

COUNTRY PAPER: BANGLADESH

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1. COUNTRY PROFILE - BANGLADESH

1.1. Location: Geography

With an area of about 144,000 sq. kilometres and situated between 29.34 degree and 26.38 degree north latitudes and between 88.01 degree and 92.41 degree east longitude, Bangladesh occupies a unique geographic location spanning a stretch of land between the mighty Himalayan mountain chain on the north and the open ocean on the south. It is virtually the only drainage outlet for a vast river basin complex made up of the Ganges, Brahmaputra and the Meghna and their network.

Three broad physiographic regions are discernible- flood plains, occupying about 80%; terraces about 8% and hills about 12% of the land area. Each of these regions exhibits its own geo-morphological characteristics, which make convenient at further sub-division into 20 generalised physiographic units.

The country criss-crossed by a network of rivers - the Padma, the Jamuna, the Teesta, the Brahmaputra, the Surma, the Meghna and the Karnaphuli and their tributaries numbering about 230 is experiencing its rivers being flattened by heavy silts deposited by these rivers during the rainy season resulting in recurrence of floods almost every year.

Bangladesh has mainly four seasons. The winter (December - February), Summer (March-May), Monsoon (June-September) and Autumn (October-November). During Summer and Monsoon tropical Cyclones, Tornadoes, Flood and drought are very common. Average temperature is minimum 7.22 degree C, maximum 37.80 degree C. Monsoon starts in July and stays upto October. This period accounts for 80% of the total rainfall is recorded in the coastal areas of Chittagong and northern part of Sylhet, the minimum is observed in the western and northern parts of the country.

1.2. Economy of Bangladesh

Bangladesh is the highest population densities in the world with about 837 inhabitants per sq. kilometres. The total population is estimated at 125 millions with an annual growth rate of 2.2%. The per capita income of Bangladesh is around US\$ 280.00. With this level of per capita income and the literacy rate is as low as 44.43 percent (male: 50.4%, female: 28.5%, urban: 63.00%, rural: 36.6%), the socio-economic imperative for sustainable development of the country is mainly alleviation of poverty of the vast majority of the population living in villages as well as in urban areas and earning livelihood on agriculture and other means. The economy continues to remain predominately on agricultural sector depending largely on the vagaries of weather, which are not always favourable. The inclement weather systems, which are of course seasonal,

make Bangladesh the most victim of natural calamities, causing at times colossal loss of lives and properties.

2. Major natural disasters in Bangladesh

Bangladesh is prone to many kinds of natural disasters. Of these natural disasters, the most important ones to mention are tropical cyclones with associated storm-surges, floods, droughts, tornadoes and river-bank erosions. Besides these disastrous weather systems, the occurrences of earthquakes at times make significant impact both on social life and topography of the country.

2.1. Cyclones

Tropical cyclones are frequent in the Bay of Bengal. Immediately pre-monsoon, and immediately post-monsoon periods are the seasons when cyclones and depressions form in the Bay of Bengal. Bangladesh has the worst record of cyclones and storm surges in the world. They destroy crops, damage infrastructure, homes and vital installations, and cause widespread health hazards for the people. Storm surges create both short and long-term problems because the salt water ruins the soils. They occur frequently and in such magnitude in Bangladesh that they have multiplied the problem of poverty and seriously challenged the efforts of the country towards self-reliance. Occasionally, tropical cyclones also cause enormous numbers of casualties. The cyclone disasters in 1970 (300,000 dead) and 1991 (138,000 dead) are among the worst natural disasters in the world.

2.2. Floods

Floods in Bangladesh are a complex phenomenon. They pose enormous threats to the population, but at the same time, moderate floods contribute to the fertility of the land. Extensive river floods cause great disruption and damage to infrastructure and loss of crops. Floods indirectly contribute to the concentration of land ownership and wealth as small landowners are forced to sell their property as a result of flooding. Bangladesh has always experienced some degree of flooding. Apart from a few small hills in the north and south east, the country is totally flat. Very little of the country is more than 20 meters above sea level. In a normal monsoon, one third of its 22 million acres of cultivated land is flooded. Flooding is a fact of life to the people of Bangladesh and they demonstrate great resilience and skill in coping with it. Monsoon flooding, which

normally affects about one third of the country, is regarded by farmers as beneficial. They have developed agricultural practices to make use of the floodwater for rice and jute as well as for fisheries. It is when flooding increases beyond the normal level when problem arise.

In August - September, 1988, Bangladesh experienced an unprecedented flood causing loss of 1657 human lives and again during July - September, 1998 Bangladesh experienced another flood which is the worst in the living memory both in respect of its long duration and water level/ Almost two-third area of the country was inundated causing widespread damage to the economy of the country ever before. It took the life of 918 people.

2.3. Droughts

Bangladesh experiences Drought conditions at some intervals of time. Records show that Bangladesh had, in the recent past, drought conditions having disastrous crop failure. In 1979 Bangladesh passed through a major drought year which was trend by many as the worst in the recent past. Droughts of 1957 and 1972 were of severe nature also. Crop failure by drought comes as a significant strain also to the socio-economic structure of Bangladesh.

2.4. Earthquakes

Bangladesh has potentiality for earthquake hazards as per the recorded history. Analysis of the long period earthquake data shows that Bangladesh as a whole lies in the earthquake zone, of which two-third comes under major and moderate fault. Veryrecently on 21 November, 1997 an earthquake with an intensity of 6.1 on Rickter Scale shakes the entire Chittagong region, the jolt of which was felt upto Dhaka. As a result, a five stories building in Chittagong sank upto first floor causing human death toll to the tune of 23 and sizeable property destruction.

2.5. River bank erosions

Along the courses of the mighty rivers, like Jamuna, Meghna, etc. erosion every year takes away chunks of land causing displacement of large number of people and losses of properties. Due to recurrence of such erosion displaced people are forced to come to cities for their earning. This adds to the growth of slum areas, scarcity of land in the cities and also create various social problems.

2.6. Tornadoes

Tornadoes cause localised devastation and demand an immediate response. A severe tornado hit Tangail district of the country on 13th May 1996 causing 540 death and injuring about 34000 people. Loss of cattle heads and damages to homes were also substantial.

Details of some of the disasters from 1990 on wards are appended with this report as **FORM-1**.

3. Emergency relief from abroad

Emergency relief following each major disaster in the form of medicines, tents, transports and food-aid were received from the friendly countries and donor agencies. The major help came from Japan, USAID, India, Canada, Saudi Arabia, UAE, European Union, World Bank, ADB, IDB, ODA etc. Due to their generous help the suffering of the affected people could be minimised substantially.

4. DISASTER MANAGEMENT PLAN IN BANGLADESH

In Bangladesh sustainable development is closely linked with disaster reduction which needs effective disaster management plan. Realisation of this reality has been the guiding force to drive all efforts of the Government of Bangladesh (GOB) towards coping with disaster through a consolidated framework of Disaster Management Plan, which is now its final stage. The aim of the prepared Plan has been spelt out to anticipate future situations and requirements, thus ensuring the application of effective and co-ordinated counter disaster measures. The Plan has also to cover both planning at normal times for aspects like prevention/mitigation/ preparedness/ response and recovery and also planning for operational activities concerning mobilisation and development of national resources, requests for international assistance etc. before, during and after disasters.

The Plan has been designed to have the scope for effective implementation in conjunction with Standing Orders on Disaster issued by GoB where the activities of each line Ministry, Major Agency/ Department have been listed in details. It has the relevance with National Disaster Management Policy and National Disaster Act, both of which are awaiting adoption by the Government. The Policy involves accurate definition of disaster threat, organisational arrangements which are require to prepare for responding to and recover from disaster events, assessments of resources available to deal with threat and how national disaster policy interlocks with other national policies of development. On the other hand Disaster Act as designed, establishes a machinery working through the State and Local Governments and Public Corporations and clarifies where

responsibilities lie, and provides for the formulation of Disaster Management Plan and Policy relating to preparedness and emergency measures and rehabilitation programs to deal with disaster and other necessary measures as well as financial action, for the purpose of ensuring an effective and organised administration of comprehensive and systematic disaster management.

5. Disaster Counter measures

As part of disaster measures, the GoB have taken a number of important steps for management aspects of disaster situation in the country. Besides designing of a complete code-book for disaster preparedness, namely "Standing Orders on Disasters" which outlines the functions of all concerned agencies to handle emergency situations efficiently, some significant institutional arrangements for disaster counter measures have already been made in Bangladesh. The GoB have commissioned an "Emergency Operations Centre (EOC) in the Ministry of Disaster Management & Relief. To raise awareness among the students on various hazards/ disaster management's, a chapter on disaster management from Class V to Higher Secondary levels has been introduced from this year. The Government have also made it compulsory to keep a sessions of at least 02 hours on disaster management in the training curricula of all types of Training Institutes to train the officials and non officials.

The GoB have also constituted various Disaster Management Committees at national and field levels as part of disaster counter measures. These are:

5.1. National Level Committees

National Disaster Management Council (NDMC), headed by the Hon'ble Prime Minister to formulate and review the disaster management policies and issue directives to all concerns.

Inter-Ministrial Disaster Management Co-ordination Committee (IMDMCC),

headed by the Hon'ble Minister in charge of the Ministry of Disaster Management & Relief (MDMR). This Committee is responsible for implementation of disaster management policies and decisions of NDMC/ Government.

Cyclone Preparedness Programme Implementation Board (CPPIB), headed by the Secretary, Ministry of Disaster Management & Relief to review the preparedness activities of cyclone.

Disaster Management Training & Public Awareness Building Task Force(DMTTF),

headed by the Director General of DMB to co-ordinate the disaster related training and public awareness activities of the Government non- Government and other organisations.

Focal Point Co-ordination Group on Disaster Management (FPCG), Also headed by the Director-General of DMB to review and co-ordinate the activities of various Departments related to disaster management. Preparation of contingency Disaster Management Plan by individual department is also reviewed.

NGO Co-ordination Committee on Disaster Management (NGOCC),

headed by the Director General of DMB to review and co-ordinate the activities of NGOs involved in disaster management activities in the country.

Committee for Speedy Dissemination of Disaster Related Warning/Signals,

headed by the Director General of DMB to meet frequently to examine, ensure and find out the ways and means for the speedy dissemination of warning/signals among the people.

5.2. Field Level Committees

- District Disaster Management Committee (DDMC), headed by the Deputy Commissioner (DC) to co-ordinate and review the disaster management activities at the district level.

- Thana Disaster Management Committee (TDMC), headed by the Thana NIRBAHI Officer (TNO) to co-ordinate and review the disaster management activities at the thana level.

- Union Disaster Management Committee(UDMC), headed by the Chairman of the Union Parishad to co-ordinate, review and implement the disaster management activities.

- These field level committees have representation from the NGO, Social Organization, Local Govt. bodies apart from the Government Departments.

6. INSTITUTIONAL FOCAL POINTS FOR DISASTER MANAGEMENT

Co-ordination at various levels of Government and the integration of the best available technical expertise are the essential requirements to ensure effective response to disaster risks and occurrences. To meet such requirements, the GoB has designated the Ministry of Disaster Management and Relief (MDMR) with its explicit rules of business and two specialised support organisation under MDMR, namely Disaster Management Bureau (DMB) and Directorate of Relief and Rehabilitation (DRR) as the focal points. The main functions of these organizations are as under:

6.1. Ministry of Disaster Management and Relief

- Formulation and implementation of policies relating to planning, co-ordination, monitoring and evaluation of all relief programme.
- Formulation of policies and preparation of national disaster, preparedness plan and co-ordination of all aspects of disaster management.
- Formulation of disaster management guidelines.
 - Co-ordination of all disaster related activities by different agencies of Government at pre-disaster, disaster and post disaster period.
 - Helping line Ministries and agencies to develop their own action plan on disaster management.
- Emergency rehabilitation of temporary nature through distribution of relief materials.
- Administration of relief work and sanction of funds for
 - a) Distribution of gratuitous relief.
 - b) Distribution of grants and loans for house building and other relief purpose.
 - c) Execution of test relief work.
 - Formulation and implementation of policies relating to planning, co-ordination, monitoring and evaluation of Food Assisted Programme like Food for work and its project components.
 - Planning, co-ordination and evaluation of food related poverty alleviation measures with emphasis on Vulnerable Group Development. Institutional Feeding Programme and Road Maintenance Programme etc.
 - a) Matters connected with distribution of relief supplies coming under relief agreements with foreign countries.
 - b) Administration of aids, loans, grants and technical assistance from abroad in connection with relief measures.
 - Liaison with international organisations and matters relating to treaties and agreements with other countries and world bodies relating to subjects allotted to this Ministry.
- All other matters relating to relief measures.
- All laws on subjects allotted to this Ministry.
- Inquiries and statistic on any of the subjects allotted to this Ministry.
- Fees in respect of any of the subjects to this Ministry except fees taken in courts.

6.2. Disaster Management Bureau

- Areas of responsibility of DMB have been categorised in the following three phases:

6.2.1. During normal time

- developing a National Disaster Plan, and associated practical guidelines for those responsible for its implementation;
- helping line ministries and agencies to develop and test their own contingency plans;
 - helping district and thana -level authorities to develop and test their own disaster action plans;
 - working with local authorities, BDRCS/PPP, NGOs and others to help union councils and village communities in high-risk areas to develop their own action plans and increase their own coping capacity;

- collaborating with existing training institutes training materials development units and NGOs already engaged in relevant training activities, to co-ordinate and promote the production of curricula and relevant training materials for various target groups;
- collaborating with line agencies, local authorities, existing training institutes in planning and organising training for a wide variety of government personnel, elected officials and others;
- establishing facilities information systems, operating procedures, and telecommunication systems, for a national emergency operations centre (EOC), for immediate use when an emergency arises.
- establishing arrangements for the mobilisation of additional personnel for the EoC and to assist local authorities in the field, when required;
- maintaining an up to date inventory of the location and ownership of all potentially live saving infrastructure including cyclone shelters, flood platforms and the like;
- providing a documentation service on disaster management for line agencies and others;
 - working with the Planning Commission and concerned line agencies awareness of disaster risks and ensure that such risks and possibilities to reduce them, are considered and appropriate measures incorporated in development planning;
 - monitoring and reporting to the Government/Parliament on the risks faced; the vulnerability of people and economic assets to known hazards; the status of preparedness in the country; and any delays/bottlenecks in the implementation of disaster prevention/preparedness programme and projects.

6.2.2. During an emergency

- ensuring the effective dissemination of appropriate warnings, of floods and cyclones, through collaboration with BMD, BWDB, CPP, Radio, TV and local authorities in particular;
- activating and operating the national Emergency Operations Centre (EOC) receiving and analysing information and making specific recommendation for action; arranging rapid reconnaissance and assessment missions where needed; providing advice and guidance to local authorities in relation to damage and needs assessment and relief and rehabilitation assistance operations; etc.
- providing secretariat service and expert advice to the IMDMCC and helping to ensure co-ordination between line agencies and between Government and NGOs in relation to relief and short-term rehabilitation activities;
- monitoring the progress of rescue, relief and short-term rehabilitation activities, identifying problems and unmet needs and taking action to resolve/meet them or bring them to the attention of the IMDMCC for resolution;
- providing information to and liaison with ERD, concerning requirements for international assistance and with Ministry of Information.

6.2.3. During post-disaster recovery

- co-operating with the Planning Commission and line agencies, as required in compiling data on reconstruction requirements and in co-ordination the preparation of an integrated reconstruction programme;
- ensuring that risk reduction measures are built into all reconstruction programmes as much as possible;
- undertaking a final evaluation, or at least a “ post mortem ” on the emergency operation, drawing lessons and feeding them back to the IMDMCC and into training activities and up-dated guidelines.

6.3. Directorate of Relief and Rehabilitation

- Advice to the Ministry of Disaster Management & Relief on formulation and execution of policies.
- Monitoring and Evaluation of both earth work & structure schemes under FFW programme, VGD, TR, etc., and allocation of Foodgrains for execution of FFW schemes in the field.
- Relief Operations.
- Execution of Rehabilitation schemes.
- Execution of Vulnerable Group Programme.
- Execution of FEW, Bridge! culverts and Test relief works.
- Administrative Control of Field officers like DRROs and PIOs and their staff.
 - Any other functions as are assigned by the Ministry of Disaster Management & Relief from time to time.

6.4. Cyclone Preparedness Programme (CPP)

In addition to the above organizations there exist a joint venture programme, namely Cyclone Preparedness Programme (CPP) of the Ministry of Disaster Management and Relief and Bangladesh Red Crescent Society. The CPP is meant for dissemination of Cyclone warning assistance to people in taking shelter, rescue of the marooned and stranded people, providing First aid to the injured people and assistance in relief and rehabilitation operation.

The Organogram of Ministry of Disaster Management and Relief, Disaster Management Bureau, Directorate of Relief and Rehabilitation and Cyclone Preparedness Programme are appended with this report as FORM-2

Apart from the above Organisations, The Armed Forces, The Bangladesh Red Crescent Society, other specialised agencies and NGOs participate actively in the disaster reduction activities, rescue and recovery operation and also rehabilitation at the time of disaster.

6.5. Project under implementation

In the backdrop of past experience that disasters can not be effectively faced without strengthening of national institutional capacity and awareness build-up at all levels of the society, the GoB with the assistance of UNDP and UNICEF has taken up a Project, named “ Support to Comprehensive Disaster Management ” The project is under implementation with DMB as its implementing agency. The following are the immediate objectives to be achieved under the project:

- Increase awareness at all levels of society concerning the practical ways of reducing disaster risks and losses.
- Strengthen national institutional capacity for disaster management with emphasis on preparedness and support to disaster management committees at District, Thana and Union levels.
- Enhance the knowledge and skill of key personnel having disaster management responsibilities, develop in country disaster management training capabilities and provide relevant operational guidelines in the form of a disaster management handbook.
- Establish disaster action plans in the most disaster prone districts and thanas and mobilize local committees in the most disaster prone areas to prepare and protect themselves and to increase their own capacities to cope with and recover from disasters.
- Promote proven local-level risk reduction (“roofing”) measures and develop post-disaster assistance strategies to minimise recovery benefits.
- Improve the effectiveness of warnings and warning dissemination systems, and the guidelines for facilities at shelters and evacuation sites for populations in high-risk areas.

7. INTERNATIONAL CO-OPERATION IN IMPROVING DISASTER REDUCTION ACTIVITIES

International Co-operation in improving disaster reduction activities in Bangladesh is quite significant. Large amounts of international assistance have been provided to Bangladesh following each major disaster, and in particular after the floods of 1987, 1988 and 1998, and the cyclone of 1991 in response to the enormous requirements for relief, rehabilitation and reconstruction. Such assistance has been provided by UN agencies, inter-government and bilateral donors, the development banks and NGOs. The importance of the contributions of NGOs has increased significantly in recent years.

Bilateral assistance, particularly from Japan, in enhancing the technical capacity of the Storm Warning Centre of BMD, while assistance from the International Federation of Red Cross! Crescent Societies has helped to sustain the capabilities of Cyclone Preparedness Programme (CPP) in relation to the dissemination of cyclone warnings. Meanwhile it has been possible to construct a good number of cyclone shelters with the support of bilateral donors, ADB, EC, IFRC and NGOs.

In addition exchange of views for reduction of disaster affects amongst Asian countries are taken place on regular interval. Bangladesh also takes part in various courses conducted by the ADPC in Bangkok.

8. DISASTER EDUCATION AND AWARENESS

Of late, there is a global realization that non-structural disaster mitigation programmes must accompany the structural measures for reducing the loss and damages of disasters. Construction of cyclone shelters, embankments, dykes etc. are no doubt necessary, but such structural measures cannot by themselves produce the desired results unless the community as a whole of a disaster-prone area is fully conscious about disaster risks and the way for disaster preparedness and mitigation.

Training and Public Awareness building are the major components of non-structural disaster prevention and mitigation programmes. The objective of Public Awareness Programme is to promote an informed, alert and self-reliant community,

capable of playing its full part in support of, and in co-operation with government in all relevant Disaster Management matters.

The Community needs to know:

- What Disaster will do?
- The best immediate action to take, personally and by families and other kin groups.
- How best to help other members of the community?
- How to participate effectively in the disaster communication and warning process.
- How to improvise shelter and sustenance until assistance is available.

The disastrous natural events like cyclones of 12 November, 1970, 29 April, 1991 and unprecedented floods of 1987, 1988 attracted the world attention to assist Bangladesh in adopting non-structural measures against disaster. Creation of Disaster Management Bureau (DMB) in 1992 under UNDP and UNICEF assistance was principally intended among other functions to build widespread public awareness against disasters through training and non-formal education. With the formation of Disaster Management Committees at national and field levels, there had been a crying need to train up the members of these committees in disaster related matters. Incidentally, these committees not only consist of the officials of the government and semi-government departments but also NGO officials, public representatives, local leaders, teachers and other cross-section of people.

The following table shows the number of training programmes conducted by DMB till December, 1998.

Table
Training programmes conducted by DMB

Sl. No.	Title of course/workshop/seminar	Number
01.	National level workshop	5
02.	Divisional level workshop	1
03.	District level workshop	7
04.	Thana level workshop/orientation course	58
05.	Course for DCs, ADCs and DRROs	3
06.	Union level orientation course/workshop	81
07.	Orientation course for UP Chairman	4
08.	TOT course	9
09.	Workshop for Representatives of Mass Media	1
10.	Team Building Workshop	2
11.	Seminar on Earthquake	1
12.	Training course for Union Parishad Secretaries	4
13.	Orientation course for Fishermen Community	3
14.	Orientation on early dissemination of signal	1
15.	Workshop for TNOs, PIOs & others	1
Total		181

About 10,099 participants attended the programmes. They included government and semi-govt. officials of the different levels, public representatives, NGO officials, local leaders, representatives of Mass Media, School and College teachers, Imams of mosques and even members of the Fishermen community etc.

Besides, DMB has supported holding of Disaster Management Training workshops in other institutes as well. In a recent month, Bangladesh Public Administration Training Centre (BPATC) arranged a senior-level workshop on Disaster Management with the financial support by UNICEF through DMB. With the approval of MDMR, DMB has been arranging financial support for in-service training programmes on Disaster Management in major training institutes.

Beside training on disaster Management, DMB under the guidance of MDMR has performed, inter-alia, the following public awareness activities:

- a) Publishing booklets in Bengali on:
 - Public information about cyclone/tidal bore
 - Public information about flood
 - Outline of Thana Disaster Action Plan
 - Outline of Union/Pourashava Action Plan
- b) Publishing Bengali Calendar/posters each year depicting disaster points.
- c) Procurement and distribution of Thana coloured base maps.
- d) Publishing Newsletters on Disaster Management.

MD & MR with the assistance of DMB, Directorate of Relief and Rehabilitation, other sister organisations and concerned NGOs have been observing the following days:

- a) International Natural Disaster Reduction Day each year on the second Wednesday of October as per united Nations Declaration.
- b) National Disaster Preparedness Day on the last working day of March from the year 1998.

Besides government efforts, some NGOs are also involved in Training and Public Awareness activities relating to Disaster Management. To mention some are CARE International Bangladesh, BDPC, CCDB, CARITAS, PROSHIKA, OXFAM etc. Disaster Forum is an umbrella organization for Disaster related NGOs. Some of the organizations like OXFAM prepared some beautiful film strips on Disaster Management which are published through govt. media. There is a regular dialogue between Govt. and NGOs and specially in the Committee for Disaster Management activities with NGOs, Disaster Management Training and Public Awareness Building Task Force and NGO co-ordination committee on Disaster Management both headed by the Director General, DMB. These committees discuss and co-ordinate the GO-NGO programmes on disaster Management, particularly, in the field of Training and Public Awareness building.

DISASTER MANAGEMENT EDUCATION IN ACADEMIC INSTITUTIONS

In Bangladesh, Urban and Rural Planning Faculty and Water Resources Management Department of Civil Engineering Faculty of Bangladesh University of Engineering and Technology teach Disaster Management. The Department of Geography and Environment of Dhaka university teaches Climatology at Honours courses, Resource Management and Planning in M. Phil courses. In the Khulna University, Urban and Rural Planning Discipline keeps 150 marks in theory and 75 marks as session course tests for Disaster Management. The Public Administration Department of Rajshahi University now teaches Environmental Studies of 100 marks at Honours level and has kept Environment and Disaster issues in the Development Administration subject at the Master's level. Shajalal University of Science and Technology has recently opened Environment Department.

Amongst the non-govt. Universities, North South university has a strong Environment Studies Department, and People's University has Agriculture and Environmental Management Department. International University of Business Agriculture and Technology (IUBAT) has to its credit established South Asian Disaster Management Centre which offers Disaster Management Workshops, Training of Trainers in Disaster Management and Seminars of international and Regional Standard. The main course contents include:

- Disaster Management Principles and Approaches to practical.
- Interaction of Environment, disaster and development.
- Disaster risks
- Mitigation and disaster losses
- Human and organisational behaviour to disaster

- Pre-disaster activities
- Post-disaster activities

In collaboration with DMB, IUBAT also held TOT courses on Disaster management for PTI Instructors. Since Disaster Management is a National issue, Hon'ble Prime Minister of Bangladesh ordered (Prime Ministers Office No. 51.4803.0.0.397-273, dt. 28-09-97) that disaster Management issue should be included in the Text Book from class V to XII.

Accordingly, NCTB in collaboration with DMB arranged for the Text Book chapters on the following themes to be implemented from Academic session 1999:

Class ? V: Introducing Natural Disasters of Bangladesh.

Class ? VI: Types, causes and Losses and Damages of National Disasters.

Class ? VII: Geographical Location and Climate of Bangladesh in Context of National Disasters. Flood and river Erosion.

Class ? VII: Cyclone and Tidal bore, Earthquake, Drought and Arsenic Pollution.

Class - IX-X: Warning Signals and Disaster Preparedness, role of Go- NGO and Mass Media in Disaster Management.

Class - XI-XII: Disaster Management (Broad aspects)

Although there is no much objective standards to measure the effectiveness of Training and Public Awareness building activities against disaster, the two instances - that while in 1991 cyclone more than 138 thousand people were killed and that the cyclone of 19th May, 1997 having the similar or even more velocity had the casualties of only about 127 persons amply speak that TPA activities have their results as about six hundred thousand people went to shelter places beforehand.

9. USABILITY OF THE INTERNET

Disaster Management Bureau under the Ministry of Disaster Management and Relief will soon have a WEB page of its own. This page will provide various disaster related information to all user agencies and individuals. The information will include data on past disasters information on the most disaster prone areas of Bangladesh and risk factors, agencies involved in disaster management, DMB's role as a focal point, topics on mass awareness, particularly on warning signals and preparedness etc. The MIS/GIS system of DMB will also provide limited access to outside agencies to share the data stored in DMB's server over the network system.

DMB has a plan to facilitate the availability of Internet connection to other focal points. DMB is now maintaining liaison through email in the Disaster Management units of other countries to share ideas and experience. Questionnaire about Computer Network Environment is enclosed with this report as FORM- 3.

10. CONCLUSION AND RECOMMENDATIONS

Bangladesh has a coastal belt of about 710 km long from Raimongal rivers to the west and Teknaf to the Southeast. Almost the entire coastal belt is exposed to the potential danger of cyclone with associated storm-surges, while the country has vast flood plains where flooding during SW monsoon from June to September is an annual occurrence. In extreme events (as in 1988) the flooding covers upto three-fourth of the land area. To alleviate flooding embankments have been constructed along certain river reaches as structural preparedness measures. Similarly to cope with cyclones for eventual evacuation about 1200 cyclone shelters have so far been constructed in the high risk areas of the coastal belt. As comprehensive control on the natural hazards most frequent to Bangladesh is not possible, the GoB have been continuously making endeavour to make disaster counter measures under the total Disaster Management Plan as sufficient as possible to ensure sustainable development of the country as a whole. Such efforts have proved to be effective in minimising human death toll significantly and mitigating suffering of the people. The system of warning for cyclone , flood and drought is in continuous process of evolution bore out of experience, research and study for farther improvement.

Nevertheless, improved performance in coping with disaster under national disaster management plan is a task which is difficult without international collaboration including resource mobilisation in terms of technological and financial help. This requires to take stock of the break-through in the field of technology which can be used for disaster management profitably. There have been remarkable advances in the areas of communications, remote sensing and computing capabilities in the field of sharing information. These need to be harnessed for use to help the disaster managers. Disaster managers of the developing member countries will have significant benefit if their communication services are linked with a effective early facilities

warning and response system. Based on these realities and also on the existing facilities in Bangladesh for disaster Management , the following proposals deserve consideration:

- ADRC should have a satellite based internet and internet facilities having two way easy communications with shared nominal charge like GTS of WMO for use by the Member States in handling disaster.
- Satellite based radii television broadcast should be undertaken by ADRC for use in coping with disaster situations and awareness build up.
- The strength of ADRC will be as good as the weakest links in the network that exists. These weaknesses are the big gaps that hinder quick communication between developed and developing member States. The issue of bridging these gaps has to be addressed under ADRC with priority.
- The ADRC should have a built in concept of helping the vulnerable people at a cost that they themselves or their Government can easily bear, at the same time making them self reliant in their efforts and objectives.
- The ADRC should help the developing member States in their efforts to systematically promoting and developing preparedness at all levels, including a massive effort at:
 - a) Public education and training
 - b) Building local level community capacities;
 - c) Developing specific expertise and management systems.
- The ADRC may establish a policy forum of the Asian countries at which consultation on programmatic issues on disaster can take place.
- The ADRC may take initiative in
 - a) Development of Basic institutional arrangements for disaster management
 - b) Community disaster preparedness
 - c) Disaster vulnerability reduction strategies for sustainable development among its member countries.

11. (FORM-1): Major Natural Disaster Since 1990

A)

Country : Bangladesh

Date of disaster YMD : 1991/04/29
 Type of disaster : Tropical cyclone & storm surge

Damage

Dead & missing : 1,38,000 people
 Injured : Half million people

Description of damage

House Completely damaged : 864161
 Partially damaged : 773697
 Crops Totally destroyed : 13 million acres
 Partially destroyed : 39 million acres
 Coastal Embankment and Allied Structure : 1328Km
 Educational institutions Destroyed : 7000
 Mosques and other

mosque and other
places of

Worship

(destroyed & : 3000
damaged)

Total loss : Tk.2.07 billion

Items of note to disaster-reduction policy-makers:

The post disaster relief and rehabilitation operation was conducted through the most effective and co-ordinated manner. A senior officer of the rank and status of permanent secretary was deputed and was the Chief-Co-ordinator of the operation. Senior officers of the rank of Joint Secretary and Deputy Secretary were placed temporary at the district and sub district level to conduct the operation and co-ordinate with the NGOs and other actors.

Other Information:

For the first time, the American Army and the British Navy were involved in the massive rescue and relief operation. Emergency relief team from other countries including Japan, France, India and China were also involved in the operation.

B)

Country : Bangladesh

Date of disaster : 1994/05/02
Y/M/D

Type of disaster : Tropical cyclone and storm
surge.

Damage

Dead and missing : 133 people

Injured and affected : 189, 960people

**Description of
damage**

House damaged : 13,00 (Completely)
: 5,000 (Partially)

Crops damaged : Standing crop (20%)
: Cash crop (100%)

Institution damaged : Corrugated iron sheet
roofing of some education
instituted were blown away.

Items of note to disaster-reduction policy-makers :

The cyclone affected the coastal and the hilly district of Cox's Bazar. Most of the injuries were caused by flying corrugated iron sheets of the houses of the local people and the temporary camps of the refugee from Myanmar. A massive first aid and medical operation was conducted in the emergency phase.

C)

Country : Bangladesh

Date of disaster : 1996/05/13
Y/M/D

Type of disaster : Tornado

Damage

Dead and missing : 540 people

Injured : 34,000 people

Description of damage

Cattle lost : 6500

People affected : 67,500

House damaged

Completely : 16,400

Partially : 5,400

Crops damaged

Completely : 2,200 Acres

Cash crop : 100 %

Educational Institution : 35

Damaged

Items of note to disaster-reduction policy-makers :

Tornado, being a sudden impact disaster resulting in massive loss of life and destruction, created a lot of media attention. Response from all actors in emergency survival phase was very encouraging. There was lack of enthusiasm and support for the rehabilitation and reconstruction phases. *The immediate invention by the Japanese Medical Team in carrying out emergency survival First-aid and Medicare programme is particularly laudable.*

D)

Country : Bangladesh

: 1997/05/19

Date of disaster
Y/M/D

Type of disaster : Cyclone

Dead : 127 people

Description of
damage

Cattle lost : 4726

People affected : 5 million

House damaged

Completely : 113,252 Nos.

Partially : 241,147 Nos.

Crops damaged

Completely : 167,586 Acres

Cash crop : 384,666 Acres

Educational
Institution : 196 Nos.

Damaged

Items of note to disaster-reduction policy-makers

The cyclone of May 19, 1997 was as severe as of April 29, 1991. But the loss of life in 1997 was most minimum because the Government of Bangladesh has taken appropriate action to evacuate the people from vulnerable areas and distant places and they were taken to cyclone shelters.

E)

Country : Bangladesh

Date of disaster Y/M/D : 1998/07/12 to 1998/09/16

Type of disaster : Flood

Dead : 918 people

Description of damage

Cattle lost : 26,591 Nos.

People affected : 31 million(approx.)

House damaged

- a) Completely : 0.98 million
- b) Partially : 2.46 million

Crops damaged : 1.75 hectares

Estimated cost of the damage in term of production : 3.34 million ton.

Value : Taka 36,470 million
(US\$ 760 M. approx.)

Educational Institution Damaged : 1718 Nos.

Rural Infrastructure Damaged

- a) Kacha Roads : 22,540 km
- b) Pucca Roads : 6565 km
- c) Bridge/Culverts : 2283 Nos.
- d) Growth Centres : 155 Nos.

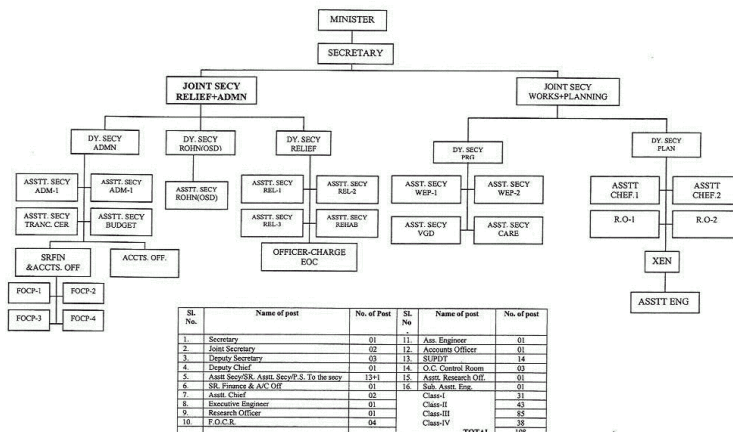
Estimated cost of the damage : Tk. 10,000 million

in terms of cash (US\$ 208.33 M. approx.)

Items of note to disaster-reduction policy-makers :

The flood of 1998 was the worst in living memory. The duration of the flood was more than two months. Out of 64 districts of the country 53 went under water. But the Government of Bangladesh has taken timely action to evacuate the marooned people. The situation was monitored with utmost care and importance. Due to this the loss of human lives were most minimum compared to the havoc. This proves that though natural disasters cannot be prevented but their impacts can be minimised with timely action. The action of the Government of Bangladesh has been widely appreciated in home and abroad.

12. (FORM -2)

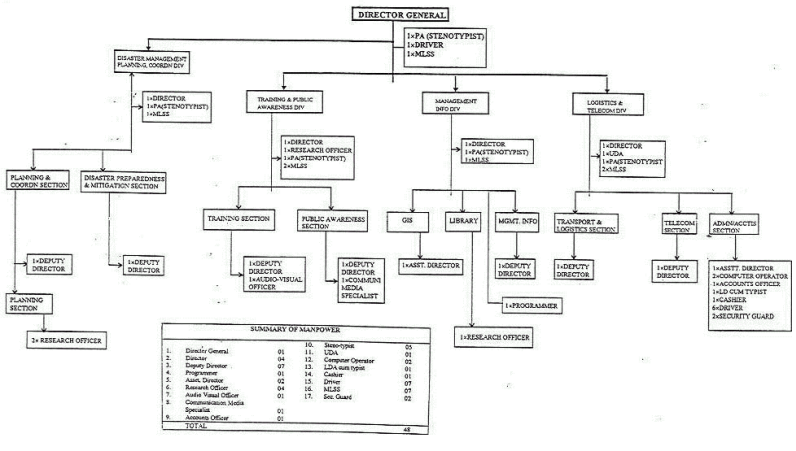


1.

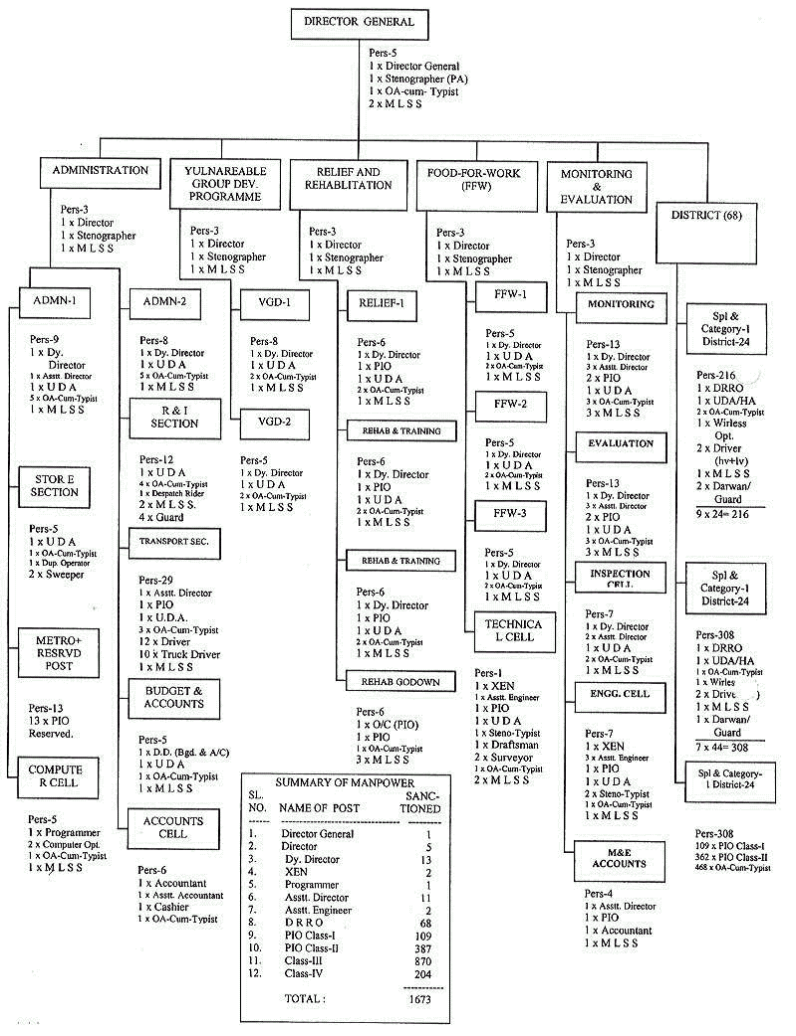
Management and Relief

Organization Setup: Ministry of Disaster

2. Organogram of Disaster Management Bureau



3. Organogram of the Directorate of Relief and Rehabilitation



12.4. Cyclone Preparedness Programme Organogram

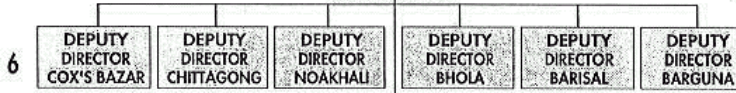
POLICE COMMITTEE

IMPLEMENTATION BOARD

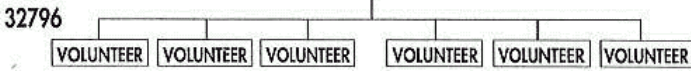
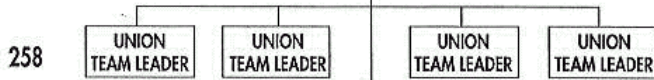
DIRECTOR

DEPUTY DIRECTOR

ZONAL OFFICE



THANA OFFICE



Zonal office	6
Thana office	30
Union office	258

Thana Team Leader	30
Union Team Leader	258
Unit Team Leader	2733

Male Volounteers 27330

Female Volounteers 5466