

Country Report : Bangladesh

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1. Introduction :

Bangladesh occupies an unique geographic location characterized by the flat terrain of alluvial soil criss-crossed with intricate system of over 230 rivers, canals and streams. The three mighty rivers, namely the Padma, (known as the Ganges in India), the Jamuna (known as the Brahmaputra outside Bangladesh) and the Meghna flow through Bangladesh to fall ultimately into the Bay of Bengal. The country is virtually the only drainage outlet for a vast catchment area of about 1.7 million sq. km. made up of these main rivers and their network. The Himalayan range to the north protect Bangladesh from Siberian freezing cold in the winter. Similarly, the Arakan mountains to the east and the Himalayas to the north influence the SW-monsoon circulation over the region including Bangladesh to get life-giving monsoonal rain. The country is well within the tropics and its sustainable development is mainly alleviation of poverty of the vast majority of the population living in villages as well as in urban areas. The economy of the country continues to remain predominantly on agriculture depending largely on weather.

2. Weather Systems in Bangladesh :

The weather systems in Bangladesh are not always favourable. The inclement weather systems, which are seasonal, make Bangladesh worst victim of natural calamities causing at times colossal loss of lives and properties. Of these calamities the most disastrous ones to mention are tropical cyclones with associated storm-surges, floods, droughts, river-bank erosions and tornadoes. Besides, the occurrences of earthquakes at times make significant impact both on social life and topography of the country. All these have direct bearing on country's economy and sustainable development.

3. Major Disasters Affecting Bangladesh :

In Bangladesh cyclone disasters happened to be quite frequent in the past. Some of these cyclones turned out to be national catastrophies. Little over 28 years

back on 12 November, 1970 Bangladesh was hit by the killer cyclone of the century with its associated storm-surges. The cyclone took a toll of human lives to the tune of 0.3 million putting property losses to more than a billion of US dollars. In the year of the inception of the IDNDR i.e. on 29 April, 1991 the worst cyclone of the country made landfall on Bangladesh coast. Human death toll rose to 0.14 million and property losses exceeded two billions of US dollars. A severe cyclone of hurricane intensity hit Bangladesh coast on 19 May, 1993. The cyclone had the intensity similar to that of 1991 cyclone. Human casualties were 126 only. The cyclones of 1876, 1919, 1961, 1963, 1965, 1985 and 1988 were also of severe nature.

ii) Floods :

In Bangladesh flooding is very much a part of the normal cycle of the seasons. For consecutive two years 1987 and 1988 Bangladesh has been deluged by exceptionally severe floods. The 1987 flood was caused mainly by heavy rainfall in or near Bangladesh, whereas the 1988 event took place largely from coincidence of flood peaks on the major rivers. The flood of 1987 washed away 50 districts covering 57,270 sq. km. area and caused loss of human lives to the tune of 1,657. Devastating effects of the 1988 flood were enormous. The 1988 flood inundated 84% of the land area covering 89,900 sq. km. of 52 districts affecting about 45 million people. Human death toll was 1,517. Again the flood of 1998 was devastating for its unprecedented duration of 65 days. The flood inundated 53 districts covering about 100,000 sq. km. area. 918 people lost their lives due to the flood and the economic impact was equivalent to 3.0 billion US dollars. Besides, the great floods of 1922, 1954, 1955, 1974 and 1984 are worth mentioning .

iii) Droughts :

In the past at some intervals of time, Bangladesh had to experience drought conditions having disastrous crop failures. In 1979 the country was hit by a severe drought which was termed 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.

iv) Earthquake :

Earthquake is a potential natural hazard for Bangladesh. Analysis of long period historical earthquake data shows that almost entire Bangladesh falls under earthquake zone, of which two-third comes under major and moderate fault. On 21 November, 1997 an earthquake of intensity 6.1 on Richter scale shook Chittagong region, the jolt of which was felt even upto Dhaka. In Chittagong a five storied building sank upto first floor and caused death of 23 people with sizeable property destructions.

4. Causes of Disastrous Effects of Cyclone and Flood in Bangladesh :

There are some specific reasons, not so common in any other country of the region, which contribute to the disastrous effects of cyclone and flood in Bangladesh. In case of cyclone four distinct special features of the Bay of Bengal with reference to Bangladesh can be of importance to mention. These are : concave shape of the Bay of Bengal, funneling of the Bay towards Bangladesh at the Meghna estuary, vast continental shelf immediately after the Bangladesh coast and large tidal range in Bay along the Bangladesh-West Bengal coast where there remains a big difference between sea levels at Chittagong and Bhubeneshawer of India.

Similarly, a good number of causes exist for the recurrence of floods in Bangladesh, some of which become most disastrous at times. Most notable causes are melting of snow of the Himalayan range which is the source of the two mighty rivers i.e. the Ganges and the Brahmaputra, monsoon rain having been torrential at times during consecutive four months from June to September, vast catchment area of 1.7 million sq. km. 92.5% of which is across the international boundary of Bangladesh, very gentle slop of Bangladesh from Tetulia down to coastal belt, deforestation of mountainous catchment area, heavy siltation on the river beds due to large quantity of

silts because of landslides in the Himalayan range and run-off in the up-hill area, and elevation of the sea-level at the Bangladesh coast due to uninterrupted whipping at the sea water by strong monsoon wind.

5. Major Accomplishments in Disaster Reduction :

The GoB has given priority to improve the early warning issuing capacity of the concerned Government Organizations such as Storm Warning Centre (SWC) of Bangladesh Meteorological Department (BMD) and Flood Forecasting and Warning Centre (FFWC) of Bangladesh Water Development Board (BWDB). As a result :

- i) Micro-wave links between SWC in Dhaka to Radar Stations at Cox's Bazar and Khepupara have already been established for real time use of radar echoes to bring about improvement of early warning system in case of cyclone.
- ii) Under bilateral agreement between the GoB and the Government of Japan (GoJ) replacement of radar at Agargaon, Dhaka, establishment of a new radar at Rangpur and a satellite ground receiving station at SWC, Dhaka are in the process of implementation, to be completed by middle of this year (1999). With satisfactory implementation of these preparedness measures, there will be further enhancement of the capability by SWC for the issuance of reliable early warning giving sufficient lead time in case of impending cyclones, local severe storms and torrential rain.
- iii) There has already been substantial progress in the expansion of flood forecasting and warning services (FAP-10) in the country under an on-going project with the Danish Hydraulic Institute (DHI) as the main consultant. The project has been completed by end of December, 1998.
- iv) Building codes, based on the analysis of seismicity in Bangladesh, have been designed for the structures in the country. The codes are under

consideration at various stages of the Government for adoption as legal basis.

- v) On the experience of 1998 flood, the Hon'ble Prime Minister has ordered that now onward the planners are to produce three kinds of physical plans, one for the cyclone-prone areas, another for the flood-prone areas and the other for the normal areas. She has advised to make the highways high enough in the flood-prone areas keeping in view the flood level.

The GoB has taken a number of significant steps during the last few years for building up institutional arrangement from national to the union levels for effective and systematic disaster management in Bangladesh. These are :

- i) Establishment of a disaster management organization named Disaster Management Bureau (DMB) in 1993.
- ii) Naming of the Ministry of Relief and Rehabilitation as the Ministry of Disaster Management & Relief (MDMR)
- iii) Establishment of Council and Committees at the national, district, thana and union levels for overall disaster management.
- iv) Establishment of Emergency Operations Centre (EOC) at the MDMR for information exchange during emergency period related to impending disaster.

The elaborate institutional arrangement is shown as Annexures A and B. The Council and the Committees are :

National Level :

- (i) 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.

- ii) Inter-Ministerial Disaster Management Coordination 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.
- iii) National Disaster Management Advisory Committee (MDMAC) to be headed by an experienced person to be nominated by the Hon'ble Prime Minister.
- iv) Cyclone Preparedness Programme Implementation Board (CPPIB), headed by the Secretary, Ministry of Disaster Management & Relief to review the preparedness activities of cyclone.
- v) Disaster Management Training and Public Awareness Building Task Force (DMTTF), headed by the Director General of DMB to coordinate the disaster related training and public awareness activities of the Government, Non-Government and other organizations.
- vi) Focal Point Operational Coordination Group on Disaster Management (FPCG), also headed by the Director General of DMB to review and coordinate the activities of various Departments related to disaster management. Preparation of Contingency Disaster Management Plan by individual department is also reviewed.
- vii) NGO Coordination Committee on Disaster Management (NGOCC), headed by the Director General of DMB to review and coordinate the activities of NGOs involved in disaster management activities in the country.
- viii) Committee for Speedy Dissemination of Disaster Related Warning / Signals (CSDDWS), 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.

Field Level :

- i) District Disaster Management Committee (DDMC), headed by the Deputy Commissioner (DC) to coordinate and review the disaster management activities at the district level.
- ii) Thana Disaster Management Committee (TDMC), headed by the Thana Nirbahi Officer (TNO) to coordinate and review the disaster management activities at the thana level.
- iii) Union Disaster Management Committee (UDMC), headed by the Chairman of the Union Parishad to coordinate, review and implementation the disaster management activities.

** These field level committees have representation from the NGO, Social Organizations, Local Govt. Bodies apart from the Government Department.*

To maintain proper coordination amongst the concerned Ministries, Government organizations and line agencies, and also to ensure their proper functioning during emergency, the GoB has designed a guidebook, named "Standing Orders on Disaster" as a basic tool. The Standing Orders outline the activities by each Ministry, major Agencies / Department so as to handle emergency situations efficiently.

6. Current Activities in Disaster Reduction :

As comprehensive control on the natural hazards, most frequent to Bangladesh, is not possible, the people of Bangladesh will have to live with natural disasters. To live with disasters there is a need for effective handling of disaster situations. Such handling is not possible without strengthening of national institutional capacity and awareness build-up at all levels of the society. Realization of this reality has been the

guiding force for the GoB to take up, with the support of UNDP and UNICEF , a project, named "Support to Comprehensive Disaster Management". The project is under implementation with DMB as its implementing agency. The project activities include :

- Building up awareness at all levels of the society concerning practical ways of reducing disaster risks and losses through training, briefing, audio-visual materials, information kits and collaboration with National Curriculum and Text Book Board.
- Strengthening of national institutional capacity for disaster management through energizing and giving support to disaster management committees at district, thana and union levels.
- Enhancement of the knowledge and skills of key personnel having disaster management responsibilities, development of in-country disaster management training capabilities and provision of relevant operational guidelines in the form of disaster management handbook.
- Establishment of disaster action plan in the most disaster prone districts, thanas and unions, and mobilization of local communities in the most disaster prone areas to prepare and protect themselves, and enhancement of their own capacities to cope with and recover from disaster.
- Improvement of the effectiveness of warnings and warning dissemination practices and the guidelines for facilities at shelters and evacuation sites for population in high-risk areas.

Till December, 1998 a total number of 181 courses/workshops/seminars (list as Annexure – C) have been conducted under the project. About 10,099 participants attended the programme. They included Government and semi-Government officials of different levels, public representatives, NGO officials, local leaders, representatives of mass media, teachers, Imam of mosques and members of fishermen community.

Besides, DMB has supported holding of disaster management training workshops in other institutes as well. As part of public awareness activities booklets containing public information about cyclone, flood, etc. and calendar, poster depicting disaster points have been regularly printed and distributed upto the grass-root levels.

To raise the awareness among the students on various hazards / disaster management, a chapter on disaster management and concept of disasters in Bangladesh has been included this year under the project in the educational curricula from class V to XII. The DDMCs, TDMCs and UDMCs in highly disaster-prone 19 districts, 60 thanas and 350 unions respectively have been energized and the action plans for these Committees are in the process of preparation to make these local based Disaster Management Committees to prepare and protect people at grass-root levels, and to increase their capacities to cope with and recover from disasters.

Clear and comprehensive National Policy on Disaster Management and national Disaster Management Plan have been designed in draft form under the project. Both the drafts are under consideration of the GoB at present. The Policy involves accurate definition of disaster threat, organizational arrangements which are required to prepare for responding to and recover from disaster events, assessment of resources available to deal with threat and how national disaster policy interlocks with other national policies of development. The aim of the draft plan has been spelt out to anticipate future situations and requirements, thus ensuring the application of effective and coordinated counter disaster measures. The Plan also covers both planning at normal times for aspects like prevention / mitigation, preparedness, response and recovery, and also planning for operational activities concerning mobilization and deployment of national resources, requests for international assistance and so on immediately before, during and immediately after the disaster.

7. Conclusion and Recommendations for Future Requirements :

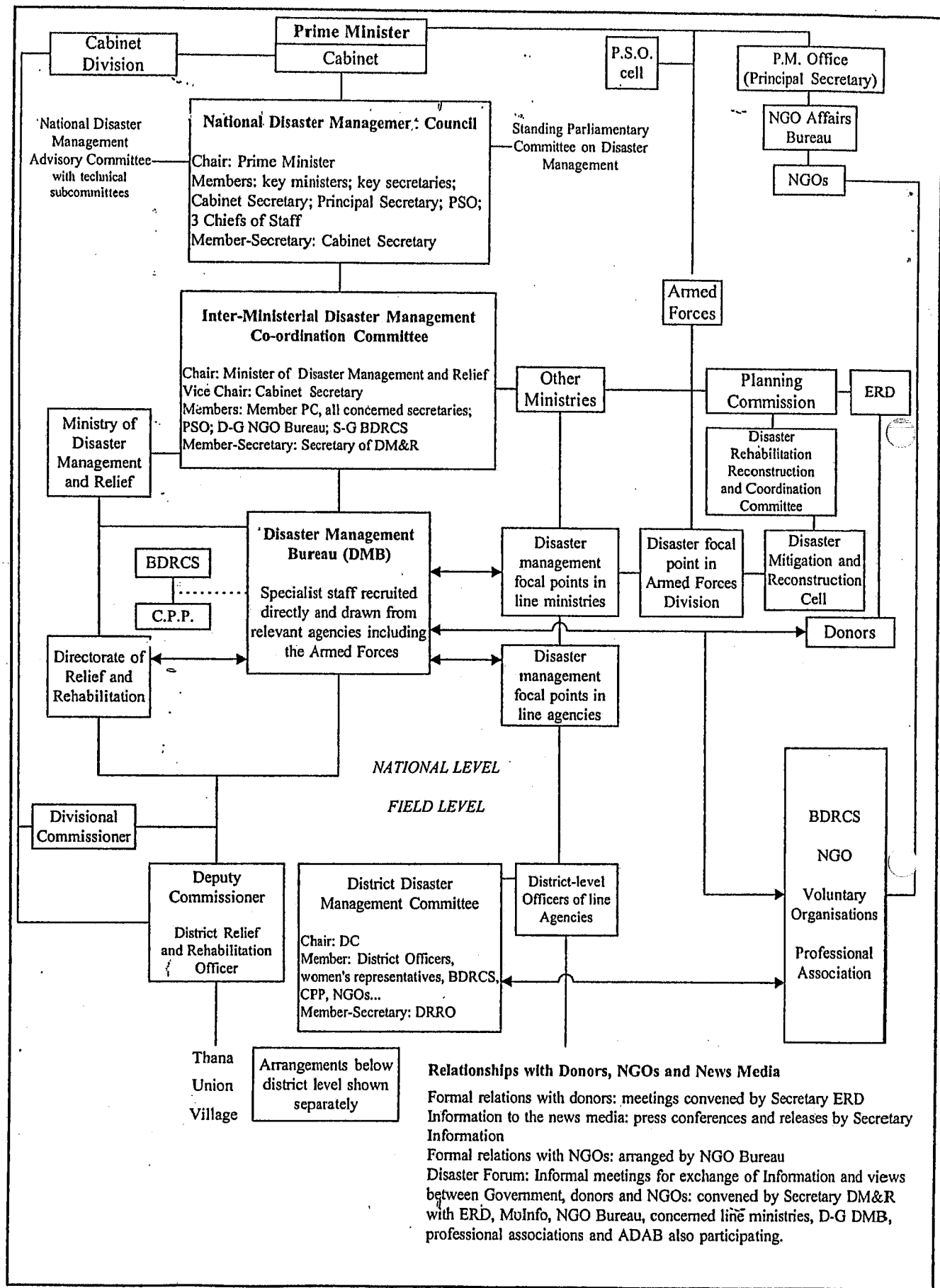
Bangladesh has a coastal belt of about 710 km. long from Raimongal river to the west and Teknaf to the south-east. Almost the entire coastal belt is exposed to the potential danger of cyclone with associated storm-surges, while with 92.5% of the

total 1.7 million sq. km. catchment area lying across the territory the country has a vast flood plains where flooding during SW-monsoon from June to September is an annual occurrence. Against such geographical features and recurring natural disasters, Bangladesh has an elaborate, established and experienced disaster management system from national down to the union level. Nevertheless, the GoB has been continuously making endeavour to make system of warnings, overall disaster management and mitigation for cyclone, flood and drought as sufficient as possible so as to ensure sustainable development of the country as a whole. There are still ample scopes for :

- a) more effective coordination between GOs and NGOs for efficient and systematic management of disaster situations at the national level;
- b) collaboration in making timely provision of meteorological and hydrological information including rainfall data from neighbouring countries for cyclone and flood forecasting;
- c) regional and international cooperation for undertaking programmes to construct cyclone and flood shelters in high-risk and remote areas so as to match the size of population exposed to disasters;
- d) efforts of the UN organizations to support the initiative of the Government for improvement of her national capability in weather and flood forecasting as well as overall disaster management;
- e) political commitment of the Governments of the neighbouring countries to halt wide-spread deforestation in the upstream of the major rivers that flow through Bangladesh;
- f) long-term coordinated efforts to accelerate public awareness activities at the grass-root level;

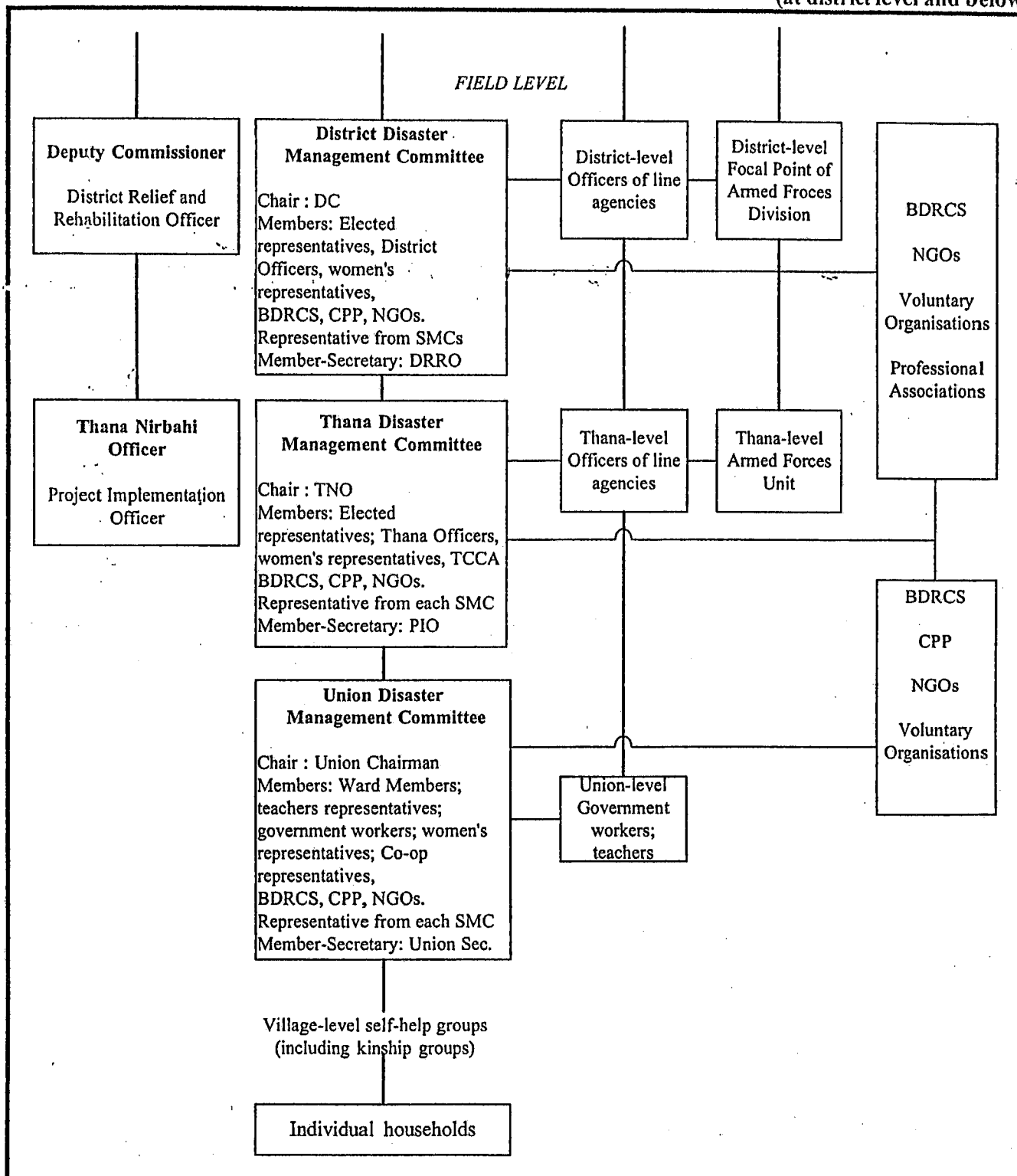
- g) further motivation of the line organizations, staff agencies and field establishments concerned with disaster mitigation to work round the year instead of considering it a seasonal activity, and
- h) regional conference on disaster management with all its aspects on periodical basis to identify weaknesses in disaster handling and establish regional cooperation for exchange of information about disasters and mitigation planning.

Institutional Arrangements for Disaster Management in Bangladesh



Dmb\Figure-3

**Institutional Arrangements for Disaster Management at Field Level
(at district level and below)**



DMB\Figure-4

Training Programmes conducted by DMB

Sl. No.	Title of Course/Workshop/Seminar	Number
1.	National level workshop	5
2.	Divisional level workshop	1
3.	District level workshop	7
4.	Thana level workshop/orientation Course	58
5.	course for DCs, ADCs and DRROs	3
6.	Union level workshop/orientation Course	81
7.	Orientation course for UP Chairman	4
8.	TOT Course	9
9.	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 and others	1
	Total :-	181