

Learning Lessons from Disaster Recovery: The Case of Bangladesh

Tony Beck



The World Bank

The Hazard Management Unit (HMU) of the World Bank provides proactive leadership in integrating disaster prevention and mitigation measures into the range of development related activities and improving emergency response.

The HMU provides technical support to World Bank operations; direction on strategy and policy development; the generation of knowledge through work with partners across Bank regions, networks, and outside the Bank; and learning and training activities for Bank staff and clients. All HMU activities are aimed at promoting disaster risk management as an integral part of sustainable development.

The Disaster Risk Management Working Paper Series presents current research, policies and tools under development by the Bank on disaster management issues and practices. These papers reflect work in progress and some may appear in their final form at a later date as publications in the Bank's official Disaster Risk Management Series.

Margaret Arnold
Program Manager
Hazard Management Unit
The World Bank
1818 H Street, NW
Washington, DC 20433

Email: hazardmanagement@worldbank.org
World Wide Web: <http://www.worldbank.org/hazards>

Learning Lessons from Disaster Recovery: The Case of Bangladesh

Tony Beck

The World Bank



Washington, D.C.

April 2005

Abbreviations and Acronyms

ACT	Action by Churches Together
ADAB	Association of Development Agencies in Bangladesh
ADB	Asian Development Bank
ADP	Annual Development Programme
ADPC	Asia Disaster Preparedness Center
ALNAP	Action Learning Network for Accountability and Participation
ASONOG	Association of Non-Governmental Organizations of Honduras
BRAC	Bangladesh Rural Advancement Committee
BWDB	Bangladesh Water Development Board
CARE	Cooperative for Assistance and Relief Everywhere, Inc.
CIDA	Canadian International Development Agency
DEC	Disaster Emergency Committee
DFID	Department for International Development
DMB	Disaster Management Bureau
DMI	Disaster Mitigation Institute
DRR	Directorate of Relief and Rehabilitation
EC	European Commission
ECHO	European Commission for Humanitarian Organization
FAP	Flood Action Plan
FFWC	Flood Forecasting and Warning Center
GDP	Gross Domestic Product
GK	Gonoshasthya Kendra
GOB	Government of Bangladesh
HKI	Hellen Keller International
IDA	International Development Agency
IFPRI	International Food Policy Research Institute
IFRC	International Federation of Red Cross and Red Crescent Societies
IMF	International Monetary Fund
ISDR	International Strategy for Disaster Reduction
JICA	Japan International Cooperation Agency
MDMR	Ministry of Disaster Management and Relief (now MFDM)
MFDM	Ministry of Food and Disaster Management
MFI	Micro-finance institution
MT	Metric tons
NGO	Non-Governmental Organization
O&M	Operations and Maintenance
PMO	Prime Minister's Office
RMP	Rural Maintenance Programme
UNDP	United Nations Development Programme
UNICEF	United Nations Children Fund
USAID	United States Agency for International Development
USDA	United States Development Agency
VGD	Vulnerable Group Development
WFP	World Food Programme
WHO	World Health Organization
WRPO	Water Resource Planning Organization

Table of Contents

Preface.....	iii
Executive summary.....	iv
1. Introduction and Background.....	1
1.1. The ProVention Consortium lesson learning review.....	1
1.2. Background to the Bangladesh case study.....	1
2. Background to Natural Disasters in the Country	3
2.1. The extent of natural disasters in Bangladesh.....	3
2.2. Recovery in the Bangladesh context.....	3
2.3. The 1998 floods - what they meant for the recovery program	4
2.4. The agricultural sector	5
2.5. The manufacturing sector.....	5
3. Policy	7
3.1. Conceptualizing floods in Bangladesh.....	7
3.2. The Flood Action Plan.....	8
3.3. Food security.....	9
4. Systems.....	10
4.1. Government institutions dealing with recovery.....	10
4.2. Preparedness and mitigation leading up to the 1998 floods	10
4.3. Coordination	11
5. Resources.....	13
5.1. Overall allocations and disbursements	13
5.2. Allocation by donors.....	14
5.3. Expenditures by NGOs.....	16
5.4. Sectoral allocations.....	16
6. Livelihoods.....	18
6.1. Vulnerability and livelihoods in the Bangladesh context.....	18
6.2. Understanding of vulnerability and livelihoods in the recovery phase	18
7. Impact.....	22
7.1. Impact of infrastructure and food aid.....	23
7.2. Government response.....	24
7.3. NGO assessments	25
7.4. Housing.....	26
7.5. Cross-cutting themes.....	27
8. Conclusions.....	28

References.....	30
------------------------	-----------

Boxes

3.1. Good practice in food security during the recovery period after major floods in Bangladesh.....	9
6.1. Livelihoods and credit.....	20
7.1. Learning from the 1988 to 1998 floods.....	22
7.2. Good practice in recovery – the case of BRAC	26

Tables

2.1. Vulnerability to natural disasters, 1970 - 1998.....	3
2.2. Flood effects, 1988 and 1998.....	5
5.1. Allocation by major donors for recovery	15
5.2. Recovery funding by NGOs following the 1998 floods.....	16
7.1. Imports under Emergency Flood Recovery Project.....	23

Preface

This report summarizes the findings of a country case study on Bangladesh, which is part of a ProVention Consortium initiative aimed at learning lessons from recovery efforts following major natural disasters. The ProVention Consortium is an international network of public, private, non-governmental, and academic organizations dedicated to reducing the impacts of disasters in developing countries. The activity was managed by the World Bank, and benefited from the guidance and conceptual inputs of a number of ProVention partners.

The study team for this initiative consisted of: Alcira Kreimer and Margaret Arnold, who served as co-task team leaders of the activity on behalf of the Hazard Management Unit (formerly the Disaster Management Facility); Tony Beck (lead consultant, India and Bangladesh desk reviews); John Telford (Honduras country mission and dissemination report); Peter Wiles (Mozambique country mission and Turkey desk study); and, Jonathan Agwe, Umkulthum Himid, María Eugenia Quintero, and Zoe Trohanis (research, editing, and administrative support). Margaret Arnold and Alberto Harth also participated in the Honduras country mission. Kerry Selvester, Lourdes Fidalgo and Isabel Guzman of the Food Security and Nutrition Association, Maputo, carried out the Mozambique community survey. The Disaster Mitigation Institute (DMI), Ahmedabad, carried out the India community survey under the direction of Mihir Bhatt. Alberto Harth supervised the Honduras community survey, which was carried out by ASONOG, and in particular María López. Professor Nurul Alam of the Department of Anthropology, Jahanimagar University, Dhaka, wrote a background paper for the Bangladesh desk review. Professor Polat Gulkan of the Disaster Management Research and Implementation Center, Middle East Technical University, wrote a background paper for the Turkey desk review.

The guidance and support of the ad hoc committee that supervised the review is deeply appreciated: Margaret Arnold (World Bank), Yasemin Aysan (UNDP), Mihir Bhatt (DMI), John Borton (independent consultant), Eva von Oelreich (IFRC), Fenella Frost (DFID), Alberto Harth (CIVITAS), Alcira Kreimer (chair, World Bank), Ronald Parker (World Bank), David Peppiatt (ProVention Consortium), Aloysius Rego (ADPC), Sálvano Briceño, and Helena Molin Valdés (ISDR).

Thanks also go to a number of World Bank staff who supported this initiative and provided valuable inputs to the Bangladesh country study: John Flora, James Fitz Ford, Sonia Hammam, Kapil Kapoor, Enrique Pantoja, Maryvonne Plessis-Fraissard, Katherine Sierra, Nemat T. Shafik, Frederick Temple, and Christine I. Wallich.

Funding for the study was provided by the World Bank's Hazard Management Unit, the UK's Department for International Development, and the Norwegian Ministry of Foreign Affairs through the ProVention Consortium. Their generous support is greatly appreciated.

Executive summary

Background

This study is part of a five-country review of lessons learned from recovery after major natural disasters. The other four country studies – on Honduras, India, Mozambique and Turkey – have been completed, and a *Synthesis Report* will be issued that summarizes the findings of the review. The lesson learning review as a whole has analyzed the strengths and weaknesses of recovery assistance from governments, donors, and civil society following major natural disasters, with a focus on identifying replicable good practice.

Bangladesh was selected as a case study as it is representative of a predominantly agricultural developing country with high levels of rural poverty; in addition, it is extremely susceptible to natural hazards, especially floods. A particular focus of this study has been on the recovery of poorer households, as these households are usually most in need of external support following major natural disasters.

The 2004 floods and tsunami disaster

This report focuses on lessons from the recovery period following the 1998 floods. Bangladesh is a country that is highly vulnerable to a number of hazards including cyclones, droughts, flooding and earthquakes. During the 2004 monsoon season, Bangladesh experienced severe flooding across 33 districts that affected approximately 36 million people and killed nearly 800 people. Over 2 million acres of agricultural land was damaged, and approximately 4 million houses were either partially damaged or completely destroyed. Total damage caused by the floods was estimated at US\$2.28 billion, with the most severe losses concentrated in the housing, transport, and agricultural sectors. Additional flooding occurred again in September, paralyzing parts of Dhaka and inundating southwestern districts that were not affected by the first monsoon emergency. In addition the December 26, 2004 tsunami in the Indian Ocean also affected Bangladesh's coastline, causing relatively minimal damage and several deaths. It is hoped that the findings of this study can contribute to the recovery efforts of the most recent events, and help to inform efforts for more effective risk reduction in the country.

As indicated in this study, the impacts of these events suggest that several factors continue to contribute to the country's vulnerability to disasters, including rapid urbanization, population growth, inadequate maintenance of infrastructure systems, and poor environmental management.

The 1998 floods

The 1998 floods appeared to be qualitatively different from major floods in the previous 20 years, because of the length of the flood period, which was about 10 weeks. Whether the extended length of the flooding is a one-off phenomenon is impossible to predict. About 30 million people and 68 percent of the country were affected, as opposed to about 30 percent in a normal flood year. The floods affected different sectors in different ways. Although a large portion of the *aman* (winter) crop was destroyed, the agricultural sector evidenced increased yields due to a good *boro* (spring) crop; and the construction industry grew by eight percent in 1998/99. Manufacturing and private investment showed a significant downturn, including in the dominant garment industry, although it is difficult to disentangle the effects of the floods from more general patterns of disinvestment, partly caused by political uncertainty in Bangladesh.

Policy

Current thinking on vulnerability, disasters and recovery is being integrated, at a slow pace, into national and donor planning documents. A significant shift is from a focus on *flood control* to *flood proofing*, that is, to a less interventionist stance that takes into account livelihood strategies of the affected population. Floods are also being viewed as part of the development continuum, rather than as discrete geographical events.

The main reasons for this change are pressure from civil society in Bangladesh, and the shift in focus in the disaster paradigm itself.

The Government of Bangladesh's policy after 1994 facilitating private sector food imports appears to have significantly improved the response to the 1998 floods. After the 1998 floods, the government promoted private sector imports through removal of the 2.5 percent development surcharge on rice imports, and instructed customs officers to expedite clearance of rice imports. Between July 1998 and April 1999, private sector imports equaled 2.42 million metric tons (MTs) and government imports equaled 399,000 MTs, which met a substantial percentage of the shortfall caused by the floods. This was probably one of the main factors in keeping the price of rice stable from September 1998 to mid-April 1999, a key issue for poorer households.

Systems

Bangladesh has over the last decade developed machinery for disaster response, including a *Disaster Management Act* and a *National Disaster Management Plan*. However, limited evidence of government coordination was found in the recovery phase, while NGO coordination was assessed as positive overall. Despite a lack of long-term forecasting capacity, almost all reports and studies note that Bangladesh was better prepared in 1998 than in 1988, the last major flood.

Resources

Assessing levels of disbursement to recovery activities is complicated by the overlapping budget headings for relief, recovery, and development interventions of the main recovery actors, and reallocation of funds to recovery by these actors from ongoing projects. While significant resources were originally allocated by donors, it appears that, overall, new disbursements were limited. This is in contrast to concurrent disasters (e.g. Hurricane Mitch in Honduras) where substantial amounts of new funds were disbursed. Sectorally, the majority of recovery funds were allocated to infrastructure projects and agricultural credit. The World Bank and Asian Development Bank (ADB) both combined aspects of a number of ongoing projects to create a new flood recovery project; while this may make sense from an administrative and policy perspective, it may also make evaluation of the recovery phase difficult. Despite the widespread loss of housing, major donors did not make housing reconstruction a priority, and it is not clear why this is the case.

Livelihoods

Understanding of, and attempts to build on livelihoods after the floods, was patchy. There is almost no discussion of livelihoods in the major infrastructure projects, i.e., in the case of the majority of funds being disbursed. NGO and academic reports cover livelihoods in more detail. The following were the main strategies used by poorer households:

- Cutting back in non-food expenditure, which lasted for at least a year after the peak of the floods.
- Distress sales of assets, including small livestock. It was extremely difficult for poorer households to recover these assets.
- Borrowing to purchase food and to fund other expenses. This was of particular importance. Due to insufficient availability of credit, poorer households were forced to take exploitive loans from moneylenders or wealthier neighbors.

Impact

There is a general consensus that the response after the 1998 floods was more effective than in 1988. Attention paid to disaster preparedness in the decade prior to the 1998 floods relative to the 1988 floods.

The main reasons for this appear to be: the growth of civil society since 1991, and in particular the role of NGOs as both service providers and advocates for a more democratic society; economic growth and reduction in poverty levels; changes in crop patterns resulting in an increase in the relative size of the *boro* harvest, which has largely reduced the seasonality of production and prices, and the susceptibility of total production to adverse weather; and investment in preparedness, which produced tangible benefits in reduced loss of lives, livestock, and property.

There is very limited discussion of any wider potential impacts of rehabilitation of infrastructure, for example the likely socio-economic, gender equality or environmental impacts. Clearly, greater attention is needed in the planning of infrastructure in the recovery phase to ensure that communities are consulted and their priorities are being met.

The focus of major donors on infrastructure may be one of the reasons why the understanding of, and attempts to build on, livelihoods after the floods was patchy. There is almost no discussion of livelihoods in the major infrastructure projects, a situation which the GOB and donors need to address. While several large infrastructure and transfer of payment projects aimed at promoting economic growth, they still needed to establish how economic growth would support livelihoods for direct poverty reduction. The debates on structural as opposed to non-structural interventions in the Flood Action Plan through the 1990s are also relevant to the introduction of infrastructure after major floods. In addition, corruption issues, which were insufficiently dealt with by reports, are systemic problems in the country that have often surrounded infrastructure projects in Bangladesh (DFID 2002).

NGO assessments, including independent assessments, are generally positive about the impact of recovery programs. While NGO programs in Bangladesh are extensive, their post-disaster assistance was considerably smaller than that provided by major donors. However, one of the least successful recovery related interventions over the last decade after natural disasters in Bangladesh appears to be housing. Problems encountered include: poor targeting; lack of standards; limited community participation, and inappropriate design.

Main lessons learned from this study are:

1. Policy and planning

- Government policy that manages the food supply in a flexible manner, including allowing private sector food imports, can help to stabilize the price of staple foods after major natural disasters. However, public intervention in food management and operation is essential.
- Households living in marginal environments worst impacted by floods are often permanently in the relief phase of development. Planning a *relief to development* continuum may need to be rethought for interventions related to these households.
- A second needs assessment could be carried out at the start of the recovery phase, in order to prioritize communities and individuals in need. This could also be used to understand ways of building on existing livelihoods.
- There was insufficient credit available in the recovery period, even despite the very widespread network of Bangladeshi micro-finance institutions. In terms of supporting livelihoods, this should be the first priority of external agents.
- NGOs with an ongoing development program are most likely to be effective in the recovery phase at targeting poorer households and supporting their livelihoods.

2. Supporting livelihoods

Based on a review of post-1998 flood and other documents over the last 10 years, the areas that could be covered in future interventions to support livelihoods include:

- Access to reliable sources of credit at low interest rates;
- Provision of seeds, particularly vegetable seeds and tree seedlings which will be of use to landless households able to grow vegetables on their homestead land;
- Replenishing the asset base of the poor, in particular provision of small livestock such as chickens, ducks and goats;
- Cash and food for work programs which involve rehabilitation of local infrastructure used by or of use to the poor;
- Reconstruction of education and health facilities with local materials and labor;
- Support in reconstructing housing that is adaptable to flooding, such as movable housing or housing made from sturdier materials, using local materials and labor; and
- Provision of information as to recovery resources available from the GOB and NGOs.

3. Understanding the impact of floods and recovery interventions

Recovery interventions are not coming under adequate external scrutiny, partly because they are still considered to be taking place in a near-emergency situation. Greater attention needs to be paid to the effect of recovery efforts on different groups among the poor, including female-headed households. Some of the areas that need greater attention are: the effects of food imports and agricultural credit on agricultural labor wage rates; the impact of infrastructure interventions on livelihoods; and the impact on gender inequality.

Introduction and Background

1.1 The ProVention Consortium lesson learning review

This report is part of a five-country review of lessons learned from recovery after major natural disasters. The other four country studies – on Honduras, India, Mozambique and Turkey – have been completed, and a *Synthesis Report* summarizing the findings of the review that draws out similarities and differences between the various experiences of recovery will be published.

The lesson learning review has analyzed the strengths and weaknesses of recovery assistance from governments, donors and civil society following major natural disasters. Lessons learned and good practice identified through this analysis will be of use to the donor community and governments in developing more effective policies and procedures, and in crafting future disaster assistance programs. For this reason one focus of the exercise is on how replicable good practice is achieved, and how constraints to overcoming good practice are overcome. The review has been made up of: country visits (Honduras, India, and Mozambique); desk studies (Bangladesh and Turkey); and community surveys (Honduras, India, and Mozambique), with a strong focus on understanding recovery-related livelihoods of the affected population, and whether these have been supported by external interventions. Countries were selected so as to provide a representative picture of recovery.

The ProVention Consortium is a global coalition of governments, international organizations, academic institutions, the private sector, and civil society organizations aimed at reducing disaster impacts in developing countries. The Consortium functions as a network to share knowledge and to connect and leverage resources to reduce disaster risk. It focuses on synergy and coordination so that efforts, and benefits, are shared. Further details on the ProVention Consortium and its work can be found at <www.proventionconsortium.org>.

For the review as a whole Tierney's (1993) definition of *recovery* has been used:

Longer-term efforts to (1) reconstruct and restore the disaster-stricken area, e.g. through repairing or replacing homes, businesses, public works, and other structures; (2) deal with the disruption that the disaster has caused in community life and meet the recovery-related needs of victims; and (3) mitigate future hazards.

Further background details on the review can be found in ProVention Consortium (2002).

1.2 Background to the Bangladesh case study

Bangladesh was selected as a case study as a predominantly agricultural developing country with high levels of rural poverty, which is extremely susceptible to natural hazards, in particular floods. Bangladesh was also selected as there is much that is comparable between the major floods of 1988 and 1998, the two worst floods of the century. One aim of this desk review was to assess what lessons had been learned between the two floods, and why. A particular focus of this study has been on the recovery of livelihoods of poorer households, as these households are usually most in need of external support after major natural disasters. The recovery phase is defined here as the period from approximately three months to 21 months after the peak of the floods, that is from December 1998 to August 2000.

As with any desk study, this report has definite limits. Particular constraints faced were the difficulty of accessing documents of some donors, although a number of donor offices were contacted through e-mail and in person. A second constraint was the general lack of information on the recovery as opposed to the relief phase. This is partly because there is inevitably greater attention to the emergency phase of a disaster, both in terms of media coverage and evaluations. The recovery phase tends to fall into a void between relief and development, the implications of which are discussed further in the forthcoming *Synthesis Report*.

This report is structured as follows. It first sets out the context of natural disasters in Bangladesh and the 1998 floods with reference to recovery. Then, in common with the other desk studies and country reports, it examines recovery policy, systems and resources. After this it moves to the ways in which livelihoods were understood, and supported by interventions, and the impact of interventions.

Chapter 2.

Background to Natural Disasters in the Country

2.1 The extent of natural disasters in Bangladesh

Natural disasters and Bangladesh have almost become synonymous. Table 2.1 provides details of natural disasters since 1970.

Table 2.1: Vulnerability to natural disasters, 1970-1998

Type of event	No. of events	Killed	Affected
Tropical cyclone/hurricane/typhoon	83	463,818	44,733,948
Floods	49	41,383	356,234,473
Drought/famines/food shortages	4	18	25,002,000
Annual frequency of disasters	8.07 (since 1985) 6.11 (since 1970)		

Source: UNDP (2001)

It is both the frequency and intensity of major disasters that is of relevance to the recovery of poorer households. For example, there were major floods in 1984, 1987 and 1988, and a major cyclone in 1991. The frequency of events means that many poorer households will be unable to recover their pre-disaster situation before the next disaster occurs; the implications of this are discussed further in chapter 6 in relation to livelihoods. It also means that there may be more effective preparedness in Bangladesh than in countries where there are less frequent disasters, which is one finding from the 1998 floods.¹

2.2 Recovery in the Bangladesh context

Some of the key features relating to natural disasters and recovery in Bangladesh are as follows:

- Bangladesh evidences a high, if declining, rural poverty rate, currently about 50 percent. The degree of poverty is directly linked to landlessness and lack of assets owned by the poor. Some 50 percent of the rural population was landless in 1996; interlocking markets mean that poor households are often dependent upon loans and employment from the same landed households, a relationship which is often exploitative. And, common among many Asian countries, Bangladesh is seeing a gradual shift of population away from rural areas to urban slums. Consequently livelihoods of the poor, and recovery from disasters, are dependent on access to wage labor and non-land resources such as credit. A large proportion of the population in high-risk areas is comprised of poor landless households.
- There is a high degree of poverty among female-headed households, and high (if declining) gender inequality.

¹ There is a considerable amount of literature on natural disasters on Bangladesh, although very little of it deals with the recovery phase. For more detailed accounts of natural disasters in Bangladesh see Benson and Clay (2001); Neto (2001); Hofer and Messerli (1996).

- Over the last 20 years, Bangladesh has been dependent on donors for a significant proportion of its development budget. Although this dependence is declining, it is still high. There is a large number of ongoing programs supported by donors such as infrastructure development, flood proofing, food for work and Vulnerable Group Development, which could be viewed as continuous efforts to promote recovery.
- In 1991, Bangladesh returned to democracy after 16 years of military rule. There has subsequently been a flowering of civil society organizations, many of which are micro-finance institutions (MFIs) targeting credit at poor landless women to purchase productive assets (see Box 7.1 for further details). Three of these MFIs – the Grameen Bank, Proshika and the Bangladesh Rural Advancement Committee (BRAC) – are among the largest and most effective institutions working in this field, and all of which over the next few years will be largely independent of donor support for core funding. They have played another important role as direct support to poorer households, which are bolstering more accountable and transparent government through these households' ability to coordinate concerning key policy issues. Civil society plays a major role in all development activities, including recovery.

2.3 The 1998 floods – what they meant for the recovery program

Annual flooding, usually covering about 30 percent of the country, is a welcome phenomenon in Bangladesh, because flooding is necessary for growing the main staple, rice, during the *aman* (winter) cropping season. It also increases the supply of fish, a key source of food for poorer households during the lean pre-harvest period. While it is important not to romanticize coping and adaptive strategies of poorer households, particularly given the misery in which most poor people in Bangladesh live, the popular notion that poorer households have developed successful livelihood strategies to deal with regular flooding is to a large extent accurate.² But with three of the largest river systems in the world flowing through Bangladesh into the Bay of Bengal, flooding is both a blessing and a major danger.

The 1998 floods – the worst of the century – have been analyzed in a number of publications (Alam 2002; Neto 2001), and this study recounts only points relevant to the recovery phase. The 1998 floods appeared to be qualitatively different from major floods in the previous 20 years because of the length of the flood period, which lasted about 10 weeks from early July to September 7th, when the floods reached their peak. There is no consensus as to why the flooding lasted as long as it did, but there are a number of suppositions, including: climate change and permanent sea level rise; and, temporary sea-level rises caused by earthquakes in the Bay of Bengal. Whether the extended length of the flooding is a one-off phenomenon or not is impossible to predict at present, but it should have influenced the planning of recovery programs, which would need to take into account the fact that Bangladesh had two “50 year” flooding events within a ten year period.

Damage was severe. About 30 million people and 68 percent of the country were affected, as opposed to about 30 percent in a normal flood year, but the consensus is that as a whole Bangladesh fared much better in 1998 than in 1988, despite the fact that the flood covered a larger area at a similar depth, and lasted twice as long in many areas. The paper returns to why the response was considerably improved in 1998 in chapter 4. Further details on effect and damage, and as compared to the floods of 1988, are provided in Table 2.2.³

² The literature on livelihood strategies of the poor in the Bengal region is reviewed in Beck (1994).

³ The author has seen little analysis as to why there were such significant discrepancies in terms of some areas damaged between 1988 and 1998, for example the number of affected people, houses, and bridges and culverts. Several of the figures in Table 2.2 related to damage could not be verified.

Table 2.2: Flood effects, 1988 and 1998

	1988	1998
Total economic loss (US\$ bn)	1.14	2
Total flood affected area (km ²)	89,970	100,250
% of total area affected	61	68
Number of affected people	45,000,000	30,916,351
Number of deaths	2,379	918
Rice production lost (million tons)	2.00	2.04
Roads damaged (km)	13,000	15,927 (out of 201,00 kms, 19,000 paved)
Embankments damaged	1,990	4528
Bridges and culverts	1,160	6,890
Number of affected houses	7,200,000	980,571

Sources: Alam (2002); Clay and Benson (2002); IFPRI (2001); Russell (2000).

Of particular relevance to recovery is the extent of damage to agricultural production, housing, and infrastructure, which were among the main areas targeted by the recovery program.

2.4 The agricultural sector

While the floods had a devastating impact, the effect on GDP growth and in particular agricultural yields was limited, for example in comparison to previous major floods. Benson and Clay (2001: 17,18,22) comment:

With the notable exception of the 1998 floods....major disasters have resulted in a downturn in the agricultural sector annual rate of growth, including negative rates of change as a consequence of both the 1987 and 1988 floods.....The sensitivity of both agricultural and non-agricultural sector components of GDP appears to be declining over time....An annual GDP growth rate of 4.9 percent was achieved in 1998/99...only slightly below the previous year's rate of 5.2 percent....the annual rate of agricultural growth actually increased year-on-year... Agricultural output expanded 4.8 percent in real terms.... boosted by good weather conditions and supported by a comprehensive program of agricultural rehabilitation, including the timely provision of credit and agricultural inputs....the large producer response was possible because of an enormous expansion of lift irrigation capacity since 1988 through private investment.

2.5 The manufacturing sector

The resilience shown by agriculture did not extend to the manufacturing sector, in particular the dominant garment sector. Growth in manufacturing output, which was already weakening before the floods, dropped to a significantly negative rate after the floods, and was reflected in a marked deceleration of export growth in 1998/99. Private investment growth also appears to have decelerated in 1998/99, although it is difficult to disentangle the effects of the floods from disinvestments caused by political and industrial uncertainties in Bangladesh (IMF 2000). The importance of the garment sector to recovery strategies from the flood should not be underestimated, because not only have garments become Bangladesh's major export, but the industry employs large numbers of poor women who are unlikely to find employment elsewhere except as domestic servants. The decision by the World Bank to provide a US\$200 million loan for imports including industrial imports was potentially a means of promoting recovery in the manufacturing and garments industry.

On the other hand, construction activity picked up strongly as various housing, road and bridge reconstruction projects were undertaken after the floods, in particular by the public sector. Output in the construction sector rose some eight percent in 1998/99. Much of this growth was supported by donor interventions, but it is often unclear from the analysis who actually implemented the recovery work.

Despite the extent of damage to livelihoods and property, additional external resources provided were limited (Benson and Clay 2001), particularly in international comparison, for example to Honduras after Hurricane Mitch. Comparative figures of donor funding are provided in the forthcoming *Synthesis Report* for this review. The extent and quality of donor funding for Bangladesh is provided in chapter 5.

Chapter 3.

Policy

3.1 Conceptualizing floods in Bangladesh

Flooding in Bangladesh provides insights and lessons concerning how recovery policy is shaped. The period after the 1988 floods has seen a gradual, but significant, shift in thinking about floods and recovery by the government and donors. Before the 1980s, disasters in Bangladesh tended to be largely considered random geographical acts, with the Government of Bangladesh's (GOB) main focus being on temporary distribution of relief during the post disaster period. Since the 1980s, and particularly the 1988 floods and 1991 cyclone, disasters have increasingly been conceptualized as part of the development continuum, with consequent attention to mitigation, preparedness, and socio-economic and political factors (WHO 2000). The move from relief to disaster management can be seen in the change of the name of the Ministry of Relief to the Ministry of Disaster Management and Relief in 1993. The government and donors have also followed, to a certain extent, attempts to reconceptualize the technical and institutional focus of response to disasters, to include vulnerability, marginality, and community participation. NGOs have also followed suit (Matin and Taher 2000). However, progress has been slow, and it remains to be seen whether the change in focus is being actively applied.

The change in focus can be seen in definitions in key GOB policy documents on disasters. The recent *National Disaster Plan*, developed with the support of UNDP, makes in its definition of "recovery" a clear link between the recovery phase and longer-term development plans (GOB nd: 6):

The period following the emergency phase, during which actions are taken to enable victims to resume normal lives and means of livelihood, and to restore infra-structure, services and the economy in a manner appropriate to long-term needs and defined development objectives.

Similarly, the *Disaster Management Act – 1998*, supported by the same technical assistance, defines "disaster" to include human and environmental issues, and implicitly recognizes the capacity of affected populations:

An event, natural or man-made, sudden or progressive, that seriously disrupts the functioning of a society, causing human, material, or environmental issues of such severity that the affected community has to respond by taking exceptional measures and is on a scale that exceeds the ability of the affected people to cope with using only its own resources.

Much of the policy discourse since the 1988 floods has centered on whether the main focus should be flood control, such as extensive embankments, or flood proofing; that is, adaptations building on strategies already used by rural and urban communities. This has been a vigorous and at times antagonistic debate through the 1990s in Bangladesh, as can be seen in the case of the Flood Action Plan, discussed below. The recent *National Water Management Plan Development Strategy* (WRPO 2001) attempts to reach a compromise between those parties interested in embankments and those interested in poor people's coping and adaptive strategies, and includes a focus on flood proofing rather than flood control.

Two things are happening here. First, in the development of disaster planning tools, there is an institutionalization of disaster management in the government machinery, which is discussed further in

chapter 4. Second, there is the incorporation of current thinking about disasters, both the fact that vulnerability to disasters is as important as natural phenomena, and an acknowledgement of the ways in which people themselves respond to or cope with disasters.

3.2 The Flood Action Plan

The change in policy is perhaps best seen through the lens of the Flood Action Plan (FAP).⁴ Stemming from the 1988 floods, in 1989 the World Bank and GOB agreed to coordinate various existing proposals in the area of flood control. The FAP consisted of 26 studies and pilot projects, supported by 17 donors with an original budget of US\$150 million (of which about US\$75 million was disbursed), and was carried out between 1990 and 1995. The FAP has been viewed as unique because of the unprecedented, close cooperation between the GOB and donors, aimed at a coordinated and integrated approach to flood-control systems covering all Bangladesh. The objective was to identify, plan, design and test high priority flood control projects, with the central concept being “controlled flooding”. A substantial part of the engineering work was to involve the building of embankments and subdividing the areas protected by these structures into compartments. While coordination was central to the FAP, however, interested parties were soon polarized somewhat simplistically into two camps:

- Those who supported large scale structural interventions, for example embankments, in particular some donors and the Government of Bangladesh. This group also tended to promote institutional change as a key factor in flood management (e.g., UNDP 1992). For example, one of the 11 guiding principles of the FAP was “strengthening and equipping disaster management machinery including building infrastructure for quick and effective communication and transmission during disasters” (Netherlands Development Cooperation 1993). This group was considered to have the upper hand in planning (Wood 1997).
- Those who questioned the feasibility of structural flood control, capacity for overall management and O&M, likely economic returns, and lack of community and NGO participation. This group, in particular NGOs and some academics, recognized flooding as a natural activity in Bangladesh and supported interventions to build on local coping and adaptive strategies of the poor, that is, flood proofing rather than flood control. For example the *Eastern Waters Study* (1989), funded by USAID, discussed flood proofing in detail, including moving flood sensitive goods, building low bunds around sensitive crops, elevating roads, building flood refuges with local labor, and adjustment of crop calendars.

Eventually an international campaign by opponents of the FAP, including Bangladeshi NGOs who successfully linked with international organizations campaigning on the environment (Huq 1997), led to a review of the planning exercise, a two year hiatus, and from 1997, the development of the *National Water Management Plan Development Strategy*, and the policy shift discussed above (Wood 1997). The role of Bangladeshi civil society in this policy shift should not be underestimated; it has been successful in influencing both the GOB and donor policy. In addition, as development discourse shifted through the 1990s to include a greater focus on participation and empowerment, this also influenced procedures within the GOB.

This is not to suggest that there is not still a technical/economic (i.e., construction of embankments) and institutional bias in planning for disasters in Bangladesh – that is, disaster recovery with women and men largely left out; but only that some attention is now necessarily paid to socio-economic and in some cases

⁴ The author was not associated with the FAP, but attended many of the FAP meetings from 1991-1993 as an observer. He was also either in Bangladesh or West Bengal during the 1984, 1987 and 1998 floods, and was part of an evaluation team that spent five weeks in Bangladesh in 1989 evaluating the impact of ODA (DFID) funding to NGOs for post-flood rehabilitation.

gender equality issues in policy and planning documents. Debates that took place during the 1990s in relation to the FAP are relevant to recovery interventions, particularly those with an infrastructure focus – for example, how far major donors can meet the needs and priorities of poorer households.

3.3 Food security

The GOB has taken various steps to promote private sector involvement in food imports, which, along with public sector interventions, appeared to stabilize the price of rice for several months after the floods. This is detailed in Box 3.1. The lesson here is that governments can regulate markets in a way that is pro-poor.

Box 3.1: Good practice in food security during the recovery period after major floods in Bangladesh

Dorosh (2001) notes that trade liberalization in the early 1990s that allowed private traders to import and export food grains with some restrictions, has added an important new dimension to response to flooding in Bangladesh. In 1994, Bangladesh allowed private sector imports of rice, its main staple, with India as the major source. Private sector rice imports increased from zero in 1992-3, to 963,000 metric tons (MTs) in 1997, comprising 100 percent of total imports (with total rice production in 1997-98 being about 18.9 million MTs). During the 1998 floods some 300,000 MTs of *aus* (summer) crop were destroyed, and the flooding caused extensive damage to seedbeds and transplanted seedlings for the *aman* (fall) crop, and there was a projected shortfall of 2.2 million MTs. The government promoted private sector imports through removal of the 2.5 percent development surcharge on rice imports, and instructed customs officers to expedite clearance of rice imports. Between July 1998 and April 1999, private sector imports equaled 2.42 million MTs and government imports 399,000 MTs. Moreover, the private sector was able to import cereals within two to three weeks, whereas government imports through formal tender procedures took three to four months.

More important than the total production and level of imports for post-flood recovery is the price of rice, and the ability of poor households to purchase rice. In the well-documented case of the 1974 famine, the average price of rice rose some 12 percent *per month* for the first ten months of the year, despite adequate food stocks being available (Sen 1981). In 1998 the national average wholesale prices of coarse rice remained in the range of 14.14 to 14.83 Taka/kg from September 1998 to mid-April 1999, and fell to 11.74 Tk/kg in the second week of May 1999 as the *boro* (winter) harvest began. Dorosh (2001) estimates that, if the public sector had imported a similar level of rice to the private sector, prices in the marketplace would have been 1-2Tk per kg higher. The volume of private sector imports appears to have been a major factor in keeping rice prices stable into the recovery period, combined with government intervention through the Public Foodgrain Distribution System and Open Market Sales was probably a significant contributor to reduced disruption to livelihoods.

Sources: Benson and Clay (2001); Dorosh (2001); IMF (2000); Sen (1981).

Chapter 4.

Systems

4.1 Government institutions dealing with recovery

In the GOB, the Ministry of Food and Disaster Management (MFDM) (formerly the Ministry of Disaster Management and Relief) is the focal point for all activities relating to relief and recovery. The Ministry is expected to supply information to the National Disaster Management Council, the apex government organization headed by the Prime Minister, and to the Inter-Ministerial Disaster Coordination Committee, which coordinates the implementation of disaster management decisions of the government and assists them in taking decisions. During the recovery phase the Ministry was expected to coordinate activities, and also arranged house building grants and food for work programs.

The Disaster Management Bureau (DMB) and Directorate of Relief and Rehabilitation (DRR) fall under the MDMR. The DMB was established in 1993 in the aftermath of the 1991 cyclone, supported by UNDP, to enhance disaster preparedness and management. A further UNDP-UNICEF supported project with DMB led to the development of the *National Disaster Act*, and a Training and Public Awareness Plan. The main function of DMB is to supply information to concerned authorities for the preparation of rehabilitation plans, and ensure adoption of steps for minimizing future disaster risk in these plans. To date, the DMB has organized 472 training courses for 23,000 participants including government staff, the media, and teachers. It also liaises with and promotes cooperation between all levels of government, international aid organizations, NGOs, and community groups. The function of the DRR is to ensure a quick supply of relief and recovery materials to appropriate places. Committees have also been established at the District, sub-District and Union (multi-village) levels to review and implement disaster management activities and undertake needs assessments. Preparedness Action Plans are being prepared in 776 highly disaster prone Unions (Alam 2002).

The *Standing Orders on Disasters* (GOB 1999), produced by the DMB, is a guidebook that aims to maintain coordination among the relevant ministries and government agencies and ensure their proper functioning during emergencies. It outlines in some detail the activities of each government agency and the Bangladesh Red Crescent Society during normal times, the alert, warning, disaster and rehabilitation phases, with a focus on coordination. It also includes details on how to develop a *Thana* (group of villages) Disaster Action Plan, which should include a section on likely rehabilitation needs – examples given include the preparation of a priority list of households for rehabilitation, house reconstruction on a self help basis, and agricultural rehabilitation. There is limited focus on recovery in these guidelines, however.

4.2 Preparedness and mitigation leading up to the 1998 floods

In terms of preparedness, the Flood Forecasting and Warning Center (FFWC) located at the Bangladesh Water Development Board (BWDB) issues flood bulletins summarizing reports of daily rainfall, river flow and water heights at different critical points along the rivers. However, these bulletins contain little analysis of trends (e.g. BWBD 1998). Since data provided by the FFWC are usually recorded with limited accompanying information, questions have been raised as to the extent these figures are useful for flood

forecasting.⁵ Given the current expertise and the state of technology at the FFWC, long-term forecasting in relation to the impact of flooding is not currently possible.⁶

Despite the lack of long-term forecasting capacity, almost all reports and studies note that Bangladesh was better prepared in 1998 than in 1988. Examples include ECHO's (2000) evaluation of rehabilitation projects of four NGO partners, which found the attention paid to disaster preparedness in the decade prior to the 1998 floods produced tangible benefits in reduced loss of lives, livestock, and property relative to the 1988 floods. Partners funded by ECHO (CONCERN, OXFAM-GB, CARITAS, BRAC) had integrated disaster preparedness into their ongoing development work, thus raising local awareness and setting contingency plans; and, their staff were well trained in disaster management (see also Benson and Clay 2001; DEC 2001; Ahmed (ed) 1999). While preparedness capacity was strengthened during the 1990s, Martin and Taher (2000) note that NGOs could do considerably more in terms of integrating preparedness into ongoing development programs.

4.3 Coordination

Reports vary as to the degree and quality of coordination that was achieved during the recovery period. Coordination within and by the GOB appears to have been limited. GOB ministries should work in union, coordinated by the MFD/MDMR (GOB 1998). However, it has been questioned as to whether there is coherence and coordination of activities between these organizations during and after emergencies. DFID et al (1999: 12) note:

The development partners have a general feeling that the government has faced problems in the upper levels of the bureaucracy to effect adequate inter and intra-ministerial coordination. To the development partners, there does not appear to be a single focus of information and action. Although in principle the DMB should have been that focus, as the 1998 emergency developed the natural center of decision-making and information dissemination in practice gravitated towards the Prime Minister's Office (PMO), where it remained.

The DMB was envisaged to perform specialist functions, working in close collaboration with the district and *thana* (local administration) level authorities and concerned line ministries, under the overall authority of a high level inter-ministerial committee (DMB 1998). However, no significant role of DMB could be found either in the relief or recovery process, excepting that it acted as a repository of information. Instead, the line ministries including agriculture, fisheries, and livestock were the main actors in the recovery process and were coordinated by the planning ministry. Some of these ministries drew up sectoral recovery plans, and funding for these plans came from both internal and external sources (Alam 2002).

Coordination among NGOs may have been more effective. Bangladesh has a history of NGO coordination, under the umbrella group the Association of Development Agencies in Bangladesh (ADAB), although ADAB has over the last few years been showing signs of strain because of contrary political affiliations of its main members. ECHO (2000) reports that, due to good informal networking and local coordination, including with the government, there was little overlap of assistance among NGOs carrying out rehabilitation activities. Also, geographical separation of NGO activities was ensured. The involvement of local authorities and community members assisted ECHO partners in defining areas to work in, beneficiary selection, and public meetings to mobilize volunteers. Local authorities verified the quality and quantity of assistance prior to distribution, provided storage facilities, and cooperated in procuring and distribution of local materials.

⁵ For a detailed discussion on this issue see DFID, EC and WFP (1999).

⁶ USAID is preparing a project to support the development of comprehensive flood models. It is expected that this will improve the ability to make long term predictions. See DFID et al (1999).

The evaluation of Oxfam's recovery work (Oxfam 1999) reports that regular meetings of the Disaster Forum, an NGO umbrella group, took place during the flood recovery period, and all organizations exchanged information to avoid duplication of efforts and ensure effective coverage. The Forum also produced situation reports, which were widely circulated. Regular meetings of the ADAB also helped coordination. This report goes on (ibid.: 30): "Regular meetings also took place at the local level to coordinate day-to-day activity, particularly between partner organizations and local government officials....Inter-agency meetings also took place at this level..." (see also DEC 2001; BRAC 1999).

A contrary perspective is given in the review by Bacos et al (1999), which was commissioned by Save the Children (USA) to examine the nutrition-focused recovery activities of 14 organizations including donors, local NGOs, international NGOs, coordinating bodies, and the government during and after the flood. The study found that there was a general lack of coordination among actors. This report used the SPHERE Standards to assess response, which is a set of standards more exact than those used in most reports.

The relative success of coordination in the Bangladesh case should be viewed in light of the very large number of actors involved in recovery activities – government, donor, private sector and NGO. Furthermore, there is often significant competition among donors and NGOs in terms of disbursing funds. For example, 163 NGOs, and probably a large number of private sector companies under contract to donors, were involved in the response. The key reason for NGOs' ability to coordinate was that the larger NGOs all started in the 1970s and have retained key staff since that period, including the heads of the NGOs. Thus, all of these people are familiar with one other and felt comfortable operating through ADAB.

Chapter 5.

Resources

5.1 Overall allocations and disbursements

There is a lack of clarity as to resources disbursed for recovery activities, mainly because government and donor accounting systems are not set up for this type of measurement, and because of the fungibility of aid funds.⁷ While a substantial amount of new aid was committed, Benson and Clay (2001: 30) point out: “the fact that disasters have not forced a significant increase in spending on the ADP [Annual Development Programme], even in the case of extreme events, suggests that disasters must have resulted, instead, in the deliberate reallocation of resources; and/or that disasters have severely hampered the progress of ongoing projects, effectively releasing domestic resources, at least, for alternative uses.”

Some of the reasons for reallocation in the Bangladesh context are given in the project document of the US\$200 million World Bank *Emergency Flood Recovery Project* (World Bank 1998: 4):

A major lesson from these rehabilitation projects [in the 1980s] is that financing rehabilitation costs in Bangladesh under on-going projects, rather than through a new, omnibus emergency project, is quicker and likely to be more flexible. This is because of the high start-up costs involved in helping the government design a new project and the high coordination costs of ensuring that different government agencies and interests involved in such a project are properly aligned. Reprogramming our existing projects is also more likely to ensure that the response to the floods will be better integrated into the country program, will influence the design of future projects, and will avoid the tendency of emergency operations to be stand-alone, one-off actions.

A further example demonstrates the ways in which interventions reallocated resources. The Rural Maintenance Programme (RMP), funded by CIDA, monetizes food aid to provide wages for poor rural women to maintain roads, and has to date covered some 72,000 km of roads. It is likely that many of these roads were wholly or partly washed away in the 1998 floods and needed to be rebuilt again, which would occur under RMP. However, this is probably classified as development rather than recovery funding by CIDA.⁸

For the purposes of this report, activities carried out more than three months after the peak of the flooding in early September 1998 are considered recovery activities. Such activities included road and bridge reconstruction, repairs to embankments, reconstruction of public building such as schools, housing, micro-credit, and the provision of agricultural credit and seeds.

In terms of overall resources disbursed, Benson and Clay (2001: 63) note: “it might be expected that total flows of assistance to the country would also increase following a major disaster, given the importance of external aid in post-disaster relief and rehabilitation efforts. In practice, however, there appears to have

⁷ ALNAP (2002) for example estimates that between 30 to 50 percent of relief funds worldwide are disbursed on rehabilitation activities.

⁸ E-mails from CIDA staff in Hull and Dhaka, September 2002. CIDA provided some US\$1.6 million in food aid, for restoration of emergency and strategic food stock reserves, distribution of food, reconstruction and repair of houses, roads and other public works, presumably small bridges, culverts and drains. The agency did not however maintain a cost breakdown of the contribution in terms of whether resources were provided to relief or recovery activities. The author evaluated RMP in 1998-1999 (CIDA 2000).

been little correlation between the incidence of natural disasters and total aid flows. Total commitments have typically increased in the year of, or immediately following, a major disaster...only to fall sharply in the following year.” One of the main reasons why disbursements may not have seen a significant increase in the recovery period is a lack of absorptive capacity of Bangladeshi institutions. The situation in Bangladesh can be contrasted to other major natural disasters, where comparatively there was much larger disbursement of funds (see the *Synthesis Report* for discussion of proportionality of disbursement in the recovery phase).

Rough estimates of recovery costs and expenditure are given in Benson and Clay (2001):

- Initial GOB/UNDP estimates of additional rehabilitation costs for donor-assisted projects from November 1998 to October 1999 were US\$1.527 billion. This included US\$186 million for major roads and highways, US\$35 million for railways, US\$76 million for urban development, US\$171 million for rural infrastructure, US\$88.8 million for education facilities, US\$82.2 million for agriculture, US\$300 million for recapitalization of micro-finance institutions, and US\$67 million for shelter.
- Overall government expenditure for flood related projects was:
 - US\$854 million in 1998/99, including at least US\$540 million of agricultural credit
 - US\$1020 million in 1999/00
 - US\$583 million in 2000/01

5.2 Allocation by donors

In the case of major donors, the majority of recovery funds appear to have been directed towards infrastructure. The largest funders of such projects in Bangladesh are JICA, USAID, the World Bank and the ADB. In addition, the IMF provided US\$138 million and the World Bank US\$200 million for balance of payment support, and some of these funds were used for recovery purposes.

It was not possible to explore an important area in relation to donor funding during the recovery phase, which is the extent to which foreign private sector companies are used for recovery. The contracting of foreign companies to aid agencies is prevalent in Bangladesh, and these companies often have a substantial say in the intervention focus and direction. This was not discussed in any of the project or other documents reviewed; however, while it was not possible to explore this topic, it is an area, which would profit from future enquiry.⁹

Details of funding by major donors are provided in Table 5.1.

⁹ The World Bank Dhaka Office noted in response to this suggestion that IDA funds allocated for post-disaster recovery were mainly used to finance small works, rather than large scale infrastructure, contracted under national competitive bidding.

Table 5.1: Allocation by major donors for recovery

Donor	Amount (US\$ million)	Purpose
World Bank	149	Supplementary funds for four ongoing projects: i Third Inland Water Transport Project (US\$2.5 million), ii River Bank Protection Project (US\$26 million), iii Second Rural Roads and Markets Project, iv Second Road Rehabilitation and Maintenance Project (US\$80 million) to finance the repair of damaged highways, rural roads, pontoons, jetties, river terminals, embankments, and marketplaces.
ADB (under one program – BAN 32501-01) ¹⁰	Total 104 40.8 26 7 15 7 8	Roads and bridges Rural infrastructure Railways Water resources Education Urban development
USAID	About US \$120 million in total	Around 300,000 metric tons of wheat to Bangladesh to replenish the country's food stocks and assist destitute families. The USDA also provided 400,000 MT of Section 416 (b) wheat valued at \$64 million (out of a total of 67 million). This wheat was given to the WFP for use in a national feeding program.
JICA	1997 7 1998 15.6	Reconstruction of small and medium bridges on the Dhaka-Chittagong Highway
DFID	32	Part relief, part recovery Included US\$6 million for construction of bailey bridges
WFP	26.9	Emergency Assistance for Post-Flood Rehabilitation and Recovery, 1 June 1999-31 May 2000 125,040 MT of wheat for 2,984,000 beneficiaries

¹⁰ The Project Completion Report for this project was being completed at the time of writing this study.

Sources: various donor documents and websites

The infrastructure and food aid focus of major donors is clear from the information presented in Table 5.1.

5.3 Expenditure by NGOs

Benson and Clay (2001) have noted that at least one quarter of aid is channeled through MFIs. Bangladesh has four large MFIs (the Grameen Bank, BRAC, Proshika and ASA), and a very large number of medium size and smaller NGOs. There is also a large number of international NGOs operating, including CARE, Concern, Oxfam and Save the Children Fund, many of which work through Bangladeshi NGO partners. DFID funded 22 NGOs to carry out work in the relief and recovery phases following the floods (Bacos et al 1999). The NGOs worked in a wide range of recovery related sectors, including housing, infrastructure (e.g. road repair, embankment repair), repair to educational facilities, and agriculture. Their funding is usually targeted at poorer households, meaning that they are likely to have a more direct impact on the most vulnerable than larger scale infrastructure projects. The large sum originally allocated for recapitalization of micro-finance institutions – US\$300 million, the largest single item in the UNDP/GOB needs assessment – is a testament to the key role that NGOs play.¹¹

Indicative figures of recovery funding, excluding loan programs, are provided below in Table 5.2.

Table 5.2: Recovery funding by NGOs following the 1998 floods (US\$ thousands)

Action Aid	900
BRAC	680
CARE	5,376
Oxfam	4,687
Proshika	280
Caritas Netherlands	597

Sources: Russell (2000); Bacos et al (1999); ADAB (1999)

5.4 Sectoral allocations

It is not possible to gain any definitive picture of expenditure by sector during the recovery period, given the way in which current expenditures are coded. For example, many expenditure headings are very broad. There is also the additional problem of delineating relief, recovery and development funding. Such an assessment would have to be done on a project by project basis, which would be very time consuming. However, it is clear from Table 5.1 that there was an emphasis on rehabilitation of infrastructure in terms of overall funding, because of the extent of destruction to infrastructure, but also because this is a funding priority of the GOB, as well as some of the largest donors, particularly the World Bank and ADB. The rationale for this approach is discussed in chapters 6 and 7.

In addition, repairs to educational facilities may have been significant. Housing does not appear as a significant expenditure, despite the extent of the loss. The initial estimate for housing recovery costs was US\$249 million in the GOB/UNDP needs assessment, which placed housing as the second largest single item after recapitalization of microfinance institutions. This finding is in direct contrast to the Turkey and Honduras case studies for this review, and a number of other previous interventions (ProVention Consortium 2002). Many NGOs worked on housing rehabilitation, but the overall number of the affected

¹¹ During and for about a year after the 1998 floods the author was working on an impact assessment with the second largest NGO, Proshika. He had many conversations with Proshika staff during and after the floods concerning their response.

population covered was relatively small in comparison to disbursements for larger infrastructure projects. It is not clear from planning documents why housing was not given greater priority by larger donors.

Chapter 6.

Livelihoods

6.1 Vulnerability and livelihoods in the Bangladesh context

The linear planning process of relief through recovery to development described in many planning documents, including the recent *National Disaster Management Plan* (GOB, nd), may not be relevant to a large proportion of the flood affected people in Bangladesh. Households living in marginal environments worst impacted by floods, despite their best efforts, are also exploited by employers and moneylenders, and lack assets and resources, ensuring the reproduction of poverty. Households in this category are often permanently in the relief phase of development.

A good case in point is the population living in the *char* lands which form and re-form on an annual or longer basis with changes in courses along all of the major rivers, and where households renting land need to move constantly with the shifting rivers. It is uncertain how many millions living in this environment are affected by flooding. A 1989 study (Rogge and Elahi 1989) estimated that five million people in the *char* lands were displaced during major flooding (as in 1984, 1987 and 1988). The figure is certainly higher now.¹²

Many among the *char* populations live in a constant state of flux and of relief/recovery. Any discussion of sustainable livelihoods for this group needs to take on a different perspective to that normally understood by the term (see Sultana 2002; Ashley et al 2000). IFRC (2001) notes that requests for funding for support to *char* dwellers, who were discovered by accident after the 2000 flooding in southwestern Bangladesh, have met little success. Some reasons for this are the complex social relationships which exist in *char* areas, the extreme levels of poverty, and geographical isolation.¹³ The relevance of the sustainable livelihoods paradigm to recovery after disasters is discussed further in the *Synthesis Report*.

6.2 Understanding of vulnerability and livelihoods in the recovery phase

Understanding of, and attempts to build on livelihoods after the floods, was patchy. There is almost no discussion of livelihoods in major infrastructure projects, i.e., the majority of funds being disbursed. This means that either those planning documents are not aware of current thinking around response to disasters, or did not think this information was worth including in project planning documents.

Some NGOs and academic institutions dealt with the issue systematically. Among the most detailed accounts is IFPRI's study of 757 randomly selected households that was carried out immediately after the floods, with follow up surveys in April, May and November 1999 (IFPRI 2001). The main livelihood strategies reported were:

- **Cutting back in non-food expenditure.** On average households spent 71 percent of their budget on food in the first round (November 1998), compared to 78 percent in the second (April/May 1999)

¹² For further details see Schmuck (2000); Chadwick et al (2001).

¹³ In 2001 DFID began a US\$56 million, eight years *Chars Livelihood Project*, targeted at one million poor women and men. Ashley et al (2000) detail the complex land holding system in Kurigram District.

and third rounds (November 1999), suggesting that the impact of the flooding on food security lasted well into the recovery phase.

- **Distress sales of assets, including small livestock.** Poorer households had great difficulty recovering these assets after the floods.
- **Borrowing to purchase food and to fund other expenses,** such as education, farming, repayment of loans, agricultural equipment, was considered the most important coping strategy employed after the flood. Households borrowed mostly from non-institutional sources such as relatives, friends and neighbors, rather than from NGOs or banks.¹⁴ NGOs and banks appeared to be lending primarily for farming and business investments, and loans from cooperatives after the floods carried an interest rate of 42 percent, up from 21 percent before 1997. There was also considerable borrowing from moneylenders at high rates of interest. IFPRI (2001) notes that in the July to December 1999 period, approximately 11 percent of flood-affected households were taking loans from moneylenders, and presumably most of these were poorer households (see also HKI 1999). Meyer (2001) notes that after the 2000 floods in southwestern Bangladesh, 29 percent of affected households had taken loans from moneylenders. A year after the 1998 floods, many households were still repaying debts that had been contracted due to the floods. Perhaps the most important finding of reports reviewed is that there was insufficient credit available in the recovery period, despite the very widespread network of Bangladeshi micro-finance institutions. In terms of supporting livelihoods this should be the first priority of external agents. However, lending should be carried out in a way that fits in with the existing and extensive credit network, and lending for immediate consumption (which may be difficult to repay) should be avoided.¹⁵

¹⁴ For the most part, only poor landless households can access loans from NGOs. For additional reviews which touch on livelihood strategies and support the information provided in the IFPRI study, see ACT (2001); Meyer (2001); CARE (1999); HKI (1999); Zaman (1999). For psycho-social aspects, see Schmuck (2000). For earlier floods see Beck (1994); Rogge and Elahi (1989); Shaw (1989).

¹⁵ The relation between debt and poverty has been well documented in Bangladesh, in particular pre-harvest, lean season loans that have to be repaid to local moneylenders and farmers at interest rates which often range between 50 and 100 percent. MFIs have attempted to break this monopoly, and tend to charge interest rates of between 10 and 15 percent. There may have been some underreporting of loans taken from NGOs, as in some instances poorer households use funds borrowed from one NGO to repay another, something most NGOs do not allow. Unfortunately the IFPRI study does not provide details of source of loan by income decile, which would have provided useful information on where poorer households received loans.

Box 6.1: Livelihoods and credit

It has been understood for some time that credit from MFIs has been effective in reducing vulnerability of poor households (Zaman 1999). The issue of reliable credit being available to the poor in sufficient quantities during the post-1998 flood recovery phase is discussed in Brown and Nagarajan (2000). During this period, most MFIs were essentially experimenting with new types of relief and recovery loans, and most MFIs used loan rescheduling – allowing clients to delay several repayments on their existing loans – as an effective means of supporting clients and also allowing them to avoid substantial losses and defaults on their existing portfolio. In almost all cases, rescheduling was conducted on a case by case basis, and loans were rescheduled from three to ten weeks. However, as a result of rescheduling, many smaller MFIs suffered temporary cash flow crises.

After the floods, many clients withdrew compulsory savings from their accounts – e.g. Grameen Bank members withdrew 95 percent of their compulsory savings, and BRAC members more than half. Levels of savings were quite small however.

Brown and Nagarajan (2000) noted two constraints to provision of recovery loans:

- Clients may not have had the capacity to take on more debt if they had already committed to repaying relief loans. This may be particularly problematic for recovery loans for potentially non-productive assets such as houses. The amount and terms of loans varied with the asset being financed – for example, loans for household repair were issued with more lenient terms than those for productive assets.
- MFIs that had difficulty accessing funds for relief loans also had problems finding recovery loans. Lack of access to recovery loans is perhaps surprising given the reputation and good relations with donors of some of the largest MFIs, as well as high repayment rates. Zaman (1999) for example found that BRAC clients placed a high priority on making loan repayments even during the relief phase, as they saw this as a way of obtaining larger loans. BRAC needed to delay its recovery loan program until April 2000 because it was waiting to receive approval for a grant from a donor.

Killas (raised earthen platforms used as a shelter for livestock) and cyclone shelters played a significant role in providing initial shelter to households. Development of community multi-purpose cyclone shelters had been carried out by a number of agencies after the 1991 cyclone, including the Bangladesh Red Crescent Society, CARITAS and others, supported by a number of donors. It is likely that the protection afforded by these mechanisms resulted in greater ability of households to recover, but there is little or no substantive information on this in the documents reviewed.¹⁶

Further details of livelihoods in Bangladesh after flooding comes from an evaluation of DFID funding to WFP activities, five months after the floods in September 2000 in southwestern Bangladesh, which affected about 2.7 million people. As well as quantitative data collection there was a qualitative livelihood assessment in five flood-affected villages. This evaluation is noteworthy because DFID sought to determine if the WFP interventions were appropriate in the context of current livelihood options of people in the flood-affected areas, in comparison with, for example, a smaller ration, food for work schemes, or other intervention strategies. The evaluation (Meyer 2001) found that there was little or no attention paid to livelihoods during the needs assessment and project planning period; food aid was not provided until five months after the flooding, when food was available in local markets at only slightly elevated prices. In addition, there was a

¹⁶ I am grateful to Ronald Parker of the Operations Evaluation Department of the World Bank for pointing this out.

large, able but idle workforce in the village, implying that food for work and cash for work schemes involving the repair of local infrastructure would have been more relevant ¹⁷

Many of these post-flood recovery strategies have been understood for some time (Beck 1994; 1995). However, building on livelihoods of the poor is a complex issue; many of these livelihood strategies are at such a micro-level that the potential for building on them systematically into project planning may seem limited. Bacos et al (1999) suggest that a second needs assessment be carried out at the start of the recovery phase, in order to prioritize communities and individuals in need. It could also be used as a means of attempting to understand ways of more effectively building on livelihoods. By the beginning of the recovery phase the emergency is largely over, the affected population has returned to its normal lifestyle to the extent possible, and there is little need to rush through project proposals. It would be worth taking the time to carry out an additional needs assessment and consult with the affected population at this point, as this could improve the project considerably.

Some interventions were apparently successful in taking a livelihoods approach. Based on a review of post-1998 flood and other documents over the last 10 years, the areas that could be covered in future interventions include:

- Access to reliable sources of credit at low interest rates;
- Provision of seeds, particularly vegetable seeds and tree seedlings, that will be of use to landless households able to grow vegetables on their homestead land;
- Replenishing the asset base of the poor, in particular provision of small livestock such as chickens, ducks, and goats;
- Cash and food for work programs which involve rehabilitation of local infrastructure used by or of use to the poor;
- Reconstruction of education and health facilities with local materials and labor;
- Support in reconstructing housing that is adaptable to flooding, such as movable housing or housing made from sturdier materials, using local materials and labor; and,
- Provision of information on how to access recovery resources available from the GOB and NGOs.

Some NGOs, for example BRAC, achieved a substantial amount in these areas, but it is clear that the need to support livelihoods has not been scaled up. This area is clearly seen as the domain of NGOs. One of the areas that needs greater attention is the extent to which major infrastructure interventions support or negate livelihood strategies (see DFID 2002; CIDA 2000).

¹⁷ The project was subsequently converted to a two year recovery intervention, with a focus on providing general rations and school feeding programs targeting girls, covering an estimated 950,000 beneficiaries at a cost of US\$40 million.

Chapter 7.

Impact

Reaching conclusions about impact is hindered by the lack of attention to the results of recovery-related interventions, particularly in the case of larger infrastructure projects. In addition, some interventions are currently ongoing, so information on impact is not yet available. Information is more readily available in relation to NGO interventions, although the focus here tends to be on the relief rather than the recovery phase. However, there is a general consensus that the response after the 1998 floods was more effective than in 1988. Bacos et al (1999: 55) sums this up: "there was a general feeling of immense success, especially in those agencies with institutional memories dating back to the floods of 1988. The 1998 response was faster, much more comprehensive and better organized, and in the end truly served the victims of disaster." Box 7.1 provides further details.

Box 7.1: Learning from the 1988 to the 1998 floods

There is a general consensus that the response to the 1998 floods, and in consequence probably the quality of recovery interventions, was superior to that of the 1988 floods. There are likely a number of reasons for this, some of which are at the macro-level and pre-date recovery interventions:

The growth of civil society: In the ten years after the 1988 floods, Bangladesh experienced substantial political change, with the reintroduction of democratic procedures in 1991, and a massive growth in NGO activity.

Civil society activity, both direct implementation of projects and programs aimed at the poor and advocacy work, has led to increased accountability and transparency. Any discussion of the success of recovery programs needs to take into account the wide network of NGOs in Bangladesh, which covers up to 30 million people and 10 million households, mainly through loans to individuals. One of the most prominent features of NGO work is loans going predominantly to women. With the majority of these loans going to poor households, aid delivered through NGOs is likely to be effective in recovery, even though only about 27 percent of aid is channelled through NGOs in Bangladesh. Most evaluations over the last ten years have pointed to the relative success of NGO interventions (See Proshika 2000 for a summary).

Sustained economic growth: Bangladesh achieved sustained economic growth and poverty reduction through the 1990s, meaning poor households were likely in a better position to recover in 1998 than 1988. In addition, previous to 1988 there had been two major floods, in 1987 and 1984, which undoubtedly left many poorer households in a precarious situation. A contributing factor to economic growth was an increased *boro* crop through the 1990s.

Investment in preparedness: There had also been a substantial investment in preparedness, with some 50,000 NGO staff receiving disaster management training (IFRC 2001), as well as technical assistance provided by donors in the area of preparedness and response.

7.1 Impact of infrastructure and food aid

Project documents for the major donors provide the rationale for larger infrastructure as its contribution to economic growth. There is in most cases, even where evaluations or other supporting documentation exists, very limited discussion of the wider potential impacts of rehabilitation of infrastructure, for example the likely socio-economic or environmental impact, or the impacts on gender equality. The interaction between infrastructure and socio-economic development is often not well understood and is in need of greater assessment in the post-disaster period (CIDA 2000).

There has also been a concern expressed over the years, for example in relation to the FAP, that large scale infrastructure projects have led to substantial corruption (DFID 2002). As the World Bank (1996: 67) notes: "External donors recognize the role of foreign aid in sustaining corruption, and have sought to improve competition and transparency in procurement under aid projects." In the case of the World Bank *Emergency Flood Recovery Project* (World Bank 1998), the GOB and World Bank agreed on quarterly rather than annual audits in order to increase transparency, a strategy that was apparently successful.

World Bank

A review of the World Bank US\$200 million credit to the GOB for an *Emergency Flood Recovery Project* for balance of payments support for import of key recovery related goods rated the intervention as satisfactory overall.¹⁸ It was developed in a four-week period, and the funds were disbursed in seven months, about a year ahead of schedule. The review also notes that this project was used a best practice model for several emergency World Bank projects that followed, including in Honduras after Hurricane Mitch, as well as in Turkey and Mozambique. The project is praised for achieving its emergency recovery objectives of helping to maintain macroeconomic stability immediately after the floods and supporting a longer-term strategy of disaster mitigation; one significant indicator of success is the rapidity of disbursement.

Of relevance to this study is not only whether the immediate objectives of the credit were met, but also the nature of expenditure and its likely impact on recovery. Commodity wise expenditure of the project according to World Bank sources is provided in Table 7.1.

Table 7.1: Imports under the Emergency Flood Recovery Project

Commodity category	Amount (US\$ million)	Percent
Food grains	60.2	30
Edible oil	12.2	6.13
Fertilizer	4.5	2.25
Seeds	10.4	5.2
Agriculture equipment and inputs	1.1	0.5
Cement and other construction materials	22.5	11.3
Industrial machinery, spare parts and raw materials	88.8	44.5

Source: World Bank sources. Figures have been rounded.

Of particular interest here is the 56 percent of funds used for construction and industrial purposes. There is unfortunately no information in World Bank reports as to who imported the goods (e.g., private sector or GOB), for what purposes the goods were used, or the likely longer-term impact of these imports in terms of poverty reduction. In the case of industrial machinery there was probably a major impact over the recovery phase, and the same may also be true for a number of the other commodity categories. Even though the original project document noted that (World Bank 1998: 8): "it will be critical to ensure that the ready-made

¹⁸ Using the three principal measures used in World Bank evaluations – outcome, sustainability and institutional development impact, and a three or four point scale in each of these categories.

garments industry, accounting for more than 60 percent of Bangladesh's exports, is able to rehabilitate its machinery and equipment", no details on this are found in follow-up documentation on the project. Given that this was one of the largest (and perhaps the largest) credits to Bangladesh at this time, it would have been beneficial to include this aspect in the assessment of project success.¹⁹

ADB

The ADB allocated US\$104 million for a range of infrastructure repairs, including roads and railways. The rationale given for this was that the resumption of normal life and revival of the economy depend on rapid restoration of critical infrastructure. The project document noted as its objective assisting the Government in restoring key infrastructure and in enabling restoration of normal levels of economic and social activity. The project consists of restoration and rehabilitation of flood damaged facilities in six key sectors: (i) roads; (ii) rural infrastructure; (iii) water resources; (iv) railways; (v) urban infrastructure; and (vi) education; and includes civil works, equipment and materials, and consulting services for project design, evaluation, and implementation.

Benefits were intended to accrue to large numbers of people in severely flood-affected areas of Bangladesh. Restoration of essential communication and social infrastructure facilities were seen to benefit large numbers of the population isolated by flood water for over two months, and the restoration of road and rail links were also seen as essential to provide food grain and relief supplies countrywide, to enable economic activity, and to restore disrupted rural communication and economic activities.

This project was undergoing a project completion review concurrent to this study, and the results of which were unavailable at the time of publication of this report. However, correspondence and interviews with ADB staff suggested that the socio-economic impacts of the project could have been more fully taken into account.²⁰

World Food Programme

The World Food Programme's US\$26.9 million intervention was planned to be part of a Bangladesh Integrated Food-Assisted Rehabilitation project, with bilateral donors, the ADB and the World Bank, in which WFP took leadership. The objective was to assist flood affected, food-insecure populations in the recovery of their prior nutritional and health status, and the reconstruction of household assets, while providing them employment for rehabilitation of flood-damaged public infrastructure. Activities included road and embankment rehabilitation, support to vulnerable women, rising of homesteads, and the rehabilitation of fishponds and plantations. The assistance was also planned to help mitigate future crises and facilitate the revitalization of rural markets for goods and services (WFP 2000).

7.2 Government response

GOB is involved as a partner in most of the areas above through different Ministries, and as noted in chapter 5, provided most recovery funds through agricultural credit. Some Ministries, such as the Bangladesh Water Development Board and the Local Government Engineering Department, were involved in a number of recovery programs, both funded by donors and from their own resources. These joint interventions tend to be evaluated mainly as part of donor evaluations.

One successful area of government response was fiscal measures related to agricultural recovery. Exemption of duty on power tillers was approved in September 1998, leading to an increase in imports from 6,299 units between mid-September 1998 and March 1999 to 17,500 units over the corresponding period in 1997-98. In addition, TSP fertilizer was made completely duty free (Benson and Clay 2001). As noted

¹⁹ It was not possible to access evaluation material relating to the other two World Bank loans – for US\$149 and US\$38 million.

²⁰ Telephone interview, Ahmed Faruque, ADB Bangladesh Country Office, November 2002.

above, US\$540 million was disbursed in 1998/1999, through commercial banks, the Agriculture Development Bank, and NGOs. The apex lending institution for NGOs in Bangladesh, the Palli Karma Sahayak Foundation, disbursed agricultural credit to over 25 million people through 145 NGOs. Agricultural credit provided by the Government, along with additional moisture in the soil as a result of flooding, was one of the key reasons for the successful *boro* (spring) crop, which subsequently led to a decrease in the price of rice about seven months after the peak of the floods (Benson and Clay 2001).²¹ The harvest was some 10 million MT (as opposed to 8.1 million MT in 1997/8). This in turn must have provided extra labor for agricultural laborers, thus supporting the recovery of poorer households, although this is not detailed in any of the reports reviewed to date.

GOB was also involved in a number of ongoing recovery/development programs. Representative is the Vulnerable Group Development (VGD) program, funded jointly by the GOB, WFP, and bilateral donors. The objectives of the VGD are to enhance income-earning capacity and self reliance of ultra poor and food insecure women, and improve the nutritional status of malnourished women and children, and about 1 million beneficiaries are covered (WFP 2000). In its survey of 757 households, IFPRI (2001) noted a significant majority of resources flowing from this program to the poorest 40 percent of households.

7.3 NGO assessments

NGO assessments, including independent assessments, are generally positive about the impact of recovery programs (e.g. DEC 2000; ECHO 2000; GK 2000; Oxfam 1999). DEC (2000) evaluated disbursements of US\$6.8 million provided to 11 British NGOs. While part of this funding was used for relief activities, there were also interventions in housing and agricultural rehabilitation covering some 50 percent of the budget. The report concluded that needs assessments were carried out adequately, coordination was good, targeting was appropriate, and the programs were carried out in a participatory fashion. Housing, however, was an area of weakness (see Box 7.2 below).

The ECHO (2000) evaluation of four NGOs whose work included provision of seeds, livestock and housing, between November 1998 and May 1999 (i.e., including about the first four months of the recovery period) focuses specifically on the rehabilitation phase. It does not provide details of funds disbursed, but notes that the rehabilitation work was intended to reach some 1 million individuals, with the main focus again being on agricultural development and housing. This report also noted a relatively high degree of success as a result of the NGO interventions. Long-term involvement in the affected areas meant that the local organizations supported by ECHO partners were able to accurately identify the most vulnerable people. As part of OXFAM's ongoing programs a distressed persons list was developed in consultation with village Disaster Committees. Beneficiary selection was monitored by a field team, and attempts to corrupt the process were for the most part contained by strong leadership from ECHO partners, the transparency of the objectives and standards of their programs. Coordination and community participation were considered effective, and attention to gender equality was reasonable (ECHO 2000). These and other reports (see Box 7.2 on BRAC) attest to the overall success of NGOs in the recovery phase, as might be expected given their overall performance in relief and development initiatives.

²¹ Also based on personal communication with Edward Clay and Charlie Benson, following their interviews in the GOB Ministry of Agriculture.

Box 7.2: Good practice in recovery – the case of BRAC

The largest NGO in Bangladesh, the Bangladesh Rural Advancement Committee (BRAC), covers some 3 million poor individuals, mainly women, with loans for productive purposes. A number of evaluations over the last five years have shown that BRAC is effective in development work in terms of reducing poverty in a sustainable fashion. BRAC's response to the floods was funded by seven donors and continued until July 1999, covering 55 districts, with a total cost for the recovery phase of some US\$680,000. It assisted about 850,000 flood affected women from landless and marginal farming households. Since most development activities were suspended, BRAC diverted its staff to recovery activities. The strategy used by BRAC was to assist targeted people so that they could quickly get back to their own homes and/or roll back to their regular income generating activities. The main sectors that BRAC worked in were: agriculture, particularly the provision of seeds, social forestry and sericulture, poultry, fisheries, sanitation, and shelter. Most of these activities fed into longer-term development programs that BRAC was already running.

Some of the constraints faced by BRAC point to areas that require further attention as part of an overall response. There was a lack of local varieties of rice, mustard seed and organic fertilizer. The price of seeds went up in the post flood period. Seedlings were not available in the local markets, and had to be purchased from government and local agencies that import seeds.

BRAC is praised in external monitoring reports for providing recovery aid in kind, not cash. Thus recipients could immediately plant the grains and vegetables, rather than losing time trying to obtain these inputs in the market.

One of the main lessons from this good practice example is that NGOs with an ongoing development program are most likely to be effective in the recovery phase at targeting poorer households and supporting their livelihoods.

Sources: BRAC (2000); Russell (2000)

7.4 Housing

One of the least successful recovery related interventions over the last decade after natural disasters in Bangladesh appears to be housing. Major infrastructure projects after the 1998 floods did not include housing rehabilitation; the rationale for this is not presented in project documents, but may be because infrastructure interventions focused on public infrastructure. While information is limited concerning the response to the 1998 floods, it appears that housing interventions supported by NGOs since the 1988 floods, including the 1991 cyclone, have faced a number of similar problems (ALNAP 2002):

- Because of the relatively large scale of the asset, coverage and targeting have been problematic, with leakage to the non-poor and overlap in geographical coverage;
- Much of the housing provided in all interventions was better than replacement, which increased the cost and decreased numbers of the affected population covered. There was little coordination among agencies in design, and there was a wide variation in costs; and
- Lack of participation of the affected population leading to inappropriate design. Problems with design ranged from buildings with too small floor space to use of reinforced concrete pillars in inappropriate soils.

Such problems appear to be generic to housing interventions in the recovery phase, and are discussed further in the *Synthesis Report*.

7.5 Cross-cutting themes

There is limited discussion in both donor and NGO documents and evaluations concerning the extent of needs assessment and community participation and the difference this made to the success of interventions. This is particularly the case in larger infrastructure interventions, but also in some NGO projects. This does not necessarily mean that adequate needs assessments and community participation did not take place, but only that these areas were not considered of sufficient importance to include in project related documents. Bacos et al (1999) make the point that the recovery phase should be able to draw upon the local community during its implementation – the emergency is largely over and any hindrances to adequate affected population consultation caused by the disaster should have been removed.

Overall, project documents and evaluations provide a substantial amount of information on target beneficiaries, particularly in the NGO documents. But there is very little attention paid to who recovered and why, so no conclusions can be drawn concerning this issue. More detailed socio-economic assessments would be needed to answer these questions.

A number of interventions, e.g. those of WFP, BRAC, Oxfam and Gonoshasthaya Kendra specifically targeted women and female-headed households, as they were understood to be the most vulnerable groups. However, very little is said about the promotion of gender equity through the recovery phase-interventions are very much in the *women in development* mode. Little or no information is provided on gender equality in project documents related to major donor infrastructure interventions.

Finally, there were clearly some attempts to link recovery funding to longer-term development programs. The case of BRAC has been given in Box 7.2 above. The choice of large infrastructure programs by large donors was an attempt to promote longer-term economic development in Bangladesh. IFRC (2001) notes that ECHO deliberately moved outside of an emergency mode in its rehabilitation funding to NGOs, in an attempt to break down the relief-rehabilitation divide, and appears to have been successful in doing this. The WFP, on the other hand, appears to have remained largely in relief mode, at least in the earlier part of its recovery work. The World Bank reallocated funds from and adjusted ongoing projects to take into account of the floods, so that its response would fit with its country assistance strategy as a whole.

Chapter 8.

Conclusions

Perhaps the most important conclusion of this study is that the 1998 Bangladesh floods had a lower impact on the affected population than the 1988 floods, even though the 1998 floods were of a considerably longer duration in most places. The study has argued that there are three main reasons for this: the political environment, which saw increased accountability and transparency after 1991 (if still lacking in some areas), and a phenomenal rise in NGOs as both direct providers of resources and advocates for a more open society; economic growth of about five percent, and poverty reduction, through the 1990s, and a significant increase in employment in the garment industry; and investment in emergency preparedness. The policy of the GOB allowing imports of rice by the private sector also appears to have played a significant role in terms of keeping the price of rice stable. These are significant achievements which all fed into improved recovery.

The level of recovery is all the more impressive given the relatively low level of new external resources which flowed into Bangladesh, for example in comparison to Honduras after Hurricane Mitch.

The allocation of a significant percentage of recovery resources to infrastructure deserves further exploration as to its impact on recovery. In particular, the GOB and donors need to pay greater attention to understanding and evaluating the longer-term impact of infrastructure projects, including the socio-economic and environmental impacts. There is a tendency to under-evaluate these areas, as it is assumed that infrastructure development will lead to economic growth, which will in turn lead to poverty reduction. But in the Bangladesh context, where infrastructure is often not planned adequately and is subject to constant threats from flooding and poor maintenance, the link between infrastructure and poverty reduction is less than clear (see CIDA 2000). Choice of emergency funding channels for longer-term rehabilitation may also lead to less scrutiny of infrastructure projects than if they had been funded through regular channels.

The focus on infrastructure may be one of the reasons why the understanding of, and attempts to build on, livelihoods after the floods was patchy. There is almost no discussion of livelihoods in the major infrastructure projects, a situation which the GOB and donors need to address. Given the corruption that has often surrounded infrastructure projects in Bangladesh, the questions should be asked: whose interests does infrastructure meet - donors and the GOB, or the poor?

In terms of livelihoods, perhaps the most important finding of reports reviewed is that there was insufficient credit available during the recovery period. The nexus of exploitation and lack of resources which ensures the proliferation of poverty in Bangladesh is maintained in part by the vulnerability of poorer households to floods. One key way for these households to escape this net is to receive credit to buy productive assets. This is an area on which donors could usefully concentrate greater activity during the recovery phase.

The following were the key areas of entry for support of livelihoods of poorer households:

- Access to reliable sources of credit at low interest rates;
- Provision of seeds, particularly vegetable seeds and tree seedlings that will be of use to landless households able to grow vegetables on their homestead land;
- Replenishing the asset base of the poor, in particular provision of small livestock such as chickens, ducks, and goats;

- Cash and food for work programs which involve rehabilitation of local infrastructure used by or of use to the poor;
- Reconstruction of education and health facilities with local materials and labor;
- Support in reconstructing housing that is based on indigenous design and adaptable to flooding, such as movable housing or housing made from sturdier materials, using local materials and labor where feasible. This housing must be of the kind that can be rebuilt, repaired, or expanded by owners; and
- Provision of information as to recovery resources available from the GOB and NGOs.

Lastly, it may be useful to develop a more differentiated approach to recovery from floods, based on the actual livelihoods of poorer households. Many of the households most vulnerable to floods, for example those in the *char* areas, are in a semi-permanent relief phase and are using a relief to development approach. Even the sustainable livelihoods paradigm may be of limited use in terms of developing responses in relation to these households. Instead, the starting point for interventions should be a clearer understanding of the livelihoods of these households and how these might be supported. Areas close to poor people's livelihoods – such as agricultural wage rates, access to natural resources and productive assets, and access to non-exploitive credit – may be useful starting points.

References

- ACT. 2001. *Project Completion Report. Flood 2000 in southwest Bangladesh*. Dhaka: Action by Churches Together, mimeo.
- ADAB. 1999. *The devastating flood of 1998. Activity Report*. Dhaka: ADAB, mimeo.
- ADB. 2002. *Country Strategy and Program Update. 2003-2005*. Dhaka: Asian Development Bank.
- Ahmed, I. (ed). 1999. *Living with Floods: An exercise in alternative*. Dhaka: University Press Limited.
- Alam, N. 2002. *Lessons Learned from Recovery Efforts after Major Natural Disasters. The case of the 1998 floods in Bangladesh*. Dhaka: background paper prepared for the ProVention Consortium lessons learning review, mimeo.
- ALNAP. 2002. *Humanitarian Action. Improving performance through improved learning*. London: Action Learning Network for Accountability and Participation in Humanitarian Action.
- Ashley, S, K. Kar, A. Hossain and S. Nandi. 2000. *The Chars Livelihood Assistance Scoping Study*. London: DFID.
- Bacos, D., M. O'Donnell, M. Bennish. 1999. *Disaster Response to the Bangladesh Floods of 1998. Nutrition interventions and support*. Dhaka: Save the Children Fund USA, mimeo.
- Beck, T. 1995. 'Fighting for respect and resources in village India'. *Human Organization* 54 (2), 169-81.
- Beck, T. 1994. *The Experience of Poverty. fighting for respect and resources in village India*. London: Intermediate Technology Publications.
- Benson, C. and Clay, E. (2001) *Bangladesh: Disasters and Public Finance. Economic and Financial Impacts of Natural Disasters: an Assessment of Their Effects and Options for Mitigation: Country Study 2*. Washington D.C., World Bank Disaster Management Facility.
- BRAC. 2000. *Flood Relief and Rehabilitation Project. July 1998-July 1999. Phase ending report*. Dhaka: BRAC, mimeo.
- Brown, W and G. Nararajan. 2000. *Bangladeshi experience of adapting financial services to cope with floods: implications for the microfinance industry*. Bethesda: Development Alternatives Inc.
- BWDB. 1998. *Annual Flood Report. 1998*. Dhaka: Bangladesh Water Development board.
- CARE. 1999. *Living with Flood. Final report on CARE- Bangladesh emergency response activities in 1998 flood*. Dhaka: CARE, mimeo.
- Chadwick, M, J. Soussan, T. Martin, D. Mallick and S. Alam. 2001. 'Bank robbery: the real losers in the 1998 Bangladesh flood. ' *Land Degradation and Development*, 12, 251-60.
- CIDA. 2000. *Infrastructure Services Performance Review. Rural Maintenance Programme (Phases II and III)*. Hull: CIDA.

- DEC. 2000. *Bangladesh 1998 Flood Appeal. An Independent Evaluation*. London: Disasters Emergency Committee.
- DFID. 2002. *Making connections. Infrastructure for poverty reduction*. London: DFID.
- DFID, EC and WFP. 1999. dispatched from Dhaka
- Dorosh, P. 2001. 'Trade Liberalization and National Food Security: Rice trade between Bangladesh and India.' *World Development*, 29 (4), 673-689.
- GK. 2000. *Completion Report of Cash for Work Program, reporting period March 2000 – May 2000*. Dhaka: Gonoshasthaya Kendra, mimeo.
- GOB. 1999. *Standing Orders on Disaster*. Dhaka: Ministry of Disaster Management and Relief and Disaster Management Bureau.
- GOB. 1998. *Disaster Management Act. 1998*. Dhaka: Disaster Management Bureau, Ministry of Disaster Management and Relief.
- GOB. Nd. *National Disaster Management Plan*. Dhaka: Ministry of Disaster Management and Relief.
- HKI. 1999. *Impact of the 1998 Floods on rural Households in Bangladesh. A Special Report from the Nutrition Surveillance Project*. Dhaka: Helen Keller International, mimeo.
- Hofer, T. and B. Messerli. 1996. *Floods in Bangladesh. Process Understanding and Development Strategies. A synthesis paper prepared for the Swiss Agency for Development and Cooperation*. Berne: Institute of Geography, University of Berne.
- Huq, S. 1997. 'NGOs' advocacy against the structural approach to flood control: The case of the Flood Action Plan (FAP) in Bangladesh.' *Discourse*, 1 (1), 75-87.
- IFPRI. 2001. *Recovering from the Shock of the 1998 Flood: household food security and nutritional status one year later*. Dhaka: International Food Policy Research Institute.
- IFRC. 2001. *World Disasters Report. Focus on recovery*. Geneva: International Federation of Red Cross and Red Crescent Societies.
- IMF. 2000. *Bangladesh: Recent Economic Developments*. Washington, D.C., IMF Staff Country Report No. 00/25.
- Matin, N. and M. Taher (2000) *Disaster Mitigation in Bangladesh: Country Case Study of NGO Activities*. British Red Cross/DFID, mimeo.
- Meyer, J. 2001. *Emergency Food Aid Assistance to Flood-affected People in South-western Bangladesh. Evaluation Report*. London: DFID.
- Netherlands Development Cooperation. 1993. *Flood Action Plan, Bangladesh. A study on the debate on flood control in Bangladesh*. The Hague: Ministry of Foreign Affairs, the Netherlands.
- Neto, F. 2001. 'Alternative approaches to flood mitigation: a case study of Bangladesh.' *Natural Resources Forum*, 25, 285-297.
- Oxfam. 1999. *Oxfam Bangladesh Flood Programme. Report to DEC*. Dhaka: Oxfam, mimeo.

- Proshika. 2000. *Proshika's Impact Assessment Study 1998-99*. Dhaka: Proshika, mimeo.
- ProVention Consortium. 2002. *State of the Art Review of Evaluations of Reconstruction after Major Natural Disasters*. Washington D.C., ProVention Consortium.
- Rogge, J. and M. Elahi. 1989. *The Riverbank Erosion Impact Study, Bangladesh. Final Report*. Ottawa: International Development Research Centre.
- Russell, N. 2000. *Evaluation of the Bangladesh Rehabilitation Projects post 1998 floods supported by ECHO*. Dhaka: ECHO, mimeo.
- Schmuck, H. 2000. ' "An Act of Allah": Religious explanations for floods in Bangladesh as survival strategy.' *International Journal of Mass Emergences and Disasters*, 18 (1), 85-95.
- Sen, A. 1981. *Poverty and Famines. An Essay on Entitlement and Deprivation*. Oxford: Clarendon Press.
- Shaw, R. 1989. 'Living with floods in Bangladesh.' *Anthropology Today*, 5 (1), 11-13.
- Sultana, N. 2002. 'Conceptualizing livelihoods of the extreme poor'. Dhaka: Proshika, mimeo.
- Tierney, K. 1993. "Disaster Preparedness and Response: Research Findings and Guidance from the Social Science Literature." Delaware: University of Delaware Disaster Research Centre Preliminary Paper 193.
- UNDP. 2001. *Disaster Profiles for the Least Developed Countries. Third United National Conference on Least Developed Countries*. New York: UNDP.
- UNDP. 1992. *Report on Needs Assessment Survey. FAP 26. Institutional Development Programme*. Dhaka: UNDP, mimeo.
- WFP. 2000. *Emergency Assistance for Post-flood rehabilitation and recovery. EMOP 6043.01*. Rome: World Food Programme.
- WHO. 2000. *Evolving Disaster Management Strategy in Bangladesh*. Bangkok: World Health Organization South East Asia Regional Office, mimeo.
- Wood, G. 1997. 'Playing with Rivers: Democracy and the Water Sector in Bangladesh'. *Discourse*, 1 (1), 23-54.
- World Bank. 1998. *Proposed Credit of SDR 146.0 Million to the People's Government of Bangladesh for an Emergency Flood Recovery Project*. Washington, D.C.: World Bank Report No. P-7264-BD.
- World Bank. 1996. *Government that works. Reforming the public sector*. Dhaka: University Press Limited.
- WRPO. 2001. *National Water Management Plan Development Strategy*. Dhaka: Water Resources Planning Organization, Ministry of Water Resources.
- Zaman, H. 1999. 'Assessing the poverty and vulnerability impact of micro-credit in Bangladesh: A case study of BRAC'. Washington D.C., World Bank, mimeo.



THE WORLD BANK

Hazard Management Unit

1818 H Street, N.W.
Washington, D.C. 20433 USA

World Wide Web: <http://www.worldbank.org/hazards>