

## **BANGLADESH: 2004 FLOOD, RESPONSE, DAMAGE AND RECOVERY NEEDS (As of 30 September 2004)**

### **A. Extent of Flooding and Current Situation**

1. In late-June 2004, heavy monsoon rains swelled the waters of the Meghna River, which reached its peak level in early-July. The Jamuna and Padma Rivers also burst their banks in early-July, due to heavy rains in the north of the country, causing flash floods in the north and the west-central districts. The floods spread, eventually impacting Dhaka and other central districts. Nationwide, 36 million people (about 25 percent of the population) across 39 districts were affected by the floods many of which were rendered homeless. Approximately 38 percent of Bangladesh was inundated by the time the waters began to recede in late-August, including 800,000 hectares of agricultural land. As of mid-September, the death toll had reached almost 800. During the emergency, access to potable water and sanitation facilities was diminished, as thousands of tube wells and latrines were affected. The floods also caused heavy damage to major infrastructure such as roads, bridges, railway, embankments, irrigation systems and rural infrastructure as well as losses to the agriculture sector and small-scale enterprises including export-oriented knitwear industry.

2. Between 10 and 16 September, a localized monsoon depression swept over Bangladesh, bringing three times the normal rainfall and causing flooding in the Dhaka and southwest and central areas of the country. Several districts, which had been spared during the previous flood, were affected this time. The Asian Development Bank (ADB) will continue to monitor and assess damage and impact of this flood over the next month through its Bangladesh Resident Mission (BRM).

3. The monsoon flood season is nearly over. Flood situation continues to improve across the country despite some rises in the Brahmaputra-Jamuna River water level. Out of 86 monitoring stations, two points remain above their danger levels. Almost all emergency flood shelters are now closed and flood-affected families are busy rebuilding their homes and livelihoods. But, relief operations are continuing in many areas while rehabilitation efforts are underway across flood-affected areas.

### **B. Response**

4. The Government of Bangladesh (the Government), in coordination with non-government organizations (NGOs), international organizations and bilateral donors, has rapidly responded to the flood emergency and assisted the affected population. On 7 July, the Ministry of Flood and Disaster Management activated emergency response committees at the local levels, and established an operations center in Dhaka to coordinate relief activities. Emergency shelters were opened at about 5,500 locations to house about 1.7 million homeless, over 3,400 medical teams were mobilized, and 800 temporary health centers were established. To assist the flood-affected households, the Government started the Vulnerable Group Feeding (VGF) program. The Government has formulated a number of assistance programs for the affected people to recover and restore their livelihoods.

5. Many NGOs and the International Federation of Red Cross Red Crescent Societies responded rapidly to coordinate relief efforts. They provided food, health supplies and services, water, and other basic necessities to thousands of families throughout the country. Most of these NGOs plan to continue supporting recovery programs.

6. In mid-July, the UN activated a Disaster Management Team to coordinate the activities of the various UN agencies. The UN agencies provided critical emergency supplies to support the Government ministries involved in emergency response and deployed a team to assist in the recovery effort. The Local Consultative Group of development partners<sup>1</sup> established a Disaster and Emergency Response sub-group, which conducted its own damage and needs assessment in the affected districts. Several bilateral donors have contributed resources for post-flood relief programs, which have been channeled through UN agencies and/or NGOs. In terms of the recovery phase, some donors have pledged money towards the rehabilitation of infrastructure.

7. In mid-July, BRM established, an in-house Flood Monitoring Unit. The Unit has been engaged in obtaining latest information on the nature, scope and extent of flood-related damages. It has also been coordinating closely with the other development partners active in Bangladesh and maintaining close contact with key ministries and executing agencies of the Government for collecting relevant information. In response to Government's request, ADB agreed on 9 August to field a mission to Bangladesh to assess, together with the Government and other interested development partners, the extent of flood damage and needs and to prepare the ground for ADB's expeditious rehabilitation response once the flood water had receded.

### **C. Assessment of Damage and Impact**

8. A joint ADB and World Bank (WB) damage and needs assessment mission was fielded from 12 to 27 September 2004. Representatives of the Japanese Bank for International Cooperation (JBIC) and the Government of the Netherlands participated in the mission as observers. The mission held discussions with a multitude of agencies, including all concerned government agencies, UN agencies, development partners, NGOs, public and private institutions, and academics. The mission also visited several flood-affected districts to meet with local authorities and communities and collect damage information.

9. The 2004 floods are likely to be as devastating as the 1998 floods in many ways. The joint mission's preliminary estimates show that total damage to assets and output losses are approximately Tk127 billion (about \$2.2 billion) or 3.9% of GDP (\$56.9 billion in FY2004), most of which correspond to lost assets. Due to the lack of available information and data, damage incurred during the September flood is not covered in this assessment.<sup>2</sup> Residential housing, roads, bridges, crops, fisheries, and livestock have suffered the most damage. Output losses have been mostly incurred by the private sector, with the agriculture sector constituting a large share of these losses. The largest assets and output loss occurred in the agriculture (including livestock and fisheries) sector, which was estimated at Tk34 billion (\$580 million) or 27% of the overall loss.

10. Although the 2004 floods affected both poor and non-poor households, the poor were generally least able to withstand the negative impacts of the disaster on household income, individual health, and personal security. Women and children were particularly vulnerable to such adverse impacts. In rural areas, households living in the northeast Bangladesh, and near major rivers, suffered from the longest and generally the most severe flooding. Within these areas, landless laborers and small farmers who lost crops were the most severely impacted. In

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<sup>1</sup> The ADB is an active member of the Local Consultative Group.

<sup>2</sup> All estimates of damage and recovery needs indicated in this paper are subject to change since damage assessments of the September 2004 flood continue until end-October 2004.

urban areas, slum dwellers who typically live in poorly drained areas suffered from long periods of water logging, which led to increased prevalence of diarrhea and other water-borne diseases. Floodwaters also reduced employment opportunities and incomes of these households.

11. The recent floods caused four visible environmental impacts: riverbank erosion; soil erosion; water logging; and water contamination and health risks. The flooding has exacerbated riverbank and soil erosion, especially along embankment areas close to major rivers. Water logging is also reported to have caused health risks in the urbanized low-lying and flood-prone areas. It was further reported that persistent drainage congestion, poor solid waste management, and inadequate water and wastewater treatment facilities contributed to the creation of unhygienic conditions.

12. The flood is expected to adversely affect the economy by damaging infrastructure, reducing economic growth and upsetting the macroeconomic balances. Preliminary analysis shows that because of the flood, the economic growth of fiscal year (FY) 2005 (July 2004-June 2005), which was earlier projected to be about 6%, would likely decline to about 5% from 5.5% in FY2004. Agriculture, particularly the crop, livestock and poultry subsectors, and small and medium scale industries, are likely to be the most adversely affected in the short run. However, these macroeconomic effects are expected to be temporary and to be overcome in the context of Bangladesh's good fiscal and macroeconomic performance unless the implementation of immediate recovery works is substantially delayed.

13. In addition, the balance of payments position may somewhat deteriorate. The external current account balance, which had a surplus equivalent to 0.1% of GDP in FY2004, was earlier projected to have a deficit equivalent to 0.9% of GDP in FY2005 before the floods. Additional reduction in export growth due to the floods, combined with additional flood-induced imports, is likely to increase the current account deficit by 0.2% to 1.1% of GDP, even after taking into account increases in remittances from overseas. This could create pressure on foreign exchange reserves, which were about \$3.1 billion or 3.7 months of imports at the end of September 2004.

14. The relief effort, expansion in food-assisted safety nets, repairing damage to public property, and the overall impact of floods on economic growth is likely to put pressure on both public expenditures and tax revenues. The total budget deficit is expected to rise from 3.2% of GDP in FY2004 to 4.4% in FY2005. Delayed transplanting of *aman* (wet season crop) and flood-induced setback in other crops may also lead to higher inflation.

#### **D. Recovery Needs**

15. Of \$2.2 billion damage estimated by the recently completed ADB-WB joint mission (para 8 above), damage to assets was estimated at about \$1.3 billion, which was as high as the 1998 flood damage of \$1.2 billion - \$1.4 billion although the 2004 flood inundated a smaller area than the 1998 flood. This was mainly because of increased population density, more infrastructure development over the past eight years and the devastating flash flood experienced in many parts of the country during the 2004 flood. The joint mission's preliminary assessment indicates that recovery needs would range between \$1.5 billion and \$1.7 billion assuming flood-resistant design standards will be applied for the reconstruction in order to prevent the recurrence of damage from future floods of similar magnitude. Of this amount, recovery needs for public physical and social infrastructure are estimated at \$680 million - \$730 million.

16. The joint ADB-WB mission proposed phased assistance to provide post-flood financial and other assistance to Bangladesh, taking into account the need for long-term disaster management and other development partners' efforts. This program would include: (i) Phase I: immediate recovery assistance of up to 15 months, which addresses urgent rehabilitation activities in critical sectors such as roads and railways, rural infrastructure, water supply and sanitation, education, water resources management, municipal infrastructure; (ii) Phase II: medium-term assistance up to 5 years, focusing on critical sector needs, including social and physical infrastructure; and (iii) Phase III: long-term, multi-hazard risk management program beyond 5 years.

17. It is expected that ADB's recovery assistance will involve expeditious processing of an emergency assistance project (EAP) to be implemented for a period of two and a half years, which will cover both immediate recovery and short-term assistance (Phase I and part of Phase II). The EAP will comprise a new emergency assistance loan (EAL) and use of loan savings by restructuring the existing loan portfolio. A Country Programs Confirmation Mission will be fielded in late-October 2004 to refine and reprioritize ADB's programmed assistance for Bangladesh in 2005 in close consultation with Government agencies concerned. Reallocations from several of the 2005 loan pipelines are expected, which will be supplemented by an additional ADF allocation for the EAL. During the joint mission, GOB requested financial assistance of \$250 million each from ADB and WB. However, the total financing available will be determined following further consultation with the Government under the guidance of ADB Management. It is expected that the proposed EAP will be submitted for Board consideration in mid-January 2005. Meanwhile, Management approved effective 12 September 2004, advance action, covering procurement preparatory work and recruitment of consultants, and retroactive financing for the proposed EAP.

18. Given the magnitude of the damage and recovery needs, and taking into account ADB's experience with past flood damage rehabilitation projects and comparative strengths, the sectors/sub-sectors for possible inclusion in the proposed EAP would be: rural infrastructure (including rural roads), roads, railways, water resources, municipal infrastructure, water and sanitation in secondary towns, along with support for disaster preparedness and mitigation. The inclusion of any sector/sub-sector will, however, depend on several factors, including extent of actual damage, Government's priorities and its past implementation performance on similar project,<sup>3</sup> ADB's ongoing and planned lending programs, and planned assistance by other development partners, particularly WB and bilateral donors. In addition, anticorruption measures will be given special attention in the design of the EAP.

19. The EAP will be followed by mid-term to long-term assistance. This assistance will cover a period up to 5 years and beyond and will be based on the new Country Strategy and Program (CSP), which is currently being prepared by ADB in close consultation with the Government and stakeholders. The new CSP, guided by the Government's national poverty reduction strategy is expected to be completed by mid-2005 for Board consideration. One of the key priorities being considered under the new CSP is disaster preparedness, through both stand-alone technical assistance and investment projects for improved water resources and flood management. In addition, the new CSP is expected to mainstream flood management in all operations, e.g., by including flood-resistant design in all social and economic infrastructure projects, together with institutional strengthening for better disaster management.

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<sup>3</sup> The GOB had satisfactorily completed Flood Damage Rehabilitation Project (\$104 million ADF: Loan 1666-BAN[SFI]), approved in December 1998, and South West Flood Damage Rehabilitation Project (\$54.8 million ADF: Loan 1825-BAN[SFI]), approved in December 2000, within the planned implementation period of 2.5 years.