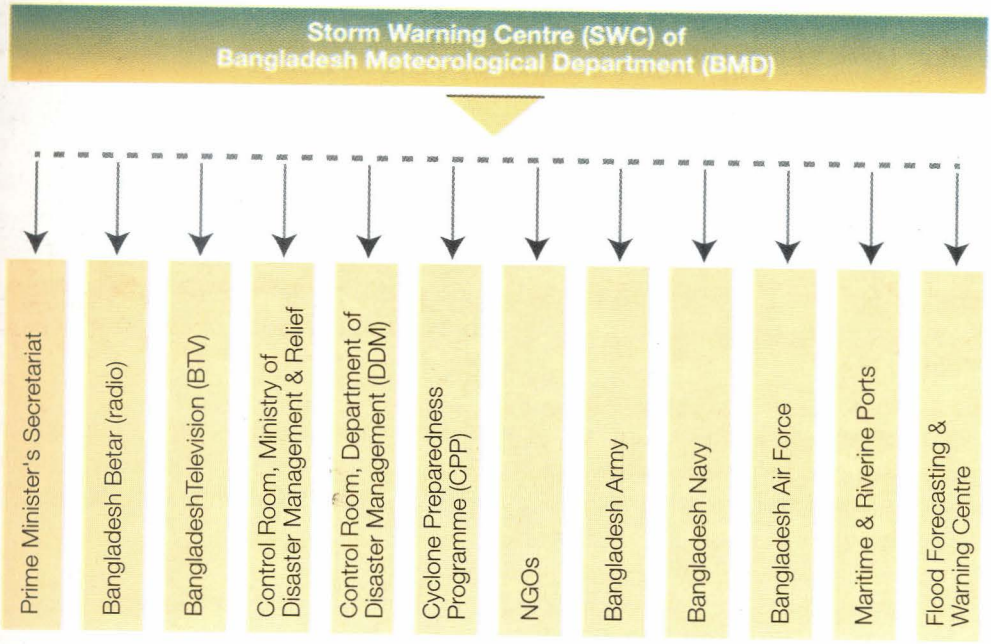


Figure 5: Cyclone warning dissemination flow of BMD

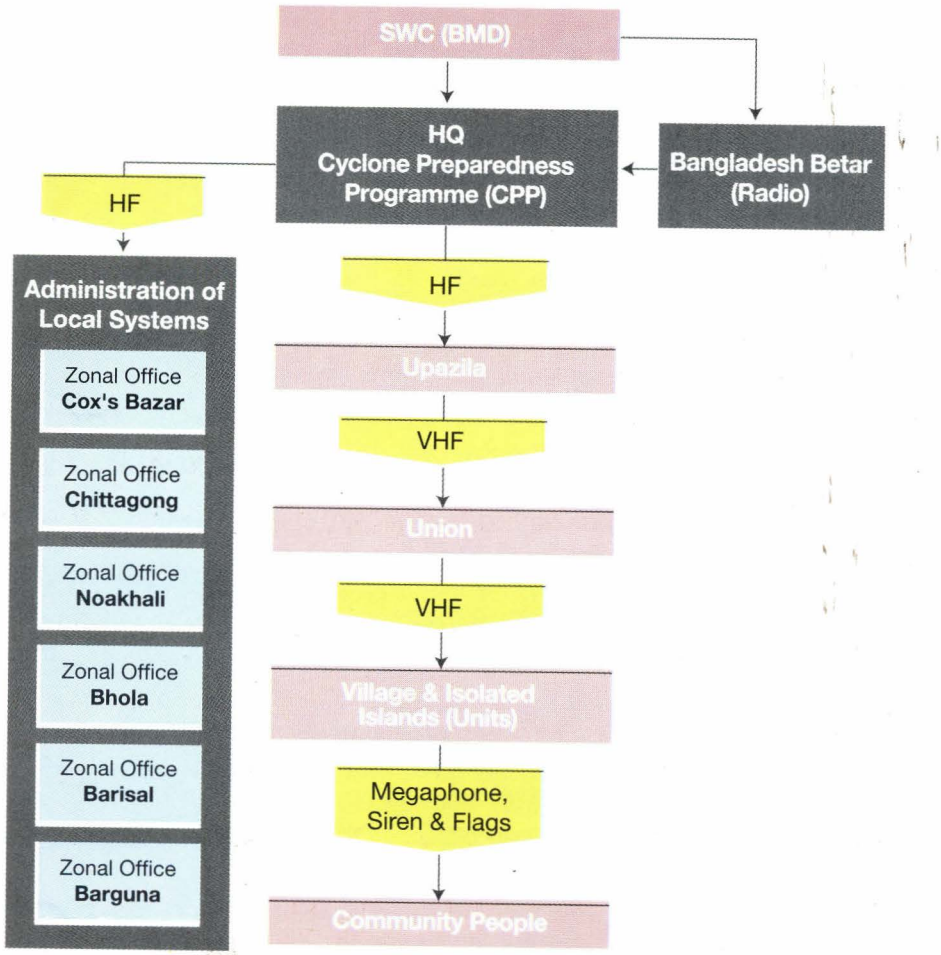


Figure 6: Dissemination of warnings and signals from the Storm Warning Centre (SWC) of BMD through the CPP to the community people

In the event of a tropical cyclone, the CPP receives cyclone warning signals from Storm Warning Centre (SWC) of BMD as soon as a depression is formed in the Bay of Bengal. The information is transmitted to the six Zonal Offices over HF radio. The Assistant Directors in turn pass it on to Unions through VHF radio. Where VHF radio has not yet been installed, a messenger then passes on the message (Figure 6). The Union Team Leaders contact the Unit Team immediately. The Unit Team Leaders with their volunteers spread out in the villages and disseminate the cyclone warnings, almost door-to-door, using megaphones, hand sirens and public address systems. The Team Leaders at the same time keep track of the approaching cyclone by listening to national radio broadcasts over transistor radios. The Team Leaders are thus alerted and start work without losing time. The volunteers keep on announcing the special weather bulletins on the characteristics of the approaching cyclone as per their action plan.

When the situation turns serious, the GoB passes the order for evacuation. The volunteers implement the order and advice and help people to seek safety in cyclone shelters or other available safe places. The entire process of communicating a warning issued by the BMD through all levels of the CPP communications network takes about 15 minutes.

After the cyclone is over, the volunteers rescue the injured and marooned people, provide first aid to the injured, send serious cases to the local hospitals and assist in post-cyclone emergency relief operations.

5.2 Flood Early Warning System

Bangladesh is an agro-based country with the Bay of Bengal to the south and the Himalayan range to the north. It is rich in water resources as the whole country is crisscrossed by a multitude of rivers and water bodies. Yet severe weather and climate events affect Bangladesh frequently and turn the blessing of abundant water into a disaster. The severe weather and climate events cause floods every year as a regular phenomenon of the summer monsoon season. These large-scale floods are caused by excessive discharge and rainfall in the Bangladesh delta as well as retardation of outflow into the Bay of Bengal due to high sea levels. The major source of floods, however, is discharge from the Ganges and the Brahmaputra.

When the level of water in a stream overtops natural or artificial banks, water overflows on to the flood plain and affects human activities is called flood. Flooding occurs when water levels rise above the level associated with the beginning of damage and disruption

5.2.1 Flood Types and Characteristics in Bangladesh

In Bangladesh, the following types of floods are normally encountered (Figure 7 and Table 3):

Table 3: Types of Flood

Types of Flood	Characteristics
Flash Flood	• Eastern and Northern Rivers • Sharp rise followed by a relatively rapid recession • High velocities that damage crops and property
Local Flood	• Due to localised rainfall of long duration in the monsoon season often generate water volumes in excess of the local drainage capacity • 50 mm or above rainfall in one day causes stress on local drainage system leading to localised flood • 300 mm or more rainfall in consecutive 10 days impedes the drainage and likely to cause rain-fed flood in the area
Monsoon Flood	• Major Rivers (specially the Ganges-Brahmaputra-Meghna GBM river system) • Generally rise and fall slowly; rise and fall may extend from 10-20 days or more • Spilling through distributaries and over the bank of the river system • Extensive flood damage when the GBM system rise simultaneously
Flood due to storm surges	• Generally formed in coastal belts of Bangladesh • Generated due to tropical cyclones • Predominant during the post monsoon (October to November) and Post Monsoon (April to June)

5.2.2 Flood Prone Areas

The flooding pattern in the hydrologic basins is summarised below:

Brahmaputra Basin: All the rivers of the Brahmaputra basin start rising in March due to snow melt in the Himalayas which causes a first peak in May and early June. It is followed by subsequent peaks up to the end of August, caused by a heavy monsoon rain over the catchments. The response to rainfall is relatively quick, resulting in rapid increases in the river. Six to ten days elapse from a period of rainfall in the upper catchments until the corresponding is felt within Bangladesh. It is a heavy alarm for Bangladesh if the water level of Brahmaputra rises, as it may cause severe flooding in the country.

Ganges-Padma Basin: The Ganges begins to rise in May and the period of maximum flow is more frequent in July and August. Occasionally September is the month of severe flooding. Floods in the Ganges basin are mainly in the form of over-bank spilling. The flood situation deteriorates when the Brahmaputra remains in spate, transmitting backwater into the Ganges.

The *Padma*, carrying the combined flows of the Brahmaputra and the Ganges, is more or less a straight channel with a relatively deep and narrow section. High water levels in the Meghna River are controlled downstream by the water levels of the Padma River during the flood season. When a peak stage of the Brahmaputra coincides with a peak stage of the Ganges and the Padma, heavy to severe flooding occurs.

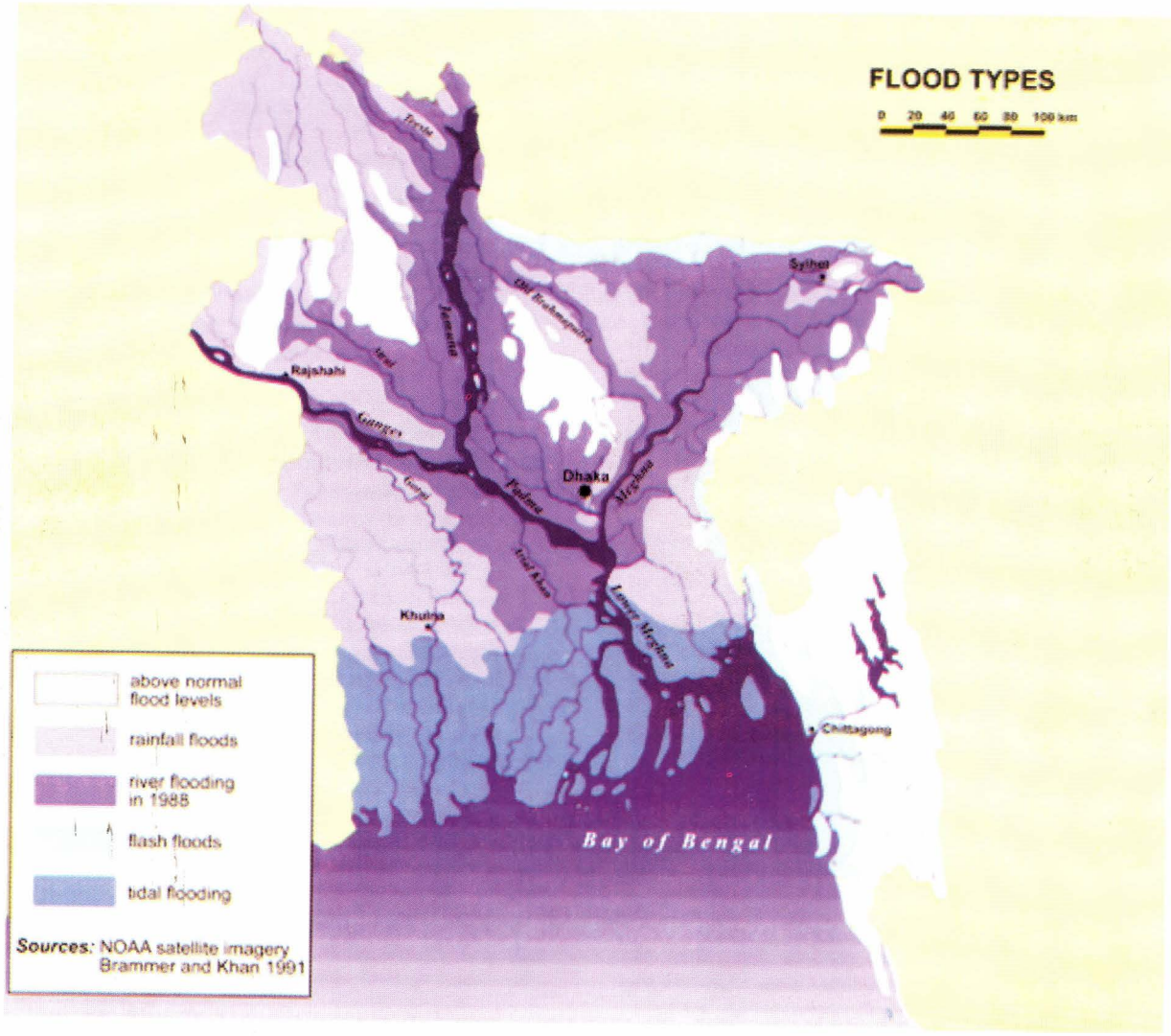


Figure 7: Types of flooding in Bangladesh

Meghna and South Eastern Hill Basin: The normal sequence of flash flooding occurs in Meghna basin of the North-eastern Part of Bangladesh and the South-eastern hill basins in the pre-monsoon and post-monsoon period. Flash flood vulnerable areas are:

- North-East (Netrokona, Sherpur, Sunamganj, Sylhet, Moulvibazar and Habiganj) - Flash floods are triggered by high intensity rainfall in neighbouring Indian catchments located in Meghalaya and Tripura
- South-Eastern hilly areas
- North-West (Teesta Basin) - Rainfall is predominantly within Bangladesh, although there is also substantial cross runoff into Bangladesh causing flash floods

Additionally, floods can be classified based on area inundated. Table 4 summarises the criteria for flood classifications:

Table 4: Types of Flood based on area inundated

Types of Flood	Area Inundated(km^2)	Characteristics
Normal Flood	<28000	• Low lying areas where cropping pattern adjusted to inundation and flooding is accepted
High Flood	28000-36000	• Inundated 1/4th of the country • Damages limited to crops • Frequency: once in 3 years
Severe Flood	36000-50000	• Damages to crops, infrastructure and urban areas • Frequency: once in 6 years
Catastrophic Flood	>50000	• Large scale damage occurs lives and property in both rural and urban areas • Frequency: once in 9 years

5.2.3 Flood Forecasting and Warning System

Flood forecasting and warning system includes four major steps:

- Measurement and Data Collection
- Preparation
- Output
- Dissemination

Measurement and Data Collection:

Flood Forecasting and Warning Centre of Bangladesh of the Water Development Board collects rainfall data at 56 stations and water level measurements in 73 stations (WL measurements every three hours and rainfall measurements at 24hr intervals. FFWC receives limited water level data from Nepal, India and China. Bangladesh Meteorological Department forecasts, SPARRSO website, IMD (Indian Meteorological Department) website, Central Water Commission (CWC) India website, NOAA website and many other potential sources for hydro meteorological information collection for flood forecasting and warning.

Major different sources of data acquisition:

- Wireless network all over the country
- Telephone and mobile phone
- Telemetry
- BMD and IMD (email)
- Website (ICIMOD, NOAA, IMD)

Preparation:

Flood forecasting was done by monitoring rainfall; runoff; water level; snow melt and other factors in the upper catchments, by measuring rainfall and water levels at important locations in the river systems of the country, from forecasts of tides and tidal surges and by using mathematical techniques and models to predict future water levels of rivers.

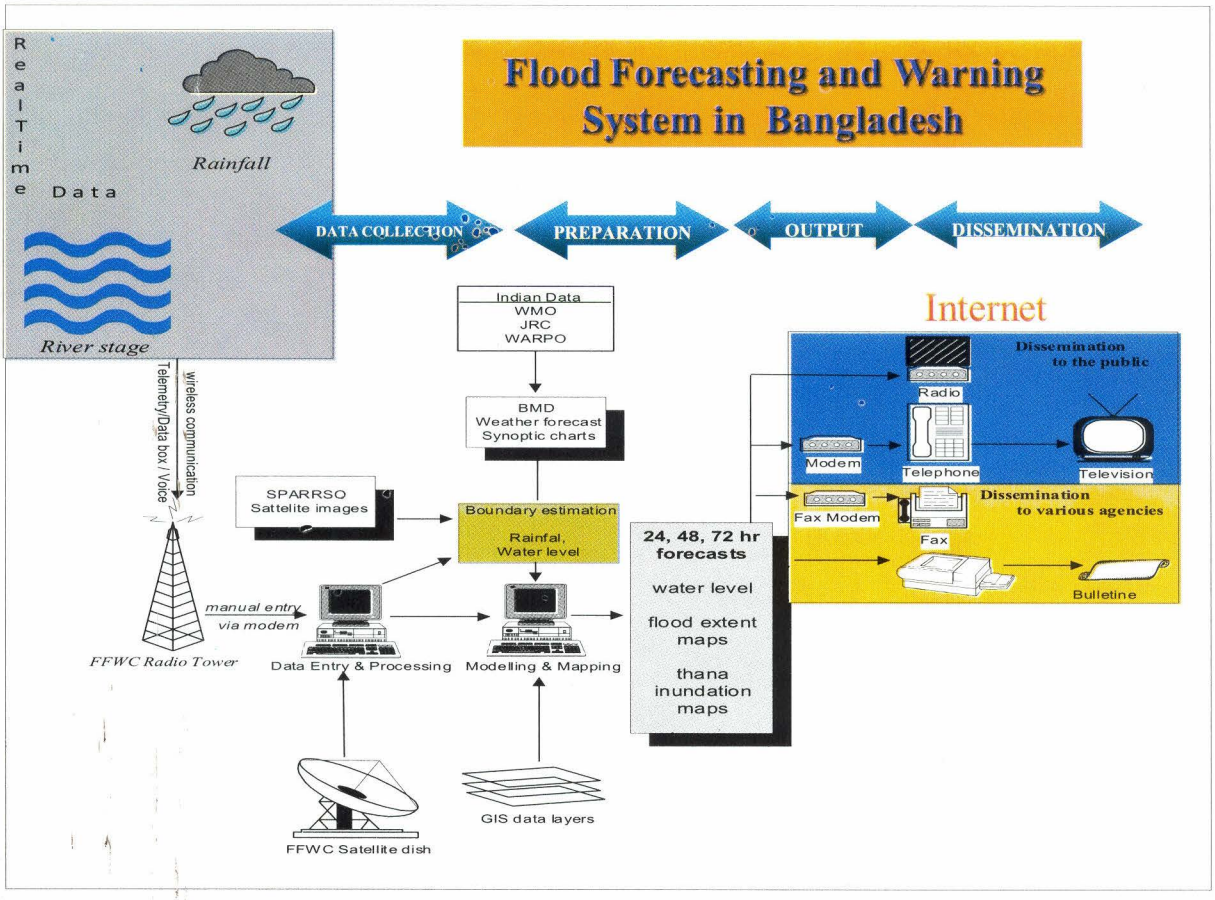


Figure 8: Flood forecasting and warning system at FFWC

Outputs:

- Rainfall and River Situation Bulletin (provide info. of river stage and rainfall in monitoring stations of last 24 hrs)
- Forecast Bulletin (Three day forecast of major points of BD river)
- Flood Hydrograph (for every year)
- Thana Status Map
- River Situation Map (indicates different conditions e.g., GREEN Dot for Normal; YELLOW for warning (within 50cm of DL); ORANGE for danger level, RED for severe (100cm above DL), WHITE for no data)
- Rainfall Distribution Map (Rainfall distribution for the last 24 years throughout the country)
- Flood Map/Inundation Map (24 hrs, 48hrs and 72 hrs flood map based on model forecast)

A daily bulletin, based on observed data and results of forecast models, is prepared, and distributed by FFWC at around 12:00 noon (Figure 8). The bulletin, mostly in tabular and graph format, includes the following:

a) a cover page showing geographical, environmental settings of Bangladesh and location of all monitoring stations;
b) river stages of all monitoring stations with respect to danger level, followed by rise/ fall of water level on the respective date;
c) rainfall situation for a specific date, followed by monthly, normal and cumulative rainfall;

d) summary of rainfall and river situation based on major findings;
e) 24-48 and 72 hours forecasts for some important stations;
f) flood warning messages that display trends of water levels (if close to or exceeds the danger levels, at which flooding becomes a serious threat); and
g) detailed statistics on river stage and rainfall for three consecutive days.

Some of the products that FFWC share through their regular and emergency network (Table 5) are shown in the following section.

Table 5: Existing Flood Warning Product Dissemination Routes

Dissemination Medium	FFWC Product	Recipient Group
Hard Copy (hand delivered), Fax and Email	Bulletins	Prime Minister's Office, government ministries, BWDB officials, government organisations
Fax and/or Email only	Bulletins	DDM, DMIC-CDMP, NGO's, embassies, international donor and aid organisations, news media
Internet	Bulletins, plots, flood map, Thana status	General public, international

A sample FFWC regular flood bulletin – "River and Rainfall Situation" (shown for a basin only) is described in figure 9.

RIVER SITUATION AS ON 24-04-2008 AT 06:00 HOURS

SL	RIVER	STATION NAME	RHWL (m)	D.L. (m)	WATER LEVEL 23-04-2008	WATER LEVEL 24-04-2008	+ Rise - Fall in cm	Abov D.L in c
	BRAHMAPUTRA BASIN							
1	DHARLA	KURIGRAM	27.52	26.50	22.66	22.84	+ 18	
2	TEESTA	DALIA	52.97	52.25	50.50	50.30	-20	
3	TEESTA	KAUNIA	30.52	30.00	26.84	26.85	+ 1	
4	JAMUNESWARI	BADARGANJ	32.92	32.16	27.94	27.93	-1	
5	GHAGOT	GAIBANDHA	22.81	21.70	16.77	16.77	0	
6	KARATOA	CHAKRAHIMPUR	21.41	20.15	15.77	15.77	-1	
7	KARATOA	BOGRA	17.45	16.32	10.84	10.84	0	
8	BRAHMAPUTRA	NOONKHAWA	28.10	27.25	21.80	21.90	+ 10	
9	BRAHMAPUTRA	CHILMARI	25.06	24.00	18.79	18.91	+ 12	
10	JAMUNA	BAHADURABAD	20.62	19.50	14.50	14.54	+ 4	
11	JAMUNA	SERAJGANJ	15.12	13.75	8.31	8.40	+ 9	
12	JAMUNA	ARICHA	10.76	9.40	3.57	3.64	+ 7	
13	OLD BRAHMAPUTRA	JAMALPUR	18.00	17.00	11.33	11.31	-2	
14	OLD BRAHMAPUTRA	MYMENSINGH	13.71	12.50	5.71	5.71	0	
15	BURIGANGA	DHAKA	7.58	6.00	1.51	1.52	+ 1	
16	BALU	DEMRA	7.13	5.75	1.79	1.87	+ 8	
17	LAKHYA	NARAYANGANJ	6.93	5.50	1.85	1.83	-2	
18	TURAG	MIRPUR	8.35	5.94	1.91	1.91	0	
19	TONGI KHAL	TONGI	7.84	6.08	3.11	3.57	+ 46	
20	KALIGANGA	TARAGHAT	10.21	8.38	1.97	1.95	-2	
21	DHALESWARI	REKABI BAZAR	7.66	5.18	1.65	1.63	-2	
22	BANSHI	NAYARHAT	8.39	7.32	1.79	1.78	-1	

Figure 9: River and Rainfall Situation

Hydrograph of respective rivers is also shared in the FFWC website (www.ffwc.gov.bd). The district BWDB offices also maintain records of more number of local points.

Dissemination:

- Hard copy of products distributed to the important local government and non-government offices
- Dissemination to public: website, email, mass media (Television, radio, newspaper), fax, telephone. The hazard information dissemination system for different hazards from source to destination is summarised in Annex-3.

5.2.4 Flash Flood Forecasting

At this point, the flash flood prediction particularly in the north-eastern districts in Bangladesh is predicted using the river water level and rainfall estimation. Often this approach adopted by the FFWC and BWDB gives a very short time to take precautions. Particularly, this threatens the boro crop harvest in the north-eastern part of the country. However, there is an experimental and developmental approach now underway by the Regional Integrated Multi-hazard Early Warning System (RIMES) shown in figure 10.

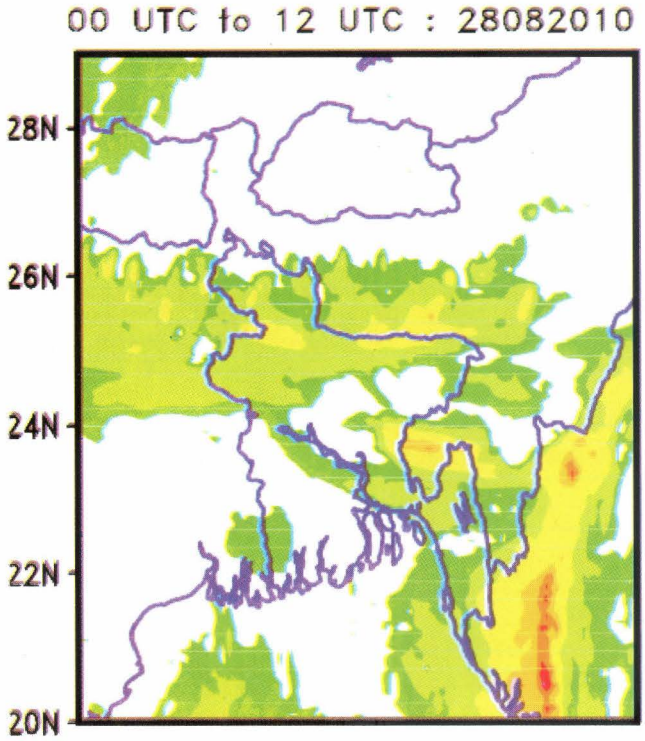


Figure 10: Experimental Forecasting of the Flash Flood situation in the Northern Part of Bangladesh

5.3 Earthquake Monitoring System

An earthquake is the trembling or shaking of the ground as a result of movements within the earth's crust. Most earthquakes are minor tremors, while larger earthquakes usually begin with slight tremors, rapidly taking the form of one or more violent shocks, and ending in vibrations of gradually diminishing force called aftershocks. Earthquake is a form of energy of wave motion, which originates in a limited region and then spreads out in all directions from the source of disturbance. It usually lasts for a few seconds to a minute. Bangladesh lies in a region with low to high seismic hazard that increases in the northern and eastern parts of the country. Historically, earthquakes in the Magnitude (M) 6.0-7.0 range have been experienced in Chittagong, Dhaka and Sylhet divisions while events in the M 5.0-6.0 range have been experienced in Khulna and Rajshahi divisions. Significant earthquake hazard exists for the urban centres like Chittagong, Dhaka and Sylhet. The classification of earthquake is shown in Table 6. A strong event may result in severe damage and destruction of massive proportion with severe consequences for the entire country. These urban centres are fast growing and influence the economic developments of much of the country. It is, therefore, essential to have a realistic understanding of the nature, severity and consequences of likely damage/loss that a possible event could cause in the urban centre since a strong earthquake affecting major urban centres like Dhaka, Chittagong and Sylhet may result in damage and destruction of massive proportions and may have disastrous consequences for the entire country.

The first seismic zoning map of the subcontinent was compiled by the Geological Survey of India in 1935. The Bangladesh Meteorological Department adopted a seismic zoning map in 1972. In 1977, the Government of Bangladesh constituted a Committee of Experts to examine the seismic problems and make appropriate recommendations. The Committee proposed a zoning map of Bangladesh in the same year.

Table 6: Classification of Earthquake

Depth of Focus	Shallow Focus	0-70km
	Intermediate Focus	70-300km
	Deep Focus	>300km
Richter's Magnitude (M)	Slight	0-4.9
	Moderate	5.0 - 6.9
	Great	7.0 - 7.9
	Very Great	8.0 or more

In the zoning map, Bangladesh has been divided into three generalised seismic zones (Figure 11): Zone-I, Zone-II and Zone-III. Zone-I, comprising of the northern and eastern regions of Bangladesh, with the presence of the Dauki Fault system of Eastern Sylhet and the Deep Seated Sylhet Fault, and proximity to the highly disturbed south-eastern Assam region with the Jaflong thrust, Naga thrust

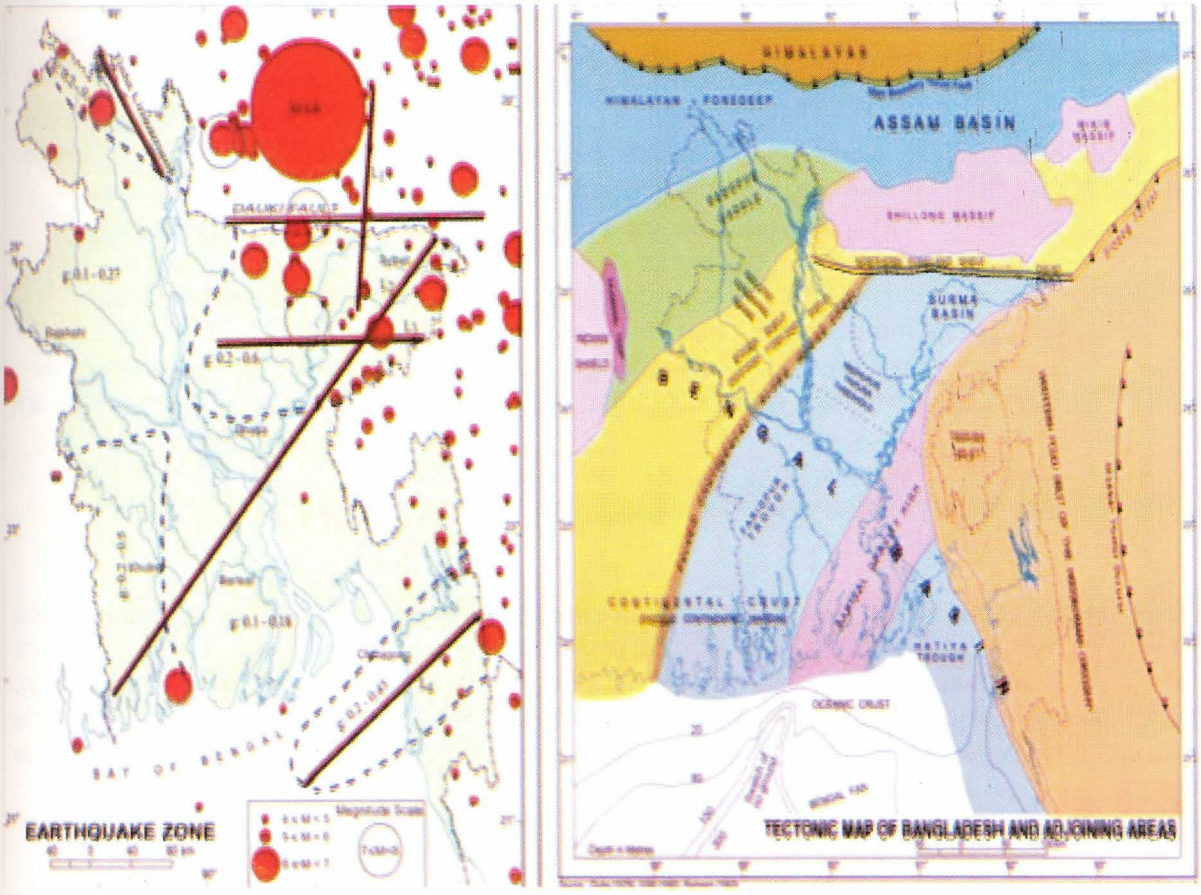


Figure 11: Earthquake zone and tectonic map for Bangladesh

and Disang thrust, is a zone of high seismic risk with a basic seismic co-efficient of 0.08. Northern Bangladesh comprising of greater Rangpur and Dinajpur districts is also a region of high seismic activity because of the presence of the Jamuna Fault, their proximity to the active East-west Running Fault and the Main Boundary Fault to the north in India. The Chittagong-Tripura Folded Belt experiences frequent earthquakes, because close to its east is the Burmese Arc where a large number of shallow depth earthquakes originate. Zone-II, comprising of the central part of Bangladesh, represents the regions of recent uplifted Pleistocene blocks of the Barind and Madhupur Tracts, and the western extension of the folded belt. Zone-III, comprising of the South-western part of Bangladesh is seismically quiet, with an estimated basic seismic co-efficient of 0.04.

During the last few years, a number of actions have been initiated to reduce the vulnerability against earthquakes. These initiatives include:

- Preparation of macro and micro-zonation maps and a more accurate assessment of seismic hazard. Legislation has been enacted to enforce the Bangladesh National Building Code (BNBC), and the procedure for issuing building permits and approving building design is being streamlined. Micro zoning of the three major cities is underway from CDMP's respective component.
- A bilingual (English and Bangla) manual for earthquake resistant design and construction of non-engineered structures has been published. Some of the fragile buildings have been identified and retrofitted.
- A public awareness campaign has been launched by the Government's Department of Disaster Management in cooperation with NGOs and Dhaka City Corporation. An earthquake drill was also held in one of the most vulnerable areas of the city.
- An Earthquake Preparedness Programme (similar to the Cyclone Preparedness Programme in the coastal areas of Bangladesh that was operated jointly by the Bangladesh Red Crescent Society and the Government, under which 40,000 volunteers may be mobilised within a short period) is being prepared.
- An awareness programme for Ward Commissioners (elected public representatives) of Dhaka City Corporation has been launched. Training programmes for Fire Service and Civil Defence Personnel, and medical doctors and nurses have also been organised. A plan for undertaking post-earthquake search, rescue and overall management has been drafted by the Armed Forces Division. The Dhaka city has been divided into eight zones and detailed plans for search, rescue and post-earthquake management have been prepared. The government has prepared an inventory of the equipment available with various government and private agencies in and around Dhaka. Moreover, additional equipment is being procured to make up for the deficiency.
- Adoption of specific programme activities on Seismic Hazard and Vulnerability Mapping of Dhaka, Chittagong and Sylhet City Corporation area by CDMP Bangladesh.

At present, the seismic hazard maps for three major cities of the country - Dhaka, Chittagong and Sylhet – are being prepared based on geological engineering maps and fault maps. The development of vulnerability maps is also in process through a building survey and using the HAZUS methodology. The risk maps will be available shortly for possible earthquake scenarios in the country. The risk maps will be used for generation of contingency plans to be used for preparedness planning of earthquake hazards.

6. Communication Flow

Communication is an integral part of disaster risk management. For people to be able to respond effectively, and to develop an efficient warning information system, a robust communication infrastructure and protocol should be in place.

A robust communication system firmly links up the source of the warning information to disseminating organisations and intermediary organisations. In times of national disasters the intermediary organisations help in interpreting, translating and disseminating information, until the warning information/forecast finally reaches end-receivers. A feedback mechanism should also be present at all levels of the communication cycle, so that processes and systems could be enhanced, based on feedbacks, to ensure better risk management in subsequent events. There is no consistency in how BRAC gets access to warning information from the government for dissemination. At the Upazila level, BRAC generally communicates with the Upazila government representatives to gather and disseminate the warning information. However, there is no protocol that is being followed. At times, BRAC's assistance is solicited in warning dissemination information, but sometimes the government does it by itself.

During disasters, the communication system is affected. The general mode of communication between BRAC volunteers/staffs on the field and BRAC offices are mobile phones. When mobiles phones are down because of electricity problem and other factors, BRAC community volunteers/staffs go to the nearest BRAC field office with communication facilities or use the government telecommunication system. Police Stations are also another option as they have a wireless communication system. BRAC has the advantage due to a very strong network. BRAC exists in most communities in Bangladesh. For efficient delivery of services and to equitably distribute relief assistance in disaster-hit areas, BRAC coordinates with the government.

Figure 12 presents the communication protocol that should be adopted by BRAC, in partnership with government institutions involved in warning formulation; dissemination; interpretation and translation.

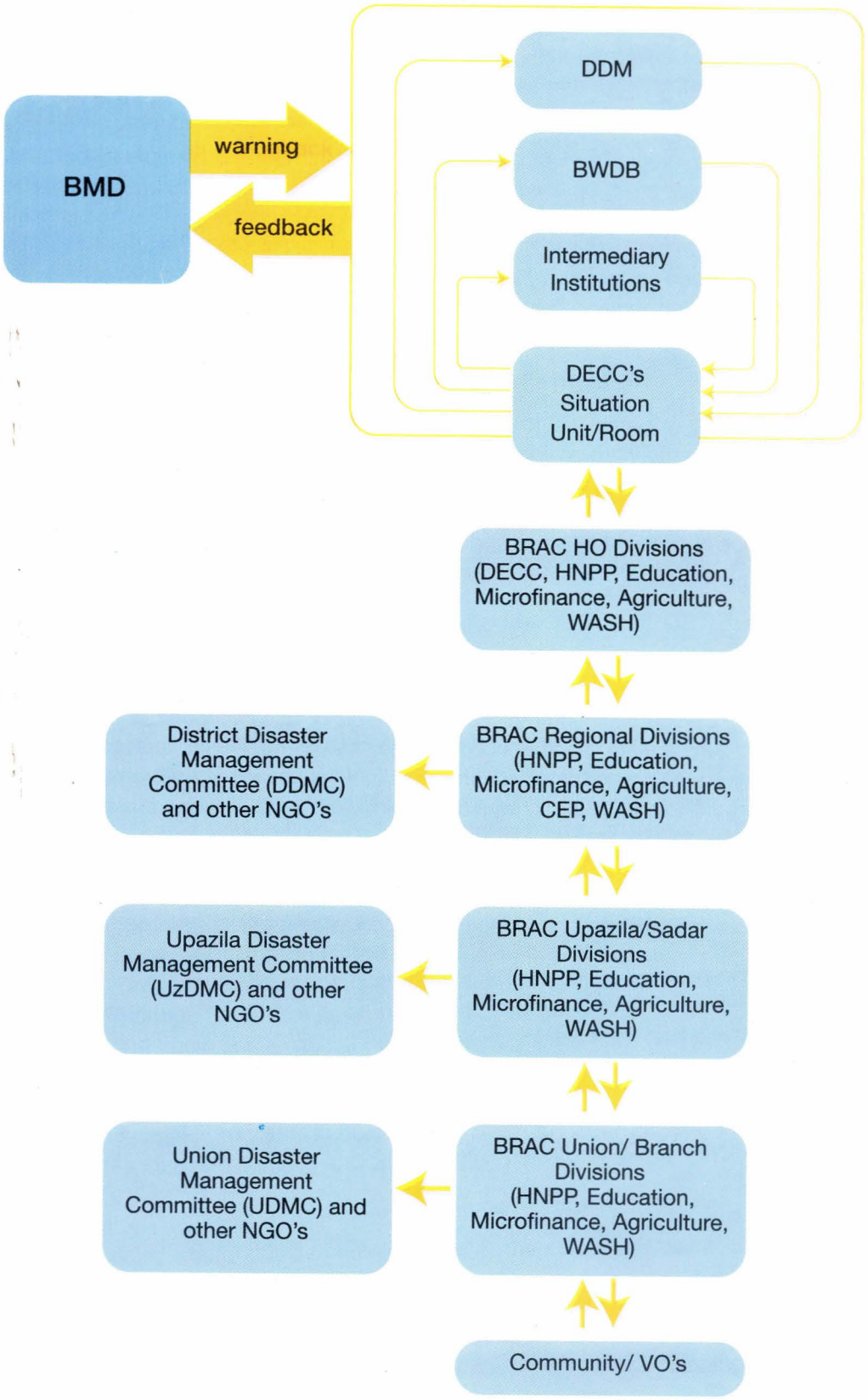


Figure 12: Communication flow diagram

7. Incident Command System (ICS)

All emergencies and crisis events are, by definition, chaotic and highly dynamic, creating physical; emotional and social disorder. The Incident Command System (ICS) is a single standardised emergency management system designed to allow users to adopt an integrated organisational structure equal to the complexity and demands of any size or type of emergency incident. It functions to incorporate and fully utilise all assigned resources and expertise from multiple agencies, and can operate in a multi-jurisdictional environment. The ICS provides accurate information, strict accountability, planning and cost-effective operations and logistical support for any incident.

ICS is a way to organise the functions of a team, so that every aspect of an incident response is addressed. This leadership model enables a team to communicate, cooperate, and get the job done. The roles and responsibilities of each function are described in Annex 8. Details of the ICS glossary are summarised in Annex 2.

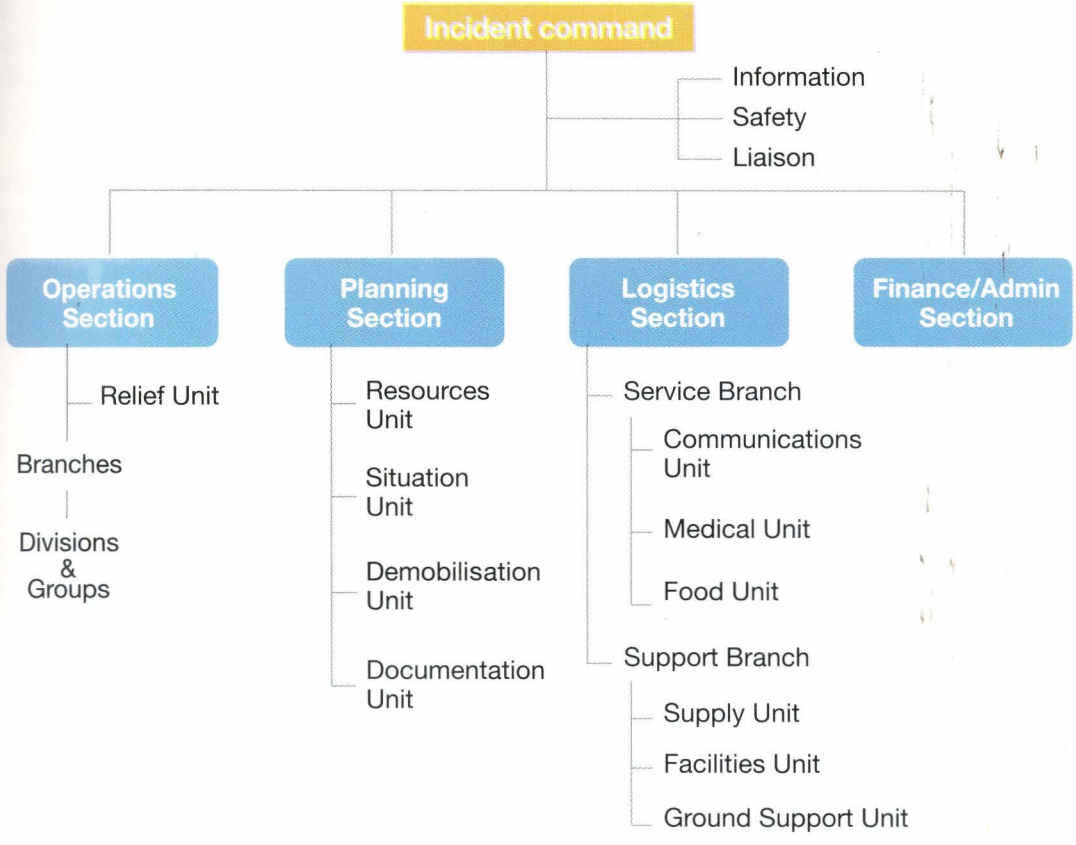


Figure 13: ICS Functional Areas

7.1 Functional Areas of ICS

ICS establishes the following five major functional areas for managing an incident (Figure 13):

- Command – Provides leadership and establishes incident objectives as well as having overall responsibility for managing the incident;
- Operations – Develops and oversees tactical operational activities needed to accomplish incident objectives;
- Finance/Administration – Oversees all administrative and financial aspects of the incident including cost tracking, procurement, payments, compensation, etc. in support of objectives;
- Planning – Coordinates planning, resource ordering and release, record keeping, mapping, technical expertise, and documentation necessary to accomplish objectives; and
- Logistics – Oversees the development and use of infrastructures (facilities, transportation, supplies, communication, food, etc.) to support responders as they work towards accomplishing incident objectives.

7.2 Organisation and Staffing

The ICS organisation is functional, modular and flexible. One way to view it is like a template. Within each of the major functional areas, there are several sub-levels that can be used or expanded as necessary. The flexibility comes in because any position can be filled without the necessity of filling all positions above it.

The ICS organisation is built around five major functions that are applied on any incident whether it is large or small. A major advantage of the ICS organisation is the ability to address only the required components and activities of the organisation. In some cases, only a few of the organisation's functional elements may be required. However, if there is a need to expand the organisation, additional positions exist within the ICS framework to meet virtually any need. BRAC has a large and dense network all over the country to respond to any kind of situation. ICS could be one of the best tools that can fit the organisational needs for disaster response.

7.2.1 Incident Commander and Command Staff

The Incident Commander's responsibility is the overall management of the incident. On most incidents, a single Incident Commander carries out the command activity. The Incident Commander is selected by qualifications and experience.

The Incident Commander may have a deputy, who may be from the same agency, or from an assisting agency. Deputies may also be used at section and branch levels of the ICS organisation. Deputies must have the same qualifications as the person for whom they work, as they must be ready to take over that position at any time.

There are three important staff functions that are the responsibility of the Incident Commander unless Command Staff positions are established.

- Public information and media relations
- Maintaining liaison with assisting and cooperating agencies
- Ensuring safety

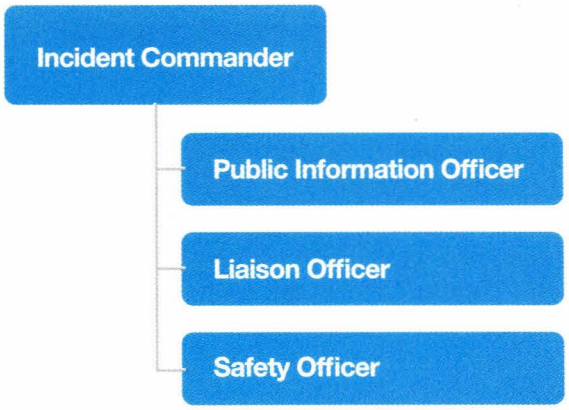


Figure 14 : Command Staffs

On some incidents, any one of these functions can consume much of the Incident Commander's time. Therefore, it is important to recognise their importance and quickly fill the positions if necessary.

7.2.2 General Staff

The General Staff consists of the following positions:

- Operations Section Chief
- Planning Section Chief
- Logistics Section Chief
- Finance/Administration Section Chief

The **Operations Section** is responsible for managing all tactical operations for an incident. The build-up of the Operations Section is generally dictated by the number of tactical resources involved and span of control considerations. There is no precise guideline as to when the Operations Section will be established during an incident. In some cases, depending upon the complexity of the incident and the desires of the Incident Commander, it may be the first section to be established. In other situations, the IC may select to maintain control of Operations, and establish Logistics, Planning, and if necessary, Finance/Administration functions as separate sections before designating an Operations Section.

In ICS, the **Planning Section** is responsible for managing all information relevant to an incident. When activated, the Planning Section Chief who is a member of the General Staff manages the Section. The Planning Section collects, evaluates, processes, and disseminates information for use at the incident. Dissemination can be in the form of the Incident Action Plan, formal briefings, or through map and status board displays.

The **Logistics Section** provides all incident support needs. The Logistics Section is responsible for facilities, transportation, communications, supplies, equipment maintenance, fuelling, food services, medical services and ordering resources.

The **Finance/Administration Section** is responsible for managing all financial aspects of an incident. Not all incidents will require a Finance/ Administration Section. Only when the involved agencies have a specific need for Finance/ Administration services, will the Section be activated. On some incidents only one Finance/ Administration function may be required (e.g., cost analysis). Often, it is more efficient to fill that function through a Technical Specialist assigned to the Planning Section.

8. Standard Operating Procedures (SOP)

The Standard Operating Procedures (SOP) provides procedural guidance to BRAC personnel for the overall disaster management process. The SOP for BRAC has been proposed in relation to the 'Standing Orders on Disaster' in Bangladesh and other standard procedures applied in the country and the region. The SOP proposed here in different phases of disasters (pre disaster, during disaster and post disaster) addresses a specific hazard, and the guidelines have been presented chronologically (first 24 to 72 hrs of operations, etc.). The revised Standing Orders on Disaster (SOD) of the Bangladesh Government recommended the Incident Command System (ICS) for disaster management. The BRAC's SOP also reflects the adaptation of ICS during and after a disaster.

8.1 Cyclone/ Storm Surge Hazard

8.1.1 Pre Disaster Activities

As a large organisation, BRAC has taken initiatives to incorporate disaster preparedness activities in its ongoing programmes. BRAC has 2,647 branch offices throughout the country serving 110 million people. Its Disaster, Environment and Climate Change (DECC) programme will take the lead for overall disaster preparedness, disaster risk reduction and ensuring training and awareness to combat any hazard. DECC will arrange and participate in seminars, workshops and meetings for earning special efficiency and skill in disaster risk management. The DECC programme will develop a short standard module on disaster risk reduction focusing on specific hazards to incorporate existing or ongoing programmes. Each BRAC programme needs to incorporate community and individual family level planning for disaster risk management.

- The Microfinance Programme (Dabi, Progati, etc.) is the largest programme of BRAC covering 64 districts. The micro-finance programme has Village Organisations (VOs) and each VO consists of 30-40 women that act as platforms for poor women to come together; access services such as microfinance; exchange information and raise awareness on social, legal and other issues concerning their daily lives. Members of the VO recite 18 promises (set of guidelines to improve their lives) whenever they meet (weekly or monthly). DECC prescribes that they should add one or two more promises on cyclone hazard and its preparedness (signal system, initial preparedness to response cyclone hazard, etc). The VO may also take initiatives to disseminate warning information during the cyclone months (shown in Disaster Calendar Figure 2).

- Human Rights and Legal Aid Services (HRLS) programme increases legal awareness to protect community members from illegal, unfair or discriminatory practices in the community level. The programme emphasises on empowering the rural poor through education on human rights and laws. A short module on hazard specific disaster preparedness could be incorporated in their training course.

- Agriculture is the prime affected field for any natural hazard. BRAC Agriculture and Food Security programme provides support to poverty alleviation by assisting the marginal, homestead-based, agricultural activities of the poor. These activities mostly cover six sectors namely poultry, livestock, fisheries, sericulture, crop farming and social forestry. The ongoing research and development programme

should continue (i.e., varieties of rice that can grow in coastal areas inundated with sea water). Agriculture risk management programme could enhance capacity for disaster response of the farmers.

- Education is the key to empowering vulnerable communities to better prepare for natural disasters. The disaster management curricula may need to incorporate teachers training programme so that they can teach their students and provide awareness for different hazards and take care of children in the event of any natural calamity. The school can also organise small simulation exercise to develop school level preparedness plan for disasters.

- BRAC Health, Nutrition and Population Programme provides support to improve maternal, neonatal and child health, and to reduce vulnerability to communicable diseases and common ailments. BRAC has 80,000 health volunteers (Shasthya Shebikas) and 7,247 health workers (Shasthya Kormis). The Programme Organiser (PO), health worker and health volunteer should be trained properly during normal times of hazard on specific health risk and prevention care (in this case after cyclone, specific health hazard due to lack of safe water and others) so that they can relay information to the community.

- The Water, Sanitation and Hygiene (WASH) programme aims to improve water utilisation and sanitation. Through the programme, hygiene messages are delivered to the community through regular community meetings involving women, men, adolescent girls, adolescent boys, and children. Each Programme Assistant (PA) has the responsibility of convening six meetings per day, with 10 households involved in each meeting. The meetings are targeted to be participated by a total of 60 households per day, while 300 households will be assigned for each PA. These meetings are avenues in which community members are taught how water, sanitation and hygiene practices are interconnected with health. Proper sanitation and hygiene, as well as safe water utilisation, are being taught. The social mapping under the WASH programme could consider the specific hazard in the community and also training to the community on disaster preparedness.

Pre-Disaster Protocol Steps:

In the beginning of cyclone seasons (April-May and October-November), the Regional DBR should check trained and capable manpower in his area to work under ICS for any emergency. A data bank (person name, designation, programme, contact, skill) could be maintained in each regional office for immediate call.

The stepwise activities that could be carried out in the pre-disaster phase are as follows:

- **STEP 1:** DECC will open a situation room or engage a PM, Senior Sector Specialist and Sector Specialist at HO level to monitor and provide early warning information to BRAC staffs on impending hazard events and communicate with the DBRs at regional/district offices. The DBR also provides regular situation update on the crisis/ emergency information to the SS/SSS/PM. From the DECC situation room, the above concerned staff will send information to the respective DBR on regular basis. Even if the DBRs do not get any information or message from the situation room at HO, she/he will be responsible to inform the situation room about the local situation on urgent basis (if necessary).

- **STEP 2:** DECC situation room will gather information regarding depression or any tropical cyclone information from different sources such as Joint Typhoon Warning Centre (JTWC), Regional Specialised Meteorological Centre (RSMC), European Centre for Medium-Range Weather Forecasts (ECMWF), Japan Meteorological Administration (JMA), etc (Annex 3 summarised the sources of hazard risk information from various sources). Any threat and warning information from other sources should be verified with the Bangladesh Meteorological Department's (BMD) forecast information or discuss with one Forecaster from BMD.

- **STEP 3:** Immediately after news of Signal No. 2, the SSS in coordination with PM/PH at the DECC situation room will establish contact to DBRs at the hazard prone areas to get the local situation updates. Situation room will activate communication with senior management at HO and other national organisations (e.g., BMD, FFWC, DDM) and will provide updates every six hours.

Note: After getting the Signal No. 2, the DBR should check available resources to work under ICS and give orders, as per requirements. DBR will temporarily assign other staff for those particular positions and also select UDMT coordinator (shown in Figure 15) as per direction.

- **STEP 4:** Based on the warning information, Area/Brach Managers will start coordination with the Union Disaster Management Committee (UDMC); the Upazila Disaster Management Team (UDMT) Coordinator will coordinate with the Upazila Disaster Management Committee (UzDMC) and the DBR will coordinate with the District Disaster Management Committee (DDMC) and District Relief and Rehabilitation Officer (DRRO). DBR will take necessary information from the RMs to carry out Upazila wise resource mapping (no of staff, branches, shelters, vehicles) of BRAC's programme with the help of UM/BM/AM/UDMT coordinator. DBRs, with the help of other RMs and Upazila Managers/UDMT coordinators, will identify vulnerable community members (elders, pregnant mothers, children, the physically challenged and those with special needs); food and facilities (health and WATSAN) within the community to give support immediately after the disaster and convey this information to the situation room at HO.

- **STEP 5:** A contingency/emergency fund (50,000 BDT) could be allocated at the branch offices to use for any emergency situation with prior approval from the DBR during the first 24-48 hrs operations. The Area/Branch Manager will ensure the fund availability for emergency. The DBR must take consent from HO. In case no contact is established between HO and Regional/District Office, the DBR will be authorised to spend the fund for emergency support. UDMT coordinator can use this fund with the consultation of the DBR.

- **STEP 6:** If warning signal has cancelled or the situation becomes normal, the staff at the HO should immediately inform the offices that have already been contacted.

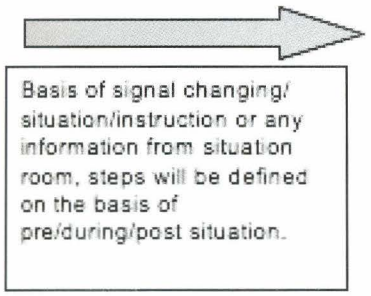
8.1.2 During Disaster Activities

Alert and Warning Stage

- **STEP 1:** Immediately after news of Cautionary Signal No. 4 (52-60 KMPH), the SSS/PM at the DECC situation room will start communicating with regional/district, area and branch offices in the coastal area and observe the ground situation. The SSS at the HO will keep monitoring the situation updates on the cyclone forecast from BMD and other sources/links. Any early warning information from other sources/links should verify with BMD before release to the field offices. The emergency decision making flow chart is shown in Figure 16.

Note: Full ICS Structure will be activated at this stage and the DBR will be designated as IC and she/he may assign a deputy IC (senior most staff) if required. **If there is a concentrated disaster in an Upazila, ICS will be formed at District level (not in Upazila level) and UDMT will be formed at Upazila level.**

Step 1 ***After forming ICS, IC can use this template for every action (mentioned below)



Objectives	*Steps of activities (Pre/During/ Post)*	*Responsibilities*
1 2 3 4		
1 2 3 4		
1 2 3 4		

Note: Objectives will keep on changing depending on the situation/instruction/ information about the situation on the basis of pre/during/post situation and steps will be maintained.

- **STEP 2:** The DECC at HO level will call for a meeting among the DECC HO staffs. Regional/District offices will call a meeting (headed by IC) among the different programme personnels at regional level and Upazila Offices will call for a meeting (headed by UDMT coordinator) among the local programme staffs to assess the ground situation, resource mapping and coordinate with the DDMC, UzMC and UDMC, according to ICS.

- **STEP 3:** If the situation deteriorates (increase signal no 6-10) the Regional/District, Area and Branch Offices will inform and offer support to the field staffs, partner NGOs and community through available means of communications. The IC will be responsible to ensure the information reaches all branches in the threat areas and start evacuation process immediately. The UDMT Coordinator will follow up with the Evacuation Checklist mentioned in the Annex 8.

- **STEP 4:** The situation room will monitor the situation until it becomes to normal. If there are any news updates on the cyclone situation, it will immediately inform the IC and UDMT Coordinator. The IC and UDMT Coordinator will inform the region/ district, area and branch offices accordingly.

- **Step 5:** The UDMT Coordinator will inform the situation to the IC, who will then inform the situation room. In case the UDMT Coordinator is unable to contact with the IC, she/he will convey the information directly to the SSS/PM of DECC programme after getting information from the branch offices on the ground situation.

First 24-48 Hrs Operation

- **STEP 1:** The UDMT Coordinator together with the Branch Manager in the affected areas will take the lead for the initial response by forming and activating a team (Figure 15: Upazila disaster management team) based on human resources available at the Area or Branch Office to conduct an initial assessment using the Rapid Initial Report (RIR) to identify initial damage and need assessment (Annex 10: RIR format). The team will inform IC on situations, team structure, what and how much is needed, where and when it is needed and who will be receiving or using it (Annex 7: Incident Briefing Form). Resources to be identified in this way include equipment, facilities and personnel and/or emergency response teams.

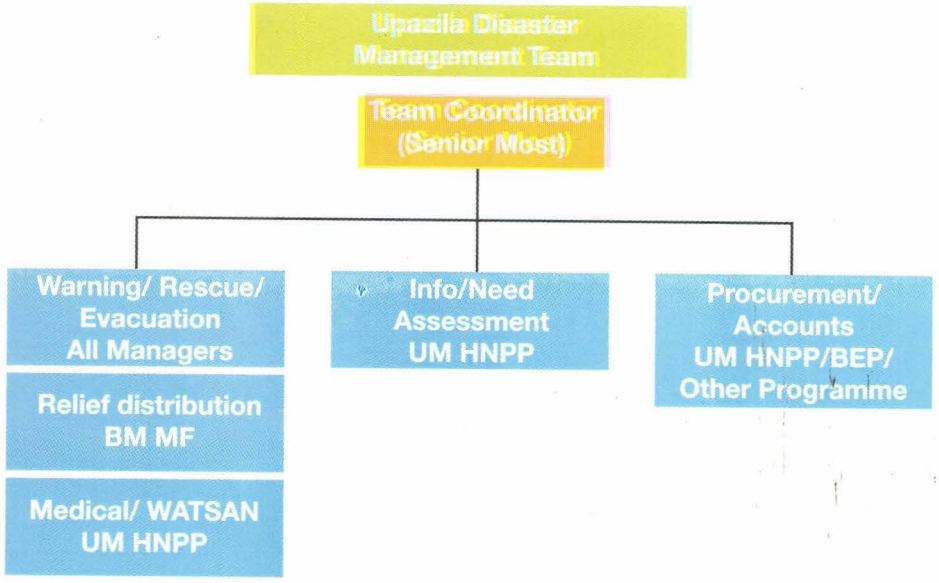


Figure 15: Upazila Disaster Management Team (For cyclone)

Upazila Note: UDMT Coordinator will be the senior most personnel of the Upazila Office. The seniority should be measured on the basis of level, designation and length of service respectively.

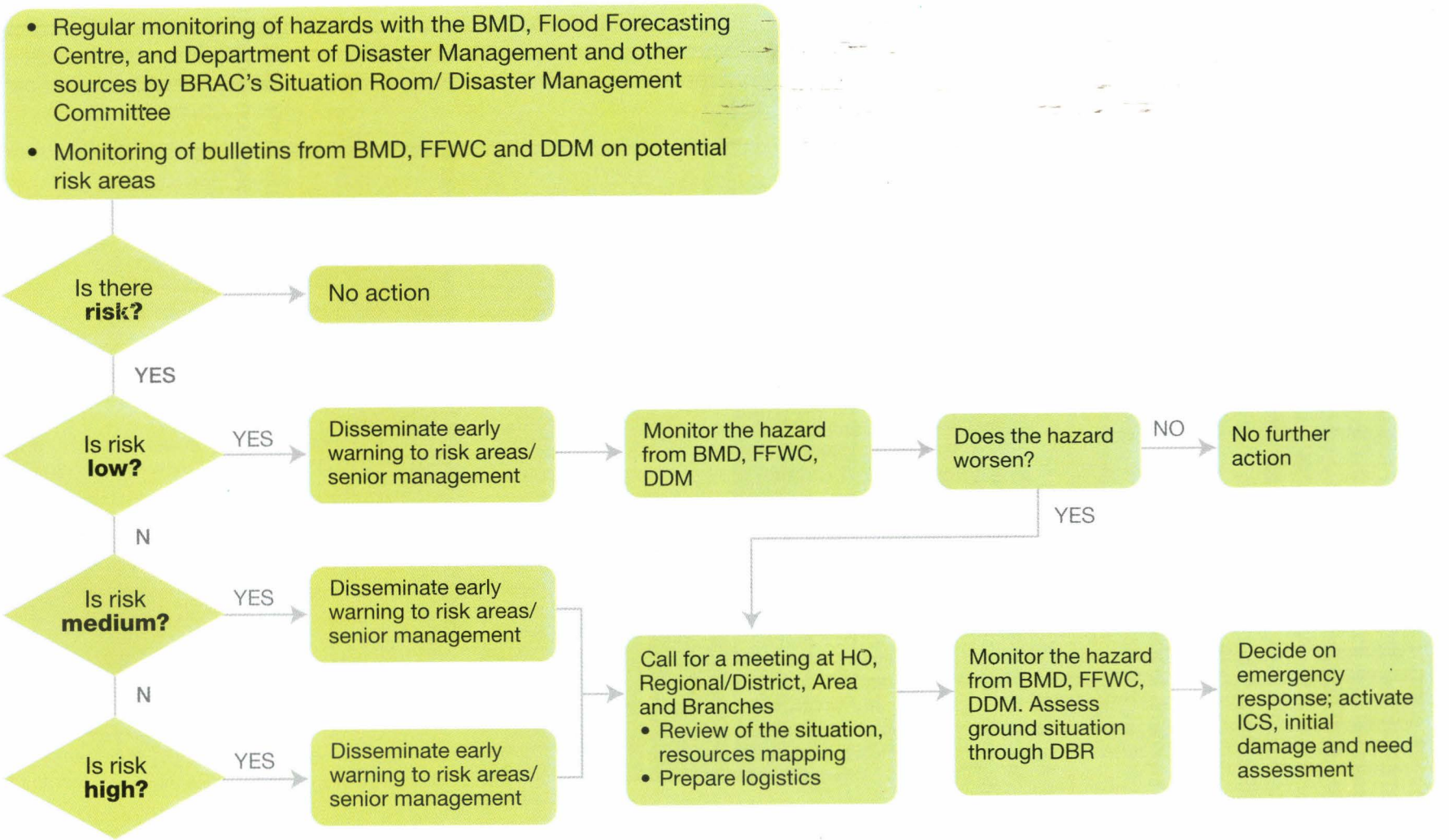


Figure 16: Emergency Decision Making Flow Chart

- **STEP 2:** The IC will be briefed by her/his deputy or the UDMT Coordinator. The IC will call for a planning meeting to develop objectives and action plan based on the Initial Resources Mapping, Damage and Need Assessment Report (i.e., RIR), and Incident Briefing Form. IC may re-structure the organisation to accomplish the objectives. The IC himself or his deputy will inform the situation room on ground situation. They may engage one Information Officer (i.e, RM/DM/RSS/AM-BEP) and one Liaison Officer (i.e., RM/DM/RSS/AM-BEP). The roles and responsibilities of IC, Deputy IC, Information and Liaison are stated in Annex 8. Based on the urgent needs of the community, IC will approve and allocate the emergency fund to provide immediate support. As objectives will keep on changing depending on the situation/instruction/information about the situation, an operational planning worksheet will be maintained to follow up objectives, step of activities and responsibilities (Annex 5).

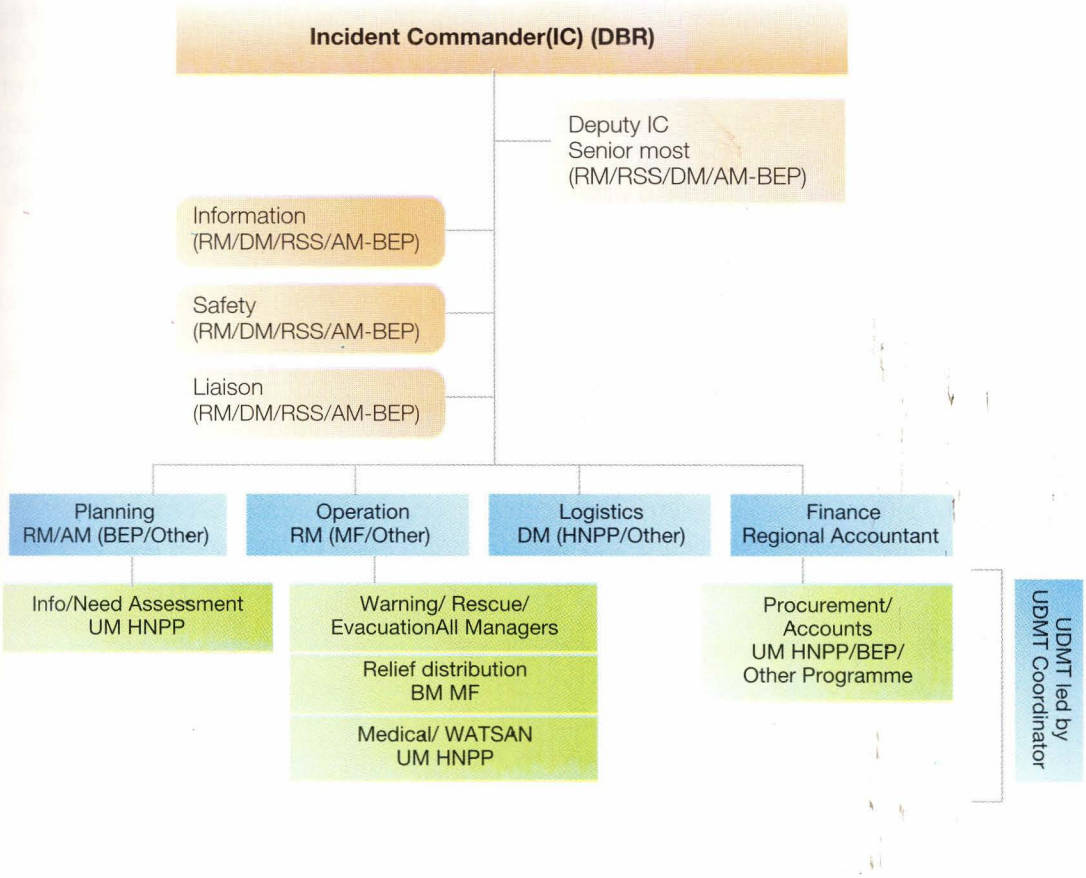


Figure 17: ICS Structure (For cyclone)

- **STEP 3:** Any RM or AM (BEP) will take the role of the Planning Section Chief (PSC). UDMT Coordinator will assist the ICS Planning Section. PSC will collect, evaluate, process, and disseminate information. Dissemination can be in the form of the Incident Action Plan, formal briefings, or through map and status board displays. She/he will also be responsible for monitoring and evaluation of the incident. The PSC will develop resource requests based on priorities considering current and successive operational periods. Discrepancies between requested resources and those available for delivery must be communicated to the requestor (UDMT). The

Planning Section will conduct detailed assessments on damage and need using Rapid Assessment Tools (RAT) (Annex 9 shows the format of RAT). The Planning Section will follow up roles and responsibilities of different agencies on different functions of an emergency. It will also follow up on the timeline response of branch, area and regional offices (Annex 4).

- **STEP 4:** The District Manager- HNPP will be the Logistic Section Chief (LSC). She/he will engage the members of Procurement/Account Section of the Upazila Level Disaster Management Team (mentioned in Figure 17) to divide the logistic support team to assist the service units (Annex 6 describes the roles and responsibilities of Logistic Section).

- **STEP 5:** The LSC will design the relief package according to the BRAC policy and Sphere guidelines. The logistic will order the handling of resources and procurement to be done by the Finance and Administration Section. The Regional Accountant will be the Chief of Finance and Administration. The roles and responsibilities of the Finance and Administration are mentioned in Annex 6. The Operation Section Chief (OSC) will take the lead on field operation and develop tactical actions. The RM of MF/others will work as OSC. The roles and responsibilities of OSC are mentioned in Annex 6. The Figure 17 shows the first 24-48 hrs ICS organisation chart for BRAC operation. **While distributing relief/sharing information at the Upazila level, UDMT should involve the community in addressing CBDRR.**

- **STEP 6:** The Finance and Administration team will maintain the supply chains and update the vendor list regularly. She/he will request for resources that cannot be obtained locally to adjacent district/regional office. They will also monitor the cost of the response and time of staffs. The roles and responsibilities of Finance Section are summarised in Annex 6.

- **STEP 7:** The Operation team will give emergency assistance/relief to disaster affected people, provide first aid to injured persons, conduct rescue and evacuation efforts, and distribute food and emergency supplies by forming teams.

- **STEP 8:** Upazila Manager (HNPP or BEP) will coordinate with the UDMC or other NGOs about losses and damages and other immediate requirements of the affected people. Information about pre-positioning of resources availed by different NGOs is a vital task which should be collected by her/him.

- **STEP 9:** Within 24-48 hrs after the disaster strikes, the Head Office will open a disaster situation room headed by the Senior Director of DECC. Programme Head of DECC will be responsible for the overall coordination of relief and rehabilitation activities reported by IC. Figure 18 represents the organisational structure of BRAC operation within 24-48 hrs after the disaster.

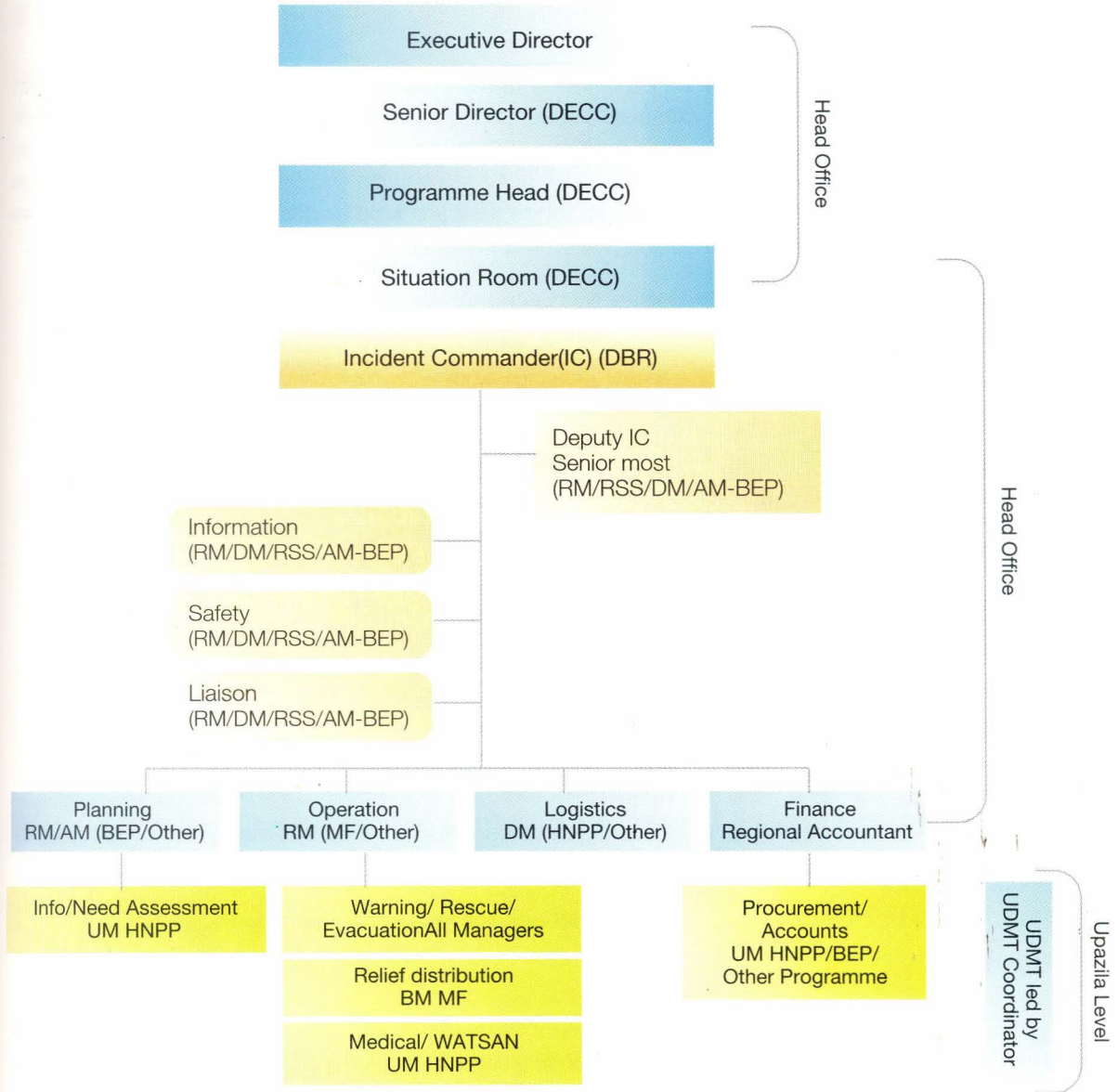


Figure 18: Organisational Structure of BRAC Operation (For cyclone)

- **STEP 10:** The situation unit/room will monitor and evaluate the first 24-48 hrs weather situation and report to the Senior Director of DECC. The Senior Director will inform ED and other Directors. The situation room will also give weather updates to IC/UDMT. This ICS process can be followed for a period of 48 hrs to 7 days based on the ground situation.

- **STEP 11: A detailed need assessment using PLA method will be carried out by involving the community right after the emergency phase by the Planning Section.**

Note: One senior manager from the HO with the help of consultants will prepare a concept paper/proposal for relief and rehabilitation based on the assessment being done. The PH will proceed to donors for additional resources.

8.1.3 Post Disaster Activities

For emergency response, support will be provided in terms of immediate needs like food and health facilities (ready food like chira, bread, molasses, biscuits, baby foods of nutritional value, drinking water, Oral Saline, etc.) for people with no cooking facilities of their own. This initiative will be supported by BRAC itself. Right after emergency response, relief activities will be provided with a food package of rice, pulses, edible oil, salt, drinking water, etc. once they are able to cook. After that, sector wise programmes will begin (e.g. agriculture credit, water and sanitation, etc.).

- **STEP 1:** Based on the casualties; damage and need assessment, the planning team will design a phase wise recovery plan for a period of one week to one month and submit it to IC. The IC will request for approval from the PH, DECC. The IC will design the criteria for the beneficiary group and send to the PH for HO approval.

- **STEP 2:** The Programme Head of DECC will assess the proposal and submit it to the committee through the Senior Director of DECC for approval. Based on the approval, the work plan will be prepared by the PH.

- **STEP 3:** BRAC may participate in reconstruction and rehabilitation programme in special circumstances and with organisational interest.

- **STEP 4:** If required psycho-social support may be provided when convenient for short-term and long-term rehabilitation, livelihood assistance and development programmes.

- **STEP 5:** The individual BRAC programmes will start different rehabilitation activities based on priority.

8.2 Flood

The country is crisscrossed by a multitude of rivers and water bodies in Bangladesh. The severe weather and climate events cause floods every year as a regular phenomenon of the summer monsoon season. These large-scale floods are caused by excessive discharge and rainfall in Bangladesh delta as well as retardation of outflow into the Bay of Bengal due to high sea levels. The major source of floods, however, is the discharge from the Ganges and the Brahmaputra. When the level of water in a stream overflows natural or artificial banks, water overflows on to the flood plain and affects human activities. Flooding occurs when water levels rise above the level associated with the beginning of damage and disruption.

In Bangladesh, danger level at a river location is the level above which it is likely that the flood may cause damages to nearby crops and homesteads. In a river having no embankment, danger level is about annual average flood level. In an embanked river, danger level is fixed slightly below design flood level of the embankment. Flood forecasting can be divided into the following categories:

- Flood forecasting in the rivers caused by upstream rise of river stage as well as rainfall in the basin
- Overland flow from upstream
- Flash flood forecasting in small basins that are generally induced by heavy localised rainfall and characterised by sharp rise and fall.

8.2.1 Pre Disaster Activities

Disaster, Environment and Climate Change (DECC) programme could develop a standard flood risk management module to incorporate existing or ongoing programmes in the flood prone areas such as:

- The microfinance programme (Dabi, Progati, etc.) is the largest programme of BRAC covering 64 districts. The programme runs through Village Organisations (VOs). Each VO consists of 30-40 women and acts as platforms for poor women to come together, access services such as microfinance, exchange information and raise awareness on social, legal and other issues concerning their daily lives. VO members should inform their community before and during the monsoon on flood risk management.

- Human Rights and Legal Aid Services (HRLS) programme in the community level increases legal awareness to protect themselves for illegal, unfair or discriminatory practices. The programme places emphasis on empowering the rural poor though education on human rights and laws. A short module on hazard specific disaster preparedness could be incorporated into their training courses.

- Agriculture is the prime affected field for any natural hazard. BRAC Agriculture and Food Security programme provides support to poverty alleviation by assisting the marginal, homestead-based, agricultural activities of the poor. These activities mostly cover six sectors namely poultry, livestock, fisheries, sericulture, crop farming and social forestry. The ongoing research and development programme should continue (i.e., varieties of rice that can grow in coastal areas inundated with sea water). The results of probabilistic flood forecasts and real life experiences in the long run have potential uses to reduce agricultural damage. The user matrix for disaster response (Annex 15) is one of the good practices to reduce agriculture risk. Flood forecast application for agriculture risk management could be introduced by BRAC to assist farmers.

- Education is the key to empowering vulnerable communities to better prepare for natural disasters. The disaster management curricula will incorporate teachers' training programme so that they can teach their students at the pre-primary, primary, adolescence, post-school levels and learning centres. They will provide awareness for different hazards and ensure safety for children during any natural calamity. The BEP Manager will take initiatives to ensure the school teachers inform the students and guardians about flood. They should discuss about:

    - When the flood is likely to occur;
    - What is the nature of the flood;
    - Where the likely impact of flood will occur in a given locality;
    - How people should respond to protect themselves from flood hazard;
    - How to be safe from snakes, insects and others if flood is there;
    - Inform about safe water and sanitation to avoid diseases.

The school can also organise hazard-specific, small-scale simulation exercises to develop a school level preparedness plan for disasters.

- BRAC Health, Nutrition and Population Programme (HNPP) gives support to improve child, maternal and neonatal care and to reduce vulnerability to communicable diseases and common ailments. BRAC has 80,000 health volunteers (Shasthya Shebikas) and 7,247 health workers (Shasthya Kormis). The Programme Organiser (PO), health worker and health volunteer should be trained properly in normal times of hazard-specific health risk and prevention care so that they can relay information to the community people. The Upazila Manager of BRAC HNPP will inform the Shasthya Shebikas and Shasthya Kormis about the flood situation and will give instruction to provide health support to the community.

- The Water, Sanitation and Hygiene (WASH) programme aims to improve water utilisation and sanitation. By means of the programme, hygiene messages are delivered to the community through regular community meetings involving women, men, adolescent boys, adolescent girls and children. Each community volunteer has the responsibility of convening six meetings per day, with 10 households involved in each meeting. The meetings are targeted to be participated by a total of 60 households per day. 300 households are being targeted for each community worker. These meetings are avenues in which community members are taught how water, sanitation and hygiene are interconnected with health. Proper sanitation, hygiene and water utilisation are being taught. The social mapping under the WASH programme could consider the specific hazards in the community and also train the community on disaster preparedness.

Pre-Disaster Protocol Steps:

In the pre- Monsoon period (April- May); every regional office will do an assessment on the resource availability for emergency response using ICS structure so that they can provide support whenever necessary. The DBR may order for resources if required from HO. The DBR should check trained and capable manpower in his area to work under ICS for any emergency. A data bank (person name, designation, programme, contact, skill) could be maintained in each regional office for immediate call.

Note for Flash Flood Region (NE, SW, and NW Region): Flash flood occurs in the months of April to June. The Regional Office in the NE region should take this preparedness during the month of February- March.

The stepwise activities that could be carried out in the pre-disaster phases are as follows:

- **STEP 1:** DECC should open a situation room engaging a PM, SSS and SS at HO level to monitor and provide early warning/inform BRAC's Staffs on impending hazard events and communicate with the DBR at regional/district office. The DBR/Representative of DBR also provides regular situation update on the crisis/ emergency information to the SSS/PM of the situation room. From the DECC situation room, the above concerned staff will provide information to the respective DBRs on a regular basis. Even if the DBRs do not get any information or message from the situation room, she/he will be responsible to inform the situation room about the local situation on urgent basis (if necessary).

- **STEP 2:** DECC situation room will gather information regarding flash flood or riverine flood forecast information from Flood Forecasting and Warning Centre (FFWC) of Bangladesh Water Development Board (BWDB) and also monitor the extreme

rainfall information through Bangladesh Meteorological Department (BMD) and BRAC offices. Other sources, like Regional Integrated Multi Hazard Early Warning System (RIMES) generate one to three days rainfall forecasts and 1 to 10 days riverine flood prediction. Websites of Indian Meteorological Department, Central Water Commission of India, etc could be monitored for flood forecasting. (Annex 3 summarises the sources of hazard risk information from various sources). Any threat and warning information from other sources should be verified with FFWC or Bangladesh Meteorological Department (BMD).

- **STEP 3:** Immediately after the flood danger level signal has exceeded, the SSS, in coordination with PM/PH at the DECC situation room, will establish contact to DBRs at the hazard prone areas to get the local situation updates. Situation room will activate communication with senior management at HO and other national organisations (i.e., BMD, FFWC and DDM) and will provide updates every 24 hrs.

Note: After getting the warning of danger level crossing, the DBR should check available resources to work under ICS and order if necessary. DBR will temporarily assign other staff for that particular position to work in an emergency as per guideline. DBR will also select the UDMT Coordinator (shown in Fig 19) as per direction.

- **STEP 4:** Based on the warning information, Area/Branch Managers will start coordinating with the Union Disaster Management Committee (UDMC); the Upazila UDMT coordinator will coordinate with the Upazila Disaster Management Committee (UzDMC) and the DBR will coordinate with the District Disaster Management Committee (DDMC) and District Relief and Rehabilitation Officer (DRRO). DBR will take necessary information from the RMs to carry out Upazila wise resources mapping (no. of staff, branches, shelters, vehicles) of BRAC's programmes with the help and cooperation from UM/BM/AM/Upazila UDMT. DBRs, with the help of other RMs and Upazila Managers/Upazila UDMT coordinator, will identify vulnerable community members (elders, pregnant mothers, children, the physically disadvantaged or those with special needs), food, facilities (health and WATSAN) within the community to support immediately after the disaster and convey this information to the situation room at HO.

- **STEP 5:** A contingency/emergency fund (50,000 BDT) could be allocated at the branch offices to use for any emergency situation with prior approval from the DBR for the first 24-48 hrs operations. The Area/Branch Manager will ensure the fund availability for emergency. The DBR must take consent from HO. In case no contact is established between HO and Regional/District Office, the DBR will be authorised to spend the fund for emergency support. The UDMT Coordinator can use this fund with the consultation of the DBR.

- **STEP 6:** If warning for water level decreases or the situation becomes normal, the staff at the HO should inform immediately to the offices that have already been contacted.

8.2.2 During Disaster Activities

Alert and Warning Stage

- **STEP 1:** Immediately after getting the news of danger level crossing/ high flood/ excess rainfall in the flash flood region, the SSS/PM at the DECC situation room will start communicating with regional/district, area and branch offices in the flood prone areas and observe the ground situation. The SSS at the HO will keep monitoring the situation updates on the flood situation from FFWC and other sources/links. Any early warning information from other sources/links should verify with FFWC or BMD before release to the field offices. The emergency decision making flow chart is shown in Fig 20.

Note: Full ICS Structure will be activated at this stage and the DBR will be designated as IC and she/he may assign a deputy IC (senior most) if required. **If there is a concentrated disaster in an upazila, ICS will be formed at district level not in upazila level and UDMT will be formed at upazila level.**

Step 1 ***After forming ICS, IC can use this template for every action (mentioned below)

Note: Objectives will keep on changing depending on the situation/instruction/ information about the situation on the basis of pre/during/post situation and steps will be maintained.

Basis of signal changing/ situation/instruction or any information from situation room, steps will be defined on the basis of pre/during/post situation.

Objectives	*Steps of activities (Pre/During/ Post)*	*Responsibilities*
1 2 3 4		
1 2 3 4		
1 2 3 4		

- **STEP 2:** The DECC at HO level will call for a meeting among the DECC HO staffs. Regional/District offices will call for a meeting (headed by the IC) among the different programme personnel at the regional level, and upazila levels will call for a meeting (headed by UDMT Coordinator) among the local programme staffs to assess the ground situation, resource mapping (no. of staff, branches, shelters) with support from Branch Managers and coordinate with the DDMC, UzMC and UDMC according to ICS. IC will identify the possible affected areas, population and BRAC programme.

- **STEP 3:** If the situation deteriorates (continuous increase of water level), the Regional/District/Area/Branch Offices will inform and offer support to the field staffs, partner NGOs and the community through available means of communications. The IC will be responsible to ensure the information reaches all branches in the threatened areas and start evacuation process immediately.

- **STEP 4:** The situation room will monitor the condition until the flood water starts receding and comes back to the normal stage. The situation room will immediately inform the IC and UDMT Coordinator of any news updates on the flood conditions.. The IC and UDMT Coordinator will accordingly inform the regional/district/area and branch officers.

- **Step 5:** The Upazila UDMT Coordinator will inform the situation to the IC to inform situation room. In case, the UDMT Coordinator is unable to contact with the IC, she/he will convey the information directly to the SSS/PM of DECC programme after getting information from the branch offices on the ground situation.

First 24-48 Hrs Operation

- **STEP 1:** The UDMT Coordinator, alongside the Branch Manager in the affected areas, will take the lead for the initial response by forming and activating a team (Figure 19: Upazila Disaster Management Team) based on human resources available at the Branch or Area Office to conduct initial assessment using Rapid Initial Report (RIR) to identify initial damage and need assessment (Annex 10: RIR format). The team will inform IC on situations, team structure, what and how much

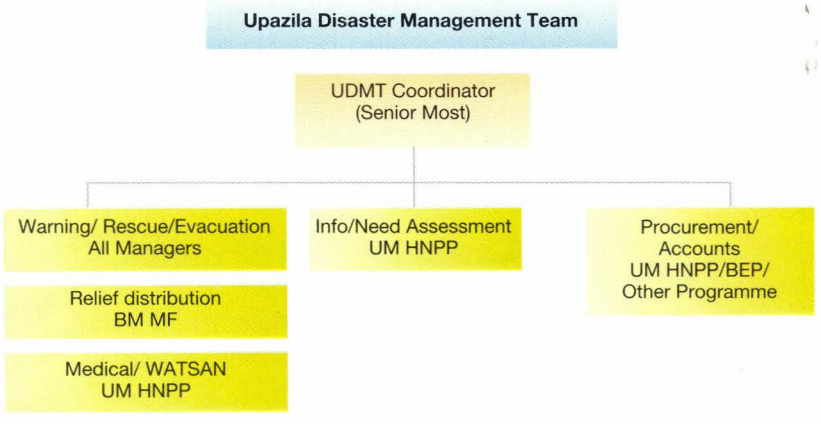


Figure 19: Upazila Disaster Management Team (For flood)

is needed, where and when it is needed and who will be receiving or using it (Annex 9: Incident Briefing Form). Resources to be identified in this way include equipment, facilities, personnel and/or emergency response teams.

- **STEP 2:** The IC will be briefed by her/his deputy or the UDMT Coordinator. The IC will call for a meeting to develop objectives and action plan based on the Initial Resource Mapping, Damage and Need Assessment Report (i.e. RIR) and Incident Briefing Form. The IC may re-structure the organisation to accomplish the objectives. The IC herself/himself or her/his deputy will establish communication with the situation room to inform the ground situation. They may engage one Information Officer (i.e., RM/DM/RSS/AM-BEP) and one Liaison Officer (i.e., RM/DM/RSS/AM-BEP). The roles and responsibilities of IC, Deputy IC, Information and Liaison are stated in Annex 8. Based on the urgent needs of the community, the IC will approve and allocate emergency funds to provide immediate support. As objectives will keep on changing depending on the situation, an operational planning worksheet will be maintained to follow up objectives, status of activities and responsibilities (Annex 5).

- **STEP 3:** Any RM or AM (BEP) will be designated as the Planning Section Chief (PSC). UDMT Coordinator will assist the ICS Planning Section. PSC will collect, evaluate, process, and disseminate information. Dissemination can be in the form of the Incident Action Plan, formal briefings, or through map and status board displays.

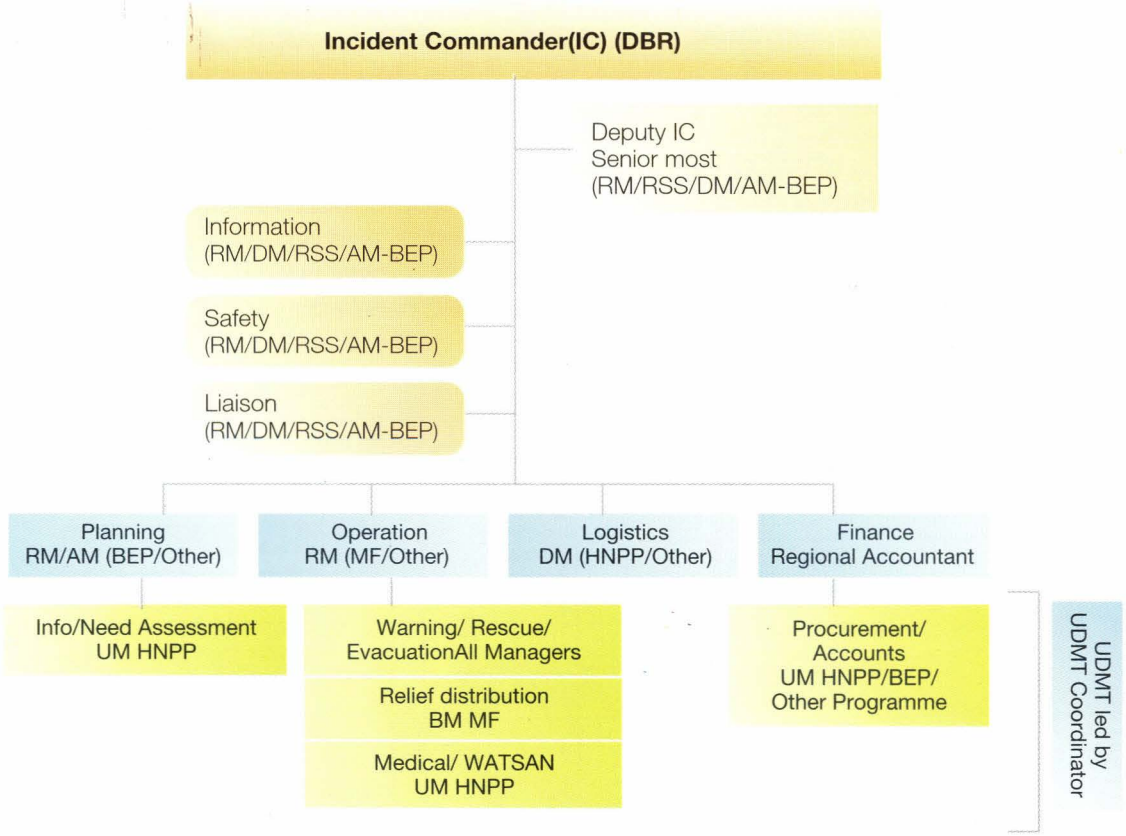


Figure 20: ICS Structure (For flood)

S/he will also be responsible for monitoring and evaluating the incident. The PSC will request for resources based on need and priorities considering current and successive operational periods. Discrepancies between requested resources and those available for delivery must be communicated to the requestor (UDMT). The Planning Section will conduct detailed assessments on damage and need using Rapid Assessment Tools (RAT) (Annex 9 shows the format of RAT). The Planning Section will follow up roles and responsibilities of different agencies addressing different emergency response functions. The Planning Section will also follow up about the timeline response of Branch, Area and Regional Offices (Annex 4).

- **STEP 4:** The District Manager- HNPP will be the Logistic Section Chief (LSC). S/he may engage the members of Procurement/Account Section of Upazila Level Disaster Management Team (mentioned in Figure 20) and divide the logistic team to support and service units (Annex 6 describes the roles and responsibilities of Logistic Section).

- **STEP 5:** The LSC will design the relief package according to the BRAC policy and Sphere guidelines. The Logistic team will order the resources, whereas procurement will be handled by the Finance and Administration Section, headed by the Regional Accountant. The roles and responsibilities of the Finance and Administration division are mentioned in Annex 6. The Operation Section Chief (OSC) will take the lead on field operation and develop tactical actions. The RM of MF/others will work as OSC. The roles and responsibilities of OSC are mentioned in Annex 6. The figure 20 shows the first 24-48 hrs ICS organisation chart for BRAC operation. While distributing relief and sharing information at the upazila level, UDMT should involve the community by addressing CBDRR.

- **STEP 6:** The Finance and Administration Section will maintain the supply chains and update the vendor list regularly. She/he will request for resources (that cannot be obtained locally) to adjacent District/Regional Offices. They will also monitor the cost of the response and timeline of staffs. The roles and responsibilities of Finance Section are summarised in Annex 6.

- **STEP 7:** The Operation Team will give emergency assistance/relief to the disaster affected people, to provide first aid to injured persons, carry out rescue and evacuation efforts, and distribute food and emergency supplies by forming teams.

- **STEP 8:** Upazila Manager (HNPP or BEP) will coordinate with the UDMC or other NGOs about losses, damages and other immediate requirements of affected people. Information about pre-positioning of resources availed by different NGOs is a vital task which should be collected by her/him.

- **STEP 9:** Within 24-48 hrs after disaster strikes, the Head Office will open a Disaster situation room headed by the Senior Director of DECC. The PH of DECC will be responsible for the overall coordination of relief and rehabilitation activities reported by IC (DBR). Figure 21 represents the organisational structure of BRAC operation within 24-48 hrs after the disaster.

- **STEP 10:** The situation room will monitor and evaluate weather situation for the first 24-48 hrs and report to the Senior Director of DECC. The Senior Director will inform ED and other Directors. The situation room will update IC/UDMT on the weather situation.

This ICS process can support 48 hrs to 7 days based on the ground situation.

- **STEP 11: A detailed need assessment using PLA method will be carried out by the Planning Section right after the emergency phase by involving the community.**

Note: One Senior Manager from the HO, with the help of consultants, will prepare a concept paper/proposal for relief and rehabilitation based on the assessment being done. The PH will approach donors for additional resources.

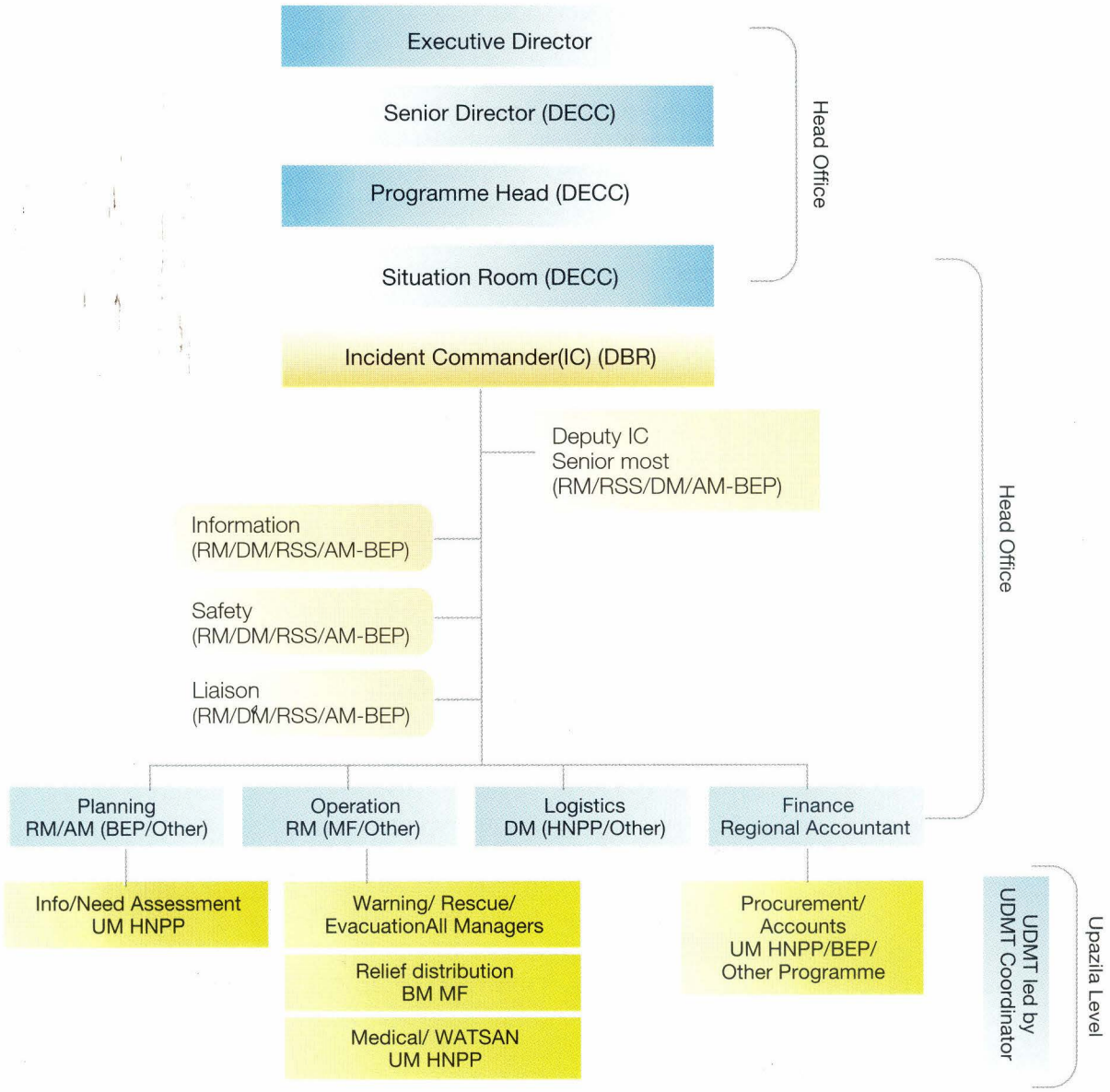


Figure 21: Organisational Structure of BRAC Operation (for flood)

8.2.3 Post Disaster Activities

For emergency response, support will be provided in terms of immediate needs like food and health facilities (ready food like chira, bread, molasses, biscuits, baby foods of nutritional value, drinking water, ORS, etc.) for the people without cooking facilities. This programme will be supported by BRAC itself. Right after emergency response, the next phase of relief activities will be provided with food packages consisting of rice, pulses, edible oil, salt, drinking water, etc. once they are able to cook. After that, sector wise programming will be carried out (i.e., agriculture credit, water and sanitation, etc.).

- **STEP 1:** Based on the casualties; damage and need assessment, the planning team will design a phase-wise recovery plan for a period of one week to one month and submit it to IC. The IC will request for approval from the PH of DECC. The DBR will design the criteria for the beneficiary groups and send it to the PH for HO approval.

- **STEP 2:** The Programme Head of DECC will assess the proposal and submit it to the committee through the Senior Director of DECC for approval. Based on the approval, the work plan will be prepared by the PH.

- **STEP 3:** BRAC may participate in the reconstruction and rehabilitation programme of communities in special circumstances with organisational interest.

- **STEP 4:** If required, psycho-social support for short-term and long-term rehabilitation, livelihood assistance and community development programme may be provided by BRAC based on the situation.

- **STEP 5:** The individual BRAC programmes will start different rehabilitation activities based on respective priorities.

8.3 Earthquake

Out of all natural disasters, earthquakes are the least predictable disaster. There are many factors that determine the scale of its damage such as the time of the event; population density and fragility of structural buildings. Moreover, the damages vary from place to place and in a country like Bangladesh, the aftermaths of an earthquake will be more severe. Its risk becomes a huge threat for the country, especially in the urban areas because of unabated increase of human settlement, industrial activities and economic growth.

Aftershocks are smaller earthquakes that follow the main shock and can cause further damage to fragile buildings and can occur in the next few hours, days, weeks or even months after the quake. It is to be emphasised that some earthquakes are actually foreshocks and a larger earthquake may follow.

Ground movement during an earthquake is seldom the direct cause of death or injury. Most earthquake-related injuries result from collapsing walls, flying glass, debris and falling objects as a result of the ground shaking or people trying to move more than a few feet during the shaking. Much of the damage in earthquakes is predictable and preventable. BRAC must work together with communities to apply knowledge to building codes, retrofitting programmes, preparedness, as well as, neighbourhood and family emergency plans.

8.3.1 Pre Disaster Activities

As a large organisation, BRAC may take initiatives to incorporate disaster preparedness activities in its ongoing programmes. The DECC programme could develop a short standard module on disaster risk reduction focusing on earthquake risk and preparedness to incorporate in the existing or ongoing programmes. Each BRAC programme should need to incorporate community and individual family level planning for disaster risk management.

- The BRAC Head Office should develop an Earthquake Contingency Plan to protect and prepare its staffs. It should assess preparedness level at HO routinely by conducting safety drills.

- The Microfinance programme (Dabi, Progati, etc.) is the largest programme of BRAC covering 64 districts. The programme runs through Village Organisations (VOs). Each VO, consisting of 30-40 women, acts as platforms for poor women to come together, access services, exchange information and raise awareness on social, legal and other issues concerning their daily lives. They could inform the community on the earthquake risk reduction tips such as, seeking shelter under heavy furniture (such as desk/table/bench) or evacuating to an open area during earthquakes.

- Human Rights and Legal Aid Services (HRLS) programme promotes legal awareness among communities to protect themselves from illegal, unfair or discriminatory practices. The programme emphasises on empowering the rural poor though education on human rights and laws. A short module on hazard-specific disaster preparedness could be incorporated into their training courses.

- Education is the key to empowering vulnerable communities to better prepare for natural disasters. BRAC's Education programme could incorporate a teachers' training programme on disaster preparedness. In turn, they would convey necessary information to students at pre-primary, primary, adolescent and post-school levels, as well as at BRAC Learning Centres. They would raise awareness on different hazards among children and ensure children's safety during any calamity. Schools can also organise small simulation exercises to enhance knowledge retention of their school level preparedness plan for earthquakes.

- BRAC Health, Nutrition and Population programme gives support to improve maternal, neonatal and child health, and reduce vulnerability to communicable diseases and common ailments. BRAC has 80,000 health volunteers and 7,247 health workers. Programme Organisers (PO), Shasthya Shebikas and Shasthya Kormis should be trained properly on hazard-specific health risk management.

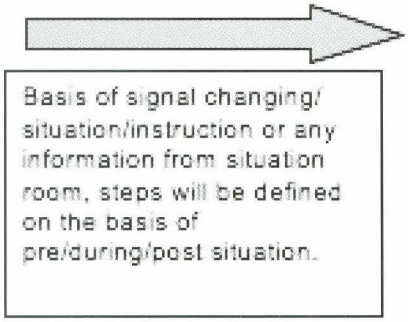
- The Water, Sanitation and Hygiene (WASH) programme aims to improve water utilisation and sanitation. Through the programme, hygiene messages are delivered through regular community meetings involving women, men, adolescent girls, adolescent boys and children. Each community volunteer has the responsibility of convening six meetings per day, with 10 households involved in each meeting. The meetings are targeted to be participated by a total of 60 households per day, with 300 households assigned to each community worker. These meetings are avenues in which community members are taught how water, sanitation and hygiene are interconnected with health. Proper sanitation, hygiene and safe water utilisation are being taught . The social mapping under the WASH programme could consider the specific hazards of a community and also provide training on disaster preparedness.

WASH programme could develop guidelines on temporary shelter and sanitation management for earthquake scenario and have managers of affected areas develop a procedure for vulnerability assessment of water supply, sewerage and drainage systems within the community.

8.3.2 During Disaster Activities

Note: Full ICS Structure will be activated at this stage. If there is concentrated disasters in an upazila, ICS will be formed at district level (not in upazila level) and UDMT will be formed at upazila level.

Step 1 *** After forming ICS, IC can use this template for every action (mentioned below)



Objectives	Steps of activities (Pre/ During /Post)	Responsibilities
1 2 3 4		
1 2 3 4		
1 2 3 4		

Note: Objectives will keep changing depending on the disaster phase (pre/ during/post), current situation and steps.

First 24-48 Hrs Operation

- **STEP 1:** The UDMT Coordinator, along with the Branch Manager in affected areas, will take the lead for initial response by forming a team (Figure 22: Upazila Disaster Management Team) based on the human resources available at the branch or area office, and conduct initial assessment using Rapid Initial Report (RIR) to identify initial damage and need assessment (Annex 10: RIR format). The team will inform IC on situations, team structure and requirements (i.e., what and how much is needed, where and when it is needed and who will be receiving or using it) (Annex 7: Incident Briefing Form). Resources to be identified in this way include equipment, facilities, personnel and/or emergency response teams.

- **STEP 2:** The IC will be briefed by her/his deputy or the UDMT Coordinator. The IC will call for a planning meeting to develop objectives and action plan based on the initial resources mapping, damage and need assessment report (i.e., RIR) and Incident Briefing Form. IC may re-structure the organisation to accomplish the objectives. The IC herself/himself or her/his deputy will establish communication to HO to inform the ground situation. They may engage one Information Officer (i.e., RM/DM/RSS/AM-BEP) and one Liaison Officer (i.e., RM/DM/RSS/AM-BEP). The roles and responsibilities of IC, Deputy IC, Information and Liaison are stated in Annex 8. Based on the urgent needs of the community, IC will approve and allocate emergency funds to provide immediate support. If there is a concentrated disaster in an Upazila, ICS will be formed at the district level (not in Upazila level) and UDMT will be formed at Upazila level. As objectives will keep on changing depending on the situation/instruction/information about the situation, an operational planning worksheet will be maintained to follow up objectives, status of activities and responsibilities (Annex 5).

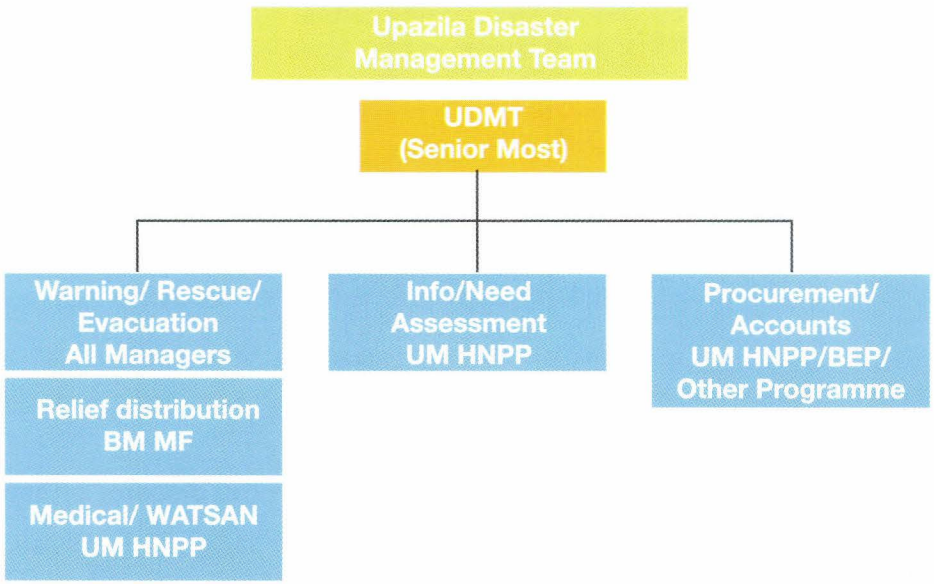


Figure 22: Upazila Disaster Management Team (For earthquake)

Upazila Note: UDMT Coordinator will be the senior most personnel of the Upazila office. The seniority should be measured on the basis of level, designation and length of service respectively.

- **STEP 3:** Any RM or AM (BEP) will take the role of the Planning Section Chief (PSC). UDMT(s) will also be a part of the ICS Planning Section. S/he will collect, evaluate process and disseminate information. Dissemination can be in the form of the Incident Action Plan, formal briefings, or through map and status board displays. S/he will also be responsible for monitoring and evaluating the incident. The PSC will request for resources depending on need and priority considering current and successive operational periods. Discrepancies between requested resources and those available for delivery must be communicated to the requestor (UDMT Leader). The Planning Section will conduct detailed assessment on damage and need using Rapid Assessment Tools (RAT) (Annex 9 shows the format of RAT). The Planning Section will follow up roles and responsibilities of different agencies by addressing different emergency response functions. The Planning Section will also follow up on the timeline response of Branch, Area and Regional Offices (Annex 4).

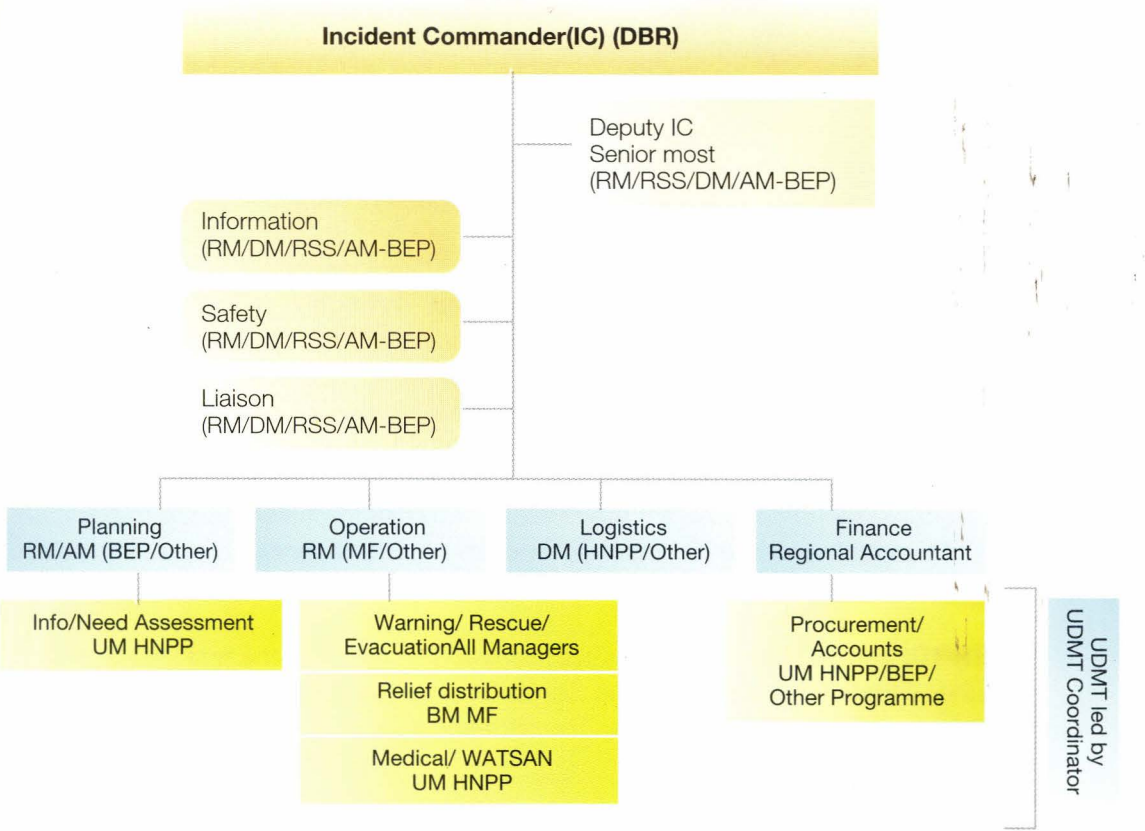


Figure 23: ICS Structure for First 24-48 hrs of Operation (For earthquake)

- **STEP 4:** The District Manager- HNPP will be the Logistic Section Chief (LSC). S/he may engage the members of Procurement/Account Section of Upazila Level Disaster Management Team (mentioned in Figure 23) and divide the logistic supports to assist and service units (Annex 6 describes the roles and responsibilities of logistic section).

- **STEP 5:** The LSC will design the relief package according to the BRAC policy. The relief package will also consider the Sphere guideline for relief distribution. The logistic will order the resources and procurement to be done by the Finance and Administration Section. The Regional Accountant will be the Chief of Finance and Administration. The roles and responsibilities of the Finance and Administration Section are mentioned in Annex 6. The Operation Section Chief (OSC) will take the lead on field operation and develop tactical actions. The RM of BDP may work as OSC. The roles and responsibilities of OCS are mentioned in Annex 6. Figure 23 shows the first 24-48 hrs of BRAC's ICS operation. **While distributing relief and sharing information at the Upazila level, UDMT should involve the community in addressing CBDRR.**

- **STEP 6:** The Finance and Administration team will maintain the supply chains and update vendor list. S/he may request for resources (that cannot be obtained locally) to adjacent District/Regional Office. The team also monitors the cost of the response and timeframe of staff. The roles and responsibilities of the Finance Section are summarised in Annex 6.

- **STEP 7:** The Operation team will give emergency assistance/relief to the disaster victims provide first aid to injured persons, carry out rescue and evacuation efforts and distribute food and emergency supplies by forming teams.

- **STEP 8:** Upazila Manager (HNPP or BEP) will coordinate with the UDMC or other NGOs in addressing losses, damages and other immediate requirements of the affected people. Information about pre-positioning of resources availed by different NGOs is a vital task which should be collected by her/him.

- **STEP 9:** Within 24-48 hrs after the disaster has struck, the Head Office will open a disaster situation room headed by the Senior Director of DECC. Programme Head of DECC will be responsible for the overall coordination of relief and rehabilitation activities reported by the IC. Figure 24 represents the organisational structure of BRAC's operation within 24-48 hrs after the disaster.

- **STEP 10:** The situation unit/room will monitor and evaluate the first 24-48 hrs weather situation and report to the Senior Director of DECC. The Senior Director will inform ED and other Directors. The situation room also supports district/upazila UDMT on the weather situation.

This ICS process can have a duration of 48 hrs to seven days based on the ground situation.

- **STEP 11:** A detailed need assessment using PLA method will be carried out by involving the community right after the emergency phase by the Planning Section.

Note: One senior manager from the HO with the help of consultants will prepare a concept paper/proposal for relief and rehabilitation based on the assessment being done. The PH will proceed to donors for additional resources.

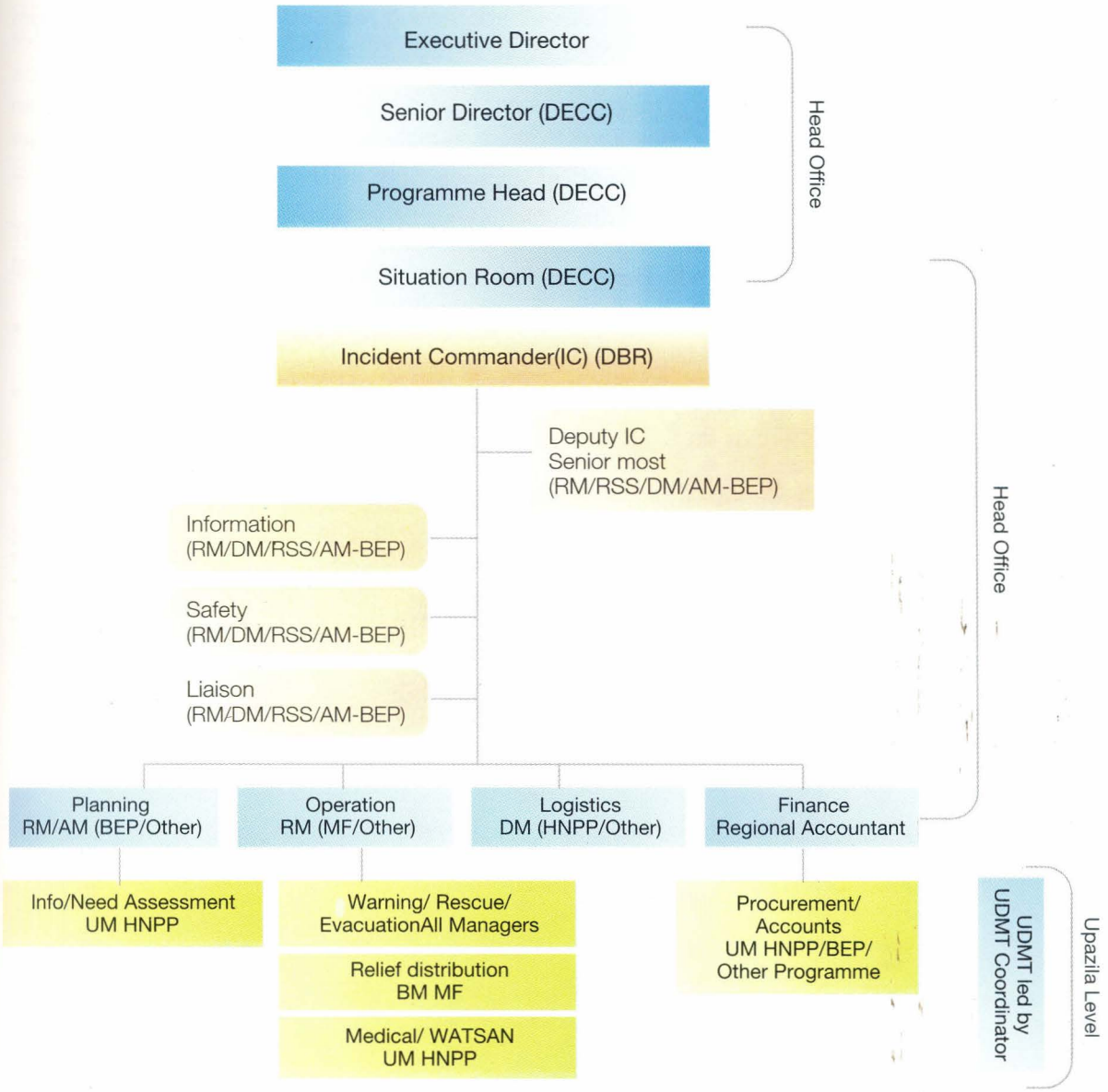


Figure 24: Organisational Structure for BRAC Operation (For earthquake)

8.3.3 Post Disaster Activities

For emergency response, support will be provided in terms of immediate needs like food and health facilities (ready food like chira, bread, molasses, biscuits, baby foods with nutritional value, drinking water, ORS, etc.) for the people with no cooking facilities. This programme will be supported by BRAC itself. Right after the emergency response, relief activities will be provided with a food package of rice, pulses, edible oil, salt, drinking water etc. for affected populations, once they are able to cook. After that, sector-wise programming will be carried out by addressing respective areas (e.g., agriculture credit, water and sanitation, etc.).

- **STEP 1:** Based on the casualties, damage and need assessment, the planning team will design a phase-wise recovery plan for a period of one week to one month and submit it to IC. The IC will request approval from the HO.
- **STEP 2:** The Programme Head of DECC will assess the proposal and submit it to the committee for approval. Based on the approval, the work plan will be prepared by the PH. The DBR will design the criteria for the beneficiary group and send to the PH for HO approval.
- **STEP 3:** BRAC may participate in reconstruction and rehabilitation programme in special circumstances and with organisational interest.
- **STEP 4:** Based on the situation, BRAC may provide psycho-social recovery; short-term and long-term rehabilitation; livelihood assistance and community development programme.
- **STEP 5:** The individual BRAC programmes will start different rehabilitation activities based on programme priority.

9. Monitoring and Evaluation Framework

Monitoring is a procedure for checking the effectiveness and efficiency in implementing the SOP. The process helps identify strengths and shortcomings and recommends corrective measures to optimise the intended outcomes. A M&E framework will be provided to follow up the SOP on regular basis to address reporting requirements, give advice on indicator selection, periodic assessment of knowledge retention, auditing of outcomes and impact, and mechanisms for modifying the SOP. The monitoring will be measured through an evaluation process of input and output, based on measured indicators. Evaluation will be conducted through effectiveness of outcomes and impacts.

The DECC programme could conduct a formal audit of the entire SOP at least once a year. The following include some issues to consider:

- How to involve all levels of management in evaluating and updating the SOP?
- Are the problem areas and resource shortfalls identified in the vulnerability analysis being sufficiently addressed?
- Do staffs of Regional, Area and Branch Offices understand their respective responsibilities?
- Have new staffs been trained?
- Are the names, titles and telephone numbers in the plan current?
- Are steps being taken to incorporate DRR into other programmes?

A. MONITORING RESULTS

Pre-Disaster/Emergency				
Outcomes	Indicators	Means of Verification/sources	Frequency of collection	Responsibility
		Data/Information		
1. Strengthened Emergency response capacity of BRAC personnel	1.1 Number and % of staff of different Programmes of BRAC undergone DRM Training 1.2 No. of DBR of BRAC trained as ICs 1.3 Number or % of BRAC staff who are maintaining SOP in emergency 1.4 Single commanding system is established in response activities 1.5 % of BRAC staff knowledgeable of SOP	Feedback/evaluation results by participants of DRM training programmes	After each training	BLD, DECC
		Progress Reports, MIS and M&E report	Yearly	BLD, DECC
		Progress report, Vendor list, circulars, meeting minutes, Contingency plan,	Disaster Calendar-wise	BLD, DECC
		Special Report from IC, and other parts of ICS	After two weeks of incident	DECC and DBR
		Progress Reports, Training evaluation report, SOP Awareness special reports	Every 6 months	BLD, DECC
2. Improved institutional capacity for Emergency response operation	2.1 Technically sound and advanced Communication systems & data processing system 2.2 Cooperation between BRAC, BMD and FFWS	Regular Communication system report , early response report from community and staff, Life and resource rescue report, response/ feedback from field, Evacuation Checklist	Quarterly (depends on incident)	DECC and IT Cell
		Signed MoU with BMD, FFWC establishing two way communication	Annually	DECC

	2.3 Organiational structure of IC with assigned functions/responsibilities at all levels	Information on the board at regional offices, Status reports, Human Resources Division Report, database of assigned persons for ICS, ICS worksheet, Operational Planning Worksheet	Monthly	DBR, DECC in consultation with other programmes/ HRD
3. Compliance on accountability fulfilling stakeholders' expectations	3.1 Statement of Internal and External Audit Department	Internal and External Audit report	At the completion of each Emergency	Finance & Accounts Department
	3.2 Real Time Evaluation findings & conclusions	RTE Report	At the completion of each Emergency	DBR and UDMT
	3.3 Financial Statement of Accounts section	Reports of Finance Regional Accountant, Resource summary	At the completion of each Emergency	Finance & Accounts Department
During Disaster/Emergency				
Outcomes	Indicators	Means of Verification/sources	Frequency of collection	Responsibility
		data/information		
IC in command	Incident Commander with support staff at ICS & Disaster Management Teams at Upazila/ District are activated and functioning	Reflection in the board at regional offices; Response Timeline Matrix	Reflected in the board & reviewed if necessary; During an incident	DBR
		Situation updates	Daily or hourly	IC
		Local Situation Updates	Daily	DBR
		SOP Annex 5 and 7 report	Daily	IC
		Rapid Assessment Tool (RAT)	Within 1-3 days of the emergency	DBRs at Districts /Upazilas/Unions

		Rapid Initial Assessment (RIR)	Within 1-2 days of the emergency	DBRs at Districts/ Upazilas
		Incident Briefing form	24-48 hours	IC
		Incident Action Plan (IAP)	1-2 days	IC
		Expenditure statements of relief	Weekly	Regional Accountant/Chief of Finance & Administration
		Demobilisation Plan/Final Report	End of each emergency	IC
Post Disaster/Emergency				
Outcomes	Indicators	Means of Verification/sources	Frequency of collection	Responsibility
		data/information		
Recovered from the emergency	No.of victims/affected people supported by BRAC under SOP against total no. of affected people	Recovery plan of BRAC	1 week -1 month	DBR
	Total estimated damage in BDT/U.S.$	Recovery plan of BRAC	1 week -1 month	DBR
	Implementation schedule/plan of Recovery Programme	Recovery plan of BRAC	1 week -1 month	DBR, Planning Teams
	Number/% of people returned home from temporary shelters	Progress reports	Monthly	DBR

B. MONITORING IMPLEMENTATION				
Pre-Disaster/Emergency				
Outputs	Indicator	Means of Verification/Sources	Frequency of collection	Responsibility
		data/information		
Standard Training modules incorporating DRM including SOP	Number of training modules developed & updated Incorporating DRM including SOP	MIS reports Training modules	Annually Yearly	BLD/BRAC DECC, BLD
Developed training modules delivered	Number of Training programs conducted	Completion report after each training programme	End of the programme	
Trained BRAC Staff in DRM & SOP	Number of trained Staff on SOP	Reports of Training programmes, M&E and MIS Report	Quarterly	BLD, DECC
	Number of Training Programmes on DRM held at District, Upazila and BLD	Reports of Training programmes, M&E and MIS Report	Monthly	BLD, DECC
Specific training modules developed & delivered	Disaster Contingency Plan prepared	Special report of DECC Disaster Contingency Plan	Bi-annually	DBR
	Number of drills conducted at all levels	Progress reports of DBR	Quarterly	DBR and Regional Office
	Training manuals are developed for Health Volunteers, Teachers and community members	Training manuals	Annually	BLD & DECC

	Number of BRAC staff trained in Flood Risk Management (FRM)	Reports of Training programmes, M&E and MIS Report	Quarterly	BLD & DECC
	Number of trained Health Volunteers, Teachers and community members in CBDRR	Reports of Training programmes, M&E and MIS Report	Monthly	DECC, HNPP, BEP, CEP and MFP
	Number of people participated in Awareness programs on Community Based advanced Disaster Warning Systems/Forecasting system	Reports of awareness programmes conducted	End of training	BLD & DECC
	No. of farmers assisted with User Matrix for disaster response	Progress Report of AFS Programme	Quarterly	AFS Programme, DBR, DECC
Incident Action Plan (IAP) developed	IAP is developed for both Branch and Regional level	Special report of DECC	Before & after each emergency	DECC, Regional and Branch Office
Trained staff on IAP	Number of Trainings conducted	Special reports of DECC, MIS and M&E Report	Quarterly	DECC and BLD
ICS Formation	Persons are designated as per ICS format	ICS Worksheet, Operational Planning Worksheet	Monthly	DBR
During Disaster/Emergency				
Outputs	Indicator	Means of Verification/sources	Frequency of collection	Responsibility
		data/information		
Activated IC	IC post at the emergency site linked to Situation Room of DECC/HO	Communications from Situation Room/DECC	Within 24-48 of the disaster strike	DECC
Activated UDMT	Full functioning UDMT	Rapid Assessment Tool (RAT)	within 24 hours of emergency onset	Branch/Regional /Area Office
	Completed RIR	Rapid Initial Report (RIR)	Day 1	IC
		Incident Briefing Form	within 24 hours of emergency onset	IC

		Operational Planning Worksheets of DTM	Day 1	IC
		Evacuation Checklist	within 24 hours of emergency onset	IC
Incident Action Plan (IAP)	IAP maintained	Incident Action Plan, Rapid Assessment Tool (RAT)	at the onset/within 24 hrs	Planning Section Chief (PSC/ RM or AM (BEP)
Concept paper/ proposal for	R&R Proposal formulated	Data from RAT& RIR, RTE reports	48 hrs-2nd week	DECC & Consultant
Post Disaster/Emergency				
Outputs	Indicator	Means of Verification/sources	Frequency of collection	Responsibility
		Data/Information		
Recovery Plans designed	Formulated Recovery Plan	Recovery Plan	1 week -1 month	Planning team
	Activity Work Plan of the recovery plan	Progress reports	Quarterly	DBR
	Rehabilitation programmes of BRAC Programs.	Progress reports and activity report of concerned programmes of BRAC	At the conclusion of emergency	BRAC Programmes

10. Key Challenge Areas

BRAC's extensive work in Bangladesh touches almost every fibre of the society. It does exemplary work in responding to disasters though there is still room to improve its general performance, in order to build a more robust organisation that promotes resilience of communities by addressing hazards and disasters proactively.

The challenge for BRAC lies in the incorporation of disaster risk management in its programmes. Programmes like Microfinance, Health, Education, Community Empowerment, Agriculture and Food Security and Gender Justice and Diversity are excellent avenues for implementing capacity building in the context of disaster risk management. The following are specific challenges in BRAC's current disaster management system:

1. No established information flow between the BMD/FFWC and BRAC

Currently, BRAC volunteers get information from the government Upazila officials only when the government feels that they need the assistance of NGOs in disseminating information. Though this scheme may work out fine, an efficient early warning system uses all the agents and channels to get the information across to its stakeholders. Utilising the network of BRAC's community volunteers for disseminating warning information will be an advantage to the community. This will encourage immediate action when emergency signals are given.

2. People's understanding of forecasts

In some past cases, a few communities did not prepare sufficiently when they heard about BMD's warning information during Cyclone Aila because of precedents where forecasts did not materialise. They underestimated the potential impacts of Cyclone Aila because there was no historical event comparable to its intensity and size. To avoid such a fatal error, maximising awareness and capacity building is essential for those areas.

3. Warning signals not understood

Though warning signals are issued, people generally do not have a clear idea on the meanings and implications of what they indicate.

4. Evacuation routes, cyclone shelters and evacuation centres not designated

Though cyclone shelters are established in many cyclone and flood-prone communities, they could not accommodate the total number of people affected during disasters. As this is the case, alternative evacuation centres should be designated and evacuation routes established.

5. Capacity of community volunteers and health workers in providing first aid

The community volunteers and health workers do not always retain the technical application of the training they receive on emergency first aid. The potential of this huge number of first responders should be harnessed even further with thorough and continuous refresher trainings so that immediate initial treatment can be given at full capacity to those who need it.

6. Capacity of general people in understanding disaster/climate risk management

BRAC has a very strong network primarily engaged in educating the different sectors of communities in Bangladesh on various issues and concerns under different programmes. These can be used as avenues for making the public understand the concepts and elements in disaster/climate risk management to make them better prepared to deal with hazards and disasters.

ANNEX

Annex 1: Glossary of Disaster Terms

Catchment Area

A river's catchment (or basin) is the land area from which rainfall will ultimately contribute to the river discharge. The catchment area of the Ganges, Brahmaputra and Meghna Rivers are 907 X 103 km2, 583 X 103 km2 and 65 X 103 km2, respectively, of which only 8% lies in Bangladesh. More than 90% of the water that flows into the Bay of Bengal enters Bangladesh through its borders with India.

Climate

Climate in a narrow sense is usually defined as the average weather, or more rigorously, as the statistical description in terms of the mean and variability of relevant quantities over a period of time ranging from months to thousands or millions of years. The classical period is 30 years, as defined by the World Meteorological Organisation (WMO). These quantities are most often surface variables such as temperature, precipitation and wind.

Climate Change

Climate change refers to a statistically significant variation in either the mean state of the climate or in its variability, persisting for an extended period (typically decades or longer). Climate change may be due to natural internal processes or external forcing, or to persistent anthropogenic changes in the composition of the atmosphere or in land use.

Disaster

A serious disruption of the functioning of a community or a society causing widespread human, material, economic or environmental losses which exceed the ability of the affected community or society to cope using its own resources.

A disaster is a function of the risk process. It results from the combination of hazards, conditions of vulnerability and insufficient capacity or measures to reduce the potential negative consequences of risk.

Danger Level

In Bangladesh danger level at a river location is the level above which it is likely that the flood may cause damages to nearby crops and homesteads. In a river having no embankment, danger level is about annual average flood level. In an embanked river, danger level is fixed slightly below design flood level of the embankment. The danger level at a given location needs continuous verification as e.g. embankments may be breached, but it is not done continuously by FFWC, whereby some danger levels may be not precise.

Disaster Risk Management

The systematic process of using administrative decisions, organisation, operational skills and capacities to implement policies, strategies and coping capacities of the society and communities to lessen the impacts of natural hazards and related environmental and technological disasters. This comprises all forms of activities, including structural and non-structural measures to avoid (prevention) or to limit (mitigation and preparedness) adverse effects of hazards.

Early Warning

The provision of timely and effective information, through identified institutions, that allows individuals exposed to hazard to take action to avoid or reduce their risk and prepare for effective response.

Early warning systems include a chain of concerns, namely: understanding and mapping the hazard; monitoring and forecasting impending events; processing and disseminating understandable warnings to political authorities and the population, and undertaking appropriate and timely actions in response to the warnings. (UN/ISD: 2004)

Earthquake

Earthquake is a term used to describe both the sudden slip on a fault, as well as, the resulting ground shaking and radiated seismic energy caused by the slip, or by volcanic or magmatic activity, or other sudden stress changes in the earth.

Floods

The floods in Bangladesh are divided into monsoon river flood, flash flood, local rainfall flood and storm surge flood. Monsoon river flood is an annual event, forced mainly by intensive river inflow through Ganges, Brahmaputra and Meghna Rivers and rainfall over Bangladesh, causes the water level in the rivers to rise and fall slowly during the monsoon season. Flash flood occurs only in the northeastern Bangladesh in the period pre- to post-monsoon forced by intense rainfall in the Meghalaya Hills and in parts of eastern Bangladesh in the post-monsoon. Local rainfall flood is, as the name states, forced by local heavy rainfall over a location inside Bangladesh. Storm surge flood is a coastal phenomenon forced by cyclones hitting the Bangladeshi coastline.

Flood Forecasting

To predict water level conditions in Bangladesh FFWC collects measurements of water level and rainfall, satellite pictures and simulates the water level conditions by use of a numerical model of the Bangladeshi river network. Every day during most of the monsoon season the model simulates the water level conditions during the previous 7 days (hind-cast simulations) and during the coming 3 days (forecast simulation). More precisely the forecasting starts during early monsoon when one of measuring stations show water level 60 cm below danger level. For obvious

reasons no measurements exist in the forecasted period and simple relations estimate boundary conditions for the numerical model during this period. The uncertainties of the estimated boundary conditions propagate into the model domain. Results from the model simulations are used to provide flood forecasting and warning.

Hazard

A potentially damaging physical event, phenomenon or human activity that may cause the loss of life or injury, property damage, social and economic disruption or environmental degradation.

Forecast

Definite statement or statistical estimate of the occurrence of a future event (UNESCO, WMO). This term is used with different meanings in different disciplines.

Mitigation

Structural and non-structural measures undertaken to limit the adverse impact of natural hazards, environmental degradation and technological hazards.

Mean Sea Level

The average level of the sea over a long period or the average level which would exist in the absence of tides. The level of the sea taken over a period of approximately 12 months, taking account of all tidal effects but excluding meteorological effects

Natural Hazards

Natural processes or phenomena occurring in the biosphere that may constitute a damaging event. Natural hazards can be classified by origin namely: geological, hydro-meteorological or biological. Hazardous events can vary in magnitude or intensity, frequency, duration, area of extent, speed of onset, spatial dispersion and temporal spacing.

Preparedness

Activities and measures taken in advance to ensure effective response to the impact of hazards, including the issuance of timely and effective early warnings and the temporary evacuation of people and property from threatened locations.

Monsoon

Bangladesh is characterised by a tropical climate, i.e. cool, dry winter from November to January with predominantly northeasterly monsoon winds; hot, humid summer from April into October; and wet monsoon from June to September with predominantly southwesterly monsoon winds. Flooding in Bangladesh occurs during the wet monsoon period.

PLA

Participatory Rural Appraisal (PRA) advanced in the last decade from its rural focus into Participatory Learning and Action (PLA), which comprises many participatory approaches in all situations of development. Visualisation in Participatory Programmes (VIPP) is a complementary approach to PLA. VIPP is a method used by people who read and write, while PLA mainly uses local people's drawings and community discussions, including the involvement of non-literates. The basic philosophy is the same but the audience for both approaches may differ.

VIPP may be considered one of the possibilities within the PLA framework.

Public Awareness

The processes of informing the general population, increasing levels of consciousness about risks and how people can act to reduce their exposure to hazards. This is particularly important for public officials in fulfilling their responsibilities to save lives and property in the event of a disaster.

Public Information

Information, facts and knowledge provided or learned as a result of research or study, available to be disseminated to the public.

Risk

The probability of harmful consequences, or expected losses (deaths, injuries, property, livelihoods, economic activity disrupted or environment damaged) resulting from interactions between natural or human-induced hazards and vulnerable conditions. Conventionally risk is expressed by the notation

Risk = Hazards x Vulnerability. Some disciplines also include the concept of exposure to refer particularly to the physical aspects of vulnerability. Beyond expressing a possibility of physical harm, it is crucial to recognise that risks are inherent or can be created or exist within social systems. It is important to consider the social contexts in which risks occur and that people therefore do not necessarily share the same perceptions of risk and their underlying causes.

Super Model

FFWC simulates the water level conditions in Bangladesh by use of a numerical model of the Bangladeshi river network. The model is named the "Super Model" and is based on measurements of the topography of Bangladesh and the general numerical hydrodynamic model system named MIKE 11 developed at DHI Water and Environment. To run the Super Model information on water level and rainfall is needed to force the model: water level boundaries are e.g., found upstream in Ganges and Brahmaputra and downstream in Meghna River. The Super Model has been run at the FFWC since 1998.

Vulnerability

The conditions determined by physical, social, economic and environmental factors or processes, which increase the susceptibility of a community impact of hazards. For positive factors, which increase the ability of people cope with hazards, see definition of capacity.

Warning

FFWC disseminates flood warnings during most of the monsoon season. The warning is related to the measured and forecasted water levels and the danger levels: a) normal flood: water level is more than 50 cm below danger level; b) moderate flood: water level is between 50 cm below danger level and 50 cm above danger level; and c) severe flood: water level is 50 cm above danger level. Warnings are disseminated through a daily flood

bulletin, e-mail, FFWC home page, newspapers, radio and television.

Water Level

BWDB and other government departments refer water levels to the Public Works Datum (PWD). PWD is a horizontal datum believed originally to have zero at a determined Mean Sea Level (MSL) at Calcutta. PWD is located approx. 1.5 ft below the MSL established in India under the British Rule and brought to Bangladesh during the Great Trigonometric Survey.

Weather

Weather is the state of the atmosphere, mainly with respect to its effects upon life and human activities. It is a short-term phenomenon, describing atmosphere, ocean and land conditions hourly or daily. It is not constant. It is dynamic and always changing. Weather is the day-to-day state of the atmosphere, and its short-term (minutes to weeks) variation.

Annex 2: ICS Glossary

Branch: That organisational level having functional/geographic responsibility for major segments of incident operations. The branch level is used in operations and logistics and is organisationally between the section and division/group.

Command: The act of directing, ordering and/or controlling resources by virtue of explicit legal, agency, or delegated authority.

Command Staff: The command staff consists of the information officer, safety officer and liaison officer. They report directly to the incident commander and may have assistants. The command staff may or may not have supporting organisations below it.

Cooperating Agency: An agency supplying assistance other than direct suppression, rescue, support, or service functions to the incident control effort; e.g., Red Cross, law enforcement agency, Telephone Company, etc.

Deputy: A fully qualified individual, who, in the absence of a superior, could be delegated the authority to manage a functional operation or perform a specific task. In some cases, a Deputy could act as relief for a superior and therefore must be fully qualified in the position. Deputies can be assigned to the Incident Commander, General Staff, and Branch Directors.

Dispatch: The implementation of a command decision to move a resource or resources from one place to another.

Division: Divisions are used to divide an incident into geographical areas of operation. Divisions are established when the number of resources exceeds the span-of-control of the operations chief. A division is located with the Incident Command System organisation between the branch and the task force/strike team.

General Staff: The group of incident management personnel reporting to the incident commander. They may each have a deputy, as needed. Staffs consist of operations section chief, planning section chief, logistics section chief, and finance/administration section chief.

Incident: A human-caused or natural occurrence that requires emergency service action to prevent or reduce the loss of life or damage to property or natural resources.

Incident Action Plan (IAP): Contains objectives reflecting the overall incident strategy and specific tactical actions and supporting information for the next operational period. The plan may be oral or written. When written, the plan may have a number of attachments, including: incident objectives, organisation assignment list, division assignment, incident radio communication plan, medical plan, traffic plan, safety plan, and incident map.

Incident Base: Location at which primary logistics functions are coordinated and administered. The incident base may be co-located with the ICP or other incident facilities.

Incident Command System (ICS): The combination of facilities, equipment, personnel, procedure and communications operating within a common organisational structure, with responsibility for the management of assigned resources to effectively accomplish stated objectives pertaining to an incident.

Incident Commander: Individual responsible for the management of all incident operations at the incident site.

Incident Management Team: The Incident Commander and appropriate general or command staff personnel assigned to manage an incident.

Incident Objectives: Statements of guidance and direction necessary for selection of appropriate strategy, and the tactical direction of resources. Incident objectives are based on realistic expectations of what can be accomplished when all allocated resources have been effectively deployed.

Mobilisation: The process and procedures used by all organisations, federal, state and local for activating, assembling, and transporting all resources that have been requested to respond to or support an incident.

Multi-Agency Coordination (MAC): A generalised term which describes the functions and activities of representatives of involved agencies and/or jurisdictions who come together to make decisions regarding the prioritising of incidents, and the sharing and use of critical resources. The MAC organisation is not a part of the on-scene ICS and is not involved in developing incident strategy or tactics.

Operational Period: The period of time scheduled for execution of a given set of tactical actions as specified in the Incident Action Plan. Operational periods can be of various lengths, although usually not more than 24 hours.

Overhead: People assigned to supervisory positions, including incident commanders, command staff, general staff, Directors, supervisors, and unit leaders.

Planning Meeting: A meeting is held, as needed, throughout the duration of an incident, to select specific strategies and tactics for incident control operations and for service and support planning.

Resources: 1) Personnel, equipment, services and supplies available, or potentially available, for assignment to incidents. 2) The natural resources of an area, such as timber, crass, watershed values, recreation values, and wildlife habitat.

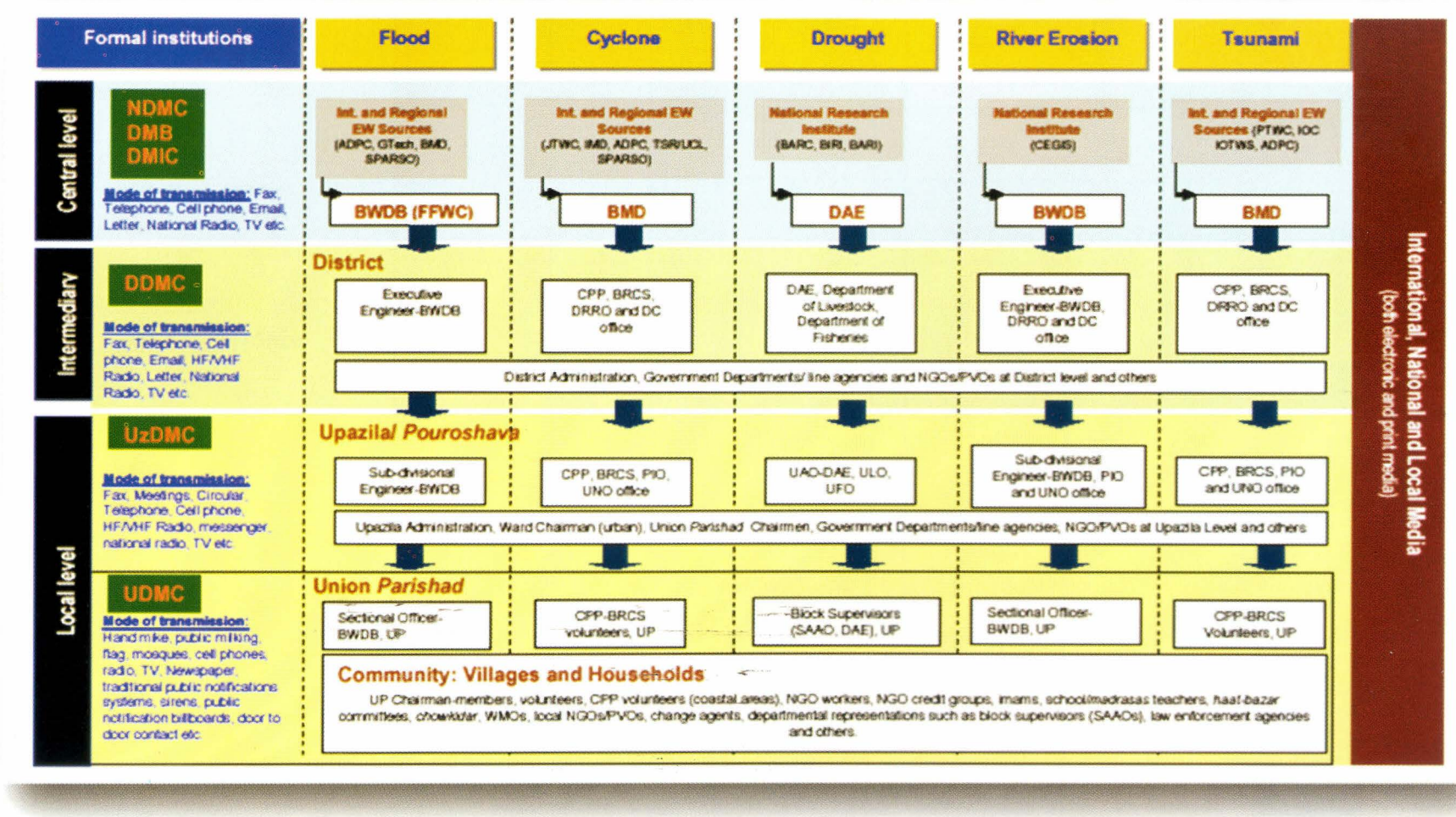
Staging Area: Locations set up at an incident where resources can be placed while awaiting a tactical assignment on a three-minute available basis. Staging areas are managed by the operations section.

Strategy: The science and art of command as applied to the overall planning and conduct of an incident. The general plan or direction selected to accomplish incident objectives.

Task Force: A group of resources with common communications and a leader temporarily assembled for a specific mission.

Unit: That organisational element having functional responsibility for a specific incident planning, logistical, or financial activity.

Annex 3: Hazards Information Linkages– "Source to Destination"



Annex 4: Response Timeline Matrix

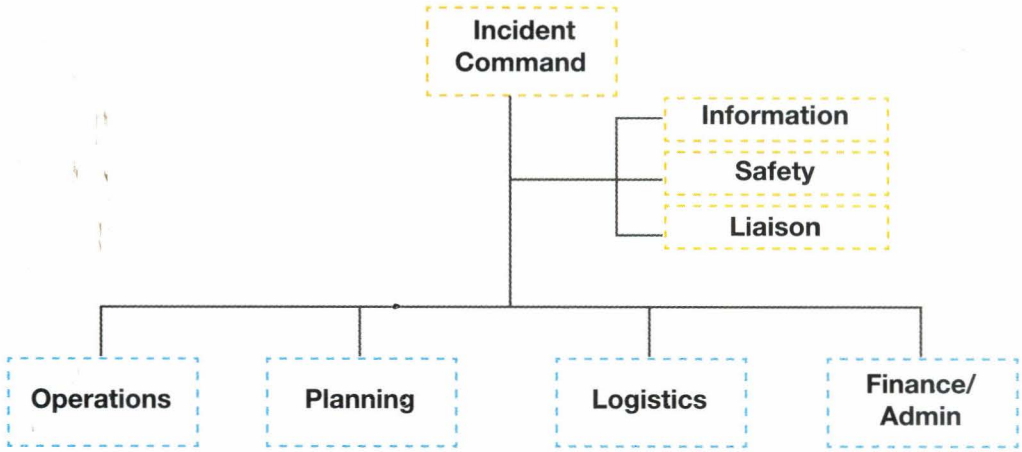
Response Time Line	Branch Office	Upazila Office	Regional Office	Head Office
Within 24 Hours				
Within 72 Hours				
Within 1 Week				
Within 1 Month				

Annex 5: Operational Planning Worksheet

Objectives and Priority	Steps of activities (Pre/Post/During)	Responsibilities
1 2 3 4		
1 2 3 4		
1 2 3 4		

Annex 6: ICS Roles and Responsibilities

1. Incident Commander (DBR/BLR/ Senior Most):



The DBR will work as Incident Commander. The Incident Commander's responsibility is the overall management of the incident. On most incidents, a single Incident Commander carries out the command activity.

The Incident Commander may have a deputy from the senior-most staff, who may be from other programmes (RM/RSS/DM/AM-BEP). Deputies may also be used at section and branch levels of the ICS organisation. Deputies must have similar qualifications to the person for whom they work, as they must be ready to take over that position at any time.

A Unified Command organisational structure should be established in multi jurisdiction or when many regions are affected by one incident. The Unified Command concept is a method to provide a coordinated management team when there are several regional offices or jurisdictions involved in an incident.

Incident Commander Major Responsibilities and Duties

The Incident Commander has a wide variety of responsibilities:

- Assess the situation and/or obtain a briefing from the prior Incident Commander (Upazila Disaster Management Team- Upazila Manager).
- Determine incident objectives and strategy.
- Establish the immediate priorities.
- Establish an Incident Command Post.
- Establish an appropriate organisation.

- Ensure planning meetings are scheduled as required.
- Updates situation to the Head Quarters regularly and seek advice if necessary on the policy and other critical issues
- Approve and authorise the implementation of an Incident Action Plan.
- Ensure that adequate safety measures are in place.
- Coordinate activity for all Command and General Staff.
- Coordinate with key people and officials.
- Approve requests for additional resources or release of resources from contingency fund.
- Seek approval from higher authority for additional funds.
- Keep DDMC/UzDMC informed of incident status.
- Approve the use of community people, students, volunteers, and auxiliary personnel.
- Authorise release of information to the news media.
- Order the demobilisation of the incident when appropriate.

Review of Selected Incident Commander Functions

1. Establish an Incident Command Post (ICP)

Initially, the ICP will be wherever the Incident Commander is located (Regional Offices). As the incident grows, it is important for the Incident Commander to establish a fixed location for the ICP and to work from that location.

The ICP provides a central coordination point from which the Incident Commander, Command Staff, and Planning functions will normally operate. Depending on the incident, other members of the General Staff may be operating in other locations; however, they will attend planning meetings and be in close contact with the Incident Commander.

The ICP can be any type of facility that is available and appropriate, e.g., Branch office, Area office, Regional office, tent, an open area, or a room in a building.

Once established, the ICP should not be moved unless absolutely necessary.

Establish the Immediate Priorities

First Priority is always safety of:

- People involved in the incident
- Responders
- Other emergency workers

Second Priority:

- Incident stabilisation.
- Support lives and emergency food and medical supply.

The IC must:

- Ensure life safety
- Ensure protection of life and property
- Stay in command
- Manage resources efficiently and cost effectively

Determine Incident Objectives, Strategy, and Tactical Direction

Establish Incident Objectives

The Incident Commander has the responsibility to determine the Incident Objectives. Incident Objectives are statements of intent related to the overall incident. Essentially, the objectives answer the question of what do we want to do. For some kinds of incidents the time to achieve the objectives is critical. In others, time, while always important, may not be an overriding issue. All Incident Objectives must be measurable.

Develop Appropriate Strategy(s)

Strategy describes the general method or methods that should be used either singly or in combination that will result in achieving the incident objective.

Execute Tactical Direction

Tactical Direction describes what must be accomplished within the selected strategy or strategies in order to achieve the Incident Objectives. Tactical Direction is the responsibility of the Incident Commander or the Operations Section Chief (The RM of MF or other programme) if that position has been established. Otherwise UDMT will interact with other Manager at Upazila Disaster Management Team or Branch Offices on the tactics that should be employed to meet the incident objectives.

Tactical Direction consists of the following steps:

- Establish Tactics: Determine the tactics that are to be used appropriate to the strategy. The tactics are normally established to be conducted within an operational period.

- Assign Resources: Determine and assign the kind and type of resources appropriate for the selected tactics.

- Monitor performance: Performance monitoring will determine if the tactics and resources selected for the various strategies are both valid and adequate.

- Establish and Monitor Incident Organisation: One of the primary duties of the Incident Commander is overseeing the management organisation. The organisation needs to be large enough to do the job at hand; yet, resource use must be cost-effective. The Incident Commander is responsible to delegate authority as appropriate to meet the need.

- Manage Planning Meetings as Required: Planning meetings and the overall planning process are essential to achieving the incident objectives. On many incidents, the time factor does not allow prolonged planning. On the other hand, lack of planning can be disastrous. Therefore, it is important to know and use an effective planning process. Proactive planning is essential to consider future needs.

- Approve and Authorise the Implementation of an Incident Action Plan: ICS offers great flexibility in the use of Incident Action Plans. Plans can be oral or written. Written plans should be provided when the incident will continue for more than one Operational Period.

- Approve Requests for Additional Resources or for the Release of Resources: On small incidents, the IC will personally determine resources needed and ask for an approval to the Head Quarter If communication fails he is authorised to spent maximum BDT 50,000 taka according to the need. As incidents grow in size and complexity, the ordering responsibility for required resources will shift to the Logistics Section Chief and to the Supply Unit if those elements of the organisation have been established.

- Authorise Release of Information to the News Media: One significant change of recent years is the increased capability and desire of the media to obtain immediate access to information. The sophistication of modern news gathering methods and equipment make it very important that all incidents have procedures in place for managing the release of information to the media, as well as responding appropriately to media inquiries.

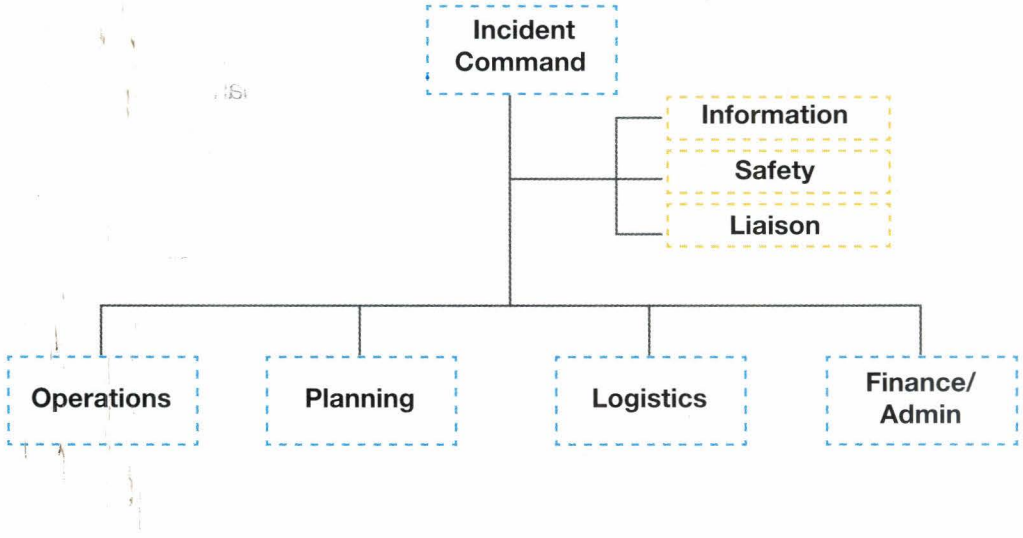
Characteristics of an Effective Incident Commander

The Incident Commander is normally the most visible person on the incident. Following are just some of the characteristics associated with an effective IC:

- Command presence
- Understands ICS
- A proven manager
- Puts safety first
- Proactive
- Decisive
- Objective

- Calm
- Quick thinking
- Good communicator
- Adaptable and flexible
- Realistic about personal limitations
- Politically astute

2. Command Staff



There are three important staff functions that are the responsibility of the Incident Commander until Command Staff positions are established.

Public information and media relations
Maintaining liaison with assisting and cooperating agencies (UDMC, DDMC, UzDMC, NGO's , INGO's, etc.)
Ensuring safety

On some incidents, any one of these functions can consume much of the Incident Commander's time. Therefore, it is important to recognise their importance and quickly fill the positions if necessary.

Note that the Command Staff differs from the general staff positions for the line organisation of Operations, Planning, Logistics, and Finance/Administration.

a) Information Officer (RM/DM/RSS/AM-BEP)

The Information Officer is responsible for developing and releasing information about the incident to the local news media, to incident personnel, and to other appropriate agencies and organisations.

Only one Information Officer will be assigned for each incident, including those operated under Unified Command and multi-jurisdiction incidents. The Information Officer may have assistants as necessary, and the assistants may represent assisting agencies or jurisdictions.

Reasons for the IC to designate an Information Officer:

- An obvious high visibility or sensitive incident.
- Media and other organisation demands for information may obstruct IC effectiveness.
- Reduces the risk of multiple sources releasing information.
- Need to alert, warn or instruct the public.

The Information Officer should consider the following when determining a location to work from at the incident:

- Information displays and press handouts may be required.
- Tours and photo opportunities may have to be arranged.

b) Liaison Officer and Agency Representatives (RM/DM/RSS/AM-BEP)

Incidents that are multi jurisdictional, or have several region involved, may require the establishment of the Liaison Officer position on the Command Staff.

The following are some of the main reasons to establish the Liaison Officer position at an incident:

- When several agencies or other regional offices send, or plan to send, Representatives to an Incident in support of their resources.
- When the IC can no longer provide the time for individual coordination with each Agency or other regional office.
- When it appears that two or more jurisdictions may become involved in the incident and the incident will require on-site liaison.

c) Safety Officer (RM/DM/RSS/AM-BEP)

The Safety Officer's function on the Command Staff is to develop and recommend measures for assuring personnel safety, and to assess and/or anticipate hazardous and unsafe situations.

Only one Safety Officer will be assigned for each incident. The Safety Officer may have assistants as necessary.

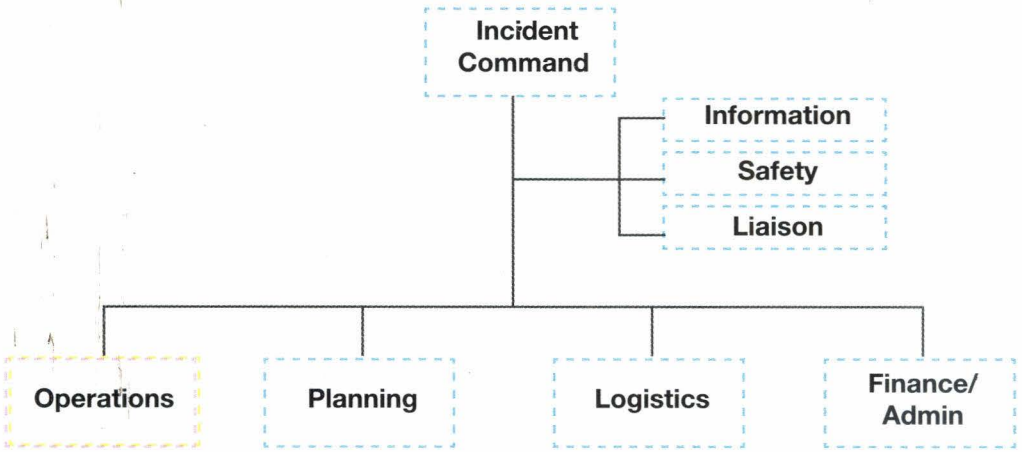
The Safety Officer will correct unsafe situations by working through the chain of command. However, the Safety Officer may exercise emergency authority to directly stop unsafe acts if personnel are in imminent life-threatening danger.

3. The ICS General Staff Positions

The General Staff consists of the following positions:

a) Operations Section Chief
b) Planning Section Chief
c) Logistics Section Chief
d) Finance/Administration Section Chief

a) Operations Section (RM- BDP/ Others)

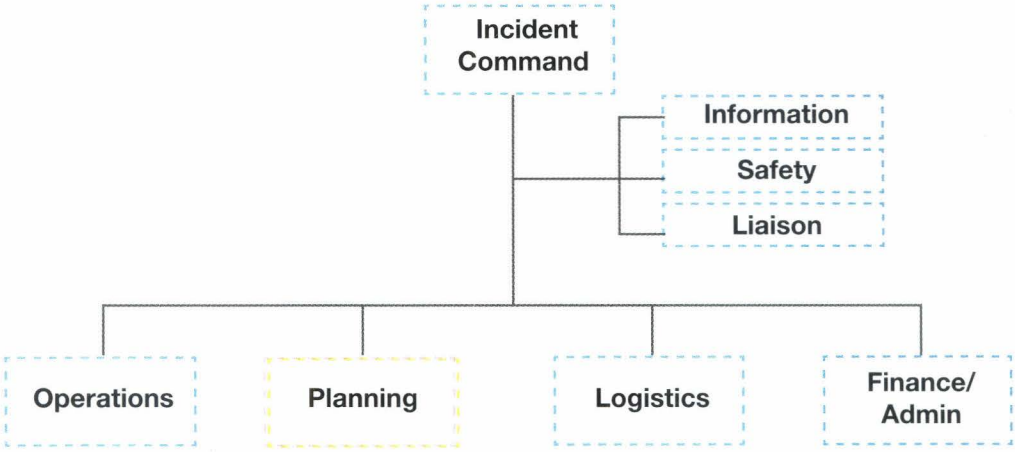


The Operations Section is responsible for managing all tactical operations at an incident. The build-up of the Operations Section is generally dictated by the number of tactical resources involved and span of control considerations.

There is no precise guideline for when the Operations Section will be established on an incident. In some cases, depending upon the complexity of the incident and the desires of the Incident Commander, it may be the first section to be established. In other situations, the IC may maintain control of Operations, and establish Logistics, Planning, and, if necessary, Finance/Administration functions as separate sections before designating an Operations Section.

The Operations Section will work mostly with tactical resources on the ground like relief distributions, medical support, first aid, search and rescues, etc.

b) Planning Section (RM/AM- BEP/ Others)



In ICS, the Planning Section is responsible for managing all information relevant to an incident. When activated, the Planning Section Chief who is a member of the General Staff manages the Section.

The Planning Section collects, evaluates, processes, and disseminates information for use at the incident. Dissemination can be in the form of the Incident Action Plan, formal briefings, or through maps and status board displays.

Some incidents may require personnel with specialised skills to be temporarily assigned to the Planning Section. These persons are called Technical Specialists. Examples of Technical Specialists include:

- Chemists;
- Hydrologists;
- Geologists;
- Meteorologists;
- Training Specialists;

A wide variety of Technical Specialists could be used, depending upon the requirements of the incident. There are four units within the Planning Section that can be activated as necessary:

- Resources Unit;
- Situation Unit;
- M&E and Documentation Unit;
- Demobilisation Unit;

The Planning Section Chief will determine the need to activate or deactivate a unit. If a unit is not activated, then the responsibility for that unit's duties will remain with the Planning Section Chief.

In ICS, a number of the Unit Leader's responsibilities are common to all units in all parts of the organisation. Common responsibilities of Unit Leaders are listed below. These will not be repeated in Unit listings further below:

- Obtain briefing from Section Chief.
- Participate in incident planning meetings, as required.
- Determine current status of unit activities.
- Confirm dispatch and estimated time of arrival of staff and supplies.
- Assign specific duties to staff; supervise staff.
- Develop and implement accountability, safety, and security measures for personnel and resources.
- Supervise demobilisation of unit, including storage of supplies.
- Provide Supply Unit Leader with a list of supplies to be replenished.
- Maintain unit records, including Unit Log.

i. Resources Unit

This unit is responsible for maintaining the status of all assigned resources (primary and support) at an incident. It achieves this through:

- Overseeing the check-in of all resources.
- Maintaining a status-keeping system indicating current location and status of all resources.
- Maintenance of a master list of all resources, e.g., key supervisory personnel, primary and support resources, etc.

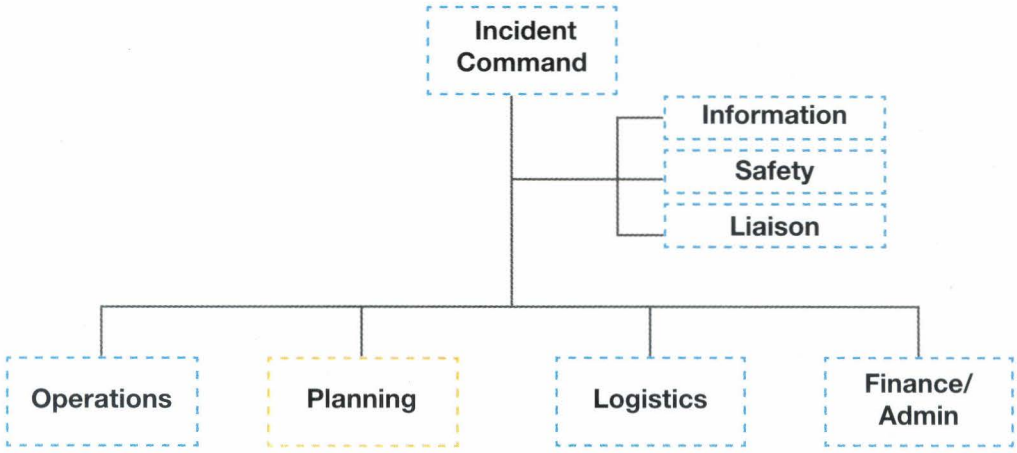
ii. Situation Unit

The collection, processing, and organising of all incident information takes place within the Situation Unit. The Situation Unit may prepare future projections of incident growth, maps, and intelligence information. This may initially be supported by the Situation Room from headquarter. In complex situations a unit may established on scene under the Planning Section.

- Display Processor - Maintains incident status information obtained from Field Observers, resource status reports, etc. Information is posted on maps and status boards as appropriate.
- Field Observer - Collects and reports on situation information from the field.
- Weather Observer - Collects current weather information from the weather service or an assigned meteorologist.

iii. M&E and Documentation Unit

The M&E and Documentation Unit is responsible for the maintenance of accurate, up-to-date incident files and regular monitoring and evaluation of incident management. Duplication services will also be provided by the Documentation Unit. Incident files will be stored for legal, analytical, and historical purposes.



c) Logistics Section DM (HNPP/ Others)

The Logistics Section provides all incident support needs. The Logistics Section is responsible for the following:

- Facilities
- Transportation
- Communications
- Supplies
- Equipment maintenance and fuelling
- Food services
- Medical services
- Ordering resources

The Logistics Section Chief, who may assign a Deputy, manages the Logistics Section. A Deputy is most often assigned when all designated units (listed below) within the Logistics Section are activated.

On very large incidents, or on incidents requiring a great deal of equipment or facilities, the Logistics Section may be divided into two Branches - Service Branch and Support Branch. A Branch Manager, who reports to the Logistics Section Chief, leads each branch. This is most often done for span of control reasons, resulting in a more manageable organisation.

Six units may be established within the Logistics Section:

- Supply Unit
- Facilities Unit
- Ground Support Unit
- Communications Unit
- Food Unit
- Medical Unit

The Logistics Section Chief will determine the need to activate or deactivate a unit. If a unit is not activated, responsibility for that unit's duties will remain with the Logistics Section Chief.

i. Ground Support Unit

The Ground Support Unit is primarily responsible for the maintenance, service, and fuelling of all mobile equipment and vehicles. The unit also has responsibility for the ground transportation of personnel, supplies, equipment, and the development of the Incident Traffic Plan.

An Equipment Manager reports to the Ground Support Unit Leader and is responsible for the service, repair, and fuel for all equipment; transportation and support vehicle services; and to maintain equipment use and service records.

ii. Communications Unit

The Communications Unit is responsible for developing plans for the use of incident communications equipment and facilities; installing and testing of communications equipment; supervision of the Incident Communications Centre; and the distribution and maintenance of communications equipment.

iii. Food Unit

The Food Unit is responsible for supplying the food needs for the entire incident, including all remote locations (e.g. camps, shelters), as well as providing food for personnel unable to leave tactical field assignments.

Planning is essential for the efficient supply of food. Working with the Planning Section Resources Unit, the Food Unit must anticipate the numbers of personnel to be fed and develop plans for supplying food to all incident areas.

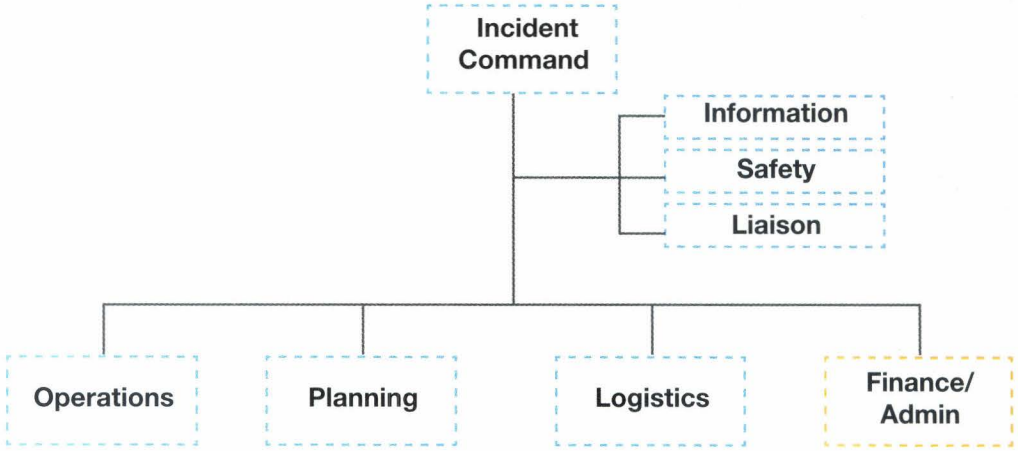
The Food Unit interacts with the Facilities Unit for location of fixed-feeding site; the Supply Unit for food ordering; and the Ground and Air Support Units for transporting food.

iv. Medical Unit

Most major incidents require the establishment of a Medical Unit that is responsible for all medical services. The Unit will develop an Incident Medical Plan (to be included in the Incident Action Plan); develop procedures for managing major medical emergencies; provide medical team to operation team.

Note that the provision of medical assistance to the public or victims of the emergency is an operational function, and would be done by the Operations Section and not by the Logistics Section Medical Unit.

d) Finance/Administration Section (Regional Accountant)



The Finance/Administration Section is responsible for managing all financial aspects of an incident. Not all incidents will require a Finance/Administration Section. Only when there is specific need for Finance/Administration Services will the section be activated.

On some incidents only one Finance/Administration function may be required (e.g., cost analysis). Often, it is more efficient to fill that function through a Technical Specialist assigned to the Planning Section.

There are four units, which may be established within the Finance/Administration Section:

- Time Unit
- Procurement Unit
- Compensation/Claims Unit
- Cost Unit

The Finance/Administration Section Chief (Regional Accountant) will determine the need to activate or deactivate a unit. In certain functional areas, e.g. Compensation, a unit may not be established if only one person would be assigned. Instead, in this example, a single Claims Specialist may be assigned.

i. Time Unit

The Time Unit is responsible for ensuring the accurate recording of daily personnel time, compliance with programme time recording policies, and managing commissary operations if established at the incident.

ii. Procurement Unit

All financial matters pertaining to vendor contracts, leases, and fiscal agreements are managed by the Procurement Unit. The unit is also responsible for maintaining equipment time records.

The Procurement Unit establishes local sources for equipment and supplies; manages all equipment rental agreements; and processes all rental and supply fiscal document billing invoices. The unit works closely with local fiscal authorities to ensure efficiency.

iii. Compensation/Claims Unit

In ICS, Compensation-for-Injury and Claims are contained within one Unit. Separate personnel may perform each function, however, given their differing activities. These functions are becoming increasingly important on many kinds of incidents.

Compensation-for-insurance, credit, injury, etc. will be filed by this unit.

iv. Cost Unit

The Cost Unit provides all incident cost analysis. It ensures the proper identification of all equipment and personnel requiring payment; records all cost data; analyses and prepares estimates of incident costs; and maintains accurate records of incident costs.

The Cost Unit function is becoming increasingly important, with frequent requests by the Planning Section for cost estimates related to strategies for achieving Incident Objectives. Accurate information on the actual costs of all assigned resources is essential.

Annex 7: Incident Briefing Form

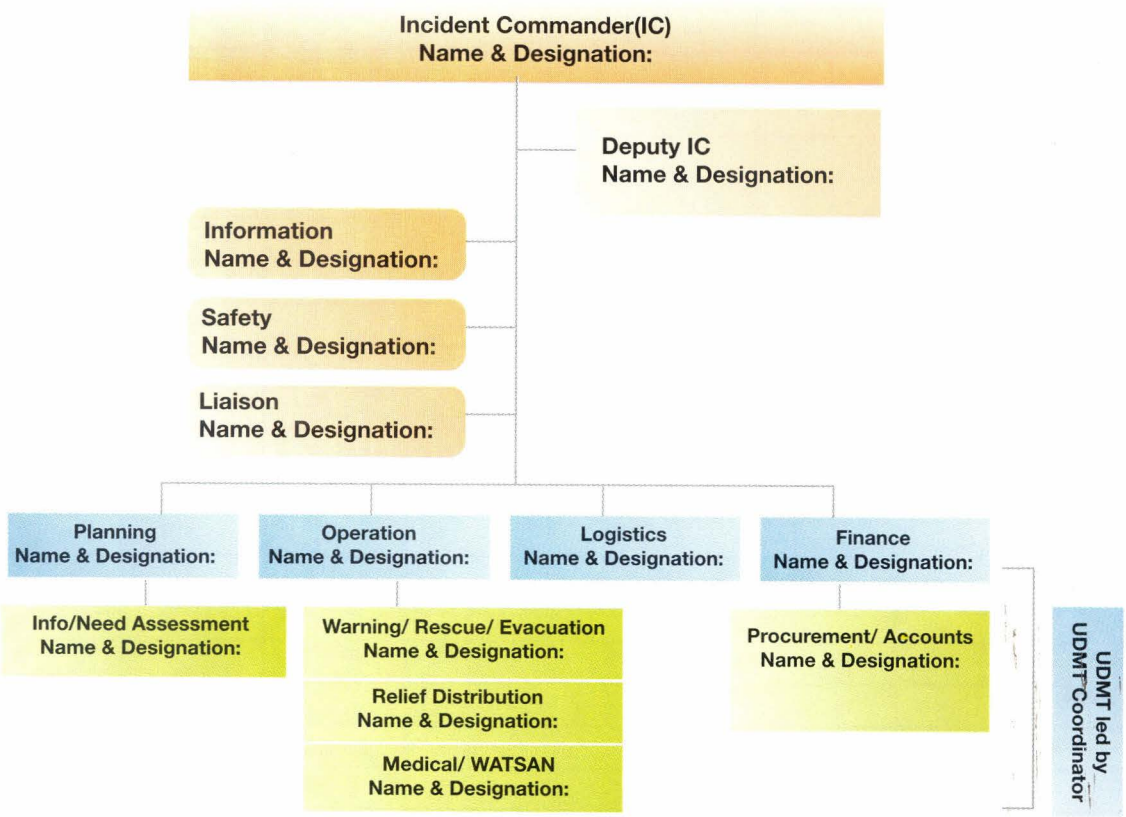
Incident Briefing	1. Incident Name	2. Date of Preparation	3. Time of Preparation
4. Map Sketch N			
IC	5. Prepared by (Name and Position)		

6. Summary of Current Actions

Date	Time	Description of Activity	Responsible Person (Name and Designation)

IC

7. Current ICS Structure



8. Resources Summary							
Name of Resource	Total Demand	Current Stock	Additional Requirements	Brand/ Quality	Vendor	Place of Delivery	Time of Delivery
IC							

Annex 8: Evacuation Checklist

Evacuation Checklist		
This is a simple checklist to use when doing an evacuation. Make sure to include the date, names of those who filled out the checklist, and the time each task was completed by.	Date:	
	By:	Time:
Early warning received		
Call in staff		
Activate ICS / Notify public safety agencies		
Sound megaphone and door to door communication		
Initiate coordination with UDMC and evacuation announcements		
Initiate evacuation of people		
Support people required special supports		
Support initial food and water		
Guide and motivate people to evacuate		
Initiate recall of disaster response workers First Aid etc.		
Open and operate shelters		
Do roll call for workers and volunteers		

Annex 9: Rapid Assessment Tool (RAT) for Emergency/Early Recovery

INTRODUCTION

- The RAT is a form to assess water, sanitation and hygiene related damages, risks and needs in the disaster affected locations; such as in the aftermath of floods and cyclones.
- The RAT is designed to derive a quick overview of the emergency situation. Given the time constraints, the collected data might be neither comprehensive nor precise. The assessment is usually based on limited interviews and visits. However it should at least make it possible for the Government and the Humanitarian Organisations to: assess the level of damage, define appropriate response, estimate cost and logistics needed for emergency response, and prioritise affected areas based on agreed standards in Bangladesh in to account. While starting to respond, more comprehensive assessments will be carried out.
- The rapid assessment, using WASH RAT, should be carried out at the earliest in the aftermath of disaster; between 1 and 3 days following the disaster. However, this can be delayed up to a week time, in case there is a possibility of availing the result of DER RIR within 3 days. The RAT also needs to be used later for the locations of newly arrived displaced people and for the locations that are not accessible soon in the aftermath of disaster.
- WASH rapid assessments should be carried out by individuals or teams with humanitarian skills and experience to understand the WASH needs of affected people; and the risks associated with disasters. Efforts need to be made to develop gender balanced team.
- The assessor(s) should fill one form for each affected upazila, first collecting information at the upazila level, and then visiting some of the affected unions within this upazila.
- Collect and triangulate information from: key informants such as: from UNO, PIO, DPHE, SAE, Health officials, and Union Chairman/Members; direct observation such as transect walks, assessment of WASH infrastructures; interviews of affected people; and participatory exercises inclusive of focus group discussions.
- The RAT is the format the assessment team should use to 'put it all together' into a coherent, systematic summary of the situation and needs for major response. This information should be shared with other WASH agencies, specially the WASH Cluster and DPHE, to optimise its use and avoid duplicating assessments.

SUMMARY (To be filled after the assessment, when analysing the results)					
District		Upazila		# of affected Unions	
Total population in the Upazila					
Est. %/# of affected people				%	#
Est. %/# of people without good access to enough safe water				%	#
Est. %/# without adequate sanitation				%	#
Est. %/# not practicing safe hygiene					
Agencies / NGOs already working in the area					
Main water risks and needs					
Main sanitation risks and needs					
Main hygiene risks and needs					
Main WASH NFIs needs					

1. GENERAL INFORMATION Locations ; Affected population ; Information sources						
1.1. Emergency assessed						
Date (dd/mm/yyyy)	/ /	Type of Emergency	Floods	Cyclone	Other (detail) :	
Brief history of the emergency						
1.2. Assessment Team						
Name	Designation	Organisation	Mobile number and Email			
1.3. Location of the assessment – Total and affected populations (Information from UNO/PIO or other Upazila level senior officials)						
District name		Number of affected Unions				
Upazila name		List of affected Unions:				
Total Upazila population		- entirely affected i.e. all over the union:		- partially affected i.e. limited area of union:		
Est. affected population (%)	%					
Est. # of dead or missing people						
Est. # of affected people in shelters	Permanent*					
	Temporary**					
Est. # of affected people in other locations (please detail)						
Est. # of people with special needs*** (segregated details)						
Note: #: number / Est.: estimated / aff.: affected / *Permanent shelters: cyclone or flood shelters earmarked by Government / **Temporary shelters: other permanent buildings, highways, embankments, etc. / ***People with special needs: separated/ unaccompanied children, pregnant/lactating women, disabled/ injured/ chronically-ill/elderly people, excluded groups, etc.						
1.4. Itinerary followed by the assessment team and sources of information						
Key-informants checklist	UNO/PIO	DPHE	Health Dept.	Union Chair.	Leaders:	Others: Specify
Contact names, mobile numbers						
Unions / villages visited						
Other information sources in these places						
WASH agencies / NGOs working in this Upazila						

Annex 10: Rapid Initial Report (RIR) for Emergency

INTRODUCTION

- The RIR is a form to assess general damages and needs in the disaster affected locations in Bangladesh; such as in the aftermath of floods and cyclones.
- The RIR is designed to derive a very brief but general overview of the emergency situation. Given the time constraints and workloads, the collected data might be neither comprehensive nor precise. The assessment is usually based on limited interviews and visits. However it should at least make it possible for the Government and the Humanitarian Organisations to prioritise affected areas and design an appropriate response based on agreed standards in Bangladesh; taking SPHERE in to account.
- While initiating the response based on RIR, further rapid/comprehensive assessments will be carried out. WASH Cluster will use the Water, Sanitation and Hygiene Rapid Assessment Tool (WASH RAT) to develop further clarity over the WASH specific needs.
- This initial assessment, using RIR, should be carried out as early as possible after an emergency in between 1 and 2 days following the disaster. Also, the RIR can be used later, in areas that are difficult to access or where displaced people have recently arrived.
- RIR assessments should be carried out by individuals or teams, possibly a combination of men and women, with humanitarian skills and experience to understand: the general needs of affected people; the risks associated with disasters including the public health risks; and the logistical issues that can affect the humanitarian response.
- The Assessor(s) should fill one form for each affected upazila or union, first collecting information at the upazila level, and then visiting a sample of affected unions within this upazila.
- Collect and triangulate information: from key informants (UNO, SAE, Health Department, Union Chairman/Members, etc.); direct observation (transect walks, assessment of infrastructures); interviews of affected people (children, adolescent, women, men, people with special needs, excluded groups); and using participatory techniques (focus group discussions).
- The RIR is the format the assessment team should use to 'put it all together' into a coherent, systematic summary of the situation and to identify the needs for major response.
- As indicated below the RIR form, this information should be shared with the Department of Disaster Management UN World Food Programme and possibly with the Cluster leads, to optimise its use and avoid duplicating assessments.

DER Rapid Initial Report (RIR)										
1. Name of Assessor, phone/email:				Organisation:				Date/Time:		
This form is intended for either Upazila or Union level assessment. Indicate which level the data collected applies to: Upazila:								Union:		
2. District:				Upazila / Municipality:				Union:		
3. Type of Disaster:				Date and Time of Onset:						
4. Initial estimate of the situation (tentative figures):										
4.1 No of affected:	Districts:		Upazilas:		Unions:					
4.2 No of affected people:	Total:		Women:		Men:	Children (include disabled, orphans, unaccompanied):				
4.3 No of casualties and injuries:			Dead:		Injured:	Evacuated:		Missing:		
4.4 No. of people in shelters:			Permanent shelters:		Temporary shelters:		Total in Shelters:			
4.5 No of houses damaged:	Fully:		Partially (%):							
4.6 Crop damaged (hectares):	Fully:		Partially (%):							
4.7 No of livestock lost/dead:	Cattle:		Goat:		Poultry:					
4.8 Pond fisheries damaged:	No of Ponds:		Pond area (hectares):							
5. Need for immediate external assistance:	No. of people	If external assistance needed, specify what type								
5.1 Food:										
5.2 Shelter :										
5.3 Drinking water:										
5.4 Clothing:										
5.5 Utensils:										
5.6 Sanitation/latrines:										
5.7 Medical supplies and medicines:										
5.8 Search, rescue and evacuation:										
5.9 Protection (security, violence, rape, theft):										
6. Damage to lifeline systems:	Fully (%)	Partially (%)	Not dam. (%)	Comments						
6.1 Public Transport:										
6.2 Road Communication:										
6.3 Telephone Communication:										
6.4 Sanitation (sewerage/drainage/latrines):										
6.5 Power/gas/water supplies:										
7. Information on disease outbreaks, if any:				No. of people affected:						
8. Relief Operation:	8.1 Has any relief operation started (yes/no):		Govt.:	Local Community:		NGO:		UN:		
	8.2 Relief items distributed. Specify type, total quantity with units and for how many households:									
9. DM Committee:	9.1 Did you consult local DM Committee (or DMC members/community group) (Yes/No):									
	9.2 Date of last Upazila DMC meeting:									
Note 1: This form is to determine the immediate needs; and should be submitted within 12-48 hrs after occurrence of disaster. Time should not be spent to collect information not easily available. However, if the Assessor has access to information that enhances the quality of information gathered by this form, such as demographic population data (e.g. pregnant and lactating mothers, single-headed HHs, elderly, disabled, IDPs, socially, ethnically, religiously, linguistically etc. marginalised groups, people w/ HIV/AIDS, TB, leprosy, sex workers and IDUs), this information is highly welcome.										
Note 2: Permanent shelters include buildings earmarked as emergency shelters by Govt., where as all other shelters are understood as temporary shelters. Signature of the Assessor :										
Note 3: A guideline will be made available to provide further understanding over how to use this form.										
Fax completed form to both: 02-9890854 (GoB DDM DMIC) and 02-8113147 (DER Secretariat). Email to both: info@dmic.cdmp.org.bd and DER.BAN@wfp.org										

Annex 11: WASH NFIs Guidelines for Emergency/Early Recovery

1. INTRODUCTION

1.1 WHAT ARE WASH NON FOOD ITEMS (NFIs)?

- NFIs are items that cannot be eaten, and that can be distributed in emergency or early recovery situations to the people affected and possibly displaced by natural disasters (floods, cyclones, earthquakes in Bangladesh) or national or international insecure contexts (in case of civil unrest in Bangladesh, or foreigners fleeing their country and seeking refuge in Bangladesh).
- WASH NFIs are items that enable people to have safe hygiene practices, use water and sanitation facilities safely and have a safe environment. They must be suitable for local conditions, culturally and socially appropriate, and gender sensitive.
- The aim of WASH NFIs distributions is to enable people who have lost their belongings following emergency situations to have safe water, sanitation and hygiene related practices, and therefore to protect themselves from WASH related diseases. The WASH NFIs are usually not distributed one by one, but rather in "NFI kits" (see p. 6 and 7).

1.2 HOW TO DISTRIBUTE WASH NON FOOD ITEMS AND TO WHOM?

- Distributions of NFIs should always be coordinated with local authorities and other NGOs involved inside the distribution area (to avoid duplication) and around the distribution area (for distribution to be relatively homogenous and to avoid tensions between neighbour communities).
- Beneficiary communities must always be involved in the choice of the NFIs, the selection of beneficiaries, the design and schedule of distributions. As various groups of people might have different needs/requirements, women, children, adolescents, men, elderly people, disabled people and chronically ill people should all be consulted to ensure the NFIs satisfy their needs and are culturally and socially appropriate as well as gender-sensitive.
- Beneficiaries must be selected according to a widely agreed set of objectives and verifiable criteria in favour of the poorest, most affected and most vulnerable households (but all displaced people should be treated equally). If possible, the list of beneficiaries should be agreed and signed by community leaders and local authorities.
- NFIs should systematically be distributed together with appropriate and visual guidelines, trainings and demonstrations, so that people use them properly and safely.
- High demand for NFIs in the communities can sometimes create tensions before, during and after distributions. Distributions must ensure the security of the beneficiaries and the distributing staff.

2. DISTRIBUTION PRIORITIES

The following Table lists safe hygiene practices and related types of WASH NFIs to be distributed.

- Distribution priority indicates the most important types of NFIs to distribute in case of time/financial/logistical constraints.
- The types of NFIs to be distributed are sometimes different in emergency and/or early recovery situations, but not always.
- OR means that only one item of the list should be distributed (choice depends on availability, local conditions, beneficiary preferences). AND means the whole list can be distributed together. OR/AND means that one or several items can be distributed – if only one item is distributed, the first in the list is the most important.
- The minimum technical and quality standards of each NFI are given in other Tables (see p. 3 to 5).

Safe hygiene behaviours	Related types of NFIs that can be distributed	Distribution priorities (1 = high priority, 3 = low priority)	Emergency NFIs (max. 6 weeks after an emergency)	Early recovery NFIs (until affected people have recovered for WASH)
Hand/body washing	Soap for hand/body washing	1	• Bathing soap bars	
Safe water collection, transport, storage and retrieval	2 appropriate water containers with lid	1	• Metal pitchers • OR plastic jerry cans • OR plastic buckets with lid	• Metal pitchers only
	Household water treatments (HWT)	1	• Water purifying tablets • OR Alum AND bleach, water purifying tablets, OR fuel for boiling water	• Permanent community or household water technologies (not NFIs)
	Jug/mugs	2	• Plastic jug AND mugs	
Safe excreta disposal	Sandals to be used in latrines	2	• Sandals	
	Water containers inside the latrines	2	• plastic badna/flushing pot • AND plastic bucket with lid (as water reservoir in the latrines)	
	Tools to dispose of children faeces safely	1	• small shovel OR/AND plastic potty • OR/AND non-disposable nappies	
	Tools and detergents to clean latrines	2	• small toilet brush • AND toilet detergent, bleaching powder or equivalent	
Diarrhoea treatment	Oral Rehydration Salt (ORS)	1	• ORS Sachets	
Safe menstrual hygiene	Sanitary napkins/clothes	1	• user-friendly, non-disposable sanitary napkins/clothes	
Safe laundry	Soap for laundry	2	• Laundry soap bars	
Body Hygiene	Gamsa/towel	3	• Gamsa/towel	
	Tooth hygiene NFIs	3	• toothpaste/powder • OR/AND toothbrushes (only if appropriate, see below)	
	Nail hygiene NFIs	2	• nail cutter	
	Hair hygiene NFIs	3	• Shampoo/soap • AND Comb/hairbrush	
Safe food handling and preservation	Dishes with lids	3	• Metal cooking pans with lids • OR/AND plastic containers with lids	
	Plates and covers	3	• set of plastic plates with covers	
	Cutlery	3	• set of metal spoons and knives	
Safe dish washing	Soap for dish washing	3	• dishwashing soap	
Vectors control	Vector control NFIs (if needed)	2	• mosquito nets	
Solid waste, drainage	Solid waste and drainage NFIs (if needed, for communities only, not households)	2	• Big shovels and picks • Impermeable boots, gloves and overalls	

Disasters	Crop	Stages	Season/ month	Impacts	Time of flood forecast	Alternative management plans
Early flood	T.Aman	Seedling and Vegetative stage	Kharif II Jun – Jul	Damage to seedlings, Damage to early planted T.Aman, Delay in planting, Soil erosion	Early June	Delayed seedling raising, Gap filling, skipping early fertiliser application
	T.Aus	Harvesting	Kharif I Jun – Jul	Damage to mature crop	Early Junetv	Advance harvest
	Jute	Near maturity	June-July	Yield loss, Poor quality	May end	Early harvest
	S.Vegetables	Harvesting	June-July	Damage in terms of yield loss, Poor quality	Mar - Apr	Pot culture (homestead), Use of resistant variety
High flood	T. Aman	Tillering	Kharif - II July-Aug	Total crop damage	Early June	Late varieties, Direct seeding, Late planting
Late flood	T. Aman	Booting	Kharif II Aug-Sep	Yield loss and crop damage	Early July	Use of late varieties, Direct seeding, Early winter vegetables, Mustard or pulses
Flood (early, high and late)	Cattle	-	Jun-Sep	Crisis of food and shelter. Diseases like cholera, worm infestation	Early June	Food storage, flood shelter, vaccination, de-warming
Flood	Nursery table fish Brood fish	-	June to Aug	Inundation of fish farms, Damage to pond embankments, Infestation of diseases, Loss of standing crops	Apr - May	Pre-flood harvesting, Net fencing/bana, Fingerlings stocked in flood free ponds, High stock density

STANDARD OPERATING PROCEDURES
for BRAC's Emergency Response in Bangladesh

Disaster, Environment and Climate Change Programme
BRAC Cemtre (12 Floor)
75 Mohakhali, Dhaka 1212

BRAC Communications/DECC/April 2013