2015-16

Project Completion Report: IMED 04/2003 (Revised)

Feasibility Study and Detailed Engineering of Ganges Barrage Project

Bangladesh Water Development Board

Government of the People's Republic of Bangladesh
Ministry of Planning
Implementation Monitoring and Evaluation Division

PROJECT COMPLETION REPORT : IMED 04/2003 (Revised)

A. PROJECT DESCRIPTION :

01.	**Name of the Project**	: Feasibility study and Detailed Engineering of Ganges Barrage Project
02.	**Administrative Ministry/Division**	: Ministry of Water Resources
03.	**Executing Agency**	: Bangladesh Water Development Board
04.	**Location of the Project**	: In the South-Western region of Bangladesh covering about 37% of the total area of Bangladesh in the greater districts of Rajshahi, Pabna, Kushtia, Jessore, Khulna, Faridpur and Barisal
05.	**Objective of the Project**	:

Detailed Feasibility Study:
Feasibility Study comprising the following main components:
Detailed studies of the Ganges Barrage sites, Gorai head works and three promising link channels, including surveys, geotechnical investigations and modelling studies, with due attention given to local peoples' needs, river regime improvement needs, possible effects of climatic changes due to global warming, construction methods and phasing and operational requirements.

Detailed studies of the coastal polder improvement works, involving river surveys and extensive hydrodynamic and morphological modeling of the river systems under alternative development sequences, whilst taking into consideration peoples' needs, possible impacts of sea-level rise due to global warming changes in tidal range and anticipated variations in salinity boundaries due to different flow augmentation scenarios. Calibration and validation of salinity model.
Overall project formulation and implementation planning including overall environmental, social and economic impact assessments, risk assessment, institutional and financing aspects, environmental management plans, and recommended overall action plan. The necessary topographical, river, social and environmental surveys geotechnical investigation, peoples' consultations, river flow and salinity data collection and mathematical and physical modeling.
Detailed Engineering Design: It consists of detailed engineering design of he barrage, head regulators, navigation lock, fish ladder, silt trap, irrigation canals, drainage canals, river training works , afflux bundh and all other related works including road and railway bridge on the barrage, if feasible. It will include preparation of detail technical specification and tender document for the barrage and associated structures leading to project implementation.

06. Estimated Cost :

(In lakh Taka)

	Original	Latest Revised
(a) Total	4563.69	4557.93
(b) Taka	4563.69	4557.93
(c) Foreign Currency		
(d) Project Aid		
(e) RPA		

07. Date of Approval : PCII PCR-II

(a) Original : 18-04-2005
(b) Latest Revised : 29-06-2015

08. Implementation Period :

	Date of Commencement	Date of Completion
(a) Original	july 2004	june 2013
(b) Latest Revised	july 2004	june 2016
(c) Actual	july 2004	june 2016

09. Financing Arrangement (Source-wise) :

9.1 Status of Loan/Grant

a) Foreign Financing :

Source (s)	Currency as per Agreement	Amount in US $ (Million)	Nature (Loan/Grant/ supplier's/ credit)	Date of Agreement	Date of Effective-ness	Date of Closing	
						Original	Revised
1	2	3	4	5	6	7	8
Not applicable							

b) GOB:

(In lakh Taka)

Total amount	Loan	Grant	Cash Foreign Exchange
1	2	3	4
4557.93	-	4557.93	-

9.2 Utilization of Project Aid : (Source wise)

(In million)

Source (s)	Total Amount		Actual Expenditure		Unutilized Amount	
	In US $	In Local Currency	In US $	In Local Currency	In US $	In Local Currency
1	2	3	4	5	6	7
Not applicable						

9.3 Re-imbursible Project Aid (RPA):

(In lakh Taka)

R P A Amount		Amount Spent	Amount Claimed	Amount Re-imbursed	Remarks
As per PP-II	As per Agreement				
1	2	3	4	5	6
Not applicable					

B. IMPLEMENTATION POSITION

01. Implementation Period :

Implementation Period as per PP-II		Actual Implementation period	Time Over-run (% of original implementation period)	Remarks
Original	Latest Revised			
1	2	3	4	5
July 2004 to June 2013	July 2004 to June 2016	July 2004 to June 2016	33%	

02. Cost of the Project:

(In lakh Taka)

Description	Estimated Cost		Actual expenditure	Cost over-run (% of original cost)	Remarks
	Original	Latest revised			
1	2	3	4	5	6
TOTAL	4563.69	4557.93	4527.65	(-) 0.75	
TAKA	4563.69	4557.93	4527.65	(-) 0.75	
PA					

03. Project Personnel :

Sanctioned strength as per PP	Manpower employed during execution	Status of the existing manpower			Manpower Employed	
		Manpower requirement for O&M as per ~~PP~~ PC-II	Existing manpower for O & M	Others		
1	2	3	4	5	Male	Female
Officer(s): 32	12	-	12	-	-	
Staff(s): 56	1	-	1	-	-	
Total : 88	13	-	13	-	-	

04. Training of Project Personnel (Foreign/Local):

Field of Training /Study tour/workshop/ Seminer etc.	Provision as per ~~PP~~ PC-II		Actual		Remarks
	Number of person	Man - months	Number of person	Man - months	
1	2	3	4	5	6
a. Foreign					
Study tour in China, Thailand and Indonesia	24	-	~~23~~ 23 (Twenty Three)		
b. Local					

05. Component-wise Progress (As per latest approved PP) :

(In lakh Taka)

Items of work (as per PP)	Unit	Target (as per PP)		Actual Progress		Reasons for deviation (±)
		Financial	Physical (Quantity)	Financial	Physical (Quantity)	
1	2	3	4	5	6	7
Revenue						
Expert Service (Remuneration)						
a) International consultants	Total Persons:11 Nos/ 96 man-month	627.13	Persons:11 Nos/ 96 man-month	627.13	Persons:11 Nos/ 96 man-month	
b) Local Consultants	Total Persons:59 Nos/ 1480 man month	1111.25	Persons:59 Nos/ 1480 man month	1111.25	Persons:59 Nos/ 1480 man month	
c) Project Office		51.77	L.S.	50.55	L.S.	
Project Input: Other:						
a) Physical Modelling		515.82	L.S.	515.82	L.S.	
b) Mathematical Modelling		407.38	L.S.	407.38	L.S.	
c) Survey & Investigations		758.14	L.S.	758.14	L.S.	
d) Environmental & Social Impact Assessment		183.25	L.S.	183.25	L.S.	
e) Study Tour		200.00	L.S.	190.19	L.S.	
Miscellaneous (Including Air Ticket per Diem etc.)		423.13	L.S.	421.18	L.S.	
Contingency		170.00	L.S.	152.9	L.S.	
Capital						
Machinery, Equipment and Vehicles		110.06	1 no. Professional Plotter (A-Z), 1 no. Jeep, 1 No Car, 1 no. speed boat	110.06	1 no. Professional Plotter (A-Z), 1 no. Jeep, 1 No Car, 1 no. speed boat	
Total		**4557.93**	**100.00**	**4527.84**	**99.37**	

06. Information regarding Project Director (s) :

Name and Designation with pay scale	Full Time	Part Time	Responsible for more than one project	Date of		Remarks
				Joining	Transfer	
1	2	3	4	5	6	7
Md. Abul Kashem, Superintending Engineer Pay Scale: 15000/--19800/-	Yes	-	No	06-08-2003	04-01-2005	
Jashim Uddin Ahmed Superintending Engineer Pay Scale: 15000/--19800/-	Yes	-	No	04-01-2005	04-01-2005	
A, Z, M Nurun Nabi Khan Superintending Engineer Pay Scale: 15000/--19800/-	Yes	-	No	04-01-2005	05-01-2005	
Jashim Uddin Ahmed Superintending Engineer Pay Scale: 15000/--19800/-	Yes	-	No	05-01-2005	22-01-2006	
Md. Muraduzzaman, Additional Chief Engineer Pay Scale: 16800/--20700/-	Yes	-	No	22-01-2006	17-04-2006	
Md. Julfiqure Haider Superintending Engineer Pay Scale: 15000/--19800/-	Yes	-	No	17-04-2006	11-09-2006	
Mirja Haroon-Ur Rashid, Additional Chief Engineer Pay Scale: 16800/--20700/-	Yes	-	No	11-09-2006	18-10-2007	
Jashim Uddin Ahmed Additional Chief Engineer Pay Scale: 16800/--20700/-	Yes	-	No	18-10-2007	27-02-2007	
Jalal Uddin Md. Abdul Hay Additional Chief Engineer Pay Scale: 16800/--20700/-	Yes	-	No	27-02-2007	05-04-2007	
Md. Abus Salam Superintending Engineer Pay Scale: 15000/--19800/-	Yes	-	No	05-04-2007	04-12-2007	
Md. Abdul Matin Bhuiya, Additional Chief Engineer Pay Scale: 16800/--20700	Yes	-	No	04-12-2007	31-06-2008	
Md. Nowshad Ali, Additional Chief Engineer Pay Scale: 16800/--20700	Yes	-	No	31-06-2008	31-07-2008	
Md. Shahidur Rahman, Additional Chief Engineer Pay Scale: 16800/--20700	Yes	-	No	31-07-2008	29-08-2008	
Md. Abu Sufian Chief Engineer Pay Scale: 29800/--35600	Yes	-	No	29-08-2008	28-02-2010	

Name and Designation with pay scale	Full Time	Part Time	Responsible for more than one project	Date of		Remarks
				Joining	Transfer	
1	2	3	4	5	6	7
Md. Ahasanul Alam Additional Chief Engineer Pay Scale: 29800/--35600	Yes	-	No	28-02-2010	31-12-2010	
Fakir Md. Jillur Rahman, Additional Chief Engineer Pay Scale: 29800/--35600	Yes	-	No	31-12-2010	20-02-2011	
Md. Gias Uddin Ahmed Additional Chief Engineer Pay Scale: 29800/--35600	Yes	-	No	20-02-2011	27-04-2011	
Md. Tofazzal Ali Additional Chief Engineer Pay Scale: 29800/--35600	Yes	-	No	27-04-2011	31-10-2011	
Md. Saidul Islam Additional Chief Engineer Pay Scale: 29800/--35600	Yes	-	No	31-10-2011	02-11-2011	
Md. Mostaq Ahmed, Superintending Engineer Pay Scale: 25750/--33750/-	Yes	-	No	02-11-2011	01-04-2012	
Kazi Abu Baker Siddique, Additional Chief Engineer Pay Scale: 29800/--35600	Yes	-	No	01-04-2012	29-01-2014	
Md. Moniruzamman Superintending Engineer Pay Scale: 25750/--33750/-	Yes	-	No	29-01-2014	04-03-2014	
Md. Akmal Hossain Additional Chief Engineer Pay Scale: 29800/--35600	Yes	-	No	04-03-2014	01-01-2015	
Md.Rawshan Ali Khan Additional Chief Engineer Pay Scale: 29800/--35600	Yes	-	No	01-01-2015	05-02-2015	
Shaik Nazrul Islam Superintending Engineer Pay Scale: 25750/--33750/-	Yes	-	No	05-02-2015	09-02-2015	
Md. Abdul Hai Baqui Chief Engineer Pay Scale: 66000/-	Yes	-	No	09-02-2015	12-07-2016	

07. Procurement of Transport (in Nos.) :

Type of transport	Number as per P.E-II	Procured with date	Transferred to Transport Pool with date	Transferred to O & M with date	Condemned/ damaged with date	Remarks
1	2	3	4	5	6	7
Car	01	12,00,000/- 01-10-2009			-	
Jeep	01	30,00,000/- 11-05-2010			-	
Speed boat	01	9,98,000/- 10-07-2010		Transferred to Bheramara O&M Division	-	

08. Procurement of Goods, Works and Consultancy Services:

08.1 Goods & Works of the Project costing above Tk. 200.00 lakh and Consultancy above Tk. 100.00 lakh:

Description of procurement (goods/works /consultancy) as per bid document	Tender/Bid/Proposal Cost (in crore Taka)		Tender/Bid/Proposal		Date of completion of works/services and supply of goods	
	As per ~~DPP~~ PC-II	Contracted value	Invitation date	Contract signing/ L.C opening date	As per contract	Actual
1	2	3	4	5	6	7
Feasibility Study and Detailed Design	2999.64 (without IT & VAT) 3434.594 (with 15.5% IT & VAT) 30-06-2013 (Original) 4136.253 (with 25% IT & VAT) (1st Amended) 4134.37 (with 25% IT & VAT) 16-05-2016 (2nd Amended)	2999.64 (without IT & VAT) 3434.594 (with 15.5% IT & VAT) original 4136.253 (with 25% IT & VAT) 1st ammended: 4134.37 (with 25% IT VAT) 2nd ammended	01-09-2005	Contract signed on 06-05-2009 (Original) 30-06-2013 (1st Amended) 16-05-2016 (2nd Amended))	05-05-2013 (Original) 31-12-2013 (1st Amended) 30-06-2016 (2nd Amended)	30-06-2016

8.2 Use of Project Consultant (s) (Foreign/Local):

Name of the Field	Approved man month		Actual man month utilised	Remarks
	As per PB-II	As per contract		
1	2	3	4	5
a) Foreign :	Total Persons:11 Nos/ 96 man-month	To.al Persons:11 Nos/ 96 man-month	Total Persons:11 Nos/ 96 man-month	
b) Local :	Total Persons:59 Nos/ 1480 man month	Total Persons:59 Nos/ 1480 man month	Total Persons:59 Nos/ 1480 man month	

09. Construction/Erection/Installation Tools & Equipment :

Description of items	Quantity (as per PB-II	Quantity procured with date	Transferred to O & M with date	Disposed off as per rule with date	Balance	Remarks
1	2	3	4	5	6	7
Not Applicable						

C. FINANCIAL AND PHYSICAL PROGRAMME :

01. (a) Original and revised schedule as per PP-II :

(In lakh Taka)

Financial Year	Financial provision & physical target as per original PP-II				Financial provision & physical target as per latest revised PP-II			
	Total	Taka	P.A.	Physical %	Total	Taka	P.A.	Physical %
1	2	3	4	5	6	7	8	9
2004-05	-	-	-	-	-	-	-	-
2005-06	-	-	-	-	-	-	-	-
2006-07	-	-	-	-	-	-	-	-
2007-08	-	-	-	-	-	-	-	-
2008-09	912.73	912.73	-	20.00%	753.40	753.40	-	16.65%
2009-10	912.73	912.73	-	20.00 %	753.40	753.40	-	16.65%
2010-11	912.73	912.73	-	20.00%	753.40	753.40	-	16.65%
2011-12	912.73	912.73	-	20.00%	753.40	753.40	-	16.65%
2012-13	912.73	912.73	-	20.00%	753.40	753.40	-	16.65%
2013-14	-	-	-	-	263.64	263.64	-	5.78%
2014-15	-	-	-	-	263.64	263.64	-	5.78%
2015-16	-	-	-	-	263.64	263.64	-	5.78%

01. (b) Revised ADP allocation and progress :

(In lakh Taka)

Financial Year	Revised Allocation & target				Taka release	Expenditure & physical progress			
	Total	Taka	P.A.	Physical %		Total	Taka	P.A.	Physical %
1	2	3	4	5	6	7	8	9	10
2004-05	-	-	-	-	-	-	-	-	
2005-06	-	-	-	-	-	-	-	-	
2006-07	-	-	-	-	-	-	-	-	
2007-08	30.00	30.00	-	0.65 %	30.00	29.42	29.42	-	0.65 %
2008-09	430.00	430.00	-	9.42 %	430.00	429.32	429.32	-	9.40 %
2009-10	800.00	800.00	-	17.53 %	591.00	564.93	564.93	-	12.38 %
2010-11	1100.00	1100.00	-	24.10 %	1100.00	979.21	979.21	-	21.45 %
2011-12	1061.00	1061.00	-	23.25 %	1061.00	940.81	940.81	-	20.61%
2012-13	900.00	900.00	-	19.75 %	900.00	823.28	823.28	-	18.06 %
2013-14	630.00	630.00	-	13.82 %	630.00	414.54	414.54	-	9.09 %
2014-15	357.59	357.59	-	7.85 %	166.80	96.69	96.69	-	2.12 %
2015-16	259.00	259.00	-	5.67%	259.00	249.64	249.64	-	5.47 %
			Project Total =	100.00 %	5167.8	4527.84	4527.84	-	99.37%

D. ACHIEVEMENT OF OBJECTIVES OF THE PROJECT:

Objectives as per ~~PP~~ PCR	Actual achievement	Reasons for shortfall, if any
a) Detailed studies of the Ganges Barrage sites, Gorai head works and three promising link channels, including surveys, geotechnical investigations and modelling studies, with due attention given to local peoples' needs, river regime improvement needs, possible effects of climatic changes due to global warming, construction methods and phasing and operational requirements.	Achieved	Not applicable
b) Detailed studies of the coastal polder improvement works, involving river surveys and extensive hydrodynamic and morphological modeling of the river systems under alternative development sequences, whilst taking into consideration peoples' needs, possible impacts of sea-level rise due to global warming changes in tidal range and anticipated variations in salinity boundaries due to different flow augmentation scenarios. Calibration and validation of salinity model.	Achieved	Not applicable
c) Overall project formulation and implementation planning including overall environmental, social and economic impact assessments, risk assessment, institutional and financing aspects, environmental management plans, and recommended overall action plan. The necessary topographical, river, social and environmental surveys geotechnical investigation, peoples' consultations, river flow and salinity data collection and mathematical and physical modeling.	Achieved	Not applicable
d) Detailed Engineering Design: It consists of detailed engineering design of he barrage, head regulators, navigation lock, fish ladder, silt trap, irrigation canals, drainage canals, river training works, afflux bundh and all other related works including road and railway bridge on the barrage, if feasible. It will include preparation of detail technical specification and tender document for the barrage and associated structures leading to project implementation.	Achieved except Rail bridge design due to omission by decision of special committee meeting headed by honorable Water Resources minister.	Because Railline and Railbridge on Ganges river is under construction 20 km d/s of Ganges barrage site by Bangladesh Railway under separate project.

E. BENEFIT ANALYSIS

01. Annual Out-put:

Items of out-put	Unit	Estimated quantity expected at full capacity	Actual quantity of out-put during the 1st year of operation at full capacity (or during, real production for newly completed project).
(a) (b) (c) (d)			

Not Applicable for study Project

02. Cost / Benefit :

Item	Estimated	Actual
(1) Benefit cost ratio of the project (i) Financial (ii) Economic (2) Internal Rate of Return (i) Financial (ii) Economic		

Non-tangible benefit for study Project

03. Please give reasons for shortfall, if any, between the estimated and actual benefit:

Not applicable.

F. MONITORING AND AUDITING

0.1 Monitoring:

Name & designation of the inspecting official	Date of Inspection	Identified Problems	Recommendations
1	2	3	4

(a) Ministry / Agency:

Not applicable.

(b) IMED :

Not applicable.

(c) Others: (Please specify)

Not applicable.

0.2. Auditing during and after Implementation:

2.1. Internal Audit:

Period of Audit	Date of submission of Audit Report	Major findings/ objections	Whether objections resolved or not.
1	2	3	4
No Audit has been conducted yet.			

2.2. External Audit:

Audit period	Date of submission of Audit Report	Major findings/ objections	Whether objections resolved or not.
1	2	3	4
No Audit has been conducted yet.			

G. DESCRIPTIVE REPORT

1. General Observations/Remarks of the Project on :

1.1 Background

The south western greater districts of Bangladesh Faridpur, Jessore, Khulna, Barisal, Rajshahi, Pabna and Kushtia (37% area of Bangladesh) are dependent on Ganges Water. About one-third population of the country live in this area. In 1975, India commissioned Farakka Barrage to increase navigability of Kolkata port. The average flow of the Ganges river in dry season at Farakka point was 2000 cumec before commissioning of Farakka barrage, the post-Farakka flow has been reduced approximately 60%. The off-takes of river systems namely Hisna-Mathabhanga, Gorai-Modhumai, Chandana-Barashia, Narod-Barnai, and Baral-Nandakuja, Ichamati river systems have been dried up and the flow have been disconnected. It caused adverse effects on lives and livelihoods of people, agriculture, fishery, navigation, industry and overall economy as well as on biodiversity, environment and eco-system of Ganges-dependent 26 districts in South-Western and North-Western region of Bangladesh covering an area of 4.6 million hectare. Saline water intrusion has been increased and its threat has already been posed on the largest mangrove forest of the world, the Sundarnbans. Under the circumstances, construction of a barrage became a necessity in order to achieve economic development and poverty reduction by ensuring integrated water management. For this purpose the Ganges Barrage Study Project (GBSP) has been taken up.

1.2 Justification/Adequacy

To undertake this study project was justified. The People's Republic of Bangladesh and India signed a historical treaty on the sharing of the Ganges waters at Farakka point on the 12th December 1996. The treaty provides for the sharing of waters at Farakka for the period covering January 01 to May 31 every year which ensured about 25000 cusec of flow downsteram of Farakka inside Bangladesh.The Ganges water sharing treaty will be terminated in 2026. Construction of a barrage is essential to make the maximum use of available fresh water and to justify the extension of the treaty. Through construction of the barrage, the Water Level will be raised in the dry season and it will be possible to ensure water in all river systems, G.K. Project, NRI Project and Ruppur Nuclear Power Plant.

1.3 Objectives

Detailed Feasibility Study: Feasibility Study comprising the following main components: Detailed studies of the Ganges Barrage sites, Gorai head works and three promising link channels, including surveys, geotechnical investigations and modelling studies, with due attention given to local peoples' needs, river regime improvement needs, possible effects of climatic changes due to global warming, construction methods and phasing and operational requirements.

Detailed studies of the coastal polder improvement works, involving river surveys and extensive hydrodynamic and morphological modeling of the river systems under alternative development sequences, whilst taking into consideration peoples' needs, possible impacts of sea-level rise due to global warming changes in tidal range and anticipated variations in salinity boundaries due to different flow augmentation scenarios. Calibration and validation of salinity model.

Overall project formulation and implementation planning including overall environmental, social and economic impact assessments, risk assessment, institutional and financing aspects, environmental management plans, and recommended overall action plan. The necessary topographical, river, social and environmental surveys geotechnical investigation, peoples' consultations, river flow and salinity data collection and mathematical and physical modeling.

Detailed Engineering Design: It consists of detailed engineering design of he barrage, head regulators, navigation lock, fish ladder, silt trap, irrigation canals, drainage canals, river training works , afflux bundh and all other related works including road and railway bridge on the barrage, if feasible. It will include preparation of detail technical specification and tender document for the barrage and associated structures leading to project implementation.

1.4 Project revision with reasons

The Project was revised for inclusion of new components during execution of the study.

2. Rationale of the project in respect of Concept, Design, Location and Timing.

Under the project a Feasibility study report consisting of 12 Volumes has been prepared. After study of topographical, morphological study, the location of the barrage has been proposed at Pangsha, Rajbari. Detailed design of the barrage including 78 Spillways with 2.10 km barrage length, 3 Offtake Structures, 8 Regulators, 265 km Embankment Construction/Improvement, 1116 km river/khal re-excavation etc.has been made. DPP & PDPP with costing of about Tk. 314137.50 million have already been prepared and submitted to the Planning Commission & ERD through the Ministry of Water Resources.

3. Brief description on planning and financing of the project and its applicability.

- **Project Identification**

  The Project was identified as necessary for the interest of Bangladesh and the financing was GoB fund.

- **Project Preparation**
- **Appraisal**

- **Credit Negotiation**
- **Credit Agreement**
- **Credit Effectiveness**
- **Loan Disbursement**
- **Loan Conditionalities**
- **Project Approval.**
- **Others (if any).**

4. Analysis of the Post-Implementation situation and result of the project :

4.1 Whether the beneficiaries of the project have clear knowledge about the Target/ Objectives of the project.

4.2 Programme for use of created-facilities of the project

4.3 O & M programme of the project.

Not applicable.

4.4 Impact of the project -

4.4.1 Direct

BWDB has become technically capable to construct a barrage on the mighty Ganges river because detailed engineering has been executed and cost estimate has been prepared.

4.4.2 Indirect

BWDB officials got experience in executing such a huge study. They became encriched with knowledge on different branches of sciences.

4.5 Transfer of Technology and Institutional Building through the project

Yes

4.6 Employment generation through the project.

Yes

4.7 Possibility of Self employment

Not applicable.

4.8 Possibility of women-employment opportunity

4.9 Women's participation in development

Yes

4.10 Probable Impact on Socio-Economic activity.

Socio-Economic activitis will be speeded up if the barrage is constructed.

4.11 Impact on environment

If the Ganges barrage Project is implemented, it will enhance environmental conditions of the project area.

4.12 Sustainability of the project

4.13 Contribution to poverty alleviation/reduction

If the Ganges barrage Project is implemented, poverty will be reduced.

4.14 Opinion of the public representatives, local elite, local administration, teachers, religious leaders, women's representatives etc.

Positive

4.15 Contribution of Micro-credit programmes and Comments on overlapping with any NGO activities.

5. Problems encountered during Implementation (with duration & steps taken to remove those)

5.1	**Project Management**	**5.12**	**Project aid disbursement and re-imbursment**
5.2	**Project Director**		
5.3	**Land Acquisition**	**5.13**	**Mission of the development partners.**
5.4	**Procurement**	**5.14**	**Time & Cost Over-run**
5.5	**Consultancy**	**5.15**	**Project Supervision/Inspection**
5.6	**Contractor**	**5.16**	**Delay in Decision**
5.7	**Manpower**	**5.17**	**Transport**
5.8	**law & Order**	**5.18**	**Training**
5.9	**Natural clamity**	**5.19**	**Approval**
5.10	**Project financing, allocation and release.**	**5.20**	**Others.**
5.11	**Design formulation/approval**		

6. Remarks & Recommendations of the Project Director:

Feasibility Study and Detailed Engineering of Ganges Barrage Project was started in 2004-05 and and completed in June 2016. The Project was an important study project. Renowned local and international consultants were involved in the study.

If the Ganges barrage project is implemented it will be beneficial to the country. After the completion of the Ganges barrage project, production of agriculture, fishery and electricity will be increased. Additional rice production will be 26 lakh MT. Additional Fish production will be 2.4 lakh MT. 113 MW additional power will be added to the national grid Water-logging in polders near the coast will be minimized. Soil salinity will be reduced. The forest resource, biodiversity, environment and ecosystem will be improved. Arsenic contamination will be reduced. Road communication will be established and extended. Industrial development will be facilitated and employment opportunities will be created. The navigation Lock and Fish Pass facilities will enable establishment of international navigation routes connecting Indian Territory of Murshidabad through Mongla, Goalundo, Chandpur and Kurigram. River trade, tourism and entertainment sectors will be boosted up. The facilities will attract foreign investment and foreign currency reserve will enrich thereby.

The reservoir of the Ganges barrage will have a capacity of 2900 million cubic metre having length of 165 km and area of 62500 hectares. The reservoir will be confined within both banks of Ganges erected with requisite height of embankment. No additional land acquisition will be needed for the proposed reservoir.

Date : 11-07-2016.

11.7.2016

Signature and seal of the Project Director/Manager

(মোঃ আবদুল হাই বাকী)
প্রধান প্রকৌশলী/প্রকল্প পরিচালক
গঙ্গা ব্যারেজ সমীক্ষা প্রকল্প
বাপাউবো, ঢাকা।

6. Remarks/Comments of Agency Head

This project covered survey & investigations, environmental & social impact assesments and physical & mathematical modelling of proposed Gangesbarrage. Successful completion of this study & designing phase taken the proposed barrage one step closere to the reality. Issuance of NOC on construction of barrage on the downstream country of transboundary Ganges river from India and confirmation of a funding option will take the barrage promptly to the implementation phase.

Date : .....

21/07/16

Signature and Seal
(Md. Jahangir Kabir)
Director General
BWDB, Dhaka.

8. Remarks/Comments of the officer in- charge of the Ministry/Division

Date :

Signature and Seal