

Grant No. 41
47 - Ministry of Water Resources
Medium Term Expenditure

(Taka in Thousand)

	Budget 2010-11	Projection 2011-12	Projection 2012-13
Non-Development	642,25,63	728,14,88	772,17,86
Development	1406,73,00	1341,85,12	1577,82,14
Total	2048,98,63	2070,00,00	2350,00,00

1. Mission Statement and Major Functions

1.1 Mission Statement

Development of the socio-economic conditions of people of the country and protection of their lives and properties through harnessing, efficient utilization, management, preparation of time be-fitting water use policy and its implementation and ensuring sustainable development of water resources by using information and environment friendly technologies.

1.2 Major Functions

- (a) Formulate national and general policy for irrigation, flood control, mitigation of water logging, improvement of drainage systems, protection from river erosion and prevention of salinity and desertification, and issues relating to technical assistance;
- (b) Manage all issues relating to flood forecasting and warning, flood control infrastructures, causes of flood and damage caused by flood;
- (c) Conduct basic and applied research on river basin and flood control infrastructures;
- (d) Promote international and regional cooperation in the areas of flood control development of water resources and share of water resources of joint rivers;
- (e) Excavate and maintain canals and construct and maintain water control infrastructures under canal excavation programmes;
- (f) Manage issues relating to land conservation and reclamation, drainage and water logging and management and development of water resources in the Haor areas;
- (g) Manage issues relating to construction of water reservoirs, embankments and barrages;
- (h) Carry out hydrological survey and data collection;
- (i) Development of a Monitoring system and priority for women in this work for sustainable management of infrastructures and resources built in flood control, irrigation and water resources sector.

2. Medium Term Strategic Objectives and Key Activities

Medium Term Strategic Objectives	Key activities	Implementing Departments/Agencies
1. Expand the utilisation of surface water; ensure rational utilisation of ground water and rivers, canals and excess to surface water for irrigation	<ul style="list-style-type: none"> • Excavation/re-excavation of irrigation canals/ river dredging • Construction and repair of irrigation structures • Construction of Rubber Dams/Barrages • Undertake Survey Programmes to promote the utilization of water flows of major rivers 	<ul style="list-style-type: none"> • BWDB
	<ul style="list-style-type: none"> • Survey, training and research programmes 	<ul style="list-style-type: none"> • BWDB • Bangladesh Haor and Wet land Development Board (BHDB)
	<ul style="list-style-type: none"> • Infrastructure model/sample test in the laboratory to assist in the design and preparation of projects for BWDB 	<ul style="list-style-type: none"> • River Research Institute
2. Improvement of flood control and drainage management systems and ensure mitigation of risks of harms and damages	<ul style="list-style-type: none"> • Construction, repair and rehabilitation of flood control embankment • Excavation and re-excavation of drainage canals • Repair and rehabilitation of flood control and drainage infrastructures • To automate the collection and distribution programme of satellite data and information from flood forecast centres using modern systems and technology 	<ul style="list-style-type: none"> • BWDB
3. Enhance involvement of the poor people in water management and other related common resources	<ul style="list-style-type: none"> • Formation and registration of Water Management Groups, training of the Water Management Group members and transfer of responsibility to them for the collection of irrigation/service charge of project • Transfer programmes of irrigation canals, cross dams, irrigation inlets, fish passes, regulators, embankment management and maintenance to community level management groups 	<ul style="list-style-type: none"> • BWDB

Medium Term Strategic Objectives	Key activities	Implementing Departments/Agencies
4. Development of Haor/Wet land, protection of coastal lands from saline water intrusion, preservation of the Sundarbans eco-system and reclamation of land from the sea	<ul style="list-style-type: none"> • Survey/research programme for the preparation of a master plan relating to development of Haor/ Wetland • Research / investigations for barrage construction over the river Ganges in order to protect against inflow of saline water through increasing water flow • Preservation of natural balance in the coastal areas of the Sundarbans • Construction of cross dams and undertake capital dredging programme in the coastal area in order to reclaim land from the sea 	<ul style="list-style-type: none"> • Bangladesh Haor and Wetland Development Board • BWDB
5. Protection of land from erosion of big rivers, ensure share of joint and border rivers water and protection large-small cities	<ul style="list-style-type: none"> • River bank preservation/protection and repair programme to protect the densely populated and socio-economically important cities/areas. • Conservation of border rivers to control erosion • Arrangement of meetings with neighbouring countries for protection of land from erosion of Border River and protection of river banks and ensure share of joint river water to increase navigability 	<ul style="list-style-type: none"> • BWDB
6. Ensure sustainable management for balanced and integrated development of water resources	<ul style="list-style-type: none"> • Survey/ research programme • Operate as clearing house to study the rationality and to prevent duplication of project proposal of Water Resources sector • Implementation, review and evaluation of National Water Resources Plan • Coastal area water resources management programmes through Programme Coordination Unit 	<ul style="list-style-type: none"> • WDB • Water Resources Planning Organisation
7. Collection of data-information relating to implementation of water sharing agreement, harnessing of water resources, development	<ul style="list-style-type: none"> • Bilateral and multilateral cooperation related programmes • Programme for exchange of information and data relating to Flood forecasting and warning jointly with India, Nepal and 	<ul style="list-style-type: none"> • Joint River Commission

Medium Term Strategic Objectives	Key activities	Implementing Departments/Agencies
and conservation, flood and climate	China and these related programmes	
	• Research programme.	• BWDB

3. Poverty and Gender Reporting

3.1 Impact of Strategic Objectives on Poverty Reduction and Women's Advancement

3.1.1 Expand utilisation of surface water, ensure rational and proper utilisation of ground water, rivers, canals and excess surface water for irrigation

Impact on Poverty Reduction: Marginal and poor farmers along with other beneficiaries will be able to increase production following excavation of 100 km and re-excavation of 2,190 km of irrigation canals. Employment opportunities for poor people will be created as a result of the excavation and re-excavation work on canals. Construction of 71 irrigation structures, repair and rehabilitation of 260 irrigation structures, dredging of 135 km of river and capital dredging of 22 km of river will also have a positive impact on marginal farmers and other beneficiaries, whilst poor people will have opportunities for employment through the projects under implementation during the Medium Term three years, it will be possible to create employment opportunities for about 9.05 crore person-days.

Impact on Women's Advancement: The involvement of rural women in irrigation works of BWDB will create employment opportunities for about 0.74 crore person-days.

3.1.2 Improvement of flood control and drainage systems and ensure mitigation of risks of damage

Impact on Poverty Reduction: Drainage systems will improve through the construction of 940 km of flood control embankment, repair and rehabilitation of 9,040 km of flood control embankment, excavation and re-excavation of 1,600 km of drainage canal and the construction and repair of 2,500 flood control structures (sluice/regulator) throughout the country. As a result, damage to crops and to the property of poor people will be reduced. Following implementation of the above programmes, opportunities for employment of poor people will also be created.

Impact on Women's Advancement: The improvement of flood control and drainage systems, construction, repair and rehabilitation of flood control embankments, excavation and re-excavation of drainage canals and flood control structures (sluice/regulator) will lead to the protection of women's property which will in turn increase their social security. Efforts will be made to provide 10% of the jobs created as a result of implementation of these programmes for women.

3.1.3 Enhance involvement of the poor people in water resources and other related common resources.

Impact on Poverty Reduction: Rural marginal farmers', among others, participation in the Water Management Groups and the improved management of other related common assets will be ensured. Transfer of the responsibility to rural marginal farmers and others for the management of 45 projects and the responsibility for the collection of service charges within 19 projects will be implemented and they will also be trained in water management. Consequently, opportunities will be created for their employment. Poor people will get scope for employment in earth moving work of BWDB as per the policy of the Landless Contracting Society (LCS).

Impact on Women's Advancement: Under the IPSWAM project, women's participation in water resource management groups and training at local level will be ensured. There is provision to include 33% women members in the water management organisations as per the water management guidelines. As a result, women's income will increase along with their empowerment. 25% of the earth-work undertaken by projects of the BWDB will be implemented by women organized through the LCS. 45% to 50% of earth-work under the IPSWAM project will be carried out by women through the LCS.

3.1.4 Development of Haor/Wet land, protection of coastal lands from saline water intrusion, preservation of the Sundarbans eco-system and reclamation of land from the sea.

Impact on Poverty Reduction: Implementation of programmes to protect wet lands and the Sundarbans from salinity and land reclamation programmes will create employment opportunities during the execution period for the poor people. Re-claimed land from the sea and houses built on char and wet-land will be properly distributed among the landless poor through implementation of the CDSP-3 Project. Programme for rehabilitation of 9,586 families in 5,550 hectares of reclaimed land (61,000 persons) will be implemented. In addition, poor people and women will be able to protect their lives and properties through use of cyclone centres which will be constructed in the coastal areas. Land which will be reclaimed through excavation of different rivers including Garai will help to increase the women's assets. The Eco-system of the Sundarbans will be conserved by blocking the intrusion of saline water by increasing water flow of the rivers passing through the South-Western part of Bangladesh. This will increase the fertility of the coastal land which will have a positive impact on poverty alleviation.

Impact on Women's Advancement: Projects implemented by the Bangladesh Water Development Board (BWD) will facilitate protection of wet lands and the Sundarbans from salinity and reclamation of land from the sea. Women's active participation will be ensured in these programmes. Reclaimed Khas land will be distributed through the CDSP-3 project and widows and women abandoned by their husbands will have priority claim to the ownership. Cluster villages will be established and distributed amongst destitute women through an implementation agency. Houses built in Char and wetland will also be distributed amongst destitute women.

3.1.5 Protection of land from erosion of big rivers, ensure share of joint and border rivers water and protection of small and big cities.

Impact on Poverty Reduction: Involvement of the poor people in the protection and repair of 145 km and 250 km of river banks to save land of the country from erosion will create employment opportunities for them. In addition, their property and assets will be better protected. This will contribute to a reduction in their poverty.

Impact on Women's Advancement: Involvement of the women in the implementation of river banks protection programmes will create opportunities for their employment.

3.1.6 Ensure sustainable management for balanced and integrated development of water resources.

Impact on Poverty Reduction: No direct impact

Impact on Women's Advancement: No direct impact

3.1.7 Implementation of water sharing agreement relating to common and border rivers, harnessing of water resources, development, preservation and collection of data and information relating to floods and climate.

Impact on Poverty Reduction: No direct impact

Impact on Women's Advancement: No direct impact

3.2 Allocation for Poverty Reduction and Women's Advancement

(Taka in Thousand)

Particulars	Budget 2010-11	Projection 2011-12	Projection 2012-13
Poverty Reduction	497,98,68	476,18,09	545,91,52
Gender	288,33,89	275,44,86	318,96,81

4. Priority Spending Areas/Programmes

Priority Spending Areas/Programmes	Related Strategic Objectives
<p>1. Excavation/Re-excavation, construction and maintenance of infrastructures to provide irrigation facilities to agricultural land:</p> <p>Irrigation water is one of the key inputs for increasing crop production. Rivers and canals are the main sources of irrigation water. But the rivers and canals of the country are continuously being silted up. Therefore, excavation and re-excavation of the rivers and canals have become indispensable. In consideration of this situation, the excavation and re-excavation of rivers and canals, construction and maintenance of the infrastructures programme has been assigned highest priority.</p>	<ul style="list-style-type: none"> • Expand the utilisation of surface water • Ensure rational and proper utilisation of ground water • Efficient utilization of water of rivers and canals and excess surface water

Priority Spending Areas/Programmes	Related Strategic Objectives
<p>2. Undertake appropriate programme on the basis of data-information in view of the challenges the water sector is facing due to climate change. And also undertake repair, modification, re-construction and development of existing embankment, infrastructures; construction and maintenance of new embankments, and afforestation programme in coastal areas:</p> <p>Protection of human lives, forests, fisheries, animals etc valuable resources from repeated natural calamities of high tides, storms, floods, deluges etc; repair, modification, re-construction of existing embankment, infrastructure and development, construction and maintenance of new embankment and afforestation programmes in coastal areas for appropriate use of coastal resources and to create employment for people in the coastal areas is assigned the second priority.</p>	<ul style="list-style-type: none"> • Development of Haor/Wet land, protection of coastal lands from saline water intrusion, preservation of the Sundarbans eco-system and reclamation of land from the sea
<p>3. Construction and maintenance of flood control embankments to protect human life, property and agricultural crops in economically important areas:</p> <p>The responsibility of protecting economically important areas (Hat/Bazar), industries and factories, lives and properties of the people and agricultural land from the wrath of flood lies with the Ministry of Water Resources. Considering this responsibility, and in particular to sustain the rate of economic development in flood prone areas, the construction and maintenance of flood control embankments in economically important areas are given the third priority.</p>	<ul style="list-style-type: none"> • Improvement of flood control and drainage systems and ensure mitigation of risks of damage
<p>4. Protective work to save important towns and establishments:</p> <p>Many important cities such as Chandpur, Sirajgang etc and establishments, valuable factories, machinery and equipment, business houses etc have been damaged as a result of river erosion. Consequently, the economy of the area and the country as a whole becomes victim to huge damages. In order to address this problem, protective is given the fourth appropriate priority.</p>	<ul style="list-style-type: none"> • Protection of small and big cities from the impacts of river bank erosion along the major rivers of the country
<p>5. Implementation of investigation programmes in order to undertake water resource planning:</p> <p>The availability of reliable water resources data - information is essential in order to prepare, implement and manage flood control, drainage, construction of embankments and other water related development programmes. For this purpose, investigations are carried on various aspects of water resource management. For the above reasons, the concerned programme demand priority</p>	<ul style="list-style-type: none"> • Ensure sustainable management for the balanced and integrated development of water resources

Priority Spending Areas/Programmes	Related Strategic Objectives
<p>6. Ensure the fair share of the water resources of border and common rivers:</p> <p>In the interest of obtaining a fair share of the water of border and common rivers, bilateral and multilateral programmes and research are undertaken for the collection of data and information on change of climate, course of rivers, flood and drought etc and this programme is considered very important work.</p>	<ul style="list-style-type: none"> Implementation of water sharing agreement relating to common and border rivers, harnessing of water resources, development, preservation and collection of data and information relating to floods and climate

Key Performance Indicators (KPIs)

Indicators	Related Strategic Objectives	Unit	Target 2008-09	Actual 2008-09	Target 2009-10	Revised Target 2009-10	Medium Term Targets		
							2010-11	2011-12	2012-13
1. *Irrigation area	1	Lac hectare	0.15	0.12	0.15	0.15	0.15	0.15	0.15
2. Total irrigable area actual and target area		Lac hectare % of total	7.95 (82.8%)	7.92 (82.5%)	8.07 (84.1%)	8.07 (84.1%)	8.22 (85.6%)	8.37 (87.1%)	8.52 (88.7%)
3. Flood free and drainage area.	2	Lac hectare	0.35	0.30	0.40	0.40	0.40	0.45	0.50
4. Total flood free** area actual and target		Lac hectare % of total	59.55 (54.1%)	59.50 (54.1%)	59.90 (54.5%)	59.90 (54.5%)	60.30 (54.8%)	60.75 (55.2%)	61.25 (55.7%)
5. Salinity protected area	4	Lac hectare	0.15	0.10	0.15	0.15	0.16	0.16	0.17
6. Salinity controllable area actual and target		Lac hectare % of total	12.50 (47.4%)	12.45 (47.2%)	12.60 (47.8%)	12.60 (47.8%)	12.76 (48.4%)	12.92 (49.0%)	13.09 (49.6%)
7. Employment.	3	Lac man-days	25	25	25	25	25	26	25

* Total irrigation area under BWDB is 15 lakh hectare of land. Out of this, 9.60 lakh hectare is irrigable. 2009-10 target of 8.07 lakh hectare is included in the total irrigable area of 9.60 hectare of land which is 84.06% of irrigable area.

** As per above explanation

5. Recent Achievements, Key Activities and Outputs of the Departments and Agencies under the Ministry

5.1 Bangladesh Water Development Board

5.1.1 Recent Achievements: It has been possible to bring 7.92 lakh hectares (82.50%) of land under irrigation out of 9.60 lakh hectares of irrigable land as a result of repair of flood embankment, excavation and re-excavation of drainage canals and construction and re-construction of the required infra-structures up to 2008-09. During the same time, 59.50 lakh hectares of land (54.09%) out of the 110 lakh hectares of land suitable for flood control and drainage, has been made flood free. Through the repair of existing embankments, construction of new embankments, and maintenance and afforestation programmes, 12.45 lakh hectares of land (47.21%) of

the total saline risk coastal area of 26.37 lakh hectares has been protected against salinity. Under programmes for river bank protection and where possible, protection of towns, Bazar, Hat, historical and nationally important establishments and assets, the protection of new 172 km of river bank and the repair of 125 km of existing river bank have been accomplished. In addition, through the construction of 14 spurs, the properties and assets of people and important establishments have been protected from the erosion along the Padma and Jamuna rivers.

5.1.2 Key Activities, Outputs related to the Activity and related Strategic Objectives

Key Activity	Outputs related to the Activity	Related strategic objectives
1. Excavation/ re-excavation of irrigation canals/river dredging	<ul style="list-style-type: none"> • Excavation of 100 km of irrigation canal • Re-excavation of 2,190 km of irrigation canal • 135 km of river dredging • 22km of capital dredging 	1
2. Construction/repair of irrigation structures	<ul style="list-style-type: none"> • Construction of 71 irrigation structures • Repair and rehabilitation of 260 irrigation structures 	1
3. Construction of rubber dams/barrages	<ul style="list-style-type: none"> • Construction of 3 rubber dams 	1
4. Survey programme to make use of the water flows of big rivers	<ul style="list-style-type: none"> • 18 investigation programmes 	1
5. Completion of surveys/researches	<ul style="list-style-type: none"> • Completion of 9 investigations 	1
6. Flood control, construction and repair and rehabilitation of embankments	<ul style="list-style-type: none"> • Construction of 940 km of embankment • Repair of 9,040 km of embankment 	2
7. Excavation/re-excavation of drainage canals	<ul style="list-style-type: none"> • Excavation/re-excavation of 1,600 km of drainage canals 	2
8. Construction, repair and rehabilitation of flood control and drainage structures	<ul style="list-style-type: none"> • Construction, repair and rehabilitation of 2,400 km of flood control and drainage structures 	2
9. Automate the process of collection and distribution of flood forecast data and information via satellite using modern systems and technology	<ul style="list-style-type: none"> • Procurement of 23 equipments and 2 softwares 	2

Key Activity	Outputs related to the Activity	Related strategic objectives
10. Formation of water management groups and their registration, training for the water management groups and transfer of responsibility of collection of cess/service charges from projects	<ul style="list-style-type: none"> • Transfer of the management of 45 projects to water management groups • Formation of 4,585 water management groups 	3
11. Transfer programme of management and maintenance of irrigation canals, cross dams, irrigation inlets, fish passes, regulators, embankments to community level/management group	<ul style="list-style-type: none"> • Formation of 4,585 water management groups and transfer of responsibility for water management 	3
12. (a) Carry out research and investigations into the construction of barrage(s) over the Ganges river in order to block saline water intrusion by increasing the flow of river water 12 (b) Protection of the natural balance of the coastal areas including the Sundarbans	<ul style="list-style-type: none"> • A total of 14 investigations programmes 	4
13. Construction of cross dams and undertake capital dredging to reclaim land from the sea and rivers	<ul style="list-style-type: none"> • Construction of 2,300 meter cross dam 	4
14. Protective embankments, protection and repair of river banks /densely populated areas and economically important towns /areas	<ul style="list-style-type: none"> • Protection of 140 km of river banks • Repair of 250 km of river banks 	6
15. Protection of land from erosion of Border river and protection of river banks and through ensuring share of joint rivers water to increase navigability, arrangement of meetings with neighbouring country/countries Protection of border rivers against erosion	<ul style="list-style-type: none"> • Protection of 10 km of border river banks 	6
16. Research programmes	<ul style="list-style-type: none"> • 5 investigation/Research programmes 	7

5.1.3 Output Indicators and Targets

Output Indicators	Unit	Actual 2008-09	Target 2009-10	Revised Target 2009-10	Medium Term Targets		
					2010-11	2011-12	2012-13
1. Irrigation canal excavation	km	9	25	25	25	35	40
2. Irrigation canal re-excavation	km	478	650	650	670	700	820
3. Irrigation structure (head regulator and aqua duct) construction	Number	4	15	15	20	25	26
4. Irrigation structure (barrage, head regulator and aqua duct) repair and rehabilitation	Number	37	50	50	70	80	110
5. Pilot capital dredging	km	-	-	-	12	8	-
6. River dredging	km	20	30	30	35	40	60
7. Flood control and coastal embankment construction	km	252	260	260	270	300	370
8. Flood control and coastal embankment repair	km	853	1,875	1,875	2,520	3,070	3,450
9. Flood control structures (sluices and regulators) construction and repair	Number	1,436	1,500	1,500	1,600	1,800	2,000
10. Excavation /re-excavation of drainage canals	km	424	450	450	475	500	625
11. Protection of river banks	km	19	30	30	40	50	55
12. River banks protection works and repair (including border rivers)	km	50	70	70	75	80	95

5.1.4 Forward Budget Estimates

(Taka in Thousand)

	Budget 2009-10	Revised 2009-10	Budget 2010-11	Projection 2011-12	Projection 2012-13
Non-development	532,11,64	680,88,28	622,47,00	707,56,88	750,76,36
Development	885,34,00	1245,07,00	1358,28,00	1139,18,00	1335,00,00
Total	1417,45,64	1925,95,28	1980,75,00	1846,74,88	2085,76,36

5.1.5 List of Projects, Programmes and Operational Units

Operational Unit/Project/Programme	Related Key Activity
Operational Unit	
BWDB Operation and Maintenance	1,2,6,7,8,14
Approved Projects	
1 Muhuri Kahua Flood Control, Drainage and Irrigation Project	1,2,3,6,7,8
2 Matamuhuri Irrigation Project	1,2,3

Operational Unit/Project/Programme	Related Key Activity
3 South Comilla-North Noakhali Integrated Drainage and Irrigation Project	1,2,3,6
4 Kurigram Irrigation Project (North Unit)	1,2
5 Kurigram Irrigation Project (South Unit)	1,2,3
6 Expansion of Activities of Choudhamather Marsh (Beel) Embankment and Canal Excavation Project	1,2,8
7 Protection of Meghai Market, Shuvagacha and Simla areas of Sirajgang District from erosion of the Jamuna River.	15
8 Teesta Barrage Project 2 nd Phase (Unit-1)	1,2
9 Urgent Rehabilitation of the Pump of G.K Irrigation Project to Uphold Rural Socio-Economic Development.	2
10 South-West Integrated Water Management Project	1,2,16
11 Protection of Chandpur Irrigation Project from the Erosion of the Meghna River-1 st Phase	1,2
12 Mahamaya Chara Irrigation Extension Project in Mirersharai Upazila of Chittagong District	1,2
13 Dhepa-Punavara Water Management Project	1,2, 10,11
14 Bhabadah Drainage Improvement Project-2	1,7
15 New Dakatia-Old Dakatia Little Feni Basin Development Project	1
16 Both banks of Upper Surma Kumiara River Flood Control and Drainage Project	6,7,8
17 Khaliaghuri Flood Control and Drainage Project	6,7,8
18 Secondary Towns Integrated Flood Protection Project - Phase-2	6,8
19 Construction of embankment from Kazirhat to Sathbaria of Pabna District	6
20 Construction of embankment from Zianagar to Hularhat of Pirojpur District	6
21 Construction of embankment and other infrastructures in Tannery Industries area in Savar Upazila of Dhaka District	6,8
22 Emergency Damages Rehabilitation (sector) Project-2007(Part-E: Water Resources)	6,8
23 Urgent Rehabilitation of the Damages of Cyclone (Sidr) 2007 Project	6,8
24 Mitigation of Water logging of Polder 1&2 of Coastal Embankment Project of Sathkhira District	7
25 Drainage and Development of Dhaka-Narayanganj-Demra (DND) Project	7
26 Integrated Participatory and Sustainable Water Management Planning	5,10,11, 12, 16
27 Jamuna-Meghna River Erosion Mitigation Project	10,11,14
28 Water Management Development Project	5,10,11,12,16
29 Estuary Development Programme	10,11
30 Char Development and Settlement Project	5,13
31 Feasibility Study and Detailed Design of Ganges Barrage Project	12,16

Operational Unit/Project/Programme	Related Key Activity
32 Feasibility Study of Land Reclamation from Bay of Bengal: Pilot Programming and Biological	13
33 Construction of Embankment from Rajabagi to Baliaghat of Godabari Upazila of Rajshahi District	6,14
34 Protection of Phulchari Thana Head Quarter and Kamarjani Market from the Erosion of the River Jamuna	14
35 Protection of Faridpur town and adjacent areas from the erosion of the Padma river in Faridpur Sadar and Chandravageon Upazila	14
36 Protection of Kajipara balashi ghat areas of Baburia, Syedpur, and Phuljhuri Upazilas of Gaibandha sadar from erosion of the Jamuna river	14
37 Goalichara Kazirbari Bazar Chara, Jangalia-Jogirgaon and Mahtabpur Embankment in Sylhet Sadar Upazila	14
38 Fenchugang Upazila of Sylhet district from river erosion of Kushiara river	14
39 Protection of Bhandarbari and Adjacent Areas under Dhunat Upazila of Bogra district from the Erosion of the Jamuna River	14
40 Narshingdi Town Protection Project	6,14
41 Bhola District Town Protection Project – 2 nd phase	6,14
42 Protection of hand loom rich industry of Enayetpur Bazar Area from the Erosion of the Jamuna River	14
43 Protection of Shailabari and nearby Areas of Sadar Upazila of Sirajgang District	14
44 Meghna-Tetulia River Erosion Protection Project	14
45 Patuakhali Town Protection Project	6,14
46 Protection of BNS Titumir Launch Terminal of Bangladesh Navy in Khulna District from the Erosion of Bharab River	14
47 Protection of Coast Guard Station at Raypur of Anowara Upazila of Chittagong District from the Erosion of Sangu River	14
48 Protection of left bank of the river Padma from Lalpur Tilakpur to Palidaha via Gouripur of Natore District	14
49 Protection of Panchgaon, Hashail-Banari and Dighirpar Union Tongibari Upazila of Munshigang District from the Erosion of the Padma River.	14
50 Protection of Chapainababgang and Shibgang Upazila from the Erosion of the Padma River	14
51 Protection of Right Bank of Brahmaputra River from Bairagir Hat to Chilmari in Kurigram District	14
52 River Bank Protection and Development and Town Protection Project (4 th Phase)	14
53 Rehabilitation of Affected very Risky Polders of the Coastal Areas	6,8,14
54 Bemarta Project in Sadar and Kachua Upazila of Bagerhat District	1,2,6,7,8

Operational Unit/Project/Programme	Related Key Activity
55 Re-excavation of Narad River, Muchakhan River (Part) and Charghat Regulator Intake Channel	1
Unapproved Projects	
1 Kalni-Kushiara River Management Project	1,2
2 Chandpur-Comilla Integrated Flood Control, Drainage and Irrigation Project	1,2,6,7,8
3 Comprehensive Irrigation, Drainage and Flood Control Project of Bangladesh Water Development Board	1,2,6,7,8
4 Guptakhali Water Reservoir Construction Irrigation Project	1,2
5 North Rajshahi Irrigation Project	1,2
6 Karotia River Right Bank Flood Control, Drainage and Irrigation Project	1,2,7
7 Dhepa River Right Bank Flood Control, Drainage and Irrigation Project	1,2,7
8 Jamuna-Padma Rivers Left Bank in Shibaloy and Harirampur Upazila of Manikgang District Flood Control, Drainage and Irrigation Project	1,2,7
9 Char Zahiruddin Flood Control, Drainage and Irrigation Project in Tazumuddin Upazila	1,2,7
10 Improvement of Data Collection System for Flood Forecast and Warning	9
11 Application of Climate/Flood Forecast for Management of Flood Related Disaster and Mitigation	9
12 Assistance for Flood Forecast and Warning for Bangladesh	9
13 Re-excavation of Kumar River Project	1
14 Reclamation of Gorai River Project	1
15 Char Kukrimukri Flood Control, Drainage and Salinity Protection Project	6,7,8
16 Flood Control Embankments and Rehabilitation Project on both Sides of Gomati River	6,8
17 Dhaka Integrated Flood Protection cum Eastern Bypass Road Multipurpose Project	6,8
18 Rehabilitation of 123 Polders of the Coastal Areas	6,7,8
19 Rivers and Canal Re-excavation Cluster Project 4 th Phase	7
20 Protection of Left Bank of Teesta River from Barrage to Chandimari including Removal of Char from the up stream	14
21 Protection of Shaghata Market and adjacent Areas under Shaghata Upazila of Gaibandha district from the Erosion of the Jamuna River	14
22 Protection of Madaripur Town and adjacent Areas	14
23 Protection of Left Bank of the Jamuna River from Haridhara to Hargila in Islampur Upazila of Jamalpur District Project	14
24 Protection of Mahajan Bazar from the Erosion of Nabaganga of Narail District	14

Operational Unit/Project/Programme	Related Key Activity
25 Protection of Gorai River Bank in Khkksha and Kumar Upazilas of Kushtia District	14
26 Naogaon Town Protection Project	14
27 Charfation and Manpura of Bhola District own Protection Project	14
28 Protection of Baherchar Areas of Dumki Upazila of Patuakhali District from Erosion of Paira River.	14
29 Construction of Flood Embankment and River Bank Protection at Nagpur and Chouhali Left Bank of the Jamuna River and Construction of Flood Embankment and River Bank Protection on the Right Bank of Dhaleswari River.	14
30 Bank Protection Project to Save Pinkna Bazar Area at Sharishabari Upazila of Jamalpur District from the Erosion of rRght Bank of Jamuna River	14
31 Brahmaputra Right Embankment Protection Project at Agla in Dathbhanga Union of Roumari Upazila and Kurigram District	14
32 Protection of Kajla Village under Tarail Upazila of Kishoregang District	14
33 Jamalpur Priority Project from Futani Bazar to Bahadurabad Ghat	14
34 Khepupara Bandar Protection Project in Kalapara Upazila of Patuakhali district	14
35 Protection of Bir Srestra Captain Mohiuddin Gahangir Memorial Museum from the erosion of Sadha river in Babugang Upazila	14
36 Protection of Bhairab Bazar Town	14
37 Rajbari Town Protection Project	14
38 Faridpur Town Protection Project	14
39 Protection of Louhajang Upazila Complex from the Erosion of the River, Padma	14
40 Protection and Development of Border River Project (2 nd Phase: 39 Sub-project)	15
41 Permanent Protection Work at Left bank of Atharo Bak River in Rupsha Upazila near Kajdia Village of Khulna District	14
42 Hydrolic Survey and Investigations Project for Development of Water Resources	4,5
43 Protection of Bakshipur of Rajbari District from the Erosion of the Padma River and Faridpur in Sengram Area Flood Control and Drainage Project (Area-1)	6,7
44 Enhancement of Water Flows of Buriganga River by Removing the Silt from the Confluences of the Jamuna River Aub-project	1
45 Construction of Cross Dam for Reclaiming Land (2006/07- 2011/12)	13
46 Jagannathpur, Dirai and Shalna Water Mangement Project	1,6,7
47 Protection of Patahat Bandar at Ulania of Mehendigang Upazila of Barisal District and Construction of Cross Dam	14
48 Construction of a Pilot Channel Down Stream of Feni Regulator in Sonagazi Upazila of Feni District	1

Operational Unit/Project/Programme	Related Key Activity
49. Hatia Nijhum Island Cross Dam under Hatia Upazila of Noakhali District	13,8
50. Chalanbeel Area including Balhali Development Integrated Water Management Project	1
51. Enhancement of navigability of Karotia River in Bogra Town and Environmental Development Project	1
52. Under MOWR ICD based Institutional and Skill Development Project	1
53. Construction of Water Bhaban at Green Road in Dhaka	1
54. Re-excavation of Nara-Sundar River Project in Kishoregang District	1
55. Rehabilitation of Barisal Irrigation Project	1,2,6,7
56. Protection of Chandpur Irrigation Project from the Erosion of the Meghna River	14
57 Pilot Capital Dredging System in Bangladesh (Phase-1)	1

5.2 River Research Institute

5.2.1 Recent Achievements: During the last three years, investigations on 4 physical model works and examination of 22,724 samples relating to soil, concrete, silt and chemicals were completed. In addition, 80% of the "Impact of Bending on River Flows and Morphology" project and 26.46% of the "Institutional Development and Capacity Building of RRI" Project were completed.

5.2.2 Key Activities, Outputs related to Activity and related Relevant Strategic Objectives

Key Activity	Outputs related to the Activity	Related Strategic Objective
1. Examination of physical models and samples in the laboratory in order to assist in the design of projects of BWDB	<ul style="list-style-type: none"> 4 model study reports Examinations of 28,000 samples 	1

5.2.3 Output Indicators and Targets

Output Indicators	Unit	Actual 2008-09	Target 2009 -10	Revised Target 2009 -10	Medium Term Targets		
					2010-11	2011-12	2012-13
1. Model Study	Number	1	3	1	1	1	2
2. Sample examination	Number	6,188	8,000	7,000	9,000	9,000	10,000

5.2.4 Forward Budget Estimates

(Taka in Thousand)

	Budget 2009-10	Revised 2009-10	Budget 2010-11	Projection 2011-12	Projection 2012-13
Non-development	4,77,60	5,16,40	6,30,69	6,40,00	6,60,00
Development	4,03,00	2,39,00	3,06,00	4,00,00	5,00,00
Total	8,80,60	7,55,40	9,36,69	10,40,00	11,60,00

5.2.5 List of Projects, Programmes and Operational Units

Operational Unit/Project/Programme	Related Key Activity
Operational Unit	
BWDB and Deposit Works of Other Agencies	1
Approved Projects	
1. Impact of bending of River Flows and Morphology	1
2. Institutional Development and Capacity Building of RRI	1
Unapproved Projects	
1. Institutional Development and Capacity Building of RRI (Phase-II)	1
2. Physical Model Study for the protection of Rajbari Town from the Right Bank Erosion of Padma Bridge	1
3. Physical Model Study to protect Madaripur Town from the Erosion of Arial Khan River	1
4. Sediment management of Kumar River through Flow Regulation and Sediment Control at the Off-take	1
5. Study of salinity Intrusion in the Ganges-Padma-Meghna River System	1
6. Development of Physical Model of the Teesta Barrage Including all its Components and Conduct Studies to Assets to Sustainable Operation Maintenance	1

5.3 Water Resources Planning Organisation (WARPO)

5.3.1 Recent Achievements: During FY-2006-07-2008-09, WARPO prepared a Coastal Area Policy (2005) and 20 priority investment programmes in the light of the Integrated Coastal Area Policy. Development plans for two coastal districts out of 19 were prepared. A data base of coastal area water and other resources (ICRD) was prepared and integrated with the national water resources data base. WARPO prepared a Coastal Development Strategy in FY-2006/07 under Integrated Coastal Area Management. Clearance was given to 40 projects of BWDB in 2007/08 under the "Clearing House" implementation programme. As part of the review and evaluation of the implementation of the National Water Management Programme, 2 projects of BWDB and 2 projects of LGED were reviewed at field level. The Organizational Development Plan (ODP-2007) of WARPO was prepared and it includes a 10 year plan of works for WARPO.

5.3.2 Key Activities, Outputs related to the Activity and related Strategic Objectives

Key Activity	Outputs related to the Activity	Related Strategic Objectives
1. Survey/research programmes.	<ul style="list-style-type: none"> Updating the National Water Management Plan (NWP) (10 reports) Investigations of 5 main programmes and 12 reports in the light of National Water Resources Management Plan. 	6
2. Act as Clearing House to review the rationality and prevent duality of Water Resources Plan	<ul style="list-style-type: none"> Provide 105 clearance certificates to avoid duality in project selection One guideline for implementation of the Clearing House 	6
3. Implementation, investigation and evaluation of National Water Management Plan	<ul style="list-style-type: none"> 16 reports on implementation, investigation and evaluation by National Water Management Plan In order to review and evaluate project implementation, preparation of one manual to determine a review index and rules of business for information collection and evaluation of systems Development and updating of the National Water Resources Database (NWRD) and ICRD. Preparation of a MIS 	6
4. Water Resources Management Programmes in the Coastal area through Programme Co-ordination Unit	<ul style="list-style-type: none"> 7 review reports on the implementation of 20 priority investment programmes 3 reports on the preparation of development plans in 19 coastal area districts 	6

5.3.3 Output Indicators and Targets

Output Indicators	Unit	Actual 2008-09	Target 2009-10	Revised target 2009-10	Medium Term Targets		
					2010-11	2011-12	2012-13
1 National Water Management Plan and Related Report(s)	Number	-	1	1	2	4	4
2 Report of water related survey projects	Number	7	3	3	4	4	4
3 Issuance of clearance certification and preparation of guidelines under Clearing House Programme	Number	20	25	25	30	35	35
4 Review and evaluation of implementation report	Number	3	4	4	4	5	5

5.3.4 Forward Budget Estimates

(Taka in Thousand)

	Budget 2009-10	Revised 2009-10	Budget 2010-11	Projection 2011-12	Projection 2012-13
Non-development	2,49,77	3,17,55	3,37,55	3,69,75	3,89,70
Development	0	91,00	0	5,00,00	6,00,00
Total	2,49,77	4,08,55	3,37,55	8,69,75	9,89,70

5.3.5 List of Projects, Programmes and Operational Units

Operational Unit/Project/Programme	Related Key Activity
Operational Units	
Non-development	
1. Clearing House, National Water Resources Plan Implementation Monitoring and Evaluation, Programme (PCU) Coordination Unit	2, 3
Approved Projects	
1. Water Management Development Project	1
2. Determination of impact of Inter-country River Basin Connection Proposed by India Project	1
3. Regional technical assistance for implementation of Integrated Water Management (Bangladesh)	1
4. Development of Underground Water as Alternative for Supply of Drinking Water in the Arsenic Affected Areas	1
Unapproved projects	
1. National Water Management Project-II	1
2. Institutionalisation and Operation of Integrated Costal Area Management	3
3. Integrated Water Resource Management for Development of Karnofuly River Basin	1
4. Determination of Availability of Surface Water during Dry Season	1
5. Determination of Ground Water Availability in Bangladesh (special survey area analysis)	1
6. Water Resources Management of Greater Dhaka Basin	1
7. Determination of the Impact of Seawater Rise on the Costal Area Polders	1
8. Finding solution of the Problem of River Erosion	1
9. Preparation Required Manual, Guidelines and Girectory for Implementation of WARPO Clearing House	2

5.4 Bangladesh Haor and Wetland Development Board

5.4.1 Recent Achievements: A project proposal for preparation of an integrated master plan to assist in the overall development of the haor areas of north-eastern region of Bangladesh and for preparation of a database of information to allow appropriate protection of the wetlands of the country was

submitted to the Government for approval. In addition, village protection work at Akashi Shapla Haor in the eastern area of the country was completed and protection works involving shelter/residence projects in different haor areas in the country was expanded.

5.4.2 Key Activities, Outputs related to the Activity and related Strategic Objectives

Key Activity	Outputs related to the Activity	Related Strategic Objectives
1. Survey/research programme for preparation of master plan relating to Haor/Wetland development	<ul style="list-style-type: none"> Preparation of a Master Plan and Database relating to haor and wetland areas 9 wetlands and village protective works in haor areas 	4
2. Survey/Training/ Research programme	<ul style="list-style-type: none"> Arrangement of 9 seminars/workshops 	1

5.4.3 Output Indicators and Targets

Output Indicators	Unit	Actual 2007-08	Target 2008-09	Revised target 2008-09	Medium Term Targets		
					2009-10	2010-11	2011-12
1. Construction of village protection embankment	Number	1	10	9	9	10	10
2. Village protection embankment repair	Number	0	0	0	3	4	5
3. Training	Number	0	10	10	10	10	10

5.4.4 Forward Budget Estimates

(Taka in Thousand)

	Budget 2009-10	Revised 2009-10	Budget 2010-11	Projection 2011-12	Projection 2012-13
Non-development	56,88	80,55	89,48	94,00	1,00,00
Development	2,62,00	5,97,00	4,39,00	6,00,00	7,00,00
Total	3,18,88	6,77,55	5,28,48	6,94,00	8,00,00

5.4.5 List of Projects, Programmes and Operational Units

Operational Unit/Project/Programme	Related key Activities
Operational Unit	
Non-development	
Bangladesh Haor and Wetland Development Board	1-2
Approved project	
1. Protection of flood Risk Shelter/Residence Project in the Haor Areas of Bangladesh-Phase I	1, 2
Unapproved Project	
1. Preparation of Master Plan and Information Database for Haor and Wetland Areas	1, 2

5.5 Joint River Commission

5.5.1 Recent Achievements: Assigning priority to distribution of water from the Teesta river, sharing of water of other common and border rivers, collection of data and information from upstream stations on the common and border rivers to increase the timing of flood forecast were ensured. In order to resolve the problems arising from protection works along river banks of common and Border River and to resolve other related problems, 1 meeting was held with India at water resources secretary level and 9 meetings held at other levels with India and Nepal. Implementation plan for obtaining data/information relating to flood of Brahmaputra River from China was signed and a meeting held with China at secretary level for mutual cooperation in the water resources areas. In addition, parliamentary standing committee members visited the Tipaimuk Dam Project in India and submitted report to the Government. During the dry season (01 January-31 May) every year, water flow and distribution of water at Farakka Barrage are observed jointly and also water flow at Harding Bridge is observed jointly. Out of flood forecast more supportive data and information required from common and border rivers, rainfall data and information in 18 stations and water level and flow in 13 stations in India and flood related data and information from 4 stations in Nepal and 3 stations in China were procured. Besides, progress was made on joint observation of Ichamati River during the last visit of the Honourable Prime Minister.

5.5.2 Key Activities, Outputs related to the Activity and related Strategic Objectives

Key Activity	Outputs related to the Activity	Related Strategic Objectives
1. Arrangement of bilateral meetings with neighbouring countries for the protection of land from erosion, bank protection works of Border Rivers and ensuring share of water of joint river to increase navigability	<ul style="list-style-type: none"> • 30 sittings of the Joint River Commission and its various committees. • Signing of water sharing agreement through bilateral and multilateral discussions in order to resolve problems relating to common and Border River and the resolution of problems arising from river bank protection works. 	5
2. Bilateral and multilateral cooperation related programmes	<ul style="list-style-type: none"> • 3 joint assessments of water flows and distribution of water programme at Farakka during the period from 01 January to 31st May as per Ganges Agreement 	7
3 To take steps for exchange of flood forecast and warning related	<ul style="list-style-type: none"> • 3 sittings of experts from Bangladesh and India on flood forecast and warning 	7

Key Activity	Outputs related to the Activity	Related Strategic Objectives
data and information jointly with India, Nepal and China and undertake related programmes.	<ul style="list-style-type: none"> Availability of more information and data from up stream stations of common and border rivers 	

5.5.3 Output Indicators and Targets

Output Indicators	Unit	Actual 2008-09	Target 2009-10	Revised target 2009-10	Medium Term Targets		
					2010-11	2011-12	2012-13
1. Different sittings	Number	3	11	7	10	10	10
2. Preparation of river based position paper	Number	8	11	9	9	9	9

5.5.4 Forward Budget Estimates

(Taka in Thousand)

Particulars	Budget 2009-10	Revised 2009-10	Budget 2010-11	Projection 2011-12	Projection 2012-13
Non-development	2,46,39	2,85,71	3,07,50	3,18,75	3,36,30
Development	0	0	0	0	0
Total	2,46,39	2,85,71	3,07,50	3,18,75	3,36,30

5.5.5 List of Projects, Programmes and Operational Units

Operational Unit/Project/Programme	Related Key Activity
Operational Unit (Non-development):	
Joint River Commission	1, 2