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Floods in South Asia with emphasis on Bangladesh: Background paper

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Flooding in the countries in South Asia is closely associated with the monsoon, and is – also when it reaches catastrophic levels – a recurring phenomenon which lends itself well to disaster preparedness planning and risk reduction activities.

Disaster preparedness organization and planning in relation to such periodic natural disasters, in turn, is a good basis for preparedness vis-à-vis other, less foreseeable events, for which reason it seems worthwhile taking a look at the recent experiences in South Asia, and particularly that of Bangladesh, with a view to extracting some learning that might be transferable elsewhere.

For the International Federation, these experiences may be drawn at two levels. One is at the level of the International Federation as an international response system; the other is the experience of the Bangladesh Red Crescent as a national institution with considerable experience and a well defined place within the overall disaster management approach of Bangladesh.

South Asia in general, and Bangladesh in particular, is a highly disaster prone zone, and especially at risk of flooding which appears on a regular basis in conjunction with the monsoon.

The recent floods in South Asia, and particularly in Bangladesh, were of greater magnitude than ordinarily seen and, therefore, required a greater response from the international community, as well as from the national governments and other institutions involved.

Bangladesh is a good example of a country where a national disaster preparedness plan with agreed roles for national authorities, other national actors including the National Society as well as international systems is in place. States undertook to establish such plans at the International Red Cross Red Crescent Conference in 1999, noting its value for preparedness and effective response.

The result is a strong and well-motivated preparedness and response strategy which meets both national and local needs, and accords with the requirements of the international community.

Despite the severity of the disaster threat faced by Bangladesh each year, its practice demonstrates the inestimable value of good preparedness, and of work done patiently over generations to prepare for major catastrophe.

Within the overall national plan, and in line with allocated responsibilities and with the support of the International Federation, the BDRCS has established a good working relationship with key IASC actors such as WFP.

BDRCS with its extensive experience in responding to flood emergencies has developed its operational capacity through a number of extensive disaster relief and preparedness programmes over the last few years. This year's flood relief operation will further strengthen the capacity of national society to implement the four-year disaster management strategy particularly for community-based disaster management (CBDM) programme for floods, and further develop its ability to receive, when required, external assistance.

The response from the International Federation, in support of the operation conducted by the Bangladesh Red Crescent Society was among the earliest international appeals for assistance for this particular emergency.

It was greatly facilitated by the work that had been done over the previous years, in parallel to that of BDRCS with its own authorities, to build good relations with representatives of agencies and potential donors.

At a practical level, investments of time and effort in negotiating framework agreements with suppliers in Bangladesh and internationally made it possible to respond faster than otherwise would have been the case, in that it limited the need for time consuming tendering processes for the relief goods required by the operation.

Proposed Actions by the IASC-WG members:

- * Consider ways and means whereby governments of disaster prone countries may be encouraged to establish or update national disaster preparedness plans which incorporate linkages, where necessary, to international systems of disaster response and have clearly defined and agreed roles and responsibilities for national institutions concerned, including representation on appropriate national policy and co-ordination bodies

Prepared by: IFRC, 16 September 2004

ANNEXES:

- I Basic information on Bangladesh Red Crescent Society**
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Annex I - Bangladesh Red Crescent

Bangladesh Red Crescent Society

Founded: 1973

Members/volunteers: 300,000 (2001)

Staff: 1,917 (2001)

Expenditure: CHF 2.3 million (2001)

Mission

The mission of the Bangladesh Red Crescent Society (BDRCS) – “To transform the BDRCS into a wellfunctioning National Society, independent, relevant, effective and efficient in addressing vulnerability in the country by mobilizing the power of humanity” – is written in its constitution and reflects the Fundamental Principles. The BDRCS is recognized as the most important relief organization in the country. Being a government auxiliary, it enjoys a preferential status and is held in high esteem as a neutral organization.

Legal base

The origins of BDRCS date to the 1920s when the British Red Cross was active in the area. The Bengal branch of the Indian Red Cross was then formed which later became a provincial branch of the Pakistan Red Cross, finally becoming the Bangladesh Red Cross Society following the country’s independence in 1971. The BDRCS was legally recognized through a presidential order in 1973.

The same year, the society received recognition from the ICRC and was admitted to the International Federation.

The constitution was updated in 1989, when the society changed its name from Bangladesh Red Cross to Bangladesh Red Crescent Society.

The presidential order of 1973 has since been modified several times, most recently in 1990. A BDRCS subcommittee has been formed with members of the managing board to propose amendments to the statutes to bring more dynamism to the governance and management of the society. A legal status agreement is at the final stage of being signed between the International Federation and the government of Bangladesh.

Constituency

The BDRCS has 68 units (branches) covering all the administrative districts of the country and the major metropolitan cities. The society has a large volunteer base, with a total of approximately 300,000 members/volunteers. Over half the volunteers are youth members. Women, as in most organizations in Bangladesh, are not sufficiently represented (about 14 per cent of total membership).

3. Capacity

Leadership

The president of Bangladesh is ex officio the president of the BDRCS. He appoints the chairman of the society to be the chief executive for a three-year term, which may be extended for one extra term. The organizational system is centralized and the chairman has much of the executive authority. The secretary general acts under the guidance of the board and on the chairman's directives.

The main governing body is the managing board comprising the chairman, vice chairman, treasurer and 12 elected members. The board meets on a monthly basis.

The general body consists of the chairman, vice chairman, treasurer, managing board members, two delegates from each unit and a representative from the ministries of defence, social welfare, disaster management and relief, and health and family welfare.

The office bearers and members of the governing board serve in an honorary capacity. The vice chairman, the treasurer and 12 members of the managing board are elected by the society's annual general meeting from amongst the delegates present for three years commencing from the first day of January of the year following the general election, but they cannot be elected for more than two consecutive terms in the same office.

The units have their own executive committees with a vice chairman and a secretary to manage the affairs of the unit. The unit executive committees act relatively independently but most of the activities depend on allocations from headquarters or inclusion in development programmes. Units that have ongoing community-based disaster preparedness (CBDP) or organizational development programmes are assisted in programme management by a unit officer from headquarters.

Human resources

In 2001, the BDRCS had a total of 1,917 staff, of whom 654 are work at the national headquarters. The cyclone preparedness programme employs 166 people, while another 1,038 are employed at the Red Crescent hospital in Dhaka.

With 77,532 youth members, 27,000 life members, 33,000 trained, disciplined and experienced cyclone preparedness programme volunteers, and 700 welltrained CBDP squad members, the BDRCS has become a strong and resourceful organization in the field of relief and rehabilitation. Volunteer training includes rescue operations, first aid, needs assessment and distribution of relief, community organization, participatory planning for community development, and low-cost sanitation and arsenic mitigation.

Material resources

The society owns three commercial buildings and a shopping complex in Dhaka, as well as two warehouses and about 25 acres of land. It also runs 74 health institutions including five general hospitals, three outdoor clinics, two eye clinics, 60 mother-and-child health centres, two blood centres, a nursing school and a few schools, most of which are housed on the society's own land. It manages, some with active community participation, 149 cyclone

shelters built mostly after the 1991 cyclone. Some units have shopping complexes, warehouses and shops to let. The society currently has a fleet of 48 operational vehicles.

Financial resources

The society produces annual accounts. In 2001, its total expenditure was approximately CHF 2.27 million. The total income from internal sources stood at CHF 1.45 million, with the highest income (CHF 1 million) coming from the Red Crescent lottery. The BDRCS received total grants for projects (excluding the fund received by the International Federation for flood and other relief activities) of CHF 3 million. Major items of internal expenditure include the lottery, running costs, and health care and family welfare activities through hospitals, mother-and-child health and blood centres.

Organization/planning

Partnerships

The BDRCS works in cooperation with the relevant ministries in each of its main programme areas. There is particularly close cooperation in the cyclone preparedness programme but also in such areas as primary health care, community health and community based disaster preparedness. And blood.

4. Performance

Activities

Disaster relief

Bangladesh, being a highly disaster-prone country, is frequently affected by floods, cyclones, tornadoes, drought and tidal surges. These disasters cause loss of lives and devastation to resources every year. In 2001, river erosion along the major river basins was a major problem, as was a tidal surge in August in the coastal districts and massive flooding in south-western districts in late September. In 2001, natural disasters affected 3,832,100 people.

Disaster preparedness

The BDRCS has two disaster preparedness programmes. The first, the CBDP programme, aims at developing the capacity of headquarters, the branches and vulnerable communities in all high-risk, disaster-prone districts of Bangladesh to respond effectively to any kind of disaster.

The second, the cyclone preparedness programme (CPP), aims at creating a system of effective, well-trained and equipped community-based volunteers for awareness, warning, rescue, first aid and relief in the most cyclone-prone areas in the coastal belt. As part of its disaster preparedness, the society has so far constructed 153 cyclone shelters.

Health services

The BDRCS runs 60 mother-and-child centres and nine hospitals and clinics, which treated over 445,783 patients and conducted almost 6,280 deliveries during 2001. The Holy Family

hospital in Dhaka, which is run on a semi-autonomous basis, treated approximately 150,000 patients in 2001.

Blood

The BDRCS blood centre in Dhaka was established in 1981 with the support of the Finnish Red Cross. In 1983, a five-year development plan was introduced for the centre with the technical support of the Japanese Red Cross. It is now 90 per cent self-financing and caters for about 50 per cent of the country's needs. Another three centres have already been established in Jessore, Sylhet and Chittagong districts.

Organizational development

An organizational development programme for headquarters and 15 units was initiated in 1997 as part of a five-year strategic plan. From 1998 to 2001, considerable progress was made in the institutional development of headquarters, in accordance with the recommendations put forward in various reports towards meeting the criteria of a "well-functioning National Society". All institutional development activities are monitored and coordinated by the BDRCS department of planning and development. As per the development plan, another 12 units are now part of the institutional development programme.

Relevance/effectiveness

Recent evaluations of some of the programmes and monitoring reports from the field bear testimony to the relevance of the BDRCS activities. Efforts are, however, being made to bring more integration into the programmes and ensure effective implementation of planned activities

Annex II - The floods of 2004 – background.

The floods that occurred in many parts of South Asia in the summer of 2004 were particularly severe in parts of India and in Bangladesh.

In India, the states of Assam and Bihar were the two areas most severely affected by torrential rains and over-flowing rivers. Over 33 million people were affected in the two states (21 million in Bihar and 12 million in Assam) and over 900 people died. Over half of Bihar's districts were inundated by flood waters while all 27 districts of Assam were affected.

In early September, there were still approximately 1.3 million people living in relief camps while others have had to make do with living on any raised ground they could find, such as roadsides and near railway lines.

Many districts were cut off for several days and there was significant damage to infrastructure such as roads, bridges, etc. A United Nations Development Programme (UNDP) assessment states about 60 percent of crops have been destroyed, affecting 1.2 million farming families. The total crop area affected is 1.15 million hectares.

Nearly 600,000 dwellings were damaged or destroyed. The flood situation considerably improved in August with no further heavy rainfalls in the states and adjoining areas. River levels have also returned to normal with flood waters receding quickly.

Within the International Federation, the response was the responsibility of the Indian Red Cross, supported by the Federation's Secretariat and Sister Societies in other countries. The Federation secretariat in Geneva focused on mobilising international resources for assistance. The India delegation supported the Indian Red Cross in mobilising the operation at all levels. National headquarters (NHQ) worked with state branches regarding all issues related to the operation.

The Bihar state branch has been very effective, raising CHF 166,000 in cash and mobilising medicines worth CHF 75,000 from the medical association and various pharmacies. To date, the Bihar state branch, along with district branches, has dispatched 31,000 tarpaulin sheets, 20,000 assorted clothes (used), 2,500 plastic buckets, 25 life jackets, 2,000 kitchen sets, 10,000 dhotis, 12,000 sarees and 40 boats. State and district branches are also providing first aid and other medical services, particularly to marooned people and those still living in temporary shelters. To date over 250,000 people have received some form of assistance from the various Red Cross branches in Bihar.

The Assam state branch, along with its district and sub-district branches, distributed 2,000 blankets, 2,000 mosquito nets, 2,000 baby food packs, utensils worth CHF 10,000, rice, sugar, barley, etc. The district branches are also running several relief camps and have distributed pulses, salt, oil, biscuits and some dry rations. The state branch is also operating a mobile medical unit from a boat in cooperation with state health authorities.

Bangladesh

The monsoon arrived early in June. Persistent and exceptionally heavy rainfall augmented by torrential river flows (coming from Nepal, India and Bhutan) and accelerated snow and ice

melts from the Himalayas, contributed to severe flooding. Forty-three of Bangladesh's 64 districts have been affected. A total of 36 million people (over 25 percent of the population) have been affected by this disaster. As of 31 August, the official death toll stood at 747.

Countrywide, the flood situation has improved, water has receded from all the flood-affected areas and communities have started to move back to rebuild their lives. According to the weather bulletin issued by Flood Forecasting and Warning Centre (FFWC) the overall flood situation in the country is now normal. All the rivers except two are flowing below danger level and experts say no new floods are likely in the coming weeks.

This year's flooding was reported as the most severe since 1998, with the floods wiping out people's household, food stocks and source of income. Over 20 million people have lost their homes in this destructive flood. Official reports indicated that floods have completely destroyed crops, including paddy rice on 1.6 million acres and partially destroyed crops on one million acres. Additionally 15,000 livestock have died and 3,158 km of embankments and thousands of kilometers of roads and infrastructure have been severely damaged or destroyed throughout the country.

Much of the capital city of Dhaka had been hit by floodwaters. All emergency flood shelters are now closed and flood-affected families are now busy rebuilding their makeshift homes and livelihoods. It is reported that as many as 30 million people in Bangladesh will need food aid for the next five months (when the next rice harvest is expected).

As of late August the floodwaters have receded, leaving in their wake the heightened risk of waterborne diseases and other health concerns. Diarrhoeal diseases, acute respiratory infections (such as pneumonia) skin diseases, and rising rates of malnutrition urgently need to be addressed. Lack of clean drinking water, hygiene inputs, and adequate sanitation facilities for the affected population increase the threat of disease outbreaks. Although no major epidemics have been reported to date, based on previous seasonal endemics, the World Health Organisation (WHO) warns of a possible peak in flood-related diseases following the complete recession of flooding in the second or third week of September.

Replenishment of seed stocks remains a priority in many areas. The government is facing additional security emergencies following bombings at a political rally and the subsequent nationwide strikes. Multi-sector efforts continue to bring relief, and to aid rehabilitation for flood-affected people in the face of the current political and civil disturbances.

ANNEX III - FLOODS IN BANGLADESH

Bangladesh is the second most populous country of the South-Asian Subcontinent. It has 143.8 million people living over a surface area of 144,000 sq. km. The density is 998 inhabitants per sq. km. Approximately 90% of the population lives in the rural areas and 80% work in the agricultural sector. The country is situated at the confluence of three major rivers flowing from the upper reaches of the Himalayas. They meet on the territory of Bangladesh before spilling into the Bay of Bengal and thus forming the most powerful river complex in the Subcontinent. The southwest monsoons which occur in summer and the location of the Himalayan range to the north, hit by these monsoons, are the two most important geo-climatic factors that govern flooding in Bangladesh. Other important elements are a flat topography, the presence of shallow areas in the river beds due to recurrent sedimentation from alluvial deposits, obstruction to drainage due to tide, wind set-up and storm surge. The majority of all losses from natural disasters is caused by flooding (60-70%). The types and amount of losses caused by floods depends on its depth, velocity, seasonal time of occurrence, speed of onset, duration, sediment and debris content, and type of area affected.

2. Key Issues

2.1 Challenges at the National Level

Bangladesh is a mostly flat, delta land crisscrossed by 250 major river systems which drain southward from the Himalayas to the Bay of Bengal. Of all the natural disasters that plague Bangladesh, floods are the most recurrent and the most damaging in terms of loss and damage of property, land, and infrastructure. Over the last decade floods have increased in frequency and intensity. Experts attribute this to several factors:

1) Heavy flood waters from monsoons and snowmelt coming from the deforested Himalayan mountains. Over the years, due to population growth, and lumbering practices the forest cover of the Himalayan mountains has been significantly reduced leading to severe erosion problems and subsequent flooding. These heavily silted flood waters then find their way down into the river systems of Bangladesh.

2) The silt carried from the Himalayan mountain run-off fill up the river beds of Bangladesh, significantly reducing their capacity to hold and carry the flood waters. It is estimated that every year approximately 240 crore tones of alluvial soil are carried from the Himalayan region by 54 major rivers in Bangladesh. Around 25% of this alluvial soil flows to the sea, the remaining 75% is deposited in the river beds year after year. This intensive annual built up of silt in the rivers is a major reason for the reduced ability of the rivers to drain the flood waters. It is estimated that during the past 30 years, the river beds have increased by 30 feet with silt deposits.

3) Filling in of canals and lakes in Bangladesh which reduces the lands ability to hold flood waters. Due to the increased demands of a large and growing population, and often poorly planned and unregulated development projects, many of the country's canals and lakes are being filled in for development purposes, thus further reducing the lands capacity to absorb excess water.

4) Reduction of forest cover to prevent land erosion and enhance moisture retention. A minimum of 25% forest cover is suggested for wholesome ecosystems, Bangladesh has about

16% forest cover. More and more mangrove forests are rapidly disappearing every year due to pressure from shrimp farmers. Additionally, the 90% of the population that live in rural communities are largely reliant on wood for their cooking fuel.

5) Unplanned urbanization and inadequate drainage systems. Every year hundreds of thousands of migrants move from the villages to the cities, either as seasonal workers or permanently seeking a better livelihood. These people are, by and large poor, and have no other choice but to move into the growing urban slums that plague the large cities of Bangladesh. These slum often exist in unwanted, flood prone areas and seldom have adequate drainage or sewerage systems.

6) Rise in sea levels in coastal Bangladesh. Though some scientists will dispute the Global Warming phenomenon, there is no disputing the rise in the sea levels of the world and in coastal areas of Bangladesh. The rate of relative rise in sea-level is 7 mm/year in the coastal area of Bangladesh. According to one study, the local relative sea level in Chittagong port has increased by as much as 25 cm between 1944 and 1964. The relative sea-level in the Bay of Bengal is predicted to rise 83 to 153 cm by the year 2050

Additionally, issues that compound the damage and destruction of the floods are:

7) Large and growing population forced to live on flood prone lands. With a population of 143 million (HDR 2004), and set to double by 2050, there are rapidly increasing pressures on the land. One of those is that more and more people are being forced to live in land which is known to be flood prone. It is estimated that 1/3 of the population lives along the rivers. Thus, river erosion is a serious problem. This year the rivers devoured several primary schools, as well as 11 lakhs houses and institutions, 205 lakhs acre of arable land, 2500 km of embankments and flood control structures, and made 6,000 people landless and homeless.

8) Inadequate and poorly maintained sewerage systems. Sixty percent of liquid waste generated in the city of Dhaka, with a population of 10 million people, is disposed of through open channels. These channels often become clogged by solid waste according to Dhaka's Water and Sewerage Authority. Dhaka is surrounded by 9 rivers, but has only 54 pumps – about half of what it needs to pump rain water out of the city areas. In the slums, which is home to millions of people, there is no sanitary sewerage system, only open ditches. All of this results in a very high level of water contamination during floods which leads to the associated illnesses which particularly take their toll on the young and the old.

9) River embankments left unfinished due to lack of funds. When three-quarters of the city was deluged in 1988, authorities began building mud, brick and concrete river embankments around the city. But the work stopped for lack of money. So now, a 22 km embankment protects only the western part of Dhaka, while the east was waist deep in water during the last 2004 floods.

2.2. Heavily silted flood waters from Nepal, Bhutan, and India.

Based on “key issues” 1 and 2 under national challenges, clearly one of the most significant factors in Bangladesh's increase in severe flooding is due to the heavily flood waters carrying large quantities of top soil into the Bangladesh's river systems. Studies show that Bangladesh's Northern neighbors particularly Nepal and India have serious problems related

to over harvesting of forest cover in the thin-soiled regions of the Himalayan Mountains. This leads to a much higher level of rain water run off, which carries with it the thin layer of nutrient topsoil. Not only is it destructive to the ecosystem of Bangladesh's northern neighbors, but it has devastating results in Bangladesh in terms of increased silt deposits in the rivers, lower carrying capacity of river systems, and higher than normal volumes of monsoon flood waters.

ANNEX IV – OVERVIEW OF FEDERATION SUPPORT TO BDRCS

Since 1972, 29 emergency appeals, of which 14 in response to floods, 6 responding to other weather-related events and 6 “other” emergencies.

In addition, the Federation has launched 13 “annual” appeals for regular programming, and Bangladesh has been covered by a number of regional and subregional programmes, both of an emergency nature and regular programming.

Prior to 1972, i.e., before Bangladesh gained independence, the Federation launched 16 appeals in response to weather related events, including floods, for Pakistan, most of which concerned East Pakistan, albeit not exclusively.

The number of intended beneficiaries for these appeals was not recorded clearly in earlier years, but for the period after 1983, the total exceeds 8 million.

Similarly, our records do not show accurately the volume of financial assistance mobilized with great accuracy, but the numbers that do exist indicate a total of close to 190 million Swiss Francs in emergency assistance and, perhaps, another twenty-odd million for regular programming making for a grand total in excess of 210 million Swiss francs.

It should be noted that in addition to these resources, which were channeled through the Secretariat of the International Federation, Bangladesh Red Crescent has received very substantial support from Sister Societies, from the ICRC and from other organizations, which is not reflected in the statistics of the International Federation. While some of these additional resources have been made available in response to emergency situations, a substantial proportion has gone to investments in infrastructure, organizational development, training programmes and similar which has contributed to building the current capacity of the Society.

In this regard it is also important to note that the Federation’s statistics do *not* reflect the resources that have been mobilized within Bangladesh by BDRCS, the support it has received from the Government of Bangladesh, and the massive efforts of countless volunteers, the leadership of the Society and its staff.

Thus it may be seen, behind and leading up to the ability of Bangladesh Red Crescent to respond to the recent floods, is a long history of concerted and sustained investment in the Society, combined with a system for mobilization of additional support when required, and a capacity, in BDRCS, to receive such support without being overwhelmed by the sheer volume.