BANGLADESH WATER DEVELOPMENT BOARD

PROJECT COMPLETION REPORT: IMED-04/2024

Name of the Project:	**Feasibility Study for Integrated and Sustainable Development of Water, Environment, Ecology and Biodiversity in Borni Baor area**

PROJECT PERIOD: February 2023 - June 2024

OFFICE : Office of the Superintending Engineer (Civil)
Directorate of Planning-3,
Pani Bhaban, Dhaka

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

PROJECT COMPLETION REPORT (PCR): IMED 04/2024 (Revised)

A. PROJECT DESCRIPTION

01.	Name of the Project	:	Feasibility Study for Integrated and Sustainable Development of Water, Environment, Ecology and Biodiversity in Borni Baor area
02.	Administrative Ministry/Division	:	Ministry of Water Resources (MoWR)
03.	Executing Agency	:	Bangladesh Water Development Board (BWDB)
04.	Planning Commission Sector/Division	:	Sector : 09-Environment, Climate change and Water Resources Division: Agriculture, Water Resources and Rural Institutions Division
05.	Type of Project (Investment/Technical/Feasibility Study): Feasibility Study		
06.	Location of the Project (As per Project Document):		

Sl. No	Division	District	Upazila
1	Dhaka	Gopalganj	Tungipara and Gopalganj Sadar

07. Estimated Cost, Implementation Period and Approval: (In Lakh Taka)

Subject	Approved Estimated Cost				Implementation Period	Date of Approval	Approved by
	Total	GOB (Foreign Exchange)	PA (RPA)	Self-finance			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Original	230.00	230.00	-	-	February 2023 - October 2023	19/02/ 2023	MoWR
1st No Cost Extension (If Applicable)	230.00	230.00	-	-	February 2023 - June 2024	29/08/ 2023	MoWR

08. Objective of the Project

Overall objective: The overall objective of the study is to assess the feasibility of the works to be done for integrated & sustainable ecological development of Borni Boar region.

Specific Objectives :

- Assessment of seasonal water retention capacity of borni baor and check connectivity issues between Borni baor & its connecting rivers/khals/wetlands.
- Delineate Borni-baor area including present status.
- Identify factors affecting environment, bio-diversity including salinity intrusion of Borni-baor area.
- Identify previously reclaimed land in Borni Baor.
- Identify the potential eco-tourism development sites, specific tourism facilities (interventions) with a detailed master plan of the Borni Baor area.

- Ensure integration of Climate Change, Disaster risk impact & their mitigation measures into proposed interventions including water management at Borni Baor.
- Carry-out Initial Environmental Examination (IEE), Environmental Impact Assessment (EIA), Environment Management Plan (EMP), Social Impact Assessment (SIA), Disaster Impact Assessment (DIA) of the proposed interventions.
- Finalize the suitable sites, site specific interventions, detailed design of the interventions and cost estimation of the project.
- Prepare the Implementation and Monitoring Plan of the project.
- Prepare a comprehensive Feasibility Study Report.
- Preparation of Development Project Proforma (DPP).

09.Background of the Project :

Bangladesh, one of the world's largest deltas, possesses around 405 rivers currently. This huge number of rivers crisscrossed across the nation supporting more than 9,000 water bodies. These water bodies are comprised of mainly low areas inside floodplains, beels, and baors along with very few artificial and natural lakes. Water connectivity improves particularly during the wet season and reduces during the dry season. Despite the year-round variation in water availability, water bodies support diverse biodiversity of flora and fauna and which ultimately keeps ecological balance intact and maintains the biological integrity of different types of ecosystems in Bangladesh.

By definition, Baor - also called oxbow lake – is an abandoned meander isolated from the mainstream channel by deposition and filled with water. River shifting due to natural and anthropogenic causes creates around 110 Baors in Bangladesh. The baors in Bangladesh comprise about 10,000 ha with a minimum size of 4.5 ha to a maximum one of 500 ha. Being cut off from the main channel and at the same time perennial in nature, a unique aquatic ecosystem develops with a wide range of biodiversity. In further, baor and its floodplain also support migratory birds and other wildlife to a great extent due to its richness in aquatic lifeforms of fauna and flora.

Baor, therefore, in all the four areas of ecosystem services (ES) e.g., provisioning, supporting, regulating and cultural; contributes the highest in comparison with the size of the other water bodies. Baors support diverse aquatic plants (floating, rooted, and marginal) that not only support the associated lifeforms but also act as the ornaments of Baors which are called aesthetic values. In addition to that, different types of rituals and cultural activities are also being performed based on the Baors environment. Therefore, tourists are being attracted to the baors unprecedently due to its scope and unparalleled opportunities.

Previously Ministry of Water Resources had taken development projects in the Borni Baor area. In 2020-21, Bangladesh Water Development Board implemented around 17.00 km of dredging work in Gopalganj-tungipara navigation route with around 2.50 km dredging work in Borni Baor area. This work was done under Operation and Maintenance budget head.

Department of Bangladesh Haor and Wetlands Development implemented "Barni Baor Development Project" with project cost of 6502.00 lac taka from January 2012 to June 2014. As a result of the project, depth of the baor increased and the livelihood of the people surrounding the baor along with overall environment improved. Implementation, Monitoring and Evaluation Division (IMED) of Ministry of Planning in their project evaluation report recommended to increase baor depth and continue maintenance dredging. They also recommended implementing

tourism facilities in the boar region and maintaining, enriching ecosystem of Borni baor. Feasibility study of Integrated and Sustainable Development of Borni Baor area will assess recommendations of the IMED and continuation of previous development works.

Bangladesh, as a signatory of the 2030 Agenda for Sustainable Development, is engaged in implementing the Sustainable Development Goals (SDGs) for the last five/few years and has also been playing an active role in the global discourse on the SDGs. 'Goal 3: ensure healthy lives and promote wellbeing for all at all ages', 'Goal 6: By 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate'. Bangladesh is working rigorously to achieve this goal. Therefore, to conserve the baors ecological resources, its sustainable development, and integrating various aspects like mainstream the aesthetic value, eco-tourism development could be one of the best efforts in achieving SDG-3 & 6.

10. Major Activities:

- Baseline Study Survey
- Demarcation of Land Area of Borni Baor
- Assessment of Connectivity of Borni Baor
- Identification of potential sites for tourism facility development
- Identification of potential interventions for eco-tourism development
- Environmental and Social Impact Assessment (ESIA), Disaster Impact Assessment (DIA) & Climate Change Impact Assessment
- Development of Eco-Tourism facilities
- Viability assessment of Financial & Economic investment
- Feasibility assessment

11. Reasons for Revision (if applicable):

11.1 Reasons for No-Cost Time Extension :Data collection of at least two seasons and survey work at field level to incorporate hydrology, biodiversity and socio-economic conditions of the project took more time than planned for which the consultant could not accomplish the task as scheduled

- 2nd time No-Cost Time Extension : **Not Applicable**

12. Financing Arrangement (Source-wise):

12.1 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 Effectiveness	Date of Closing	
						Original	Revised
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)

b) GOB:

Total amount	Loan	Grant	Cash Foreign Exchange
(1)	(2)	(3)	(4)
230.00	-	230.00	-

c) Self-finance/Equity: **Not Applicable**

Total amount		Self-finance	Equity	Cash Foreign Exchange
(1)	(2)	(3)	(4)	(5)

12.2 Utilization of Project Aid (Source wise): **Not Applicable**

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)

12.3 Reimbursable project Aid (RPA): **Not Applicable**

Source (s)	RPA Amount		Amount	Amount	Amount	Remarks
	As per Project Document	As per Agreement	Spent	Claimed	Re-imbrued	
(1)	(2)	(3)	(4)	(5)	(6)	(7)

B. IMPLEMENTATION POSITION

13. Implementation Period:

Implementation Period as per Project Document		Actual implementation	Time Over-run (% of original implementation period	Remarks
Original	Latest Revised			
(1)	(2)	(3)	(4)	(5)
February 2023- October 2023 (9 months)	February 2023- June 2024 (17 months)	February 2023 - June 2024 (17 months)	(89%)	Data collection of at least two seasons and survey work at field level to incorporate hydrology, biodiversity and socio-economic conditions of the project took more time than planned for which the consultant could not accomplish the task as scheduled

14. Cost of the Project:

Description	Estimated Cost		Actual expenditure	Cost over-run (% of original cost)	Remarks
	Original	Latest revised			
(1)	(2)	(3)	(4)	(5)	(6)
TOTAL	230.00	-	223.25		The actual expenditure was less than the estimated cost.
TAKA	230.00	-	223.25		
PA	-	-	-	(-2.93%)	

15. Information regarding Project Director (s):

Name, Main Designation & Grade. Mobile Number (From Beginning)	Full time (Yes/No)	Part time (Yes/No)	Responsible for more than one project	Period		Remarks
				Joining	Transfer	
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Dr. Md. Abul Basher Superintending Engineer (Civil), Directorate of Planning-3, BWDB, Dhaka; Grade-4; 01782615546	Yes	No	No	28 March 2023	Till date	-

16. Personnel:

16.1 Personnel of Project implementation Unit (PIU): Existing manpower of Directorate of Planning-3, BWDB were engaged with implementation of the project.

Sl. No.	Name of Post (Grade)	Approved Strength	Employed during Implementation
(1)	(2)	(3)	(4)
Total=			

16.2 Personnel Required after the Project Completion: **Not Applicable**

Sl. No.	As P reposed in Project Document (PD)		Recruited (Yes/No)	If not recruited explain reason and latest status
	Name of Post	Number		
(1)	(2)	(3)	(4)	(5)
Total=				

17. Training (Foreign/Local): **No training was given under this project**

Category	Sl. No.	No. of Days/Weeks/Months (D/W/M), Batch & Participants					
		As in Project Document			Achievement		
		D/W/M	Batch (s)	Participants(s)	D/W/M	Batch (s)	Participants(s)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Local Training							
Sub Total=							
Foreign Training							
Sub Total=							
Total=							

(PD= Project Document)

18. Component-wise Progress (As per latest approved Project Document):

Name of Component	Unit	Quantity	Estimated Cost (Taka in Lac)					Actual Progress (Taka in Lac)				
			Total	GOB	PA	Self-finance	Others	Total	GOB	PA	Self-finance	Others
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
(a) Revenue:												
Feasibility Study (Consultancy)	LS	LS	226.778	226.778	-	-	-	221.54	221.54	-	-	-
Computer Consumables	LS	LS	0.754	0.754	-	-	-	0.75	0.75	-	-	-
Printing & Binding	LS	LS	0.468	0.468	-	-	-	0.4651	0.4651	-	-	-
Other stationery	LS	LS	0.500	0.500	-	-	-	0.4958	0.4958	-	-	-
Fuel and Gas	LS	LS	1.000	1.000	-	-	-	0.00	0.00	-	-	-
Petrol, Oil and Lubricants	LS	LS	0.500	0.500	-	-	-	0.00	0.00	-	-	-
Sub-total (Revenue)			230.00	230.00				223.25	223.25			
(b) Capital												
Sub-total (Capital)			0.00	0.00	-	-	-	0.00	0.00	-	-	-
Total a+b (Revenue+ Capital)			230.00	230.00				223.25	223.25			

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

Type of transport	Number as per Project Document	Number Procured with date	Transferred to Transport Pool with date	Transferred to O & M with date	Condemned / damaged with date	Returned or transferred to following project	Remarks
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Car							
Jeep							
Microbus							
Minibus							
Bus							
Pick-up							
Truck							
Motor - Cycle							
By-cycle							
Speed Boat							
Launch							
Others with name							

20. Project Consultant (s) (Local/Foreign):

Name of the Field	Approved man month		Actual man month utilized	Number of Deliverables		Remarks
	As per Project Document	As per contract		As per Project Document	Actual	
(1)	(2)	(3)	(4)	(5)	(6)	(7)
a) Local:	42 man month	42 man month	42 man month	Inception Report, Interim Report, Progress Report, Draft Final Report, Final Report.	Inception Report, Interim Report, Progress Report, Draft Final Report, Final Report.	
b) Foreign:						

21. Infrastructure/Erection/Installation Tools & Equipment: **Not Applicable**

Description	Quantity (as per project document)	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)

22. Procurement of Goods, Works and Services:

22.1 Information on packages:

a) Total number of packages as per Project Document: 2 (Goods- 1Works-0 Services- 1)

b) Total number of packages procured: 2 (Goods- 1Works-0 Services- 1)

c) Reason for not procuring (if any): Not Applicable

d) Number of packages for which the estimated cost is more than 1% of the estimated cost of the project: 0(Goods- 0Works- 0 Services- 0)

22.2 Detailed Package-wise information of Goods, Works and Services (For each case the highest 50 (fifty) packages):

Information Related to Procurement of Goods:

As per Project Document			Estimated Cost. (Taka in Lac)	Procurement Method	Approving Authority	Date of Tender Invitation	Name of Newspaper	Date of Opening	Date of Approval	Date of NOA	Contract Price & Date	Actual Payment	Date of Completion	
Package No	Description of Package												As per Contract	Actual
(1)	(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
GD/01	Computer Consumables	Plan	0.754	RFQ	PD	09-11-2023		13-11-2023	14-11-2023	14-11-2023	75,000/-	75,000/-	19-11-2023	19-11-2023
		Actual	0.752	RFQ	PD	09-11-2023		13-11-2023	15-11-2023	15-11-2023	15-11-2023			
		Deviation				0		0	1	1				

* Deviation in days (difference between plan and actual)
*Plan as per procurement plan described in project document

Information Related to Procurement of Services:

As per Project Document			Estimated Cost. (Taka in Lac)	Procurement Method	Approving Authority	Date of Tender Invitation	Name of Newspaper	Date of Opening	Date of Approval	Date of NOA	Contract Price & Date	Actual Payment	Date of Completion	
Package No	Description of Pack age												As per Contract	Actual
(1)	(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
SR/ 01	Detailed Study for Integrated and Sustainable Development of Water, Environment, Ecology and Biodiversity in Borni Baor area.	Plan	226.778	SSS	ADG (Planning, Design and Research)	20.02.23		20.03.23	29.03.23	29.03.23	2,25,54,286/- (18.06.2023)	2,21,54,287/-	30.06.2024	27.06.2024
		Actual	226.778	SSS	ADG (Planning, Design and Research)	09.04.23		18.05..23	08.06.23	08.06.23				
		Deviation				49		60	83	83				

* Deviation in days (difference between plan and actual)
*Plan as per procurement plan described in project document

C. FINANCIAL AND PHYSICAL TARGET AND PROGRESS

23. Original and Revised Financial Provision and physical Target (as per Project Document):

Financial Year	Financial provision & physical target as per original Project Document						Financial provision & physical target as per latest revised Project Document					
	Total	GOB	P.A.	Self-finance	Others	Physical %	Total	GOB	P.A.	Self-finance	Others	Physical %
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
2022-23 and 2023-24	230.00	230.00	-	-	-	100%	-	-	-	-	-	-
TOTAL	230.00	230.00	-	-	-	100%	-	-	-	-	-	-

24. Revised ADP allocation and progress:

Financial Year	Revised Allocation & target						GOB Release	Expenditure & physical progress						Unspent* GoB Released
	Total	GOB	P.A.	Self-Finance	Others	Physical %		Total	GOB	P.A.	Self-Finance	Others	Physical %	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15) = (8)-(10)
2022-23	0.00	0.00	-	-	-	5%	0.00	0.00	0.00	-	-	-	5%	0.00
2023-24	229.00	229.00	-	-	-	95%	228.70	223.25	223.25	-	-	-	95%	5.45
Total=	229.00	229.00	-	-	-	**100%**	**228.70**	**223.25**	**223.25**	-	-	-	**100%**	5.45

*Attach the Proof for Reconciliation of Unspent GOB Released

**To determine the physical quantity, use the formula as in the circular of Planning Division

D. ACHIEVEMENT OF OBJECTIVES OF THE PROJECT

25. Project objective, Actual achievement and Reason for shortfall (if any):

Objectives as per Project Document	Actual achievement	Reasons for shortfall (if any)
a) Assessment of seasonal water retention capacity of borni baor and check connectivity issues between Borni baor & its connecting rivers/khals/wetlands.	Completed. Assessment of seasonal water retention capacity of borni baor and check of connectivity issues between Borni baor & its connecting rivers/khals/wetlands are described and incorporated in Section-4, Sub Section 4.1.3-4.1.14, Page 47-95 of the Final Report.	
b) Delineate Borni-baor area including present status.	Completed. Delineating of Borni-baor area including present status is incorporated in Section-4, Sub Section 4.8, Page no. 153-166 of the Final Report.	
c) Identify factors affecting environment, bio-diversity including salinity intrusion of Borni-baor area.	Completed. Identification of factors affecting environment, bio-diversity including salinity intrusion of Borni-baor area is incorporated in Appendix F, Page 435-436 of the Final Report.	
d) Identify previously reclaimed land in Borni Baor.	Completed. Identification of previously reclaimed land in Borni Baor is incorporated in Section-4, Sub Section 4.8, Page no. 153-166 of the Final Report.	
e) Identify the potential eco-tourism development sites, specific tourism facilities (interventions) with a detailed master plan of the Borni Baor area.	Completed. Identification of the potential eco-tourism development sites, specific tourism facilities (interventions) with a detailed master plan of the Borni Baor area are described and incorporated in Section-4, Sub Section 4.9.6, Page 183-192 and Appendix E, Page 409-434 of the Final Report.	

Objectives as per Project Document	Actual achievement	Reasons for shortfall (if any)
f) Ensure integration of Climate Change, Disaster risk impact & their mitigation measures into proposed interventions including water management at Borni Baor.	Completed. Integration of Climate Change, Disaster risk impact & their mitigation measures into proposed interventions including water management at Borni Baor are incorporated in Section 5, Sub Section 5.2, Page 225-239 and Section 9, Sub Section 9.1, Page 287-288 of the Final Report.	
g) Carry-out Initial Environmental Examination (IEE), Environmental Impact Assessment (EIA), Environment Management Plan (EMP), Social Impact Assessment (SIA), Disaster Impact Assessment (DIA) of the proposed interventions.	Completed. Initial Environmental Examination (IEE), Environmental Impact Assessment (EIA), Environment Management Plan (EMP), Social Impact Assessment (SIA), Disaster Impact Assessment (DIA) of the proposed interventions are incorporated in Section-5,Sub Section 5.1.1-5.1.5, Page 203-225, and Sub Section 5.2.1-5.2.5, Page 225-239 of the Final Report.	
h) Finalize the suitable sites, site specific interventions, detailed design of the interventions and cost estimation of the project.	Completed. Finalization of the suitable sites, site specific interventions are incorporated in Section 4, Sub Section 4.9.1-4.9.11, Page 167-202 and cost estimation of the project are incorporated in Section 6, Section 6.1-6.2, Pages 241-258 of the Final Report. Detailed design of the interventions are attached in the Final Report.	
i) Prepare the Implementation and Monitoring Plan of the project.	Completed. Implementation and Monitoring Plan of the project are incorporated in Section-5, Subsection 5.1.4, page 222 of the Final Report	
j) Prepare a comprehensive Feasibility Study Report.	Completed. A comprehensive Feasibility Study Report is prepared and attached in the Final Report.	
k) Preparation of Development Project Proforma (DPP).	Completed. A Development Project Proforma (DPP) is prepared and attached in the Final Report.	

E. BENEFIT ANALYSIS

26. Annual Out-put: **Not Applicable for the 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)			
f)			

27. Cost/Benefit: **Not Applicable for the Study Project.**

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

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

F. MONITORING AND AUDITING

29. Monitoring: **Nil.**

Name & Designation of the inspecting official	Date	Identified Problems	Recommendations
1	2	3	4
a) IMED:			
b) Ministry/Agency:			
c) Others: (Please specify)			

30. Auditing during and after Implementation:

30.1 Internal Audit: **NA.**

Period of Audit	Date of submission of Audit Report	Sl. No.	Major findings/objections and Money involved	Whether objections resolved or not (if not, mention status)
1	2	3	4	5
Total findings/objections and Money involved=				

30.2 External Audit: **Not conducted yet.**

Period of Audit	Date of submission of Audit Report	Sl. No.	Major findings/objections and Money involved	Whether objections resolved or not (if not, mention status)
1	2	3	4	5
Total findings/objections and Money involved=				

G. POST-PROJECT REMARKS

31. General Observations/Remarks on the Project

31.1 Background:

Bangladesh, one of the world's largest deltas, possesses around 405 rivers currently. This huge number of rivers crisscrossed across the nation supporting more than 9,000 water bodies. These water bodies are comprised of mainly low areas inside floodplains, beels, and baors along with very few artificial and natural lakes. Water connectivity improves particularly during the wet season and reduces during the dry season. Despite the year-round variation in water availability, water bodies support diverse biodiversity of flora and fauna and which ultimately keeps ecological balance intact and maintains the biological integrity of different types of ecosystems in Bangladesh.

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Baor, therefore, in all the four areas of ecosystem services (ES) e.g., provisioning, supporting, regulating and cultural; contributes the highest in comparison with the size of the other water bodies. Baors support diverse aquatic plants (floating, rooted, and marginal) that not only support the associated lifeforms but also act as the ornaments of Baors which are called aesthetic values. In addition to that, different types of rituals and cultural activities are also being performed based on the Baors environment. Therefore, tourists are being attracted to the baors unprecedently due to its scope and unparalleled opportunities.

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Department of Bangladesh Haor and Wetlands Development implemented "Barni Baor Development Project" with project cost of 6502.00 lac taka from January 2012 to June 2014. As a result of the project, depth of the baor increased and the livelihood of the people surrounding the baor along with overall environment improved. Implementation, Monitoring and Evaluation Division (IMED) of Ministry of Planning in their project evaluation report recommended to increase baor depth and continue maintenance dredging. They also recommended implementing tourism facilities in the boar region and maintaining, enriching ecosystem of Borni baor. Feasibility study of Integrated and Sustainable Development of Borni Baor area will assess recommendations of the IMED and continuation of previous development works.

Bangladesh, as a signatory of the 2030 Agenda for Sustainable Development, is engaged in implementing the Sustainable Development Goals (SDGs) for the last five/few years and has also been playing an active role in the global discourse on the SDGs. 'Goal 3: ensure healthy lives and promote wellbeing for all at all ages', 'Goal 6: By 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate'. Bangladesh is working rigorously to achieve this goal. Therefore, to conserve the baors ecological resources, its

sustainable development, and integrating various aspects like mainstream the aesthetic value, eco-tourism development could be one of the best efforts in achieving SDG-3 & 6.

31.2 Justification/Adequacy:

The project is relevant in terms of compliance of the project with the national master plan(s), national development goals, compliance of the project with the missions and visions of the existing government and the relevance of the project with the visions of the executing agencies. Key documents which contextualized and guided the overall design of this project, are:

- **Perspective Plan of Bangladesh 2021-2041:** This Plan addresses governance, human development, industry and trade, agriculture, power and energy, climate change and environment. The Plan presents a path to shift Bangladesh from a rural agrarian economy to a primarily industrial and digital economy.
- **Bangladesh Delta Plan 2100:** The Plan focuses primarily on the delta agenda through 2050 while reflecting the longer-term challenges of sustainably managing water, ecology, environment, and land resources in the context of natural disaster and climate change risk. The Delta Plan addresses flood control, sea level rise, water logging, river-bank erosion, irrigation, urban and rural water supply, water pollution, land reclamation, river dredging for inland water traffic, environmental protection, fisheries, and preservation of biodiversity.
- **8th Five Year Plan, FY2021 to FY2025:** The 8th FY Plan initiates the transition to the goals of the Perspective Plan and is built around six themes: (i) rapid recovery from COVID-19; (ii) GDP growth acceleration; employment generation, and rapid poverty reduction, (iii) a broad-based strategy of inclusiveness; (iv) a sustainable development pathway that is resilient to disaster and climate change; (v) improvement of critical institutions; and (vi) achieving the United Nations 17 sustainable development goals.

Linkage with 8th Five Year Plan:

The impact (goal) of the project is aligned with these documents, and particularly the 8th Five Year Plan for "sustainable, inclusive development resilient to disaster and climate change generating employment and leading to rapid poverty reduction".

The project implementation will be done for integrated & sustainable ecological development of Borni Boar region. In addition, this study will further predict the potential eco-tourism facilities development without hindering the ecological functions and dynamisms at any level.

Linkage with Sustainable Development Goal (SDG):

The following goals of SDGs are related to the present study:

- Goal-3: Ensure healthy lives and promote wellbeing for all at all ages'
- Goal-6: Ensure availability and sustainable management of Water and Sanitation for All
-

Linkage with Bangladesh Delta Plan 2100:

The project is located under "Coastal Zone" which is one of the hotspots of Bangladesh Delta Plan 2100 (BDP 2100). The main strategy for development of the area as specified in the Delta Plan is combating storm surge and salinity intrusion through effective management of existing polders, increase drainage capacity and reduce flood risks, balancing water supply and demand for

sustainable growth, Reclaim New Land in the Coastal Zone, Sundarbans Conservation and restoration of dead/low flowing rivers and basin wide management of cross boundary rivers for increasing supply of fresh water.

The concept of the project is in line with BDP2100. Particularly, the Project contributes to the following strategies and sub-strategies:

Strategy at National Level:

- Sub-strategy FR 1.5: Improvement of drainage
- Sub-strategy FR 2.3: Restoration of water bodies and connectivity among and between FMDI schemes Strategy
- FR 3: Safeguarding Livelihoods of Vulnerable Communities.

Fresh Water (FW) Strategies:

- Sub-strategy FW 1.3: Excavation of local water reservoirs (canals, ponds, and baors) for restoration of water and rain water harvesting;
- Sub-strategy FW 1.6: restoration of natural reservoir and water bodies along with their biodiversity conservation;
- Sub-strategy FW 2.2: Monitoring and control of pollution; and
- Sub-strategy FW 2.3: Action research for improved ecosystem services.

Hotspot Specific Strategies:

- Coastal Zone

Also, dependency on the surface water will be reduced and ground water will be recharged which would help to achieve the goals of BDP 2100.

Therefore, the goals of the project are in the same line of the Vision Bangladesh 2100-50.

31.3 Objectives:

(a) Overall Objectives:
The objective of the study is to assess the feasibility of the works to be done for integrated & sustainable ecological development of Borni Boar region. The study will further envisage the potential eco-tourism facilities development without hampering the ecological functions and dynamisms at any level.

(b) Overall Objectives: The specific objectives of the study are to-

a) Assessment of seasonal water retention capacity of borni baor and check connectivity issues between Borni baor & its connecting rivers/khals/wetlands.
b) Delineate Borni-baor area including present status.
c) Identify factors affecting environment, bio-diversity including salinity intrusion of Borni-baor area.
d) Identify previously reclaimed land in Borni Baor.
e) Identify the potential eco-tourism development sites, specific tourism facilities (interventions) with a detailed master plan of the Borni Baor area.
f) Ensure integration of Climate Change, Disaster risk impact & their mitigation measures into proposed interventions including water management at Borni Baor.

g) Carry-out Initial Environmental Examination (IEE), Environmental Impact Assessment (EIA), Environment Management Plan (EMP), Social Impact Assessment (SIA), Disaster Impact Assessment (DIA) of the proposed interventions.
h) Finalize the suitable sites, site specific interventions, detailed design of the interventions and cost estimation of the project.
i) Prepare the Implementation and Monitoring Plan of the project.
j) Prepare a comprehensive Feasibility Study Report.
k) Preparation of Development Project Proforma (DPP).

31.4 Project revision with reasons: **Not Applicable**

31.5 Rationale of the project (Considering Concept, Design, Location and Timing):

Natural resources management, conservation, and its development are the worlds of the prior demands to maintain the ecological balance and continual provision of ecosystem services to human beings. Bangladesh is also spelling the same slogan and trying to be on the same page the developed world is now in the position. To do so, Bangladesh is gradually achieving the SDGs targets and so far doing well in comparison with the many middle-income generating countries. In addition to the development and management of natural resources, Bangladesh is parallel improving the standard of living as well. In this sense, where suitable, the development of nature-based tourism concept is the ideal one.

There are 29 khals in the study region that are somehow connected to each other and eventually to Borni Baor. The entire length of these canals was 36.18 kms. Congestion in the khals is caused by a variety of land use patterns and sedimentation activities. The baor and the nearby marshes are cut off from the khals by sedimentation, particularly in the dry season. Moreover, irrigation of crop fields with baor water is hampered by saline intrusion during the dry season. Additionally, water logging in the lowland area interferes with the timely planting of Aman, which lowers the area's annual rice production. If seasonal water retention capacity of Borni baor increases and connectivity issues between Borni baor & its connecting rivers/khals/wetlands is resolved, Borni Baor could be a role model of eco-tourism for this nation. The baor forms the perfect horse-shoe shape with the perennial nature of water availability. This surplus benefits the wide range of flora and fauna comprised from natives to migrants. Having spectacular scenic beauty, local people are already using this baor for seasonal recreation and traditional boat race purposes. During winter, more than 500 tourists (local respondents) visit this baor daily to observe its natural beauty and refresh their minds.

The baor becomes more beautiful during the rainy season. Full of clear water, blooming of aquatic vegetation and huge roaming and staging of wildlife gives the baor a new look of a living garden. Unfortunately, there is no facility, the tourists can use to achieve the aesthetic value of the baor over the whole year.

Analyzing all the facts, eco-tourism development at the Borni baor can improve the living standard of the surrounding communities and the tourists coming from across the whole nation without any question.

Brief description on planning and financing of the project and its applicability (Consider the following issues):

31.6 Project Identification:

Bangladesh's wetlands are important for socioeconomic, ecological, and cultural reasons. Borni Baor is an oxbow lake with potential for ecotourism and livelihoods and is situated Tungipara and Gopalganj Sadar, Gopalganj. The lake is rich in biodiversity. Due to its enormous potential, sector-based development strategies were used in the past to improve the Baor's natura resources. However, the attempt was unsuccessful since it took a fragmented strategy, which isn't very helpful for a complex ecosystem like Borni Baor.

In view of the above, BWDB has decided to conduct a detailed feasibility study to rejuvenate and sustainably develop the baor and its surrounding areas, addressing water management, agriculture, fisheries, biodiversity, socio-economic conditions, eco-tourism, waste management, infrastructure, and livelihood improvement.

31.7 Project Preparation:

In view of the above, BWDB prepared a PFS to execute the feasibility study project.

31.8 Appraisal:

The DPEC meeting was held on 21/08/2022.

31.9 Credit Negotiation: NA
31.10 Credit Agreement: NA
31.11 Credit Effectiveness: NA
31.12 Loan Disbursement: NA
31.13 Loan Conditions: NA
31.14 Project Approval:

The project was approved by honorable state minister, MoWR on 19/02/2023.

31.15 Others(specify) : NA

32. Analysis of the post- implementation situation and result of the project (Consider following issues): **Not Applicable**

32.1 Whether the beneficiaries of the project have clear knowledge about the Target/Objectives of the project.
32.2 Programme for use of created-facilities of the project
32.3 O & M Program of the project.
32.4 Impact of the project (Direct & Indirect)
32.5 Transfer of Technology and Institutional Building through the project.
32.6 Employment generation through the project.
32.7 Possibility of Self employment.
32.8 Possibility of Women-employment opportunity.
32.9 Women's participation in development.
32.10 Probable Impact on Socio-Economic activity.
32.11 Impact on environment.
32.12 Sustainability of the project.
32.13 Contribution to poverty alleviation/reduction.
32.14 Opinion of the public representatives, local elite, local administration, teachers, religious leaders, women's representatives etc.

32.15 Contribution of Micro-credit programs and Comments on overlapping with any NGO activities.

33. Problems encountered during Implementation (with duration & steps taken to resolve those) (Consider following issues): **Not Applicable**

33.1 Project management:
33.2 Project Director:
33.3 Land Acquisition:
33.4 Procurement:
33.5 Consultancy:
33.6 Contractor:
33.7 Manpower:
33.8 Law & Order:
33.9 Natural calamity:
33.10 Project financing:
33.11 Allocation and release:
33.12 Design formulation/approval:
33.13 Project aid disbursement and re-imbursement:
33.14 Mission of the development partners:
33.15 Time & Cost Over-run:
33.16 Project Monitoring:
33.17 Delay in Decision:
33.18 Transport, Training:
33.19 Approval and Others:

34. Remarks & Recommendations of the Project Director:

The study was approved by the Ministry of Water Resources (MoWR) vide memo number: 42.00.0000.039.14.007.22-54, dated 19 February 2023. The project was accomplished on 27 June 2024.

The main objective of the study is the integrated & sustainable ecological development of Borni Boar region as well as envisagement of the potential eco-tourism facilities development without hampering the ecological functions and dynamisms at any level.

The study has been framed to attain its objectives through some scope of the works. Under this scope of works, detailed baseline study was done to demarcate the land area of Borni Baor and to assess of connectivity of Borni Baor. Modeling tools like SOBEK was utilized for flood and drainage modeling, and evaluating climate change scenarios for long-term planning. Besides potential sites for tourism facility development and potential interventions for eco-tourism development are identified. Additionally detailed Environmental and Social Impact Assessment (ESIA), Disaster Impact Assessment (DIA) & Climate Change Impact Assessment was accomplished to analyze the impact of the proposed interventions on the environment and the society of the project area.

The study emphasized the development of agriculture and fisheries, enhancing water retention, improving connectivity within the Baor, addressing encroachment issues, and creating a comprehensive master plan centered on eco-tourism. Surveys were conducted covering topographical, geotechnical, hydrological, ecological, and socio-economic aspects,

incorporating input from local communities and stakeholders who rely on the Baor for their livelihoods. The study identified major challenges, including sedimentation, saline intrusion, waterlogging, Water Hyacinth Management, overharvesting of fish, harmful fishing practices like katha fishing, and inadequate freshwater availability during the dry season.

After assessing semi-structured questionnaire surveys and field observation, seven nos. possible tourism destinations have been identified using Multicriteria Decision Analysis (MCDA). Among them, Borni Bazar and the areas around it (37%) has been selected as the most well-known location, Kushli Hat (23%) is the second most popular site, followed by Nokrir Char (14%).

In addition to, it is recommended that the PIC and PMU be established in collaboration with the appropriate stakeholders and the corresponding line agencies. It is preferable to ensure their effective participation and owner shipment in the project by turning into a multi-stakeholder project implementation and management committee. The Management Modality is suggested for the Operation and Maintenance (O&M).

06.11.24

Date.....

Signature and seal of the Project Director

(Dr. Md. Abul Basher)
Superintending Engineer (Civil)
Directorate of Planning-III
BWDB, Dhaka.

35. Remarks/Comments of Agency Head:

The study project is aimed for holistic and sustainable management of water resources, environmental health, ecosystem integrity, and biodiversity in the Borni Baor region. After field investigation, satellite image analysis and analysis of model outputs, the consultants of this study project recommended some development plans such as development of agriculture and fisheries, dredging for enhancing water retention capacity, improving connectivity within the Baor, addressing encroachment issues, and creating a comprehensive master plan centered on eco-tourism. These interventions will be able to mitigate existing problems such as sedimentation, saline intrusion, waterlogging, overharvesting of fish, harmful fishing practices like katha fishing, inadequate freshwater availability during the dry season and uncontrolled spread of invasive water hyacinth in the area. It is expected that implementation of the project based on the study outcomes would revitalize the Baor and its surrounding areas. It is also anticipated that implementing the proposed development plans will improve socio-economic conditions and elevate living standards of people, create livelihood opportunities of the local communities and ensure environmental conservation.

Date....03.12.24.....

Signature and seal of Agency Head

(Muhammad Amirul Haq Bhuiya)
ID No. 660118001
Director General
BWDB, Dhaka.

36. Remarks/Comments of the Secretary/Senior Secretary of the Ministry/Division:

The project has been done successfully and subsequent investment project will be taken as per recommendations of the study.

Date.....

Signature and seal of Secretary

ব্যাংকের কপি

টি.আর.ফরম নং-৬ (৪)
(এস আর অনুচ্ছেদ ৩৭ দ্রষ্টব্য)

চালান ফরম

চালান ভেরিফিকেশন QR কোড

জনতা ব্যাংক লিমিটেড, গ্রীনরোড কর্পোরেট শাখা শাখায় টাকা জমা দেওয়ার চালান

যে সরকারি প্রতিষ্ঠানের অনুকূলে অর্থ জমা হচ্ছে	যার মাধ্যমে টাকা প্রদত্ত হলো তার নাম, সনাক্তকরণ নম্বর ও ঠিকানা	যে ব্যক্তির/প্রতিষ্ঠানের পক্ষ হতে টাকা প্রদত্ত হলো তার নাম, সনাক্তকরণ নম্বর ও ঠিকানা	চালান নং	কি বাবদ জমা দেওয়া হলো তার বিবরণ	জমার পরিমাণ
সচিবালয়, পানি সম্পদ মন্ত্রণালয়	মোঃ জাকিরুল ইসলাম ২৩৯৬০৭৭৯৮০ বাসা/হোল্ডিং: মৌসুমী সি ৪/৬,বাপাউবো অফিসার্স কোয়ার্টার, গ্রাম/রাস্তা: ১১, ডাকঘর: বনানী-1213, উপজেলা: বনানী, জেলা: ঢাকা, বিভাগ: ঢাকা	131016000-বাংলাদেশ পানি উন্নয়ন বোর্ড,131016000-BANGLADESH WATER DEVELOPMENT BOARD ***Identity not shown***	২৪২৫-০০০৫২৬২৯৯৫১	১৪৪১২০২-পূর্ববর্তী অর্থবছরের অতিরিক্ত গৃহীত অর্থ ফেরত	৫৪৪,৬২৭.০০

মোট (অংকে) = ৫৪৪,৬২৭.০০

নতুন কোড: ১৪৭০১০১১৩০২১৭-১১০০০০০০০০-১১০০১০০০-১৪৪১২০২ অন্যান্য বিবরণ/মন্তব্য (যদি থাকে): BORNI BAOR ELAKAR PANI,PORIBESH,PROTIBESH O JIBOBOICHITRER SOMONNITO EBONG TEKSOI UNNAYANER LOKKHE BISTARITO SOMIKKHA PROSTAB SHIRSHOK,PROJECT CODE NO;২২২০১৬১০০,RECURRING UNSPENT TK.:৫৪৪৬২৭,CAPITAL UNSPENT TK.:০.০০,TOTAL UNSPENT TK.:৫৪৪৬২৭ FOR THE FY ২০২৩ - ২৪

টাকা (কথায়): পাঁচ লক্ষ চুয়াল্লিশ হাজার ছয় শত সাতাশ টাকা

তারিখ: ২২/০৮/২০২৪ খ্রি.

এটি একটি সিস্টেম জেনারেটেড চালান, কোন স্বাক্ষর প্রয়োজন নেই।

গ্রাহকের কপি

টি.আর.ফরম নং-৬ (৪)
(এস আর অনুচ্ছেদ ৩৭ দ্রষ্টব্য)

চালান ফরম

চালান ভেরিফিকেশন QR কোড

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নতুন কোড: ১৪৭০১০১১৩০২১৭-১১০০০০০০০০-১১০০১০০০-১৪৪১২০২ অন্যান্য বিবরণ/মন্তব্য (যদি থাকে): BORNI BAOR ELAKAR PANI,PORIBESH,PROTIBESH O JIBOBOICHITRER SOMONNITO EBONG TEKSOI UNNAYANER LOKKHE BISTARITO SOMIKKHA PROSTAB SHIRSHOK,PROJECT CODE NO;২২২০১৬১০০,RECURRING UNSPENT TK.:৫৪৪৬২৭,CAPITAL UNSPENT TK.:০.০০,TOTAL UNSPENT TK.:৫৪৪৬২৭ FOR THE FY ২০২৩ - ২৪

টাকা (কথায়): পাঁচ লক্ষ চুয়াল্লিশ হাজার ছয় শত সাতাশ টাকা

তারিখ: ২২/০৮/২০২৪ খ্রি.

এটি একটি সিস্টেম জেনারেটেড চালান, কোন স্বাক্ষর প্রয়োজন নেই।

সচিবালয়, পানি সম্পদ মন্ত্রণালয় -এর কপি

টি.আর.ফরম নং-৬ (৪)
(এস আর অনুচ্ছেদ ৩৭ দ্রষ্টব্য)

চালান ফরম

চালান ভেরিফিকেশন QR কোড

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তারিখ: ২২/০৮/২০২৪ খ্রি.

এটি একটি সিস্টেম জেনারেটেড চালান, কোন স্বাক্ষর প্রয়োজন নেই।