Unraveling KJDRP

ADB Financed Project of Mass Destruction in Southwest Coastal Region of Bangladesh

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The Context

"In the future, the project design should involve more rigorous public consultations and incorporate the learned experience of the beneficiaries".

Project Completion Report (PCR)
Khulna-Jessore Drainage Rehabilitation Project (KJDRP)
The Asian Development Bank (ADB)

"The design and implementation of development projects should recognize adequately and timely the wisdom, knowledge and practical experiences of the potential beneficiaries. For Example, project implementation delays could have been reduced if the beneficiaries demand for the TRM system had been appreciated early".

Project Completion Report (PCR)
Khulna-Jessore Drainage Rehabilitation Project (KJDRP)
The Asian Development Bank (ADB)

After several failed attempt to address river drainage congestion and waterlogging problem in southwest coastal districts of Bangladesh, the Bangladesh Water Development Board (BWDB) in 1995-96 came up to implement Khulna-Jessore Drainage Rehabilitation Project (KJDRP) with $ 62 million finance from Asian Development Bank (ADB). The river drainage congestion problem in the rivers of southwest region of Bangladesh was/is a result of a series of earlier donor funded interventions (including ADB) on the river systems of the region since sixties with constructions of polders/enclosures that de-linked the floodplain wetlands from the rivers. KJDRP was officially completed in 2004.

The stated objective of KJDRP was to alleviate river drainage congestion. KJDRP met people's protest in its initial stage. The local communities, skeptical of the project design and the approaches to the problem suggested in the project, launched massive movement and suggested alternative ecologically sound approaches/concept. The leading personalities of the movement survived police harassment and detention order and had to go to higher court to secure bail. The popular concept was based on indigenous water management practices developed over generations. The concept later entered into the lexicon of water "experts" as Tidal River Management (TRM). Local communities demanded environmental and social impact assessment (EIA and SIA). The EIA recommended the peoples concept of TRM and commented that its cost effective, environment friendly and acceptable to people.

In 1997 and 1999 ADB sent fact-finding missions and endorsed the viability of TRM. ADB advised the BWDB to redesign the project and incorporate the concept of TRM. However, the TRM was not implemented according people's suggestions. The failed project has now left a legacy of environmental disaster exemplified by silted up dead rivers, permanent inundation of thousands of hectares of land and loss of indigenous variety of fish and crop bio-diversity. Moreover, the land acquired for the TRM was not compensated. Local wisdom and water management practices were undermined.

This report is a preliminary attempt to document, understand and analyze the project, community experiences, people's movement, the role of the ADB and to find a long term and sustainable solution to the environmental problems in southwest coastal region, towards community based river basin management.

A Brief History of Water Resources Management in Southwest Coastal Region

Ecology and Indigenous Water Management Practice

Southwest coastal region of Bangladesh is a unique brackish water ecosystem comprising the districts of Satkhira, Khulna, Bagerhat and the southern part of Jessore. The region is a tidal wetland flooded by high tide twice in a day in harmony with the lunar cycle. The region is rich in biodiversity with hundreds of species of fish and saline tolerant rice varieties. The local communities developed an indigenous knowledge system of water and river basin management uniquely adapted to this natural process. Local communities used to construct temporary earthen embankments, low dikes and wooden sluice gates around the areas to protect the arable land from saline water intrusion. In the rainy season farming communities exchanged saline water of their fields with river water when it became almost sweet. Sweet water normally minimizes the salinity of the land. Thus they got good harvest and variety of fish. It was based on a local practice called *doser badh* (embankment construction by community) or *ostomasi badh* (embankment for eight month), and effective and innovative management of tidal flow and sediment, for agricultural production and land formation. The process allowed the sediment carried by tidal flow to deposit on the *beels* or wetland basins. The deposited sediment raised the land level of the wetlands. Due to this traditional

community based practice, based on "solidarity economy"[1], and indigenous ecological knowledge, there was a balance between sedimentation and land subsidence in the area[2]. Hence, the ecology evolved in the area was in equilibrium. It was a unique system of land-water interface developed over hundreds of years of experience and practice[3].

Disruption of Local Water Management Practices

The contemporary institutional water and river basin management regime has a long history. Its career began with disruption of local "traditional and indigenous[4]" water management practices and imposition of western scientific management in South Asia by British colonial empire. The British colonial engineers brought the language of "waste" to justify interventions on rivers for commercial ends. Invocations of phrases like "*every drop of water that runs to the sea without its full commercial returns to the nation is an economic waste*" was abound in the literature on river in colonial times. This is distinctly opposed to cyclical conception of river and water in local traditions (Dixit, 2001). This amounted to hydrological imprudence, because water is indisputably part of a continuous system that circulates in its different forms on a periodic basis[5]. There was also a distinct shift in replacement of *communities* by *state* as the *custodian* of water and river. This was the days of the advent of techno-economic approach to river basin management[6]. "Traditional" practices in water management were viewed as "backward and unscientific".

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[1] The development theoreticians and practitioners have not yet paid adequate attention to the idea of "solidarity economy".

[2] Southwest coastal region is an active delta and land subsidence is a natural characteristic of the region.

[3] The unique practice of "overflow" irrigation and wise use of sediment by the farming communities in the Bengal delta was noted by pioneer colonial researcher Sir William Willcocks. He also noted that the prime of issue of river basin management in Bengal delta is effective management of sediment. But water resources planners and engineers neglected this illuminating observation (Willcocks, 1930).

[4] Traditional/modern or indigenous/modern binary oppositions are prevalent in development discourses where traditional and indigenous are seen as backward exemplifying the power of modernity. It's urgent for the development practitioners to deconstruct the hierarchal binary opposition and contest the power of modernity.

[5] It's interesting to note the similarity of the notion with the concept of "surplus/waste" binary opposition in the language of inter-linking of rivers project (ILRP) in India.

[6] Approaches to river basin management will be briefly discussed later.

Advent of Centralized and Institutional Water Management

In the 1960s a centralized state water bureaucracy was established according to the report of the Krug Mission setup by United Nations[7]. Following the recommendations of the report East Pakistan Water and Power Development Board (EPWAPDA) was established and irrigation department was merged with it (Kibria, 2005). A Water Master Plan was prepared in 1964. It introduced a compartmentalized polder or enclosure system in the southwest tidal areas. 37 polders, 1566 kilometers of coastal embankment and 282 sluice gates were constructed in the coastal area with funding from USAID to prevent intrusion of saline water from sea and "recover" more land for cultivation of HYV. The compartmentalized polder/enclosure system de-linked the floodplains from the rivers and turned wetlands into dry lands (Adnan, 2006). Thirty-seven polders/enclosures were constructed in Khulna, Satkhira and part of Jessore districts (Ali, Reshad Md Ekram and Ahmed, Moinuddin, 2001). A polder is a tract of land, surrounded by dykes in which the discharge and supply of surface water are artificially controlled. The polder/enclosure system was developed and implemented in line with the "green revolution" paradigms of "grow more food". The idea was to promote cultivation of high yielding variety (HYV) crops in dry lands with controlled irrigation (Adnan, 2006). In the subsequent decades several similar projects were undertaken in the region.

Interventions of Aid Agencies and International Financial Institutions (IFIs)

Almost all these projects were undertaken with finance and policy "advice" from aid agencies and international financial institutions (IFIs)[8]. Projects undertaken in the southwest region in this period include USAID funded Coastal Embankment Project (CEP), and ADB funded Coastal Embankment

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[7] In 1957 The Krug Mission was set up by the United Nations after the severe floods in 1954, 1955 and 1956.

[8] The World Bank (WB) and Asian Development Bank (ADB) policy "advice" (read diktat) formulated bulk of the approaches to water and river basin management in Bangladesh since the 1972 IBRD water sector study, which included Flood Control, Drainage and Irrigation (FCD/I) approaches and culminated in the controversial Flood Action Plan (FAP) in the nineties. Civil society protest stopped the FAP and The World Bank had to withdraw from the water sector of Bangladesh. The World Bank has signaled its willingness to invest again in the water sector with the publication of Bangladesh Country Water Resources Assistance Strategy (The World Bank, 2005).

Project-2 (CEP-2) and Khulna Coastal Embankment Rehabilitation Project (KCERP). These projects and polder/enclosure model was an export of western technology, very often implemented with "assistance" of high paid consultants. These projects performed well till the 80s with increased cropping intensity (mostly HYV rice), but caused erosion of local crop varieties and biodiversity[9]. The latest project in the line is misleadingly titled Southwest Area Integrated Water Resources Planning and Management, funded by ADB and the government of The Netherlands[10].

Adverse Environmental Impacts: Drainage Congestion of Rivers and Waterlogging

Then the ill effects of the polder/enclosure system surfaced. Exemplified by deposit of silt on the riverbed, drainage congestion and waterlogging in massive areas creating disastrous consequences for the local communities with inundation of massive areas under stagnant water that seriously jeopardized livelihood and environment. Due to construction of permanent embankments on both sides of the rivers, tidal flow could not enter into the tidal wetlands. Almost all the estuaries began to silt up at the upper end of the southwest tidal region. In the pre-polder period the high tides used to deposit silt on the tidal wetlands during the months of January to June when local people used to breach the temporary earthen embankments (*ostomasi badh*) built for the period from July to December. But after construction of polders sedimentation only took place in river channels, causing very rapid deposition on the river channels. This process ultimately raised the riverbeds in comparison to adjacent *beels* or wetlands. Due to non-deposition of sediment the wetlands subsided and gradually took the shape of lakes and over 106,000 thousand hectares of land became permanently waterlogged.

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[9] Shapan Adnan (Adnan, 2005) has done a revealing study on links between agricultural paradigm of "green revolution" and water management, flood control and irrigation in Bangladesh.

[10] ADB Loan: BAN 34418-01. The government of The Netherlands is a co-financier in the project. Uttaran and Paani Committee, Ulashi and Rivers for Life BanglaPraxis have started monitoring the project. International IFI watchers like Bank Information Center (BIC), based in Washington DC, USA, with a new South Asian office in Delhi and NGO Forum on ADB, based in Manila, is providing technical and knowledge support in the monitoring process. BothEnds, a Dutch NGO is involved in monitoring The Netherlands government's role in the project.

Photo: Sheikh Selim Akter/Uttaran

Waterlogging has made numerous educational institutions inaccessible to children.

The waterlogging has brought extreme suffering to the local communities in the region. Salinity has increased due to capillary action and vast areas of agricultural land lost soil fertility. Many rivers dried up. Many villages have been submerged and communication system has collapsed, surface as well as inland water transport. Many people moved onto embankments and roadside. Educational institutions have been severely damaged and children have been forced to discontinue education. On the other hand, biodiversity and livestock have been greatly decreased. Firewood and pure drinking water have become scarce. Waterborne diseases like diarrhea and scabies have become endemic. Moreover, unemployment has forced many people to migrate to urban areas in search of livelihood (Uttaran 2005a and 2005b)[11].

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[11] See *Supeo Panir Sondhane* (Uttaran, 2005a) and *Jolaboddota o Koronio* (Uttaran, 2005b) for detail analysis on drinking water and waterlogging problem in the southwest region.

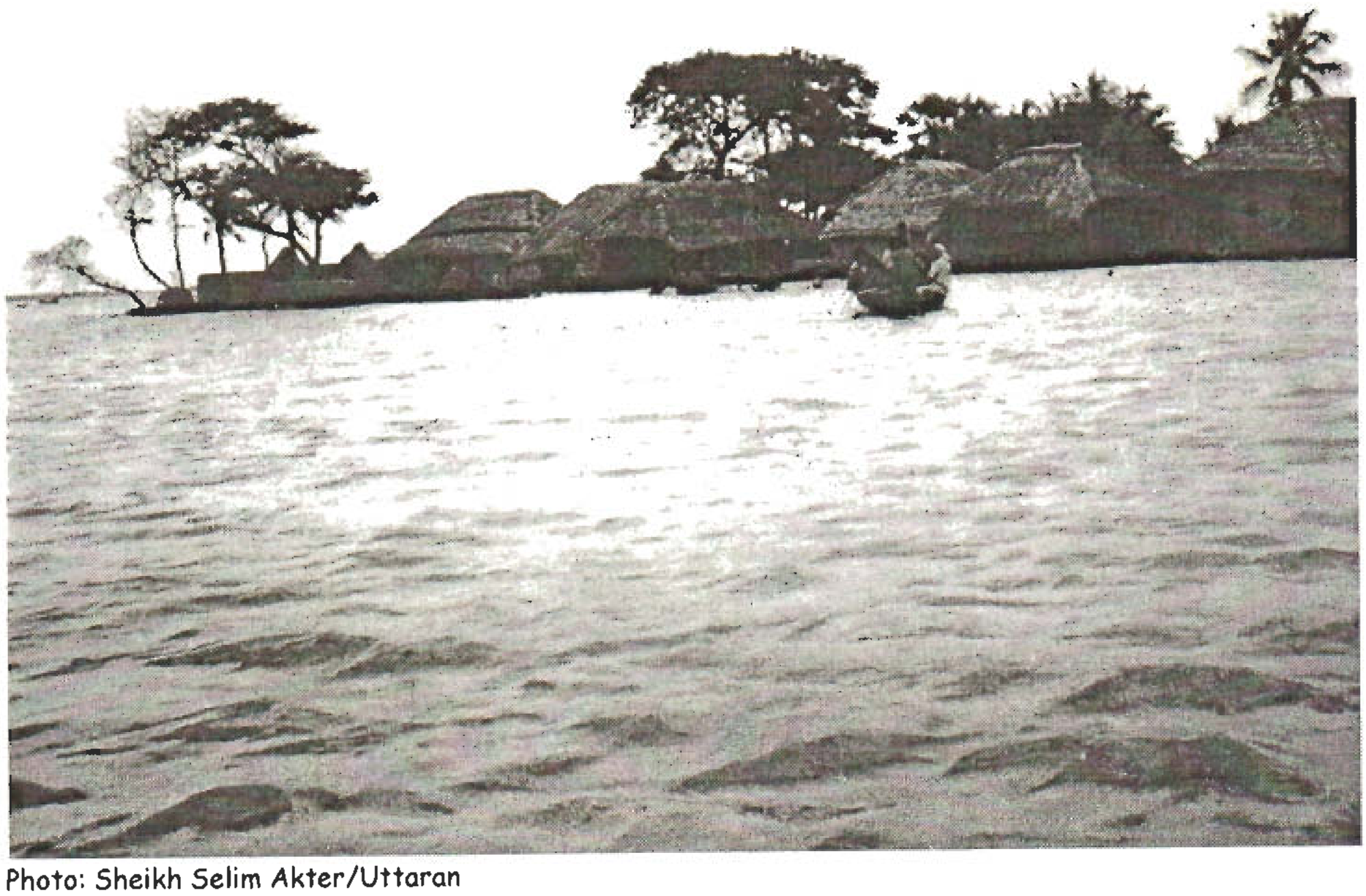

Photo: Sheikh Selim Akter/Uttaran

Waterlogged village.

Institutional Amnesia to Rethink the Approaches

Instead of rethinking the polder/enclosure system and techno-economic approaches to water and river basin management in the southwest tidal region the state water bureaucracy, with funding and technical/policy "advice" from aid agencies and international financial institutions (IFIs) like ADB, concentrated on upgrading the existing flood control infrastructure. The critiques termed it "system rehabilitation approach". The approach continues from 80s till today. Among the various projects undertaken in this period in the region the most controversial was Khulna-Jessore Drainage Rehabilitation Project (KJDRP)[12]. Local people resisted the project for years because the design and approaches of the project didn't live up to the aspirations of the local communities. They mounted movements against the project and funding

[12] ADB Loan No. 1289-BAN [SF]

agency ADB and suggested alternative proposals to solve the drainage congestion[13].

Manufacturing Participation

In the initial years of centralized water management, authorities ignored community participation in river basin management, flood control and irrigation projects. Over the years the idea of community participation in design, operation and maintenance of large and small-scale projects were incorporated. But it was done to *expedite* the implementation of the projects. A set of guidelines and legal regulations were developed[14]. The idea of water cooperatives was also developed. The plan was to handover operation and maintenance (O & M) of large projects and components of projects to these cooperatives. Theoretically these cooperatives are people's organization with power to levy charges and fix rates for irrigation water, and recover operation and management (O & M) costs of the projects. A number of projects were also handed over to these cooperatives. Practically the system privatized irrigation and left it to the predatory market mechanism. Representation of communities in these cooperatives is a contentious issue. These cooperatives are often plagued with factions and control by elite groups of the society and serve the project authorities to *expedite* the implementation of the projects. The missing link is indigenous water management practices. The existing policies are ambiguous on initiatives developed by communities themselves. A detail analysis of current policies is urgent to ensure proper participation of communities for river basin and water resources management.

Unprecedented Floods in 2000 and 2004

In the year 2000 and 2004 the people in the southwest experienced unprecedented severe flood during the rainy season, this worsened the situation of the waterlogging and human suffering. The marooned people lost their paddy fields, homesteads and livelihood. They were forced to sale their

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[13] See Zakir Kibria (Kibria, 2005b) for discussions on the impact of Asian Development Bank (ADB) investment on the water sector of Bangladesh, the paper also briefly analyzes KJDRP and limitation of ADB Water Policy.

[14] One such tool is the Guideline for Participatory Water Management (Ministry of Water Resources/GoB, 2001). See Dirk Frans (Frans, 2000) for a history and analysis of the development the guideline and people's participation in water projects.

Photo: Sheikh Selim Akter/Uttaran

Many people had to move onto embankments and roadside.

livestock. Many people had to leave their house and took shelter in the nearby schools, flood shelters and even on the side of roads and embankments. Sanitation has become a nightmare and waterborne diseases like diarrhea and scabies have become endemic. Many people permanently moved onto embankments and roadside. Educational institutions have been severely damaged and children have been forced to discontinue education. Safe drinking water is a rarity. The unemployment situation is very high and people are migrating to cities in search of livelihood. Increased salinity induced by prolonged inundation of vast areas of land is causing rapid degradation and erosion of biodiversity. KJDRP completely failed to prevent and mitigate flood in the region.

Impact of Climate Change Induced Vulnerability

Bangladesh is generally considered to be one of the most vulnerable regions in the world to climate change induced sea level rise. Southwest coastal region is vulnerable to climate change induced sea level rise due to low elevation from

sea level and a continuous process of land subsidence, (Huq, Karim, Asaduzzaman, and Mahtab, Ed., 1999)[15]. A possible scenario for climate change would have temperature rising up to one degree Celsius, monsoon precipitation increasing by as much as 10%, dry season precipitation reduced, and sea level rising by 30 centimeters or more. These changes would have several critical impacts in the southwest coastal region. The combination of reduced winter season precipitation and increased temperatures, resulting in higher evapotranspiration rates, will reduce winter river flows. In addition to reducing the freshwater available for an expanding population, this could result in saline water intruding further inland along coastal areas, affecting natural ecosystem as well as food production system. A further likely impact is the sediment transport characteristics of the river system would be altered. A sea level rise will exacerbate drainage problems in coastal zone. This will occur in two ways. Firstly, existing flood control infrastructure was designed for historical water levels and tidal fluctuations. A sea level rise would reduce the tidal range within which outflow occurs, decreasing the total discharge during each cycle. Secondly, tidal meeting points will migrate further inland. These locations, where sediment deposition occurs, will impede upstream drainage and change drainage characteristics of the region. A massive environmental and human disaster in southwest coastal region is looming on the horizon.

Khulna-Jessore Drainage Rehabilitation Project (KJDRP)

The Project Location

The ADB designed and funded the Khulna-Jessore Drainage Rehabilitation Project (KJDRP) to "support" the efforts of the Government of Bangladesh to reduce poverty by alleviating river drainage congestion. The project was spread over Batiaghata, Daulatpur, Dumuria and Phultata *upazillas*[16] in the district of Khulna and Abhaynagar, Keshabpur, Jessore Sadar, and Manirampur *upazillas* in the district of Jessore, covering about 100,600 hectares (ADB, 2004b).

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[15] See Huq, Karim, Asaduzzaman, and Mahtab, Edited, (1999) for more details on the climate change induced vulnerabilities in Bangladesh.

[16] An *upazilla* is the next administrative unit under a district, also known as *thana*.

Claimed Objectives of KJDRP

The claimed objectives of the project were to reduce poverty by increasing agricultural production and creating jobs. The project aimed to achieve these objectives by a. mobilizing beneficiary participation in the design, implementation and operation and maintenance (O & M) of the project facilities; b. rehabilitating the drainage infrastructure to reduce drainage congestion, and protect the project area from tidal and seasonal flooding; c. supporting the expansion of agricultural extension services to the agricultural lands under the project; and d. supporting fisheries management in the polder areas to safeguard the supply of fish caught and consumed primarily by the poor (ADB, 2004b) [17].

Project Costs or the Loan Burden on Bangladesh

At appraisal, the cost of KJDRP was estimated at $ 62.7 million. The actual cost was $44.9 million or 72% of the appraisal estimates. The estimated disbursement of loan proceeds was $ 54.1 million, while actual disbursement was $32.6 million. ADB "contributed" $32.6 million or 70% of the actual costs. The Government of Bangladesh contributed $12.3 million, or 27% of the cost. ADB financed $18.5 million equivalent or 60% of local currency cost, which was 41% of the project cost. A change of project design and depreciation of local currency against $ resulted in cancellation of $ 16.0 million of the loan fund (ADB, 2004b)[18].

Project Schedule

KJDRP loan was approved on 14 December 1993. The loan agreement was signed on 17 December 1993, and became effective on 4 April 1994 (compared with an effectiveness date of 17 March 1994 in loan agreement). KJDRP was scheduled to close on 31 December 1999 but ADB had to extend the closing date for 36 months due to delays in implementation. The loan closed on 18 March 2002. The Project Completion Report (PCR) was released on September 2004.

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[17] See the Project Completion Report (PCR) for details of the project component (ADB, 2004b). Also see the annexes for technical and financial details for the project.
[18] See the annexes for the financial detail of the project.

Project Constructions

KJDRP dredged 1.6 million cubic meters of rivers and 11.1 million cubic meters of drainage channel. The project also constructed 25 drainage inlets, 7 hydraulic structures, 19 sluice gates (rehabilitated), 60 vertical lift gates, 38 culverts, 30 foot bridges, 1 boat berth, and 20 outlet structures. Further, 33.4 km of embankment, 111 km of access roads, 10 km of tidal basin perimeter dyke, 12 km of marginal dyke, 10 km of protective perimeter, and 2.5 km of riverbank protection were constructed. The project also constructed 2 closures in Beel Bhaina, 5 cross dams in upper Bhadra River, and 1 river closure at Ramdia. Dredgers bought under the project were used for dredging works totaling 7.8 km. 22.5 more km was dredged by groups formed under the project.

Peoples Movement against KJDRP and ADB

Earlier Movements in Southwest

People in the southwest region have a long history of movement and fighting IFIs. In the last decades there were a number of movements against large-scale infrastructural water and flood management projects. There were movement against ADB funded KCERP project in late eighties. The movement was nationally now well known as *Beel Dakatia Andolon*. ADB had to stop the project. There were also numerous other localized movements to solve waterlogging pròblem and river drainage congestion in southwest region. Local communities have shown a deep understanding of the ecosystem of southwest and resisted any construction-happy projects in the region.

Movement to Resist Teabunia Regulator

After the Beel Dakatia movement forced ADB to cancel the KCERP project the drainage plan developed under KJDRP planned to construct a regulator at Teabunia. The plan deliberately decided to kill the Hamkura River and ensure drainage through Salta River by constructing Teabunia regulator. Local communities rejected KJDRP land acquisition plan. Local people mobilized with support from Uttaran and Paani Committee. In the end KJDRP authorities had to stop the construction of Teabunia regulator.

Hamkura River Action Committee

Hamkura River is situated in Dumurua Thana of Khulna district. It used to drain water from Dakatia, Madhugram and Singa *beels* on the north-west and from Madhabkati, Khajura and Khalshi beels on the south and east of the river. The river then met Bhadra river on the south after traversing a length of 15 km. Tidal water used to flow all through Hamkura and Bhadra rivers and now it flows up to 14 kms from Dighulia towards north. Rest of the river is completely silted up. The riverbed is now converted into paddy field, enclosure for fisheries and homestead. KJDRP plan let the river dye although there were massive popular demands for revival of the river. The local people who have been cultivated in the silted up river were ready to vacate the land if needed for revival of the river. *Hamkura River Bachao Andolon* or Hamkura River Action Committee has been campaigning for years for the excavation and revival of the river.

Photo: Sheikh Selim Akter/Uttaran

Hamkura River is now dead. A Settlement for landless people on what used to be Hamkura river bed.

Movement against Bhabadaha Sluice Gate

Bhabadaha sluice gate has often been compared to infamous Farakka dam. One of the popular slogans in the area is "*Moron faad, Bhabadahar badh*" (Bhabadahar regulator is a death trap). Bhabadaha sluice gate is situated on the upper end of Hari River. It was constructed in 1965 under the Coastal Embankment Project (CEP), in the days of polderization. Within 15 years of construction of Bhabadaha sluice gate the river silted up and created massive waterlogging in 139 villages. Throughout the 1980s local communities tried different options to mitigate the problem culminated in massive people's movement in 1986 and cut the embankment. Administration promised to solve the problem and closed the cut in the embankment. Local people then ensured tidal flow by keeping the gates of the sluice gate of Bhabadaha. During the implementation of KJDRP local people again launched a movement demanding long-term solution of the problem. But project authorities unilaterally constructed a cross dam and excavated Hari river. Lack of proper planning and non-removal of the cross dam in due time created serious problem of sedimentation in Hari River. Local people were forced to establish a tidal basin Beel Bhaina to ensure uninterrupted tidal flow.

Movement to Ensure Tidal Flow in Beel Bhaina

When water upstream of Bhabadaha flooded Beel Bhaina in 1997 local people organized and decided to cut the embankment constructed in the sixties under Coastal Embankment Project (CEP). Local people mobilized in thousands and defied police and cut the embankment in October 1997. After 20/25 days they cut another embankment one kilometer upstream. The objective was to ensure uninterrupted flow of tidal flow in the *beel* and ensure sedimentation. The waterlogging problem in the area relieved greatly and the river became wide and deep. The land level of the beel was raised as a result of sedimentation. There was also abundance of fish in the beel and river. Local communities asked the KJDRP authorities to ensure planned and systematic management of tidal flow in Beel Bhaina. The idea later became well know as Tidal River Management (TRM). KJDRP authorities were skeptical to TRM. Although local initiative for TRM in Beel Bhaina was not implemented in a planned way but the result was remarkable. The land level was raised enabling the local farmers to cultivate throughout the year. The surrounding areas are plagues from waterlogging problem but Beel Bhaina is now free from waterlogging problem.

Movement to Resist Kashimpur Regulator

CEGIS, consultant to KJDRP authorities, recommended tidal river management (TRM) in Beel Buruli-Pathra in upper Bhadra river system to ensure drainage in upper Bhadra River. KJDRP authorities took initiative to construct a regulator at Kashimpur point taking it for granted that upper Bhadra River would dye in the near future. Local communities resisted the regulator and planned tidal river management (TRM) in Beel Buruli-Pathra. Local communities declared that KJDRP authorities will not be allowed to do any work and started vigilance at Kashimpur point. Kashimpur Regulator Resistance Committee organized a conference in Khulna town and invited national level civil society groups working on environmental issues and KJDRP authorities. In the end KJDRP authorities had to abandon the plan to construct Kashimpur regulator.

Surviving the Violence of Law

The democratic movements in southwest region against construction based KJDRP project that ignored local ecological context had to survive violence of law. The leading personalities of the movement were also harassed by administration on numerous occasions. BWDB on different occasions lodged a number of cases in local police stations. There were five cases against the local people:

Keshobpur Thana, case number 01, date 02/11/97. 28 persons were accused of cutting the embankment at Beel Khuksia.

Keshobpur Thana, case number 09, date 17/11/97. 13 persons were accused by BWDB for cutting the embankment of Beel Khuksia.

Keshobpur Thana, case number 11, date 27/03/98 GR-223/98. 18 persons were accused of cutting embankment.

Keshobpur Thana, case number 07, date 15/05/99. 36 persons were accused of cutting embankment.

Keshobpur Thana, case number 03, date 11/06/99. 11 persons were accused of cutting embankment.

But in each of the cases the court ruled that the plaintiffs failed to prove the complaint against the accused. The cases lingered for as long as four years; causing suffering and distress to the accused. Uttaran provided legal and other support to the accused all along.

Tidal River Management (TRM): Conceptual Genealogy of a Sustainable Solution Developed by People

"Public Cuts": Contesting Power and Authority

Tidal River Management (thereafter TRM) is a people's concept generated from indigenous knowledge system in water and river basin management in the southwest tidal region and a contribution to the lexicon of water "experts". Throughout 80s and 90s, due to repeated failure of "system rehabilitation approach", drainage congestion in river channels and perennial waterlogging problem local people breached embankments. in many locations, allowing tidal flow into wetland basins. The authorities termed it "public cut" (Adnan, 2005)[19]. This placed the local communities in direct confrontations with water bureaucracy and law enforcing authorities. The objective of these "public cuts" was to drain out stagnant water and raise land by deposited silt on the tidal wetlands and relieve drainage congestion in river channel.

Peoples Negotiation during Implementation of KJDRP: Engaging ADB

During the implementation of the infamous KJDRP local people remained skeptical of the project and demanded a complete environmental impact assessment (EIA) and social impact assessment (SIA). In the consultation for the EIA and SIA, conducted by CEGIS (then called EGIS), local people demanded their idea of TRM to be included in the project. In the beginning project authorities were not interested to include TRM as an option. Successful advocacy by Uttaran, Paani Committee and national level civil society forums lead CEGIS to study people's ideas and recommend TRM as an option in the project[20]. The EIA recommended that TRM is technically sound,

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[19] In official and administrative narrative the term "public cut" sees the event and issues as a "law and order problem", not an expression of people's desire and initiative to mitigate environmental problem through a collective process. See Shapan Adnan (Adnan, 2006) for a discussion of the "public cut".

[20] Uttaran and Paani Committee played a leading role in the campaign against KJDRP Detention orders were issued against Shahidul Islam, Director of Uttaran and a number o

economically viable, environment friendly and acceptable to people (EGIS, 1998). The project authorities also remarked in its report that local people could not articulate the exact location where TRM is to be implemented. This remark is an interesting example of engineers' and water experts' inability and unwillingness to understand indigenous knowledge, vocabulary and paradigm in water and river basin management.

Photo: Sheikh Akter/Uttaran

Beel Kedaria tidal basin is now under water.

activists of Paani Committee. Uttaran and Paani Committee are now working on to mitigate the problems created by the project. BanglaPraxis, a Dhaka based public interest research, advocacy and campaign organization focused on accountability of international financidl institutions (IFIs) is working to ensure accountability of ADB beyond the official completion of the project. Bank Information Center (BIC), NGO Forum on ADB and BothEnds, three leading IFI watchers, are providing technical and knowledge support.

Inadequate Implementation of TRM in KJDRP

Later KJDRP partly implemented TRM in *Beel Kedaria* of *Hari* River basin. But people's conception of TRM is different from the TRM implemented by the project. The project authorities implemented TRM only to ensure drainage in river channels. TRM was not implemented in its true meaning. KJDRP established a permanent tidal basin in Beel Kedaria on the other hand local communities demanded rotational TRM in the *beels* or wetlands of the region. The project authorities implemented TRM through existing regulator not cutting the embankment and allowing open flow of tide in the wetland as demanded by local communities[21].

Peoples Actions for Sustainable Solution: Experimenting with TRM

The way TRM was implemented by authorities didn't live up to people's aspirations and true conceptual meaning of TRM. Local communities experimented the concept in several *beels* or wetland basins in southwest region, in *Beel Dakatia* (89-90), and in *Beel Buruli-Pathra* (93-94). The most successful was in *Beel Bharat-Bhaina* in *Hari* river basin (97-2000). The peoples' idea and objective of TRM is not only to improve drainage. The basic idea of TRM is simple: to allow tidal flow into wetland basin, known as *jowar-bhata khelano* (free play of tidal flow) in local vocabulary, and releasing the tidal flow back to the river. As a result of this process sediments carried by tidal flow deposits on the wetland basin instead of riverbed. The process is continued for several years (usually three years, the duration depends on the size of the wetland basin). It gradually raises the land on the wetland basin with formation of alluvial soil from silt. This is a unique system of tidal flow and sediment management. TRM prevents sediment deposition on the riverbed and ensures the drainage and smooth navigation in river channels.

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[21] Contempt to local initiatives in water management is endemic in the centralized state water bureaucracy of Bangladesh. See Jennifer Duyne (Duyne, 1998) for more details on bureaucratic attitudes to local initiatives in national water management projects.

Photo: Sheikh Selim Akter/Uttaran

Farmers now get year round crop in Beel Bhaina where local people implemented tidal river management (TRM).

The Benefits of TRM is Multidimensional

The objectives of TRM, as developed by local communities over the years, are:

a. Formation of new alluvial land in tidal wetland through silt deposition
b. Mitigate climate change induced sea level rise
c. Conservation of bio-diversity and ecological balance
d. Mitigating land subsidence
e. Enhance livelihood through agriculture and fisheries
f. Improving inland water transportation
g. Mitigate flood hazards

TRM is Sustainable Solution to Waterlogging, Drainage Congestion and Climate Change induced Sea Level Rise

The environmental disaster of waterlogging in southwest region is a result of decades of ill planned water management projects constructed by governments and international financial institutions (IFIs) which neglected

indigenous wisdom in water management by local communities and overlooked ecological characteristics of the region. Management of risks caused by the waterlogging disaster requires a two-pronged strategy: responding to the immediate suffering of the marginal sections of local communities in their survival and adaptive strategies, and a long-term and a sustainable solution that is ecologically sound and low cost. TRM offers a unique possibility in mitigating the waterlogging, drainage congestion in river channels, and climate change induced sea level rise.

KJDRP: Project of Deception and Destruction

Waterlogging Problem Persists

One of the claimed objectives of KJDRP was to mitigate the waterlogging problem in the region by relieving drainage congestion in the rivers. Practically the waterlogging problem has become worse and permanent and made far more difficult and complex to mitigate the problem. The problem of waterlogging has worsened in north-west (Jessore part) of the project area. Waterlogging problem has spread to Hari-Mukteshwarai and upper Bhadra river basin.

Further Degradation of the Rivers

KJDRP has further worsened the drainage problem in the region and killed a number of local rivers. Hamkura River is now silted up and dead. 35 kilometer of Hamkura River was alive and flowing before the implementation of the KJDRP. Hamkura flow was divided by the project to Hari river basin and upper Sholmari basin despite repeated objection by the local communities. Waterlogging problem in Hamkura River basin still persists, in polder 27/1 and polder 25. The connection between upper Bhadra and Buri Bhadra is now almost dead. Rivers in north-west part of KJDRP area, namely Teligati, Hari upper Bharda and Harihar now under threat. The situation would have further worsened if local communities didn't implement TRM in Beel Bhaina.

Downstream Impact

KJDRP has seriously impacted the rivers downstream of the project areas. The connection between Ghengrail and Salta has been severed by KJDRP. Navigability of Ghengrail and lower Salta has substantially been reduced.

Jhopjhopia River is now almost dead as its connection to lower Salta River been severed. The project has also increased siltation in the mangrove forest of Sundarbans, UNESCO declared World Heritage Site, further downstream of the project area.

Impact on Fisheries

Although the Summary Initial Environmental Examination Report of the project warned about the project impact on the indigenous fish species KJDRP failed to ensure fish pass or other fish friendly measures in its construction. The Summary Initial Environmental Examination Report of KJDRP rightly warned that the annual flood cycle is an essential element in the life history of most fishes and many of the riverine species migrate considerable distances upstream to spawn and travel back. The report also warned that embankments and their various regulating structures will interfere with fish spawning migrations from rivers to floodplains inside polders. The report also noted the Fish Pass Study then being conducted under Flood Action Plan (FAP), and recommended each regulator to be constructed appropriately fish friendly design and suggested to install fish ladders. KJDRP didn't comply with its own Summary Initial Environmental Examination Report[22]. As a result a number of local indigenous fish varieties have now become almost extinct and local fishers folks are out of work.

Deceptive Claims of Community Participation

KJDRP claimed to ensure community participation in the project. Practically the water management associations (WMAs) and the federation (WMF) created by the KJDRP have created community conflict. Local community does not think the WMAs and WMF represent the community. Rather they feel that WMAs and WMF work to expedite the project. Local communities want the WMAs and WMF to be disbanded. Rather they ask if WMAs and WMF represented the community the how come hundreds of thousand of people had to defy police brutality and fought with the project authorities.

[22] See the Summary Initial Environmental Examination Report for details (ADB, 1993)

Photo: Sheikh Selim Akter/Uttaran

Fishers folk out of work.

Non Payment of Compensation

The project constructed of land fixed tidal basin of a 600 hectares in Beel Kedaria. Local communities demanded compensation for the land acquired for the tidal basin. Project authorities argued that the land was already waterlogged and in their view the owners of land didn't get any income from the land. On this ground KJDRP authorities did not pay any compensation to the landowners. Although the tidal basin constructed in Beel Kedaria not a rotational basin, it is a fixed basin. ADB Aide Memoire, dated 14-17 December, 1998, commented that, *"A realistic assessment of loss of income can be made only after Project Completion and a plan can be prepared at this stage. The Government confirmed that compensation would be undertaken at project completion stage"* (ADB, 1998). The owners of the land were never paid compensation. Interestingly, ADB has recently signed a technical assistance grant to Government of Bangladesh under which a national Policy on Involuntary Resettlement will be developed (ADB, 2004a)[23]. ADB continues to

[23] BanglaPraxis is monitoring the technical assistance grant, ADB TAR: BAN 37334

shape and dictate the policies and regulatory framework in Bangladesh while it did not pay compensation for the land acquired in its project!

Towards Community Based River Basin Management

TRM is a community-based initiative and a holistic and negotiated approach for people centered integrated river basin management. The conventional and institutional practices to river basin management can be summarized into two approaches: a. techno-economic approach and b. integrated river basin management approach (IRBM).

Techno-economic Approach to River Basin Management

The conventional techno-economic approach to river basin management is centralized, supply based and top-down relying on large irrigation systems. Debates and decisions are usually restricted to engineers and policy makers based on technological and economic efficiency of the projects. The methodology focuses on the statistical models and directing maximum volume of water with minimum cost. The community experience and participation is not included in this approach and ill effects are often exemplified in ecological impact and unjust social impacts.

Integrated River Basin Management (IRBM)

The integrated river basin management (IRBM) approach was developed through repeated failures of techno-economic approaches and rise of environmental concerns in development discourses over the years[24]. Ecologists see integrated approach as inalienable nature of the ecosystem and administrators see it as interrelated links among sectors, planners and stakeholders. People's participation is included but very often without any meaningful decision making role and to expedite effective implementation of the projects. People's participation and consultation in later implementation stages cannot be called an open and transparent process. This approach remains supply-based and participation ends up in co-opting the communities

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[24] The genealogy of the approach/terminology can be traced to World Water Conference in Marrakech, 1997, The Hague 2000, Kyoto, 2003, as well as several other events like UNCED, 1992, WSSD, 2002, the Bonn Freshwater Conference, 2001, and the annual Stockholm Water Weeks (BothEnds and Gomukh 2005).

towards implementation. It has potential to reach more stakeholder than the techno-economic approach and often produced success in water and river basin management. However experience shows that integration rarely reaches far down the project and never reaches the sub-basin or micro-catchments level. The direct and continuous participation of large population is still not regarded as essential[25].

Towards Community Based River Basin Management

TRM offers a distinctly new approach to river basin management in southwest region. It's a negotiated approach developed over the years by communities themselves from indigenous knowledge system in water and river basin management and engagement and contestations with policy makers, authorities, water bureaucracy and water "experts". This is a true bottom-up approach as local communities developed the whole concept in the course of experimentation over the years. In the age of "participation fatigue" in development projects TRM offers a gift with the possibilities of solving a whole range of environmental disasters including waterlogging in southwest region and river basin management in the southwest tidal region.

New ADB Project in the Region: Dark Cloud on the Horizon

Southwest Area Integrated Water Resources Planning and Management Project

The latest project in the line is misleadingly titled Southwest Area Integrated Water Resources Planning and Management, funded by ADB and the government of The Netherlands[26]. Uttaran, Paani Committee, Ulashi, Rivers for Life and BanglaPraxis have started monitoring the project. There are issues of concerns and a report based on preliminary analysis is under preparation collectively by Uttaran, Paani Committee and BanglaPraxis. International IFI watchers like Bank Information Center (BIC), based in

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[25] See Majid Rahnema (Rahnema, 1999) for a discursive history of participation in development discourses.

[26] ADB Loan: BAN 34418-01. The government of The Netherlands is a co-financier in the project.

Washington DC, USA, with a new South Asian office in Delhi and NGO Forum on ADB, based in Manila, are providing technical and knowledge support in the monitoring process. BothEnds, a Dutch NGO is involved in monitoring. The Netherlands government's role in the project.

Annex # 1: Basic Data

A. Loan Identification

1. Country: Bangladesh
2. Loan Number: 1289-BAN (SF)
3. Project Title: Khulna-Jessore Drainage Rehabilitation Project
4. Borrower: Peoples Republic of Bangladesh
5. Executing Agencies: Bangladesh Water Development Board (BWDB), Department of Fisheries, Department of Agricultural Extension
6. Amount of Loan: SDR35, 914,000
7. Project Completion Report Number: BAN 21087

B. Loan Data

1. Appraisal
   - Date Started: 4 July 1993
   - Date Completed: 20 July 1993

2. **Loan Negotiations**
   - Date Started: 2 November 1993
   - Date Completed: 5 November 1993

3. Date of Board Approval: 14 December 1993
4. Date of Loan Agreement: 17 December 1993
5. Date of Loan Effectiveness:
   - In Loan Agreement: 17 March 1994
   - Actual: 4 April 1994
   - Number of Extensions: 1

6. Closing Date
   - In Loan Agreement: 31 December 1999
   - Actual: 18 March 2003
   - Number of Extensions: 1

7. Terms of Loan
   - Service Charge: 1%
   - Interest: 0%
   - Maturity: 40 years
   - Grace Period: 10 years

8. Disbursements

a. Dates

Initial Disbursement	**Final Disbursement**	**Time Interval**
7 October 1994	18 March 2003	101 Months
Effective Date	**Original Closing Date**	**Time Interval**
4 April 1994	31 December 1999	63 Months

Annex # 2: Summary of Physical Progress- Appraisal and Actual (Project Completion Report, ADB, 2004)

Rehabilitation Works	Units	Appraisal	Actual
1. Excavation and Re-excavation of Drainage channels			
1.1 River dredging	Million cubic m.	1.50	1.60
1.2 Excavation of drainage channels	Million cubic m.	11.30	11.10
	Kilometers	0.00	7.75
1.3 Emergency re-excavation by dredgers	Kilometers	0.00	22.52
	Kilometers	0.00	123.30
1.4 Emergency re-excavation by labors	Kilometers	0.00	12.00
1.5 Repair of flood embankments at various sections			
1.6 Marginal dykes			
2. Construction of Structures			
2.1 Hydraulic structures	number	8	7
2.2 Pipe sluice	number	0	8
2.3 Pipe outlets	number	0	13
2.4 Rehabilitation of sluice gates	number	19	19
2.5 Dismantling of sluice gates	number	34	0
2.6 Vertical lift gates	number	0	60
2.7 Culverts/bridges	number	20	38
2.8 Boat berths	number	0	1
2.9 Foot bridges	number	0	30
2.10 Outlet structures	number	0	20
2.11 Construction of roads- Macadam	Kilometers	0	2.10
	Kilometers	0	2.48
2.12 Construction of roads- Asphalt	Kilometers	0	106.42
2.13 Construction of roads- HBB	Kilometers	0	10.00
2.14 Construction of perimeter embankment in Beel Kedaria	Kilometers	0	33.40
	number	0	5
2.15 Construction of embankment	Kilometers	0	2.50
2.16 Construction of seasonal cross-dam	number	0	1
	number	0	1
2.17 River bank protection	number	0	9
2.18 Permanent river closures	number	0	25
2.19 Seasonal river closure at Ramdia			
2.20 WMA office building			
2.21 Drainage inlets			
3. **Land acquisition**	**hectares**	**0**	**136.00**

Annex # 3: List of project works and new O&M equipment (Project Completion Report, SMEC, 2003)

Description	Quantity	Description	Quantity
Structure		Roads	
• Regulator (new)	7 nos.	• Macadam	2.1 km.
• Pipe Sluice	8 nos.	• Asphalt Road	2.48 km.
• Pipe outlets	13 nos.	• HBB Roads	106.42 km.
• Culverts	21 nos.		
• Bridges	17 nos.		
• Foot Bridges	30 nos.		
Flood Embankments		Others	
• Flood Embankment	123.3 km.	• River Bank Protection	2.50 km.
• Marginal Dyke	12 km.	• Permanent Rive Closures	3 nos.
		• Seasonal Cross-dam	2 nos.
		• Boat Berth	1 no.
Beel Kedaria Tidal Basin		O&M Equipment	
• Perimeter Embankment	10.00 km.	• 300 mm dia. cutter section dredger	1no.
• Associated Seasonal Cross-dam	4 nos.	• 350 mm dia. cutter section dredger	1no.
• Associated Pipe Outlets	21nos.	• Amphibious soft terrain excavator	1no.
		• Long range excavator	1no.
Drainage			
• River Excavation	113.40 km.		
• Channel Excavation	348.60 km.		

Annex # 4: Components (parts) wise financial analysis

Cost Breakdown ('000) by Project Component (Project Completion Report, ADB, 2004)

Components	Appraisal Estimate	Actual
Part A- Mobilization of Beneficiary Participation	**1,450**	**1,247**
1. Consulting service, BME (local)	150	72
2.Training	1,300	1,175
i) Informal campaign expense	100	241
ii)NGO support for WMAs	1,200	934
Part B- Rehabilitation Works	**36,675**	**35,657**
1. Civil Works	26,580	25,012
i) River dredging	3,294	2,538
ii) Drainage channel	3,084	10,929
iii)Structure including Government procured sheet piles	10,11	6,705
iv) Embankment/access roads	5,261	5,199
2. Equipment and vehicles	1,746	3,175
3. Consulting services	3,746	5,294
4. O&M during construction	3,218	1,399
5. Training on O&M for BWDB staff	100	0
6. Land acquisition	1336	436
Part C- Agriculture Development	**770**	**206**
1. Civil works for rehabilitation for training centers	160	0
2. Equipment/furniture	63	0
3. Consulting services	236	169
4. Extension program	299	0
5. Training for DAE staff	12	37
6. NGO demonstration program	100	0
Part D- Fisheries Management	**200**	**50**
Consulting services	200	50
Subtotal (A,B,C,D)	**39,095**	**37,160**
Administration	1,457	5,691
CDVAT and taxes	5,500	1,091
Base Cost	**46,502**	**43,942**
Physical contingencies	7,837	0
Price escalation	6,437	0
Service charge	1,900	1,030
Total Cost	**62,676**	**44,972**
Advisory Technical Assistance	1,025	0
Project Preparatory Technical Assistance	631	866
Grand Total	**64,322**	**45,838**

Annex # 5: Category wise financial analysis

Project expenditure by category (Project Completion Report, SMEC, 2003)

As on 30 September 2002 (in US$)

ADB Ref.	Category	Expenditures			% of Total Expenditure
		ADB Loan	GOB Contribution	Total	
01A	Dredging (Part-B)	2,005,517	1,337,011	3,342,528	8.04
01B	Drainage Channel (Part-B)	9,253,788	1,633.021	10,886,809	26.20
01C	Structure (Part-B)	5,786,231	1,021,100	6,807,331	16.34
01D	Embankment &Access Road (Part-B)	4,812,494	849,264	5,661,758	13.63
02A	Equipment Materials & Vehicles (Part-B)	3,583,797	0	3,583,797	8.63
03	Consulting Services (Part-B)	6,102,485	0	6,102,485	14.69
04	Operation & Maintenance Cost (Part-B)	930,270	232,568	1,162,838	2.80
05G	Local Expert Consulting Services (Part-A)	77,468	0	77,468	0.19
05I	Local Expert Consulting Services (Part-C)	169,320	0	169,320	0.41
05J	Local Expert Consulting Services (Part-D)	46,157	0	46,157	0.21
05L	Local Expert Training Information Campaign (Part-A)	366,266	0	366,266	0.88
05M	Expert Training, NGO Support for WMAs (Part-A)	1,461,834	0	1,461,834	3.52
θ5N	Local Expert Training, O & M for BWDB staff (Part-B)	70,999	0	70,999	0.17

05O	Local Expert Training, Extension Program (Part-C)	2,518	0	2,518	0.01
05P	Local Expert Training, DAE Staff Training (Part-C)	39,247	0	39,247	0.09
06	Service Charge During Construction	1,729,156	0	1,729,156	4.16
Total		**36,477,547**	**5,072,963**	**41,550,510**	**100.00**

At the time of project appraisal the exchange rate was US$ 1.00= Tk.38 (July 1993).
At the end of project the exchange rate was US$ 1.00= Tk.58 (July 1998).

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In 1995-2004 Asian Development Bank (ADB) implemented $ 62 million Khulna-Jessore Drainage Rehabilitation Project (KJDRP) in southwest coastal region of Bangladesh with a stated objective to solve river drainage congestion and waterlogging problem. The local communities, skeptical of the project design and the approaches to the problem mounted a massive movement against the project and suggested alternative ecologically sound approaches/concept. The leading personalities of the movement had to survive violence of law and police brutality. The popular concept was based on indigenous water management practices developed over generations. The concept later entered into the lexicon of water "experts" as Tidal River Management (TRM). Local communities demanded environmental and social impact assessment (EIA and SIA). The EIA recommended the peoples concept of TRM and commented that its cost effective, environment friendly and acceptable to people. However, the TRM was not implemented according people's suggestions. The failed project has now left a legacy of environmental disaster exemplified by silted up dead rivers, permanent inundation of thousands of hectares of land and loss of indigenous variety of fish and crop bio-diversity. Moreover, the land acquired for the TRM was not compensated. Local wisdom and water management practices were undermined.

This report is a preliminary attempt to document, understand and analyze the project, community experiences, people's movement, the role of the ADB and to find a long term and sustainable solution to the environmental problems in southwest coastal region, towards community based river basin management.

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