



Asian Development Bank

Operations Evaluation Department
Operations Evaluation Division 1

Work-in-Progress: Not for Quotation

Title **Project Performance Evaluation Report on Loan No. 1289-BAN(SF):
Khulna-Jessore Drainage Rehabilitation Project and TA No. 2012-BAN:
Khulna-Jessore Drainage Rehabilitation
Proposed Evaluation Approach**

Author **Ganesh Rauniyar, Evaluation Specialist, OED1**

Date **31 January 2007**

A. Background

1. Bangladesh has an estimated 25,000 kilometers of drainage channels¹ but the average annual sediment load of 1.7 billion tons seriously undermines the conveyance capacity and navigability of these channels. Poor drainage conditions lead to local runoff and local flooding. Local flooding may be associated with (i) backwater effects from downstream imposed by the main river systems and high tides; (ii) restricted drainage due to reduced capacity of channels caused by siltation; (iii) increased head loss in the natural drainage network imposed by new cross drainage structures (which may be too small); (iv) increased head loss in the natural drainage network imposed by new roads with inadequate bridges, box-culverts which increase drainage path more lengthy; and/or (v) development of flood control embankments, if drainage facilities are inadequate.

2. Many drainage schemes perform significantly below their potential due to a variety of shortcomings. These include inadequate drainage, use of inappropriate technology, system layouts that do not adequately reflect existing conditions, inappropriate governance arrangements, and poor management practices. Injudicious planning of roads, canals and other infrastructure blocking the natural drainage ways also cause many of the drainage problems. Similarly, water logging problems arise due to siltation of waterways, reduced storage capacities of downstream waterbodies and waterways, shrinking floodplains (supposed to be water drainage areas) due to settlements, cropping and other human activities, construction of railways, roads and highways, creating barriers for water movement, and construction of polders in almost all poldered area water drainage is a concern.

3. The Khulna-Jessore Drainage Rehabilitation Project (the Project) was formulated under the Second Coastal Embankment Rehabilitation Project.² The Project was appraised in July 1993. The loan negotiation took place in November 1993 and the Asian Development Bank (ADB) approved a loan³ of SDR35.914 million (\$50 million equivalent) and a technical

¹ Drainage issues in coastal zone, working paper WP 045, Program Development Office, Integrated Coastal Zone Management Plan Project, November 2005.

² ADB. 2003. *Report and Recommendation of the President to the Board of Directors on a Proposed Loan and Technical Assistance Grant to the People's Republic of Bangladesh for the Khulna Jessore Drainage Rehabilitation Project*. Manila.

³ Loan 1289-BAN(SF): *Khulna-Jessore Drainage Rehabilitation Project*, for \$50 million, approved 14 December 1993.

assistance (TA) grant⁴ for the Project. The loan became effective on 4 April 1994. The Project got one extension and closed on 18 March 2003. The Bangladesh Resident Mission (BRM) took over implementation responsibility of the project from 1 July 2000. The Project closed 38 months later than originally planned. ADB fielded one fact-finding, one appraisal, one inception, nine review, six special project administration, one project specific consultation, and one project completion review mission. The project completion report (PCR) was prepared by ADB's BRM and circulated on 25 October 2004. The PCR rated both the Project and TA successful.

4. The Association of Development Agencies in Bangladesh expressed deep concern about the project design in a letter to the ADB President dated 13 February 1997. Similar voices had been raised by several nongovernment organizations (NGOs) and in public media.⁵ Following the strong opposition from the beneficiaries, the technical component of the Project was redesigned in March 1997. While the Project incorporated the Tidal River Management (TRM) concept, there are claims that the TRM was not implemented in accordance with people's suggestions⁶ and as a result, the Project has now left a legacy of environmental disasters exemplified by silted-up, dead rivers, permanent inundation of thousands of hectares of land and the loss of indigenous varieties of fish and crop biodiversity.⁷ It is also argued that the embankments constructed under the Project disconnected the rivers from floodplains and wetlands, cutting fish migration routes, and disturbing fish spawning areas of indigenous fish varieties. In addition, land acquired for the TRM has, reportedly, not been compensated. One recent article notes that despite all efforts, the water logging problems have become worse and permanent. Currently an estimated 300,000 people in the Khulna-Jessore region live year round in a waterlogged polder. Children cannot go to school, farmers cannot grow food, and cattle are held on dikes.⁸

5. The Operations Evaluation Department (OED) conducted an in-depth review of the PCR in July 2004 and raised specific concerns about the ratings associated with relevance and sustainability assigned in the PCR. It declined to validate the rating of successful.

B. Objective and Scope of the Project

6. The principal objective of the Project was to reduce poverty through increased agricultural production and creation of on-farm employment in the project area. This was to be achieved by (i) mobilizing beneficiary participation in design, implementation, and subsequent operation and maintenance (O&M) of the project facilities; (ii) rehabilitating the existing drainage infrastructure to reduce congestion and protect the project area from tidal and seasonal flooding; (iii) providing support for the expansion of agricultural extension services that was necessary as flooded lands were returned to productivity; and (iv) improving management of fisheries in polder areas to ensure continuing supply of non-commercial fishes caught and consumed primarily by the poor. The Project was expected to cover approximately 100,000

⁴ TA 2012-BAN: *Khulna-Jessore Drainage Rehabilitation Project*, for \$920,000, approved 14 December 1993.

⁵ Impact of ADB investment in the water sector in Bangladesh by Zakir Kibria, Executive Director, BanglaPraxis; Massive projects of little use: waterlogging continues in Southwestern districts. Available: <http://www.sos-arsenic.net/english/development/destruction.html>

⁶ Withanage, H. 2006. Another ADB Disaster! Khulna-Jessore Drainage Rehabilitation (KJDRP)—Bangladesh. *Bankwatch*: V(1).

⁷ Available: www.asianpeoplesforum.net/twiki/tiki-download_file.php?fileId=16 (Supplemental)

⁸ Available: www.ben-center.org/RiverLinkingDocs/REPORT%20on%20Amsterdam%20meeting%202006.doc

hectares of flat, low-lying, alluvial lands with seasonally inundated depressions called “beels,” supporting a population of 800,000 inhabitants in the Southwest Bangladesh.

7. The TA (footnote 4) provided for the Project was to help social preparation and beneficiary participation in Bangladesh Water Development Board (BWDB) projects by assisting BWDB in developing and implementing appropriate procedures. The TA scope included (i) development of a water management association (WMA) plan; (ii) preparation and implementation of information campaign; (iii) formulation of benefit monitoring and evaluation (BME) indicators, together with periodic impact assessment studies; (iv) formulation of land acquisition, compensation, and resettlement plan; (v) legal framework for the registration of WMAs; and (vi) recommendations of modifications of existing legislation or new legislation to allow registration of WMA as a legal entity.

8. During implementation, the Project encountered problems with social acceptance of the technical and structural design solutions and, as a result, the Project commissioned a feasibility study for overall drainage plan which was completed in March 1997. The Project finally adopted a beneficiary-preferred TRM approach to alleviate drainage congestion problem.

1. Major Points and Issues Raised During Loan Processing

9. **Management Review Meeting (MRM).** Community participation was seen as a vital issue during the Project MRM of June 1993. The community was expected to play a key role in the Project through the formation of water management associations, committees, and organizations (WMA/C/O) with the assistance of NGOs. Caution to project implementation and sustainability, however, was expressed given the enormous challenge in the project area including possible environmental impacts and implementation impediments such as the presence of opposition groups, involvement of multiple agencies, and the legal status of WMCs. The Project was environmentally classified under Category B and, thus, would need to comply with ADB’s environmental procedures as outlined in Section 21 of the Operations Manual.

10. **Staff Review Committee (SRC).** The subsequent SRC of October 1993 highlighted the following issues: (i) adjustment of the local cost escalation factor to ensure consistency with other projects currently processed for Bangladesh during that time, (ii) that the fisheries management component would not duplicate activities of other projects, (iii) a possible inclusion of an environment-related covenant based on review of the results of the Summary of Initial Environmental Examination and as discussed with the Office of the General Counsel, and (iv) the need for further clarification or justification in terms of the share of local cost financing and the proposed accompanying TA.

11. **Board Discussions.** The Project was approved by the Board on 14 December 1993. The Project was cited for its consistency with ADB’s operational strategy and the Government’s policies and strategies during that period. More importantly, the Project’s potential contribution to agricultural production, and that of community participation that was envisaged to increase sense of project ownership was also recognized. In spite of the positive aspects of the Project, several issues and concerns were raised such as: (i) the sustainability of O&M upon project completion; (ii) remonstrance coming from agencies, local communities, and other interest groups given the new planning approach; (iii) challenges in forming WMAs; (iv) NGO selection; (v) beneficiary identification given skewed land ownership; (vi) track record of the executing agency (EA); (vii) project duration; and (viii) negative environmental externalities.

2. Major Findings of the Project Completion Report

12. A project completion review mission was fielded from 4–29 February 2004. BRM prepared the PCR in September 2004 and circulated it on 25 October 2004.⁹ Actual project cost was \$44.9 million, much lower than the appraisal estimate of \$62.7 million.¹⁰ The difference was attributed mainly to the depreciation of the Taka. Overall, the Project was rated as successful. The Project was rated highly relevant given its adherence to ADB's strategic objectives and its emphasis on supporting greater private sector participation and market efficiency improvements. Likewise, it was assessed as consistent with the Government's development policy of poverty reduction. According to the PCR, beneficiary participation highlighted the relevance of the Project.

13. Project implementation was seen as efficacious (effective) given the following: (i) reduction of poverty incidence from 75% at appraisal to 53% at evaluation, (ii) cropping intensity increased by 27%, (iii) creation of 3.5 million person-days of employment per year, and (iv) strengthened institutional capability of the EA and WMOs. The Project was also rated efficient as it reportedly achieved its outputs and purpose such as (i) increased agricultural production; (ii) creation of both on- and off-farm employment; and (iii) the adoption of beneficiary approved, innovative, and cost effective TRM design. The PCR computed the Project's economic internal rate of return to 20.6%. Finally, project sustainability was rated as likely based on (i) sustained mitigation measures for chronic drainage congestion; (ii) perceived growth in agricultural production, employment, and household incomes based on a PCR survey, (iii) development of good management practices by the EA; (iv) demonstrated willingness of beneficiaries in sharing responsibilities and meeting the costs of O&M; and (v) the increased capacity of the WMO and EA in terms of skills, experience, and commitment. The PCR reported that the Project was assessed to have moderate institutional and development impacts and produced no adverse negative environmental externalities.

14. A number of lessons drawn from the Project by the PCR included: (i) the adequate and timely recognition of local wisdom, knowledge, practices, and experience of potential beneficiaries in project design and implementation; (ii) close and functional coordination among the various offices and similarly, among different service providers during project implementation; (iii) the importance of joint efforts between the EA and WMOs as prerequisites for sustainable O&M and efficient water use; and (iv) the need for effective policy and regulations to support water resource management.

3. Issues to be Addressed During Operations Evaluation Mission (OEM)

15. The proposed Project Performance Evaluation Report (PPER) aims to rate project performance based on assessment of relevance, effectiveness, efficiency, and sustainability of the Project. The issues during project implementation and the concerns raised by various stakeholders and by the in-depth OED review of the PCR require that the PPER be more comprehensive, which in a number of instances go beyond those addressed by the PCR. The OEM will also assess the validity of the concerns and claims expressed by NGOs. Key issues to be addressed in PPER are:

⁹ ADB. 2004. *Project Completion Report on the Khulna-Jessore Drainage Rehabilitation Project in Bangladesh*. Manila.

¹⁰ Savings in total project cost comprised \$5.6 million in foreign exchange and \$12.2 million in local currency costs

- (i) **Institutional capacity of the Bangladesh Water Development Board.** The Project lagged behind in the formation of Water User Groups (WUGs) and WMAs and only 35% of the beneficiaries had joined WUGs at the time of PCR. The WUG and WMA formation took place at a much later stage of the Project than originally envisaged and within a short period. However, beneficiary participation was recognized as a critical success factor for the Project at all stages, including project design, construction, and O&M. The Directorate of Land and Water Use (DLWU) of BWDB were expected to mobilize beneficiaries with the help of local NGOs. The WMAs were supposed to be a focal point for EA interactions with project beneficiaries. Two of the six NGOs were dropped due to their poor performance. The OEM will assess whether DLWU had adequate capacity and commitment to engage NGOs and promote active beneficiary participation at different stages of the Project and the extent to which the Project contributed to strengthening beneficiary participation modalities in BWDB. The ongoing relationship between BWDB and WMAs and roles of NGOs in harmonizing better relationship between beneficiaries and the EAs will also be examined.
- (ii) **Design of drainage networks rehabilitation.** The beneficiaries rejected the initial project design for drainage network rehabilitation, leading to more than 3 years delay in project implementation. Structural engineering solutions proposed by the Project were not compatible with the needs of beneficiaries and local wisdom. In the end, the Project adopted the TRM approach proposed by local beneficiaries to resolve the drainage congestion problem. The OEM will assess the initial consultation process adopted by the Project, which resulted in proposed solutions unacceptable to local population. While the initial performance of the TRM approach reportedly seems encouraging, the OEM will assess the effectiveness, viability, and sustainability of this approach in Bangladesh and its replicability elsewhere in the region encountering similar problems.
- (iii) **Poverty impacts.** Two of the four components of the Project (agricultural development and fisheries management) were dropped in 1999 on the recommendation of an ADB review mission. Reportedly, the Project took this step to avoid duplication of efforts already undertaken by the Department of Agricultural Extension (DAE) and Department of Fisheries (DOF). However, the Project was conceived to have a strong poverty focus with considerable emphasis on increased agricultural productivity and improved management of fisheries in polder areas. This was seen as requiring active involvement of DAE and DOF. There are also concerns that some of the land acquisition claims remain uncompensated. The OEM will assess the extent to which the Project created on-farm employment and benefited the vulnerable population, including marginal and landless households; distributional benefits in terms of access to reclaimed land and productivity gains from agricultural development and fisheries management of polder areas; contribution of DAE and DOF activities in reducing poverty in the project area; and property right issues. The OEM will also consider whether the dropping of two components reflected design deficiencies (thus reducing relevance) or were a correct and timely response to changed circumstances. Furthermore, OEM will assess if the Project has had any implications for resettlement of households, particularly the poor and vulnerable ones previously benefiting from economic activities.

- (iv) **Environmental impacts.** The rationale of classifying the Project in Environmental Category B is not clear. The OEM will assess the appropriateness of this classification. While PCR findings indicated no adverse environmental impacts due to the Project, it is not clear how the Project mitigated its impacts on fish migration routes and spawning areas, misuse of chemicals, and other agricultural inputs, disposal of dredged material, and potential increase in the incidence of diseases. The OEM will examine the extent to which adverse environmental impacts were mitigated by the Project and ways in which environmental monitoring data collected by the Project were used during project implementation and management decision-making. Based on available secondary data, the OEM will also review trends in prevalence of water-borne diseases and status of fishing habitats in the project area. The issues raised in OED's recent special evaluation study on environmental safeguards will be taken into account.
- (v) **Sustainability.** The PCR rated the Project to be likely sustainable. However, OED's in-depth review of the PCR noted that sustainability of the Project was significantly dependent upon satisfactory operations of management organizations; where only 35% of beneficiaries had joined water management organizations by project completion. The OEM will assess sustainability of the WMOs both in terms of their membership structure and growth and financial viability. The continued viability of WUGs and WMAs is important for project sustainability and, thus, the OEM will assess membership criteria as well as functional status of WUGs and WMAs. In addition, the OEM will also examine efforts of WMAs and WUGs in seeking technical assistance and other means of revenue generation for O&M for drainage network rehabilitation.

C. Approach and Methodology

16. The proposed Evaluation Design Matrix is presented in Appendix 1. The PPER will adopt a mixed method approach and use qualitative and quantitative data collection techniques. The evaluation will involve:

- (i) a desk review of project files, reports and documents provided by the BRM, BWDB, and NGOs¹¹ to understand operational performance and constraints experienced in project implementation and remedial actions taken by the Project;
- (ii) secondary data collection and analysis, in particular, environmental monitoring data collected by the Center for Environmental and Geographic Information Services, agricultural and fisheries statistics collected at the district level by DAE and DOF staff, poverty data collected by project *Upzillas* (local administrative units), health statistics (especially water-borne diseases) collected by Department of Health, and land use data collected by BWDB and DAE to ascertain project impacts on land use, fishing in polder areas, human health, economic and social well-being of affected population;
- (iii) key informant interviews with local and senior staff of relevant agencies (Ministries of Planning and Water Resources, BWDB, DAE, DOF, Center for Environmental and Geographic Information Services, NGOs, BRM, Yusuf and

¹¹ A review of documents at ADB headquarters has been completed at the time of preparation of this approach paper.

Associates [consultants for PCR]), local community and environmental leaders, and local consultants engaged by the Project in order to assess relevance of project design, consultative process adopted by the Project during design and implementation, reasons for delays,¹² and aggregate environmental and poverty impacts due to the project activities;

- (iv) focus group discussions with randomly selected 10 landless groups, 5 fisher-folk groups in polder areas, 30 WUGs, 4 WMAs and 1 Federation of Water Management Association representatives to gain first hand insight into operational modalities, revenue collection procedure, O&M mechanisms, and likely sustainability of local water management organizations;¹³
- (v) visit to selected project sites to observe operations and management of drainage rehabilitation systems;
- (vi) a 1-day workshop with concerned NGOs to better understand environmental and socioeconomic impacts due to project activities and the concerns of NGOs with respect to these;
- (vii) face-to-face structured interviews with randomly selected 240 (120 per district, 2 villages per district)¹⁴ household heads to assess income and poverty impacts of the Project; the respondents will include small and marginal farmers, landless, women and fisher-folks originally affected by flooding due to drainage congestion; household data will be collected from the respondents on their pre-project and post-project living conditions, including education of children, health conditions and access to drinking water, on-farm and off-farm employment, household production, access to and use of land resources, cropping patterns and intensities, women's access to and control over resources, access to services and markets, expenditure patterns, and on-farm and off-farm incomes; the survey sample will have equal representation of male and female respondents;
- (viii) appropriate use of baseline, BME and PCR data collected by the Project and associated NGOs; OED requested BRM for the Project's BME reports and a copy of the survey report completed for PCR; OED also requested BRM to provide original economic and financial analysis soft files used for the PCR; **however, BRM advised OED that requested information are not available; this is most unfortunate;** the OEM will reevaluate economic and financial rates of return using updated data on key parameters;
- (ix) establish counterfactuals based on information contained in baseline/ socioeconomic and environmental analysis prior to drainage rehabilitation, review of secondary data collected by various agencies in the project area and recall interviews with key informants and beneficiaries;

¹² This will include disputes in land acquisition as well as claim associated with non-payment of compensation to land owners.

¹³ At the time of PCR, there were 507 WMGs, 58 landless groups, 48 fisher-folk groups, 58 water management committees, 9 WMAs and one Federation of Water Management Association (footnote 9).

¹⁴ The project is spread over two districts (Khulna and Jessore), covering four villages in each district.

- (x) update the project Design and Monitoring Framework contained in the report and recommendation of the President (footnote 3) with PPER assessment as per Appendix 2; and
- (xi) gather photographic evidence to support evaluation findings.

17. The OEM will prepare structured and semi-structured questionnaires for the key informant interviews, focus group discussions and household surveys in consultation with the international and national consultants. The questionnaires will be pre-tested and amended as deemed necessary before conducting interviews and discussions. The Mission Leader, with the support from the staff consultants and an OED Evaluation Officer will analyze field data and prepare the PPER. The quality and consistency of data collected by the OEM will guide the specific method of data analysis, which will include univariate, bivariate and multivariate analyses, data permitting.

1. Requirements for OED Staff Resources and Consulting Services

18. An Evaluation Specialist from OED will lead the PPER. The evaluation team will comprise: (i) the OED Team Leader, (ii) an OED Evaluation Officer (headquarters-based for intermittent analytical support); (iii) an Operations Evaluation Assistant (headquarters-based for intermittent administrative, logistic support and report finalization); (iv) an international staff consultant, with extensive experience in drainage rehabilitation and water management; and (v) a domestic staff consultant, with experience in socioeconomic surveys, participatory institutional development, and social mobilization in water management. A senior OED1 staff will participate in the NGO workshop and/or evaluation wrap-up meeting. The OEM will be conducted from I to IV March 2007, subject to a degree of political stability in the country. The OEM will comprise an OED Evaluation Specialist (Team Leader), an international staff consultant, and a domestic staff consultant. Each of the two staff consultants will be engaged for about 28 person-days. The OEM will also engage four experienced local enumerators to facilitate data collection. The terms of reference are presented in Appendix 3.

2. Milestones and Deliverables

19. The proposed schedule for PPER is as follows:

Approval of evaluation approach paper	IV January 2007
Operations Evaluation Mission	I–IV March 2007
Data analysis and preparation of draft PPER	I–IV April 2007
Submission to DG	III July 2007

Appendixes

- Appendix 1: Proposed Evaluation Matrix
- Appendix 2: Project Design and Monitoring Framework
- Appendix 3: Terms of Reference