2018-19

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH

MINISTRY OF WATER RESOURCES

BANGLADESH WATER DEVELOPMENT BOARD

PROJECT COMPLETION REPORT (PCR)

IMED 04/2003 (Revised)

Name of the Project	**: Feasibility Study for Flood Control, Drainage and Irrigation System at Gowainghat in Sylhet District**

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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 for Flood Control, Drainage and Irrigation System at Gowainghat in Sylhet District **(Project code- 222002700)**
02.	**Administrative Ministry/Division**	:	Ministry of Water Resources
03.	**Executing Agency**	:	Bangladesh Water Development Board
04.	**Location of the Project**	:	Gowainghat, Sylhet

05. Objective of the Project:

The prime objective of this consultancy service is to carry out a Feasibility Study including EIA for flood & erosion management, drainage improvement and irrigation development of the area of Gowainghat Upazila of Sylhet district. The study will assess the biophysical and socio environmental impact with recommendation of appropriate mitigation plan in the project area and to prepare report on EIA to obtain necessary clearances from the Department of Environment (DoE) by the project proponent. The specific objectives of the consultancy service are following:

- Analyze hydro-meteorological condition of the catchment and assess the flood vulnerability during pre-monsoon and monsoon, identify drainage problem;
- Analyze morphological condition of the river system and assess and sedimentation characteristics;
- Devise a plan for flood management, post-monsoon drainage, erosion management and increasing water retention capacity of the river system for irrigation through dredging/ excavation;
- Detail design of the proposed interventions;
- Conduct detailed Environmental and Social Impact Assessment (ESIA);
- Estimate the detail cost of the project with economic and financial analysis against the proposed interventions.

06. Estimated Cost :

(In lakh Taka)

	Original	Latest Revised
(a) Total	292.00	-
(b) Taka	292.00	-
(c) Foreign Currency	-	-
(d) Project Aid	-	-
(e) RPA	-	-

07. Date of Approval	:	PCP/PFS	PP
(a) Original	:	27.11.2017	
(b) Latest Revised	:	-	

08. Implementation Period :

	Date of Commencement	Date of Completion
(a) Original	October 2017	June 2019
(b) Latest Revised	-	-
(c) Actual	October 2017	June 2019

09. Financing Arrangement (Source-wise):

9.1 Status of Loan/Grant

a) Foreign Financing : *Not Applicable*

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

b) GOB:

(In lakh Taka)

Total amount	Loan	Grant	Cash Foreign Exchange
1	2	3	4
292.00	-	292.00	-

9.2 Utilization of Project Aid: *Not Applicable*

(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

9.3 Re-imbursible Project Aid (RPA): *Not Applicable*

(In lakh Taka)

R.P.A Amount		Amount Spent	Amount Claimed	Amount Re-imbursed	Remarks
As per PP	As per Agreement				
1	2	3	4	5	6

B. IMPLEMENTATION POSITION

01. Implementation Period :

Implementation Period as per PP		Actual Implementation period	Time Over-run (% of original implementation period)	Remarks
Original	Latest Revised			
1	2	3	4	5
October 2017-June 2019	-	October 2017-June 2019	-	-

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	292.00	-	272.84	-	The actual contract contract with the consultant was less than the estimated cost.
TAKA	292.00	-	272.84	-	
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	Existing manpower for O & M	Others		
1	2	3	4	5	Male	Female
Officer (s)	13	N/A	N/A	-	11	2
Staff(s)	14	N/A	N/A	-	10	4
Total :	27	N/A	N/A	-	21	6
The Study Project was implemented using existing manpower of Direcorate of Planning-1, BWDB, Dhaka in addition to their regular works.						

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

Field of Training /Study tour/workshop/ Seminer etc.	Provision as per PP		Actual		Remarks
	Number of person	Man - months	Number of person	Man - months	
1	2	3	4	5	6
a. Foreign	N/A	N/A	N/A	N/A	
b. Local	N/A	N/A	N/A	N/A	

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

(In lakh Taka)

Items of work (as per PFS)	Unit	Target (as per PFS)		Actual Progress		Reasons for deviation (±)
		Physical	Financial	Physical (%)	Financial	
1	2	3	4	5	6	7
A. Revenue						
1. Travel Expense	LS	100%	1.50	100%	1.50	
2. Fuel & Gas	LS	100%	1.00	49%	0.49	
3. Stamps and seals	LS	100%	1.00	100%	0.94	
4. Seminar,Conference Expenditure	LS	100%	10.00	100%	8.52	
5. Consultancy (83 m.m)	Man-Month	100%	274.00	100%	258.16	
6. Honorarium/Fees/Renuneration		100%	3.00	58%	1.74	
7. Other stationarie	LS	100%	1.50	100%	1.49	
Sub-total (Revenue):			**292.00**	**100%**	**272.84**	
B. Capital						
		-	-	-	-	
Sub-total (Capital):			-	-	-	
Grand-Total			**292.00**	**100%**	**272.84**	

06. Information regarding Project Director (s):

Name & 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
Fazlur Rashid Superintending Engineer Grade-4; 50,000-71,200	Full time	-	Yes	21.02.2018	11.11.2018	
Dr. Shamal Chandra Das Superintending Engineer Grade-4; 50,000-71,200	Full time	-	Yes	11.11.2018 (Charge assume date) 07.01.2019 (Appoint date)	30.06.2019 (Project Completion)	

07. Procurement of Transport (in Nos.): ***Not Applicable***

Type of transport	Number as per P.P.	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	-	-	-	-	-	
Jeep	-	-	-	-	-	
Microbus	-	-	-	-	-	
Minibus	-	-	-	-	-	
Bus	-	-	-	-	-	
Pick-up	-	-	-	-	-	
Truck	-	-	-	-	-	
Motor Cycle	-	-	-	-	-	
By-cycle	-	-	-	-	-	
Speed Boat	-	-	-	-	-	
Launch	-	-	-	-	-	
Others with name	-	-	-	-	-	

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	Tender/Bid/Proposal Cost (in lakh Taka)		Tender/Bid/Proposal		Date of completion of works/services and supply of goods	
/consultancy) as per bid document	As per PFS	Contracted value	Invitation date	Contract signing/ L.C opening date	As per contract	Actual
1	2	3	4	5	6	7
Consultancy Services for "Feasibility Study for Flood Control, Drainage and Irrigation System at Gowainghat in Sylhet District"	274.00	258.16	23.04.2018	27.06.2018	27.06.2019	27.06.2019

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

Name of the Field	Approved man month		Actual man month utilised	Remarks
	As per PP	As per contract		
1	2	3	4	5
a) Foreign :	-	-	-	
b) Local	83	83	83	

09. Construction/Erection/Installation Tools & Equipment: *Not Applicable*

Description of items	Quantity (as per PP)	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

C. FINANCIAL AND PHYSICAL PROGRAMME :

01. (a) Original and revised schedule as per PFS :

(In lakh Taka)

Financial Year	Financial provision & physical target as per original PP				Financial provision & physical target as per latest revised PP			
	Total	Taka	P.A.	Physical %	Total	Taka	P.A.	Physical %
1	2	3	4	5	6	7	8	9
2017-18	-	-	-	-	-	-	-	-
2018-19	292.00	292.00	-	100%	-	-	-	-
Total	**292.00**	**292.00**	-	**100%**	-	-	-	-

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
2017-18	-	-	-	-	-	-	-	-	-
2018-19	277.00	277.00	-	100%	275.16	272.84	272.84	-	100%
Total	**277.00**	**277.00**	-	**100%**	**275.16**	**272.84**	**272.84**	-	**100%**

D. ACHIEVEMENT OF OBJECTIVES OF THE PROJECT:

Objectives as per PP/PFS	Actual achievement	Reasons for shortfall, if any
To analyze hydro-meteorological condition of the catchment and assess the flood vulnerability during pre-monsoon and monsoon, identify drainage problem	Hydro-meteorological condition of the catchment has been analyzed and the flood vulnerability has been assessed	
To analyze morphological condition of the river system and assess and sedimentation characteristics	Morphological condition of the river system has been analyzed and sedimentation characteristics have been assesed	
Devise a plan for flood management, post-monsoon drainage, erosion management and increasing water retention capacity of the river system for irrigation through dredging/ excavation	Plan has been prepred for flood management, post-monsoon drainage, erosion management and increasing water retention capacity of the river system for irrigation through dredging/ excavation	
Detail design of the proposed interventions	Design has been prepared	
Conduct detailed Environmental and Social Impact Assessment (ESIA)	Detailed ESIA study has been conducted	
Estimate the detail cost of the project with economic and financial analysis against the proposed interventions.	Detail cost of the project with economic and financial analysis against the proposed interventions has been prepared	

E. BENEFIT ANALYSIS

01. Annual Out-put: *Not Applicable* for this Study Project.

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) (e)			

02. Cost / Benefit: *Not Applicable* (It is not an investment project, hence *not applicable*)

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

03. Please give reasons for shortfall, if any, between the estimated and actual benefit:
Not Applicable

F. MONITORING AND AUDITING

Monitoring: *Not Applicable*

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

(a) Ministry / Agency:

(b) IMED :

(c) Others: (Please specify)

0.2. Auditing during and after Implementation:

2.1. Internal Audit: *No audit conducted yet.*

Period of Audit	Date of submission of Audit Report	Major findings/ objections	Whether objections resolved or not.
1	2	3	4

2.2. External Audit: *No audit conducted yet.*

Audit period	Date of submission of Audit Report	Major findings/ objections	Whether objections resolved or not.
1	2	3	4

G. DESCRIPTIVE REPORT

1. General Observations/Remarks of the Project on:

1.1 Background

Gowainghat Upazila is located in the north-eastern side of Sylhet district in the north-east region of Bangladesh shown in Figure 1. The area of Gowainghat upazila is approximately 488 square kilometers. It is surrounded by Jaintapur, Sylhet Sadar and Companiganj Upazila in the east, south and west respectively and by India in the north. The Upazila is situated in the foothills of Khasia-Jaintapur hills of India. Significant rivers flowing through this Upazila e.g. Dawki (Jaflong) and Piyan is originated from 'Om' (ওম) River which has its origin from Khasia-Jaintapur hills in India where rainfall intensity is quite high compared to other nearby regions. Sari, another river originating from Mehgalaya area, enters Bangladesh at Lalakhal. The river also carries huge flow with sediment. After travelling about 22 km from border, the river meets with Dawki (Jaflong) river and then flows downstream as Gowain river.

To protect the area against flood from hilly catchment upstream, improvement of drainage facilities, increasing water retention capacities for dry season irrigation, to protect river erosion and for fostering socio-economic development in the area, a "Flood Control, Drainage and Irrigation (FCDI)" Project should be implemented in this area.

All FCDI projects of BWDB require undertaking detail feasibility study before implementation. Under the circumstance, it is proposed to conduct a 'Detail Feasibility Study including ESIA' for the proposed 'Gowainghat Flood Control, Drainage and Irrigation (FCDI) Project'. It is important to mention here that the area is situated in a very complex hydro-morphological/ hydro-meteorological zone where water from transboundary hilly areas accumulates within in a relatively short duration and inundates the surrounding flood plain. To realize this complex hydro-morpholigical/ hydro-meteorological phenomenon, the situation is to be analized with modeling tools.

1.2 Justification/Adequacy

High rainfall in the upper catchment coupled with steep slope of the hilly region causes flash flood in Gowainghat Upazila and surrounding areas that causes damage to life and property.

Over decades, there have been significant morphological changes of the river system in the area. Flash flood, river bank erosion, sand deposition in agricultural land, siltation in rivers and khals etc. are recurrent problems in the area.

Due to fear of flash flood local farmers are reluctant to cultivate Boro crops in the area which is the main crop in the region. On the other hand, farmers suffer from shortage of irrigation water to irrigate their crops that results in low agricultural production. There is a local practice of constructing earthen weir to store water in the project area which is shown in Figure 3. Absence of proper water management activities particularly in respect of flood, drainage, irrigation and river erosion, study area is retarding in socio-economic development.

In addition, the area is also facing river erosion problem along the banks of Dawki, Sari and Gowain rivers. The rate of erosion is increasing day by day; the Gowainghat upazila sadar is under serious bank erosion. By this time important installation like school, college, government/ non-government buildings, houses and agriculture lands along the both banks of Dawki, Sari and Gowain rivers are diminishing by river erosion. People are losing their land and properties by river erosion, this becomes a serious concern for the local community.

BWDB have constructed and regularly maintains more than 52 haor sub-projects in the haor area to save boro-crops which is vulnerable to pre-monsoon flash flood. The submergible embankment and drainage cum flushing regulators are the main component of these projects. Due to construction of submergible embankments water has to pass following the river routes only, thus there is possibility of rise of pre-monsoon water level due to confinement effect. It is important for planning and design of such project infrastructure considering the interactive responses of other project components or other surrounding projects, which would be inevitable in networked river system like in the haor area. Quantitative estimates of the higher flood levels for embanking the haor areas can only be obtained realistically through using mathematical modelling tool. This would lead to develop a comprehensive development plan considering existing conditions and different development options for better water management through pre-monsoon flood control and post-monsoon drainage improvement for the flood control and drainage improvement. Moreover, with the help of mathematical modeling flow analysis and impact of the development/ interventions could be possible to assess. Thus mathematical models are very much needed in developing existing situation and thereafter final judgment are to be based on number of scenarios to offer safety, environmental sustainability and BWDB's choice of easy management; alternately if

planning would be conducted using traditional tools which will surely end up with undesired designs in such complex hydraulic situations.

1.3 Objectives

The prime objective of this consultancy service is to carry out a Feasibility Study including EIA for flood & erosion management, drainage improvement and irrigation development of the area of Gowainghat Upazila of Sylhet district. The study will assess the biophysical and socio environmental impact with recommendation of appropriate mitigation plan in the project area and to prepare report on EIA to obtain necessary clearances from the Department of Environment (DoE) by the project proponent. The specific objectives of the consultancy service are following:

- Analyze hydro-meteorological condition of the catchment and assess the flood vulnerability during pre-monsoon and monsoon, identify drainage problem;
- Analyze morphological condition of the river system and assess and sedimentation characteristics;
- Devise a plan for flood management, post-monsoon drainage, erosion management and increasing water retention capacity of the river system for irrigation through dredging/ excavation;
- Detail design of the proposed interventions;
- Conduct detailed Environmental and Social Impact Assessment (ESIA);
- Estimate the detail cost of the project with economic and financial analysis against the proposed interventions.

1.4 Project revision with reasons: Not Applicable

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

Gowainghat upazila has an area of approximately 488 square kilometers. To protect the area against flood from hilly catchment upstream, improvement of drainage facilities, increasing water retention capacities for dry season irrigation, to protect river erosion and for fostering socio-economic development in the area, a "Flood Control Drainage and Irrigation (FCDI)" Project is being planned for this area. All FCDI projects of BWDB require undertaking detail feasibility study before implementation.This study was assigned to Institute of Water and Flood Management (IWFM), BUET to be carried out during the period of July 2018 to June 2019.

Since, the project area is located in an ecologically resourceful (e.g. number of haors, lowland forest etc) and sensitive area (eg. Ratargul Biodiversity Special Area, Jaflong ECA), therefore a minimum intervention approach is undertaken to develop proposed interventions. The planned interventions put more emphasis on non-structural options rather than structural options of flood management. Interventions include partial flood control, strengthening flood forecasting, strategic dredging of the rivers, erosion protection at important locations, maintaining open connectivity between haors and rivers, protection of remaining natural features of haor basin in Gowainghat Upazila, and sustainable land use management.

The contract agreement is signed lower cost than the approved cost. Hence, the project cost has been reduced by Tk. 16.84 lakh. The expenditure of the project is 272.84 lakh Tk. and achievement is 100% and the project has been completed in approved time.

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

- **Project Identification**

Gowainghat upazila has an area of approximately 488 square kilometers. To protect the area against flood from hilly catchment upstream, improvement of drainage facilities, increasing water retention capacities for dry season irrigation, to protect river erosion and for fostering socio-economic development in the area, a "Flood Control Drainage and Irrigation (FCDI)" Project is being planned for this area. All FCDI projects of BWDB require undertaking detail feasibility study before implementation.This study was assigned to Institute of Water and Flood Management (IWFM), BUET to be carried out during the period of July 2018 to June 2019. The study team consists of 15 faculty members of IWFM, BUET, and 4 independent consultants (Ecologist, Fisheries Expert, Agronomist, and Socio-Economist). The prime objective of this study is to carry out a Feasibility Study including EIA for flood & erosion management, drainage improvement and irrigation development of the area of Gowainghat Upazila.

- **Project Preparation**

In view of the above, BWDB decides to carry out a Feasibility Study including EIA for flood & erosion management, drainage improvement and irrigation development of the area of Gowainghat Upazila.

- **Appraisal**

Detailed Feasibility Study including EIA for flood & erosion management, drainage improvement and irrigation development of the area of Gowainghat Upazila is essential to find out required mesures for the development of the area. The rationale of this study was agreed unanimously agreed at every meeting at BWDB and MoWR.

- **Credit Negotiation**
- **Credit Agreement**
- **Credit Effectiveness**
- **Loan Disbursement**
- **Loan Conditionalities**

All cost was borne by GoB fund

- **Project Approval**

Letter for administrative approval was issued on 27 November, 2017. The project was approved by Ministry of Water Resources as per guidelines for project approval of Bangladesh.

- **Others (if any).**

4. <u>Analysis of the Post-Implementation situation and result of the project</u>: *Not Applicable*

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.

4.4 **Impact of the project -**

4.4.1 Direct

4.4.2 Indirect

4.5 **Transfer of Technology and Institutional Building through the project**

4.6 **Employment generation through the project.**

4.7 **Possibility of Self employment**

4.8 **Possibility of women-employment opportunity**

4.9 **Women's participation in development**

4.10 **Probable Impact on Socio-Economic activity.**

4.11 **Impact on environment**

4.12 **Sustainability of the project**

4.13 **Contribution to poverty alleviation/reduction**

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

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

It is a contract base consultancy project. The above problems have not occurred

6. Remarks & Recommendations of the Project Director:

The prime objective of this study was to carry out a Feasibility Study including EIA for flood & erosion management, drainage improvement and irrigation development of the area of Gowainghat Upazila. The study area includes two ecologically important areas – Jaflong Ecologically Critical Area and Ratargul Special Biodiversity Conservation Area. Such designation of these areas puts limits on development activities in the surrounding areas. However, to get the maximum benefit and to ensure sustainability of the project proper monitoring and regular maintenance will be required.Since, the project area is located in an ecologically resourceful (e.g. number of haors, lowland forest etc) and sensitive area (eg. Ratargul Biodiversity Special Area, Jaflong ECA), therefore a minimum intervention approach is undertaken to

develop proposed interventions. The interventions include Piyan River offtake dredging, construction/resectioning of embankment, river bank protection, river dredging, canal excavation/re-excavation, Bridge construction, etc. The planned interventions put more emphasis on non-structural options rather than structural options of flood management. After implementing the suggested measures through a new project the area will be benifted a lot.

18.09.2019

Date : .....

Signature and seal of the Project Director
(Dr. Shamal Chandra Das)
Director/Superintending Engineer
Directorate of Planning-1
BWDB, Dhaka.

7. **Remarks/Comments of Agency Head**

This study project was taken to find the solution of flood, drainge and irrigation problem at Gowainghat upazilla of Sylhet district. The consultant suggested different measures to be taken through a new project. They recommended structural as well as non-structural measures. Coordination between government organizations such as BWDB, District Administration, LGED, Pourasava, DoE etc. will be required to make the project successful. Active participation of local stakeholder and civil society will also be required.

22/09/2019

Date : .....

Signature and Seal

(Md. Mahfuzur Rahman)
Director General
BWDB, Dhaka.

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

Date :

Signature and Seal