

# **Blue Gold Program**

**2017 Annual Review Mission  
November/December 2017**

**Position Paper  
Achievements and Future Expansion**

**November 2017**

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## **Annexes**

### **A Status of ARM 2016 recommendations**

### **B Blue Program Information**

(i) Table of polder data

(ii) Map of polders

#### **References** (ie separate documents)

BWDB Progress Report January-June 2017

DAE Progress Report January-June 2017

TA Half-Yearly Progress Report January-June 2017

### **C Building Organisations**

(i) PCD letter 25 July 2017 on phasing out of old polders

#### **References**

Field Manual in Participatory Water Management (May 2017)

Compilation of Fact Sheets (October 2017)  
Wijay's report (28 Aug 2017) and TA response  
BWDB Act 2001  
PWMR 2014

**D Water Resources Infrastructure**

- (i) RDPP – plans for infrastructure rehabilitation and development
- (ii) PCD presentation at PEC 2 November 2017
- (iii) Status of SDDC
- (iv) Status of SDDC outsourced contracts
- (v) Status of infrastructure rehabilitation progress
- (vi) Erosion damage to BGP polders
- (vii) O&M Agreement (Bangla, draft)

**References**

Pilot Sluice Catchment Planning Reports, August 2017

**E Agriculture and Market Development**

**References**

Mustard value chain report  
Rice value chain report  
Short Moringa value chain report  
Market orientation and value chain training manual

**F Innovation Fund**

**References**

BGIF QPR July-September 2017  
BGIF Procedure Manual (August 2017)

**G Gender**

**References**

WP9 Gender Approach (September 2016)

**H Monitoring, Reflection and Learning**

- (i) WMG Tracker Results – TO BE PROVIDED SEPARATELY
- (ii) Improvement in crop production (2013-2017) – TO BE PROVIDED SEPARATELY

**References**

WP8 Participatory Monitoring  
Socio-Economic Baseline Survey – Phase II (draft)  
Trend Watcher, Issues 1 and 2  
2017/18 Annual Work Plan

## Core Questions to be Addressed

### Section Questions

- 3.2 Is the decentralised organisation working?  
Are the XENs, UAOS, SAAOs, TA polder teams engaged effectively with WMOs?
- 3.3 Is WMG functionality well-defined, understood and clearly communicated at all levels?
- 3.4 Horizontal learning:  
How can self-organising be further encouraged? See also Section 4.7.
- 3.5 Phasing-out of TA support:  
Is the strategy adequate?  
Is phasing out from the IPSWAM polders too soon?  
Beyond Blue Gold, how can FTs, presently engaged through the TA, be more strongly linked with DAE, DoF and DLS?
- 3.6 How can OCWM be effectively engaged for fostering PWM during and beyond the programme period?  
What is the role of and resourcing plan for OCWM beyond June 2020 in the Blue Gold area?  
How should OCWM share responsibilities with water management partners (eg DoC, DAE, LGIs, LGED, DoF, DLS, BWDB O&M Divisions, NGOs etc) to implement PWMR beyond the end of Blue Gold  
Can OCWM capacity be enhanced on the short-run to *inter alia* supervise OCWM CDFs, and to witness and advise on the phasing-out and phasing-in processes in Blue Gold?  
Does the BWDB Audit Department have the capacity to continue auditing WMGs beyond the end of Blue Gold?
- 3.7 How can LGIs be effectively engaged in supporting participatory water management?
- 4.2 What is a realistic projection of infrastructure expenditure by end-June 2020?
- 4.3 What further action is possible to accelerate survey and design data collection (SDDC)?
- 4.3 What is a realistic aggregate target value for award of contracts before end-June 2018?
- 4.4 Has the BWDB emergency support/crash program been effective:  
- In survey and design data collection?  
- In the design office?  
- What more is needed in BWDB Field Offices?
- 4.5 What actions are required to obtain better value from LCSs?
- 4.6 What measures are required to ensure pre-emptive action against embankment failure from erosion?  
Can LGIs contribute to early action against embankment failure, given their role in disaster risk management?
- 4.7 How do we optimise horizontal learning methods (ie farmer-to-farmer training) to build the capacity of WMGs in water management?
- 4.7 What measures are required to expand CAWM/IPWM initiatives?  
How to ensure replication and sustainability?  
How to set up funding streams to enable WMG initiatives?

- 4.8 Do the BWDB Field Offices have the knowledge and skills to support WMGs in O&M (in particular, in-polder water management at sluice catchment level) beyond the end of Blue Gold?
- 5.4 Does the cropping intensity initiative (CII) help to scale-up and disseminate functional WMGs and water management for development?
- 6.2 What are the relative merits of the proposed options for disbursing the balance of the Innovation Fund budget?
- 7 How can the attention to gender translate more strongly into active participation of women in the benefit streams created by the programme?
  - Are PWM structures and processes sufficiently conducive for female involvement in decision-making
- 8.2 What additional information or indicators would strengthen the WMG tracker?
- 8.3 How will participatory monitoring be institutionalised as a means to strengthen the reflective and self-organising capacity of WMGs?
- 9.1 How can BWDB capacity in DP3 and Field Offices be strengthened?
- 9.2 What actions are needed to continue DAE's effective involvement beyond end-December 2018?
  - Can DAE's RDPP be modified to strengthen their staffing?

## Blue Gold Program – 2017 Annual Review Mission Position Paper – Achievements and Future Expansion

### 1 PREAMBLE

This discussion paper has been prepared for the Annual Review Mission (ARM 2017) which is visiting the Blue Gold Program (BGP) from 24<sup>th</sup> November to 4<sup>th</sup> December 2017.

The paper presents the achievements over the last year together with the background to the key issues which inhibit the expansion and replication of successes to the wider community in the Blue Gold polders. An early draft of this paper was discussed with main BGP stakeholders BWDB, DAE or EKN during a meeting at the beginning of November 2017.

### 2 SIGNIFICANT ACHIEVEMENTS

A brief chronological summary of some of the most significant achievements over the twelve months since ARM 2016 is as follows:

4 December 2016	CAWM <i>aman</i> harvest festival at Dakshin Atharogachia WMG in Polder 43/1A, Patuakhali with exchange visits from 168 representatives of six WMGs from Polders 43/2B, 43/2A, 43/2D, 43/1A and 43/2F
Dec 16 to Jan 17	Workshops for polder staff in Patuakhali and Khulna on the Unified Approach, which contributed to the Field Manual on Participatory Water Management
Dec 16 to Apr 17	Consultation meetings on engineering assessments of rehabilitation needs with Union Parishads and local stakeholders in 8 new polders. Orientation for Union Parishad representatives in 8 new polders
19 January 2017	BWDB workshop on BGP's Unified Approach to improve conditions and approaches for participatory water management. The deliberations focussed on the final draft field manual and on the proposed field staff reorientation course; the alignment of the approach to the structure defined for WMGs and WMAs in the polders; the fundamental position given to collective actions; the early interaction and involvement of LGIs; the early involvement of Divisional staff in the work process; and for provision of orientation training to GoB members of the polder teams
2 February	TA infrastructure team occupied BCIC office in Motijheel. From March 2017, training and gender teams also relocated to Motijheel. (And from August 2017, CDSP-IV shared the BGP Gulshan office, thus contributing to operating costs).
January -March	First round of training for 76 TA Farmer Trainers (FTs) – 43 Khulna, 33 Patuakhali - in FFS homestead activities in three batches. First round training focused on fisheries, livestock, nutrition and market orientation. After further hands-on training, coaching and mentoring, a season of "apprenticeship" to CDFs (former FOs) follows after which FTs will be entrusted directly with FFS homestead training in new polders from Cycle 11 in April 2018.

Jan-Nov	Orientation on Blue Gold for 6 Upazila Parishads
8 March	International Women’s Day: rallies and discussions held in three Union Parishads (one in each district) with male and female members of the communities, WMGs and Local Government (LGIs).
March	Publication of Trend Watcher (first issue – analysis of data available from December 2016)
16 April	Under 2017 ARM emergency support to expedite infrastructure development, four Junior Design Engineers appointed to Design Circles 2 and 5
24 April	Seminar on bank protection in BWDB projects – BGP, FRERMIP, CDSP, etc
April – June	Field work for socio-economic baseline survey covering 3,651 sample households from 7 of 13 Phase-II polders
May	Distribution of Bangla version of Field Manual in Participatory Water Management (aka “Unified Approach”)
2-8 May	Training in Participatory Water Management procedures for 25 new CDFs (including 10 for OCWM) in BWDB Training Centre, Baradi, Kushtia
11 May	Deltares/IWM Water Management Knowledge and Innovation Program (WMKIP) Formulation Workshop, to strengthen and complement the Blue Gold Innovation Fund by allowing higher value contracts to be awarded for specific water management interventions
15 June	Administrative Order issued for DAE BGP Transfer of Technology for Agricultural Production (TTAP) Revised Development Project Proforma (RDPP)
July	Contract for emergency geobag protection is successful in stabilising the Lower Bhadra riverbank adjacent to P29, thus protecting Chadghar community from flooding during monsoon 2017
July-August	Orientation on CAWM for DAE staff (SAAOs), BWDB (XOs), BGP-TA (CDFs) and key farmers of CAWM FFSs
July-November	Second round training for 70 TA FTs in FFS homestead activities in three batches. Second round training focused on poultry, homestead gardens with market orientation.
19-24 August	Training of facilitators on CAWM FFS for DAE staff (24 SAAOs, 4 FTs) and 2 BGP-TA CDFs
August-October	Twelve open air dramas performed in new polders as an introduction to Blue Gold. Where possible, the dramas are inaugurated by local UP members and closed by the chairman. During the interaction section of the drama, a number of UP Chairmen took to the stage to persuade the muscle man (actor) that he should allow the requirements of the community to be implemented.
August	Pilot sluice catchment water management workshops (Batiaghata Sluice, P30 Khulna on 2/3 Aug and Amkhola Sluice, P43/2B Patuakahli on 6/7 Aug)
13 September	Workshop on the update of BWDB’s Gender Action Plan held by BWDB
October	3,500 acres (4,200 HHs) benefiting from excavation of P2 Amodkhali Khal
25 October	Presentation of dashboard to PCD/DP3
25-31 October	Preparedness program with WMGs and civic society for international day for disaster reduction (13 October) in advance of cyclone season



2 November	Pre-ECNEC meeting for BWDB BGP Revised Development Project Proforma (RDPP)
5 November	Publication of Trend Watcher (second issue)
12 November	Booklet “Compilation of Fact Sheets” with 38 examples of good practices issued to CDFs for use in horizontal learning visits.

### **3 BUILDING ORGANISATIONS AND NETWORKS FOR SUSTAINABLE PWM**

#### **3.1 Introduction**

A functional WMO drives higher productivity and profitability in agriculture, aquaculture, livestock and poultry through water resource management, which includes operation of water management infrastructure based on joint production planning and maintenance of water management infrastructure. Furthermore, a functional WMO builds partnerships and networks for development, including market linkages for improved inputs and better prices.

BGP has geared up its efforts towards sustainable participatory water management (PWM):

- (a) facilitating decentralised implementation in accordance with approaches agreed with BWDB and DAE, as documented in the Field Manual (in Bangla/English, May 2017);
- (b) re-establishing its organisation into integrated teams under decentralised management, and orienting frontline staff on the BGP approach towards PWM;
- (c) fostering constructive relationships between WMOs and LGIs (and between LGIs and the program);
- (d) enabling WMOs to undertake local and catchment level water management, by applying methods that promote self-development and replication by WMOs.

These achievements are summarised in Annex A: “Progress in Implementation of ARM 2016 Recommendations”. More elaborate documentation of strategies, structures and approaches are available.

While considerable progress has been achieved, the issues discussed in the following sections (Sections 3.2 to 3.7) play an important role in the successful implementation of the program.

#### **3.2 Decentralised Program Organisation**

Over the last eighteen months, the strategy, approach and structure of BGP have been redefined, leading to the formation of decentralised coordinated integrated polder development teams; in which divisional and *upazila* staff work together with zonal TA teams to promote water management for development. The transition from the erstwhile centralised and specialised programme to one in which local initiative is fostered – and indeed required – is, however, in essence a change in culture. While polder teams display more initiative in pursuing opportunities for water management for development; and while planning of activities by the polder teams has become more responsive to local priorities and needs; the transition to decentralised management is a gradual process.

There are opportunities for strengthening decentralised management and for better matching interventions to meet the demands of individual WMOs and specific local circumstances. Stronger decentralised management can be brought forward by setting targets for the replication of centrally

developed approaches (e.g. CAWM, catchment water management planning, HL), as well as by introducing new work methods that are more responsive to local needs (eg prioritisation exercises using WMG action plans).

Teams of community development facilitators (CDFs) who live and work in the polders are led by a polder coordinator (a zonal-based position to facilitate the cross-over of experience in other polders) assisted by a co-coordinator CDF (who is resident in the polder). They are supported on the basis of their operational planning and needs by cross-disciplinary zonal teams and regular field visits from Dhaka-based staff.

This so-called “matrix management” arrangement strengthens the multi-disciplinary polder-based teams with skills and practical experience in community mobilisation, agricultural development and business skills. Ninety-eight (98) CDFs – or over 60% of the Blue Gold professional staff – live and work in the polders. The first line of support to these teams is from zonal offices in Khulna, Satkhira and Patuakhali where teams of mixed discipline staff provide support directly to polder teams (as polder coordinators) and supporting technical capacity. At zonal level, there are 42 staff (Khulna 18, Patuakhali 17 and Satkhira 7) or 26% of Blue Gold professional staff. Of these, 14 staff support BWDB with the water resources infrastructure. From Dhaka, a core team of 21 professional staff (9 of whom primarily support BWDB with infrastructure) provide analytical capacity directed towards implementing broader Blue Gold pathways or strategies and achieving overarching objectives, as well as assisting in relating practical achievements to Blue Gold’s logical framework, the cross-linkage of experience between polders and zones, and horizontal learning and expansion of WMG collective actions, and good practices in general.

The last two annual plans (for 2016/17 and 2017/18) have been based on bottom-up planning. As a result, polder teams have strong connections with WMG communities, and are well positioned to identify community priorities, the demand for BGP services, and the most effective timing for WMG capacity building.

### **3.3 WMG Functionality**

Under BGP, the priorities for WMG development were initially focused on formation, registration and financial management as laid down in the Guidelines for Participatory Water Management (GPWM) and the Participatory Water Management Rules (PWMR 2014). However, from 2017, this has been replaced by a focus on WMG functionality, in terms of: agricultural and economic development; operation and maintenance; and partnerships. Structured participatory monitoring self-assessments by the WMOs and assessments of individual WMG functionality by the polder teams are used increasingly as the starting point for capacity building support. The first line of intervention is provided by the polder and zonal teams, who guide the WMOs through activity planning and implementation in *inter alia* WMG action plans and sluice catchment water management plans. These events are followed-up by regular coaching. Training and capacity building now concentrate on providing customised specialised training (eg bookkeeping) at the appropriate time of a WMO’s development, and exchange visits for horizontal learning – based on needs-analyses.

### **3.4 Methods for horizontal expansion of self-organising**

Our experience of horizontal learning (HL) confirms that WMOs are eager to learn from successes elsewhere, and keen to take up similar activities. However, replication of successes by WMOs still requires time, effort and resources from the polder team (and sometimes from zonal and central

teams). Despite the importance of HL, BGP has not yet established within the WMOs a process of self-organising, in which replication follows more naturally from initial demonstrations.

A practical question is how polder teams can promote autonomous roll-out of water management for development initiatives. A more fundamental question is whether such a process of self-organisation can reasonably be expected to take place within the present enabling environment.

Some of the recent HL activities include:

- (i) 21 experience-sharing visits for 125 neighbouring WMG members to the 16 CAWM pilots in Patuakhali, Khulna, Satkhira and 2 WMGs (good practices site) in Satkhira. More than 770 members from 125 WMGs/WMAs and BWDB, DAE and UP representatives participated in the experience-sharing visits.
- (ii) Experience-sharing meeting of participating CAWM groups to share each other’s experience and learning in Patuakhali.
- (iii) 38 Fact Sheets summarising examples of WMGs’ good practices have been published and distributed with the intention that polder teams will encourage WMGs to learn and adopt some of the good practices, including exchange visits to the originator of the good practices.
- (iv) Demonstrations on increased cropping intensity have been held in a number of polders to disseminate successful initiatives by WMGs.
- (v) WMO workshops involving members from 198 WMGs of 12 polders (Khulna-86 and Patuakhali-112) have promoted collective actions, business planning and links with private companies.
- (vi) A farmers’ field day (FFD) at Khulna was attended by members from 6 WMGs to share and learn experiences.
- (vii) An experience-sharing visit attended by members from 58 WMGs of 3 polders in Patuakhali disseminated mustard demonstration results.

Opportunities to accelerate replication of collective actions were investigated during an input in August 2017 by a community mobilisation specialist. An action plan has been prepared based on the recommendations in the assignment completion report.

### 3.5 Phasing-out from old polders

2016 ARM (Aide Memoire recommendation 2.1) recommended early joint OCWM/TA planning of withdrawal from the “old polders” in order to release resources for the “new polders”. And a recent PCD directive (letter dated 25<sup>th</sup> July 2017) recommended the withdrawal by end-June 2018.

PCD and OCWM have reached agreement on the schedule for phasing out by the TA team (see table below), the activities that need to be completed before withdrawal of TA resources, the resources that will be in place after withdrawal and the regular processes to monitor the status of WMGs after withdrawal.

**Tentative Schedule for Phasing Out**

	No of Polders	Date of withdrawal	Name of Polders	Remarks
Phase 1	8	30 Jun 2018	43/2D, 43/2E, 43/2F, 43/1A, 22, 29, 30, and 26	7 IPSWAM and 1 polder with no previous WMG-related project activity.
Phase 2	6	30 Jun 2019	43/2A, 43/2B, 55/2A, 55/2C, 31-part and 2	2 IPSWAM and 1 WMIP and 3 polders with no previous WMG-related project activity.
Phase 3	8	30 Jun 2020	25, 27/1, 27/2, 28/1 28/2, 34/2 47/3 and 47/4	5 KJDRP, 1 GoB funded and 2 polders with no previous WMG-related project activity.

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**Total**      **22**

**Notes:**

- (i) WMG development through earlier projects has not taken place in the following new polders - Polders 55/2C, 47/3, 47/4, 26, 31part and 2.
- (ii) In all three phases, infrastructure works are likely to continue beyond the target date of phasing out. This might include survey, design data collection, and construction.

Key activities to be completed as part of the phasing out process include: (a) completion of O&M training and signing of O&M agreements; (b) establishment of O&M fund and evidence of withdrawals for O&M activities. In order to establish the process of O&M, it is suggested that BWDB will closely monitor the process during a 3 to 4 month period over the monsoon. Some CDFs will be retained to provide support as polders are phased out up to end-June 2020, when TA support comes to an end.

The establishment of WMOs is aligned to guidance given by the OCWM, which is provided both in terms of general procedures and pragmatic solutions to specific situations. In the case of Patuakhali polder-level WMAs, there were delays in agreeing how to incorporate existing sluice-level WMAs into the polder-level agreement with BWDB. However, at a meeting between OCWM and WMA representatives in Patuakhali on 15 October 2017, the agreed modality is that the respective BWDB Executive Engineer and two representatives from each of the existing WMAs would be parties to the O&M agreement.

After phasing out, the intention is that the following support will be in place: (i) a cadre of Farmer Trainers (FTs) who can continue to promote agricultural innovations; (ii) a model for sluice catchment planning, which WMAs can replicate to other polder catchments once infrastructure is complete; (iii) O&M agreements between polder-level WMAs and BWDB; (iv) needs-based support to the established WMGs; and (v) the posting of 10 CDFs under OCWM's management, in the phased-out polders to continue basic support to effective program completion at end-June 2020.

### **3.6 Role and responsibility of OCWM**

One of the non-structural functions of BWDB is: "Establishment of water user's association and other water users/stakeholders' organizations, their training and participation, in project planning, implementation, operation and maintenance and cost recovery for long-term sustainability of benefits to the beneficiaries of completed projects" (BWDB Act, 2000; Clause 12).

Despite this obligation, BWDB (through OCWM) has – in reality - very limited capacity to provide practical hands-on support to BGP. OCWM resources are so limited that their focus is, in practice, confined to registration with very limited involvement in other organizational activities.

The very practical restrictions faced by BWDB and OCWM – comprising limited funding through either regular or project-related ADP provisions – will affect the work for which the TA is responsible; and has consequences for the long-term position and role of WMOs in water management at polder level. The BGP team suggests that the ARM addresses the challenges faced by OCWM so as to provide sustainable support to WMGs beyond the lifetime of Blue Gold.

### **3.7 Enhanced reliance on LGIs and others**

Under BGP, formation of WMOs and their initiatives for water management for development have increasingly been coordinated with Local Government Institutions. Experience shows that LGI support

is a condition for water management initiatives, such as *khal* cleaning and removal of impeding fisheries equipment; whereas the LGIs themselves benefit from WMO involvement in their disaster preparedness activities. Moreover, LGIs increasingly allocate their resources to small-scale water management initiatives. In its five years' existence, BGP has established that the partnership between LGIs and WMOs is a contributing factor for the latter's performance and sustainability. Other lessons, for example on the cooperation with production services (DAE, DLS, DoF, private sector), are also relevant beyond the confines of the BGP.

We feel these are important lessons, and BGP insights on working with local government and others could contribute positively to refinement of Bangladesh's enabling environment for participatory water management. Contributing to further refinement of the enabling environment has been outlined as one of the TA exit strategies. Bringing the above and other lessons to bear on national policy development is, however, primarily a responsibility of the development partners that initiated BGP.

A clear position of the project partners on further development of the enabling environment is a condition *sine qua non* for the TA to contribute to policy refinement.

## 4 WATER RESOURCES INFRASTRUCTURE

### 4.1 Achievements against overarching objectives

**Polder Safety:** Polder safety against tidal floods, storm surges, river erosion and salinity has been greatly enhanced through embankment strengthening, breach closing and erosion protection measures. The RDPP has provision for 360 km of embankment, out of which 212 km embankment has already been completed and 44 km of embankment is in progress. Out of planned 119,124 ha of total program area, almost 84,374 ha of land in 18 polders is already under improved safety. Most of the remaining polders will be subject to improved safety by June 2020. In combination with the infrastructure improvements, DRR activities involving WMOs, LGIs and the concerned government departments has increased the state of preparedness of polder inhabitants to prospects of embankment breaches and overtopping, and the pre-emptive actions that can be taken.

**Improved in-polder water management:** Re-excavation of primary canals and some major secondary canals, and rehabilitation of water management structures (sluices, outlets etc) has improved the overall water management in the polders as well as created enormous scope for internal water management and community-led agricultural water management (CAWM) inside the polders. A brief overview of progress to end-June 2017 is provided in the table below.

Category	Unit	Target	Achieved	In Progress	Remaining
Re-sectioned embankment	Km	360	212	44	104
Retired embankment	Km	19.6	3	2	14.6
Re-excavation of <i>khals</i>	Km	567	110	55	402
Sluice Rehabilitation	No	186	45	19	122
Rehabilitation of Inlets/Outlets	No	235	186	5	44
New Sluices	No	31	3	4	24
New Inlets	No	8	2	1	5

Where infrastructure works are complete, controlled flow of water is now possible through the cleared main *khals*, and the rehabilitated sluices/outlets allow improved water regulation. Previously, many areas were either unable to be drained and remained inundated, or suffered water shortages as their main outlets or inlets were obstructed or poorly functioning. Now, there is the potential for

WMGs to resolve water management problems by connecting to the main canals with some field channels and minor structures. Because of improved water management - especially early drainage during post monsoon and rapid drainage after post-germination rains in February – the planting of early *rabi* crops is now possible. Moreover, due to reduced flooding and improved water supply during monsoon, *aman* production has also greatly increased.

## 4.2 Plans for Infrastructure Development

The plans for infrastructure rehabilitation and development over the next three construction seasons are defined in the RDPP (refer Annex D(i)). A comparison of the construction plan in the RDPP plan with the TA forecast is given in the table below.

	Total Budget MBDT	Cumulative Expenditure to June 2017	Projected			
			2017/18	2018/19	2019/20	2020/21
RDPP	3,082	672	718	1,115	577	
TA Forecast	3,082	672	500	650	750	510

Because of the delayed approval of the RDPP (with ECNEC approval now expected in January 2018) and slower than expected progress in survey, design data collection (SDDC) and design, and the pace of construction works, the RDPP plan now seems very optimistic.

Since the number of designs are limited, and the value of new works likely to be awarded in the 2017/18 construction season is also low, the TA forecast for 2017/18 is therefore 500 MBDT (refer to table above).

Based on historical achievements, and the present contracting arrangements and understaffing in BWDB field offices, more realistic maximum projected expenditures by the TA team are 650 MBDT in 2018/19 and 750 MBDT in 2019/20. In the TA forecast (refer to table), we have indicated an over-run of construction works into 2020/21.

## 4.3 Pre-Construction Infrastructure Planning

**Revised Development Project Proforma (RDPP)** Despite sustained efforts by the PCD over a long period, there have been delays in processing the BWDB Blue Gold RDPP. The following timeline aims to provide an insight into the lengthy nature of the process:

14 September 2016	Letter sent by EKN to DG BWDB expressing intention to top-up BGP FA fund
27 October	Letter sent by MOWR to ERD about additional funding
8 November	PCD and TA revise RDPP text
14 November	BWDB Chief Planning sends revised RDPP to MoWR
6 December	EKN Letter of Commitment to ERD to make additional grant financing of €12.07 million
1 January 2017	MOWR meeting with BWDB about the recast RDPP
19 March	PCD advised that the RDPP file was transferred from MoWR to the Planning Commission
21/22 April	A two-person IMED team headed by Director Md Afzal Hossain visited Khulna and Satkhira, accompanied by PCD and Alamgir Chowdhury, and Blue Gold zonal staff. The IMED team was very thorough and took many field measurements of earthworks, visited WMGs to witness agriculture, homestead production and business

	development activities, and the training of DAE Departmental Trainers (SAAOs) at Daulatpur. Although the report was completed (by PCD before end-April), it took some time to obtain signatures from the IMED team. It is a pre-requisite for the pre-ECNEC committee (PEC) meeting.
14 June	Signed IMED report received with recommendations and comments
23 July	PCD advised that all answers to questions raised by IMED and the Planning Commission about the Blue Gold RDPP have been answered by BWDB, and that a revision of the RDPP incorporating these responses (as necessary) was received by the Planning Commission.
10 August	EKN meet Minister MoWR and <i>inter alia</i> discuss progress of RDPP (will be “cleared in another month”)
18 September	PCD and DTL attend a pre-ECNEC appraisal of the RDPP for Blue Gold at the Planning Commission led by Nazmul Islam, Head of Division, Agriculture, Water Resources and Rural Institutions. In preparation for this meeting, both DP3 and TA teams had been very active – including working over the weekend of 15/16 <sup>th</sup> September – to <i>inter alia</i> prepare detailed infrastructure programs for each of the financial years covered by the project, as well as revised TA staffing charts.
21 September	PCD advised by the Planning Commission that the RDPP will be formally presented to the pre-ECNEC meeting – if the required additional material can be provided. The DP3 and TA teams, together with field XENs, are assigned to the preparation of the additional material.
2 November	Pre-ECNEC meeting held in Planning Commission, attended by BWDB DG and ADG (Planning). A copy of the PCD’s presentation to the PEC is included as Annex D(ii). The RDPP was approved at this meeting, with a <i>proviso</i> that a list of 25 points are addressed before the document is submitted to ECNEC. After correction, the revised RDPP will require BWDB and MoWR approval before it is submitted to ECNEC (in 65 copies). It is therefore possible that the RDPP may only be tabled at an ECNEC meeting in January 2018, with formal ECNEC approval following in another two to three weeks.

**Inclusion of O&M Fund in RDPP Budget:** Polder embankments are vulnerable to erosion (refer Section 4.6 to the BWDB seminar in April 2017). Within BWDB, general practice assumes that ongoing projects will fund any emergency works. The existence of an O&M/emergency fund in the RDPP is an essential element of the RDPP for the inevitable repairs to breached or vulnerable embankments that will occur during the remaining three year lifetime of Blue Gold. The O&M budget was increased to BDT 21 crore, but has since been reduced to BDT 8 crore. For future projects in the coastal zone, it is worth emphasising the importance of this budget.

**Survey and Design Data Collection (SDDC)** A system to monitor the flow of survey and design data information from field to the design offices has been established. It is operated by a retired BWDB Chief Engineer (Design), who advises the field offices on the correct formats for submitting design data to the design offices, and then coordinates with the design offices on the progress and quality of design data submission and design preparation. The progress of survey and design data submission is summarised in Annex D(iii), and requires careful monitoring.

Seven SDDC contract agreements are currently in place between the BWDB Field Offices and the service companies (see Annex D(iv)). Most of these are expected to start delivering data to design offices during November/December 2017.

### Designs and Quantities (as of 12<sup>th</sup> November 2017)

Category	Unit	Remaining	2017/18 Plan			
			Planned	SDDC submitted	Design/Quantities Completed	Designs in Process
Re-sectioned embankment	Km					
Retired embankment	Km	15.0	14.0	2.4	2.4	
<i>Khals</i> re-excavated	Km	390.8	237.6	116.9	66.4	50.5
Sluice Rehabilitation	No	119	99	30	6	24
Inlets/Outlets Rehabilitated	No	44	40	25	25	
New Sluices	No	24	23	20	6	14
New Inlets/Outlets	No	23	23	13	12	1
Culverts	No	32	24	10		
Pumpshed	No	6	6			

Those works for which designs and quantities have been prepared by the Design Circles, it is possible to arrange for contracts to be awarded by early-March 2018. The next stages in the process (with estimates of time for each activity) are as follows:

Estimate preparation	BWDB Field Office	1 week
Estimate vetting	TA	1 week
e-Tendering process	Contractor	2 weeks
Notification of Award (NOA)	BWDB Field Office	2 to 4 weeks
Works Orders	BWDB Field Office	1 week
Contract mobilisation	Contractor	1 week
<b>Total</b>		<b>8 to 10 weeks</b>

Thus, where designs/quantities are completed before end-December 2017, it would be possible to have a contractor on site on or before end-February 2018. However, if most contracts can be awarded in the 2017/18 season (however late), then there will be two full construction seasons (2018/19 and 2019/20) available for implementation of the contracts.

A summary status of cumulative infrastructure rehabilitation progress as of June 2017 is given in Annex D(v).

The 2016/17 schedule of rates are now available for some of the BWDB divisions in the Blue Gold area. These show increases which will affect the RDPP cost calculations, and could also have implications on the overall scope of work assumed in the RDPP. This is being examined, and a note on the findings is expected to be available for the mission.

#### 4.4 Emergency Support to BWDB Design and Field Offices

Recommendation 1.1 of ARM 2016 was that additional staff – recruited from the market – should be made available under an emergency arrangement and deployed as soon as possible to compensate for the numerous vacancies within the BWDB Division and Design Offices:



**Design staff** - Four junior design engineers were identified and selected by BWDB and subsequently contracted through the TA Team in April 2017 and appointed to Design Circles 2 and 5 in BWDB's Green Road complex. And in October 2017, a junior mechanical engineer for ME Khulna was appointed. These staff have been recruited through the TA team but are accountable to BWDB line managers.

**Survey and design data collection (SDDC)** – After appreciating the range of support likely to be required by BWDB if survey teams were recruited locally (ie recruitment of trained staff, provision of survey equipment, transport, field allowances etc), and the complexity of managing and obtaining transparent financing procedures, preference was instead given to contracting local survey firms to conduct survey and design data collection. A number of contracts are now in place outsourced to local service companies instead of hiring additional staff, for which contract agreements were signed during 10 August 2017-16 September 2017 (see Annex D(iv)).

**Procurement and quality control staff** - Additional staff have yet to be appointed in field offices in field offices for the preparation of estimates and tendering, and quality control. With respect to estimates and tendering, there is understandable reluctance within BWDB about providing confidential and sensitive information on prices and tendering procedures to part-time staff – for fear of collusion with contractors. During November/December 2017, BWDB plan to appoint 24 no SAEs to Field Offices operating in the BGP area. Whilst the SAEs will be inexperienced, BWDB/TA will agree on the content of required on-the-job training to make best use of their presence during the construction season, and to then follow-up during the 2018 monsoon with targeted capacity building.

#### 4.5 Labour Contracting Societies

There continues to be a serious lack of progress of earthwork by LCSs. Labour shortages during the construction season contribute to the poor progress - because of the availability of other employment opportunities with higher remuneration, local labour is not incentivised to carry out WMG/LCS earthworks.

Although the ARM has recommended a minimum 50% earthworks should be allocated to WMGs/LCSs, the Participatory Water Management Rules of 2014 (PWMR 2014) states in Chapter 6 Section 44 (1) (unofficial translation): “It is with the aim of alleviating poverty and to generate employment in the project area, ie in the interest of the people, that at least 25% of earthwork of a project can be given to related WMGs, which will implement the earthwork through landless contracting societies (LCSs) under them.”

Given the poor progress and some underlying difficulties in incentivising LCSs, it was recommended by PCD and agreed by EKN (in February 2017) that Blue Gold adheres to the minimum required by the PWMR 2014 regulation for implementation of earthworks through WMGs (LCS), giving preference, and a higher share, to female LCS groups – because of their lower mobility relative to men. In new polders, where no WMGs have yet been formed, all earthworks in the first year will be awarded to contractors and the share of the LCS works will be adjusted in subsequent years. These restrictions applied to the 2016/17 construction season, pending: (a) the proceedings of a BWDB committee to facilitate and review the process of PWMR 2014 and (b) the report of a more elaborate LCS study commissioned by TA that will look at maximizing developmental impacts of this activity. The study will *inter alia* look at opportunities to introduce better tools, to build in connections to savings, income generation or skill development activities in the LCS program or for more transparent operations. It was also subsequently agreed that LCSs would be awarded 25% by value of earthworks contracts in 2017/18.

A number of decisions arose from a meeting of the BWDB PWMR/LCS committee on 2<sup>nd</sup> January 2017:

- 1 PCD will issue a letter to Field XENs regarding LCS advances and other related issues, referring to PWMR Clause 44 Section 5.
- 2 Committee members will discuss with XEN Patuakhali and Khulna regarding their concerns about LCS problems.
- 3 Before issuing work orders, TA/BWDB Field Offices will discuss about the pre-work arrangements and advise WMG/LCS members about their respective roles and responsibilities;
- 4 LCS contracts should be allocated based on demand and availability of labour/WMG members.
- 5 Before LCS formation, more discussions should be held with WMGs/WMAs to explain respective roles and responsibilities.
- 6 Field XENs are to forward observations and comments to PCD within 15 days.

A follow-up meeting on 8<sup>th</sup> November 2017 agreed that: (a) *ad hoc* committees will be eligible to organize LCSs for new polders where formal WMGs remain unregistered; (b) LCSs will be paid in three instalments, the first of which will be payable (in place of an advance) after a period of 7 to 10 days from mobilisation of the LCS when the BWDB Field Office can establish that the LCS is active.

#### **4.6 Erosion damage and emergency provisions**

All of those who live and work in the SW face the consequences of erosion damage to polder embankments. And many engineering professionals have practical experience of the consequences of breaches to polder embankments. But those who are resident in the polders, and whose families and livelihoods are dependent on the exclusion of flood waters from the polder bear the brunt of the consequences when polder embankments fail. There is enormous social and economic impact.

Of the 22 BGP polders, records in April 2017 showed that there was active threat to 13 polders at 29 different locations. BWDB is responsible for 139 polders in the coastal region, so the scale of the threat to the integrity of the polders will be proportionately larger. One of BWDB's primary responsibilities in the coastal region is to ensure the integrity of the polder embankment and to thus protect the vulnerable communities who live and work in the polders.

Pre-emptive action to strengthen vulnerable embankments before they fail is justified because:

- Costs of repair of threatened infrastructure (embankments, sluices etc) are much reduced if work is done before embankment failure; and
- Costs in terms of human lives, and damage to crops, livestock, businesses and households can be prevented.

There are a number of measures which might be considered:

- Providing the field XEN with technical assistance from an experienced design team – supported by IWM - who are responsible for preparing recommended engineering interventions and presenting them and obtaining local community acceptance, assisted by representatives from WMG, WMA, UP, UZP and any local MP.
- Providing flexible funding arrangements by pre-allocating budgets under the Annual Development Plan (ADP) so that pre-emptive actions can be included in the Revised Annual Development Plan (RADP) in February/March, thus leaving a four-month window for

tendering and construction from March to June (when the onset of the monsoon prevents work from continuing).

- Providing a 5-year on-call framework contract for pre-emptive emergency repair including stock-piling geotextile bags in godowns of BWDB Divisions. Incentivising contractors through appropriate contractual arrangements to complete pre-emptive works on time and to a good quality, and to be accountable for successful implementation and the integrity of the embankment, perhaps for the duration of the framework contract.
- Emergency maintenance is a major role of BWDB in the O&M Agreement between BWDB and polder-level WMA, and should be extended to include investments for pre-emptive works – with BWDB and WMA together agreeing a prioritized list of actions.

#### 4.7 Internal polder water management (IPWM) and Operation and Maintenance (O&M)

Re-excavation of primary canals and some major secondary canals in first and second batch polders has created scope for internal polder water management (IPWM) and community-led agricultural water management (CAWM) initiatives. The Blue Gold Program has strengthened and upscaled IPWM and O&M practices in 2017 through the following mechanisms:

1. **Operational sluice catchment water management planning workshops** with support of BWDB, DAE and LGIs have been piloted tested successfully. The workshops resulted in the identification of cropping pattern and water management issues, and produced water level management maps and detailed water management action plans based on the needs and resources of the WMA/WMG. Development of the O&M training planning and the O&M training module have started. Through a ToT pilot workshop for PCs and CDFs, their comments will be included in the O&M training module to make sure this new planning approach can be introduced in at least one sluice catchment per polder. The sluice catchment selection process considers the leadership capabilities of WMAs especially. The selected WMAs are expected to roll out the approach further to other sluice catchments in same the polder with support of PCs, CDFs and BWDB/DAE field staff.
2. **Existing O&M guidelines have been revised** to include operational sluice catchment planning, an O&M framework and agreement. O&M training modules are being developed for use by BGP trainers, and WMA/WMG members. The total training package includes operational sluice catchment planning, technical operation of sluices/structures and maintenance requirements, planning and monitoring. The O&M training session ends the signing of an O&M agreement between BWDB and WMAs. The O&M training modules have been successfully pilot tested.
3. **About 60 DAE-led CAWM FFSs** have been conducted to provide intensive technical and agronomic guidance on crop synchronisation, improved varieties management, new crop technologies and on farm and catchment water management. A special CAWM FFS curriculum has officially been published by DAE and ToTs for SAAOs have started. Monthly coordination meetings between DAE and TA team are being held to monitor the progress of implementation.
4. **CAWM Aman and Rabi crop and water management planning workshops** for WMG members have been organised with support of DAE/BWDB (OCWM) and the upcoming ones will be fully led by DAE. During the workshops, a CAWM challenge between WMGs was launched.
5. **Horizontal learning visits, Farmer Field Days and crop cutting festivals on CAWM** were attended by more than 760 participants from 125 WMGs in 2016/2017. During those events practising

WMGs have demonstrated the benefits of proper IPWM and crop synchronisation to neighbouring non-practising WMGs. Since June 2017, DAE is actively supporting another 20 enthusiastic WMGs to adopt CAWM. Recent adopters are already further promoting CAWM to other WMGs through horizontal learning.

6. **Collective action among WMA/WMGs to create financial sustainability of WRM infrastructure** is actively promoted through the establishment of linkages with UPs, BWDB and DAE group support. UP orientation sessions have addressed IPWM and number of WMGs have managed to get co-funding for small-scale infrastructure through their UP.
7. Under the Innovation Fund, the **feasibility study for “Roads for Improved Water Management and Flood Protection”** has been conducted by MetaMeta. Findings are promising and we are actively looking for ways to include the approach as a further means to strengthening IPWM.

The results of our IPWM and O&M initiatives are promising so far. The WMGs involved in the pilot testing of O&M training modules have demonstrated keen interest in the new approach on operational sluice catchment planning and the improved O&M framework. The areas where we could work intensively with WMGs on CAWM have demonstrated a duplication of Aman rice yields, earlier establishment of Rabi crops and less *Rabi* crop damage. The horizontal learning events ensured the further adoption of CAWM crop practices without direct guidance from the Blue Gold Program. The area under HYV *Aman* expanded 9-fold in Patuakhali zone. Due to the large demand of HYV *Aman* seeds, which are not readily available, a special partnership between BADC and DAE was set up to provide **seed production and preservation training** to WMG members.

DAE and BWDB are keen to continue upscaling CAWM and enhancing IPWM and O&M practices in catchments/polders not yet covered. As the IPWM concept has not been part of the original DPPs of both BWDB and DAE, different possibilities to ensure sufficient financial and human resources are being reviewed. While farming WMG members agree to pay for agro-inputs after the introduction of CAWM and willing to dig field channels by their own means, they are challenged to fully finance small-scale WRM infrastructure. Part of the solution lies in stimulating O&M fund collection and collective labour mobilisation, and enhancing lobby capacity towards UPs. However, additional mechanisms of co-contribution are required to accelerate the adoption process. It is being explored whether the EUR 0.5 million budget available related to ARM 2016 recommendation 2.6 could be utilised to realise co-funding for another 150 WMGs and the RDPP-BWDB provides scope to provide a number of small drainage pipes. DAE is ready to roll out another large number of CAWM-FFS to provide technical and agronomic guidance to WMGs enabling the integrated adoption of IPWM concepts and willing to disburse DAE group support for additional co-funding.

The key question remains **what is a realistic target for horizontal expansion of CAWM and improved O&M practices?** The introduction of IPWM and O&M practices is only effective in polders/catchments where main WRM infrastructure is functioning well. The large delays in WRM infrastructure implementation provides little scope for DAE to roll out CAWM-FFS effectively to new polders. At the same time, DAE inputs to the Blue Gold Program end per December 2018. While in batch I and II polders main WRM infrastructure is more or less ready for operation, the TA team support will phase out soon and OCWM has little field staff available, making it hardly impossible to coach WMA/WMGs in expansion and adoption of CAWM and improved O&M practices. Due to the required reformation of WMAs in 2017 and therefore delayed capacity building on O&M, the WMG/WMA leadership capabilities may not be sufficiently developed to take on the responsibility of introducing operational sluice management planning using horizontal learning approaches.

## 4.8 O&M Agreement

Copies of O&M agreements from related projects (IPSWAM, SW and WMIP) have been reviewed, and a suitable agreement for use in Blue Gold has been drafted (in Bangla) and distributed to PCD and CWM for their comments and suggestions. PCD and CWM have suggested that a model document is developed with annexes providing: (a) a polder map with water and road infrastructure and areas covered by WMGs and WMAs; (b) sluice catchment maps with water and road infrastructure; and (c) catchment-wise inventory of water infrastructure, noting – in cases where BGP infrastructure contracts are ongoing – the likely date of completion and handing-over of the works.

In parallel, TA zonal coordinators will discuss the draft O&M Agreement with BWDB Field XENs, UPs, WMAs and WMGs, and with the LGED Upazila Engineer. By end-December 2017, a final form of the agreement will be prepared. From January 2018, specific O&M agreements will be prepared for those polders which are to be phased out by end-June 2018. These agreements will be presented and discussed in a workshop for each polder with participants including BWDB Field XEN, WMA and UP representatives. The outcome from these workshops will be a signed agreement between the BWDB XEN and the WMA.

## 5 AGRICULTURE AND MARKET DEVELOPMENT FOR ECONOMIC IMPACT

### 5.1 Still facing the elements

Water resource management (WRM) is a precondition to increasing agricultural production in the SW coastal region, which in combination with better market linkages or value chain development, aims to achieve economic impact. There are regular reminders that the area is more prone to extreme climate events compared to other areas of Bangladesh - the last three years have shown agriculture's weather dependency, as excessive and untimely rain combined with extreme weather events have resulted in significant crop damage.

### 5.2 Market oriented production shifts and water resource management

Broader agriculture development (crop, fisheries and livestock) remains the key driver of the polder economy as in any other rural area of Bangladesh. But agriculture in the polder areas is heavily dependent on improved water resource management, and large areas are still faced with severe waterlogging and tidal zone effects. Present agriculture production systems reflect the current water infrastructure cum management situation. The condition of WRM infrastructure - embankments, sluices, inlets, outlets, canals - largely determines the local agricultural production system. Improving the water infrastructure and its operation can open up increased potential by introducing production system shifts. To lead production shifts towards higher productivity and profitability we simultaneously enhance market participation and market linkages. The former assumes the commercialisation of farmers, including the notion that farming is a business, and the latter a broader development of the market system including other value chain actors and service providers, and where relevant also an improvement of the business enabling environment.

### 5.3 Stimulating collective actions

The stimulation of collective actions (CA) is one of the starting points of the Blue Gold programme in the new polders. The polder teams now identify any existing groups and leaderships in their respective polders, and explore present constraints and opportunities for collective actions through workshops. Besides all kind of producers, they thereby involve other actors and stakeholders in the local economy. While some CA have a social development bias, most are directly aimed at improving water management and at facilitating production system shifts eg through enhancing the availability of the required inputs or services.

CAs are need based and generally demand driven. They aim at reducing production cost, obtaining timely quality inputs and services at reasonable prices, negotiating favourable deals utilising a group's bargaining power, improving water resource efficiency, enhancing community welfare and increasing revenue for participants. Different types of CAs, particularly where these were aimed at benefiting farmers economically, play a crucial role in improving agricultural production and ensuring more income for participants. The CAs rapidly picked up by the producers are joint purchases of seeds, fertiliser, pesticides, fingerlings, lime etc and joint tillage arrangements followed by coordinated selling in different forms. This is witnessed by increasing trade levels amongst traders and service providers, in but also outside the polders. A more recently facilitated CA is the collective selling of Moringa drumsticks by households. In its first year of introduction, this CA resulted, for example, in an additional income of more or less 0.6 million BDT on total Moringa sales of 2.5 to 3.0 million BDT. As households have basically no costs in producing the drumsticks, this is pure household income, moreover landing directly in the hands of the women<sup>1</sup>. When producers become confident about the benefit of CA, they increasingly are organising such CA by themselves. Already in polder 29, farmers organized themselves the collective selling of vegetables under the initiative of a female Resource Farmer (RF) and with the effective participation of WMG members; it is one of several examples where the principles are applied by communities on their own.

In the process of stimulating CA the first challenge to Blue Gold, and the Polder teams in particular, is recognising that not everything works everywhere due to specific social and economic characteristics of the polder or catchment area. Some have sufficient tillage power, others are closer to markets, consist of richer farmers, have alternative employment opportunities, or benefit of the presence of specific actors. Secondly, polder teams need not only to support CA technically e.g. fish production, but also have to ensure costs and benefits, and often most importantly risks, are understood for sustainability while they also have to facilitate the evolving organisation of the CA. To address both challenges, polder teams benefit from being multi-disciplinary and with time, by becoming more familiar with their respective polder and catchment characteristics. Experts of all levels do support this ongoing process in the field by coaching.

#### 5.4 Supporting production system shifts with value chain development

Besides stimulating CA, much attention is given in creating awareness of the potential in production systems that can arise from improved water management. In essence, this is supported by DAE FFS, CAWM and Cropping Intensity Initiatives (CII). CII was promoted in 15 BGP polders covering 96 acres of land spreading in 43 trials. These three strategies, fully led or supported by DAE, demonstrate the increased productivity and profitability of enhanced production systems<sup>2</sup>. As these constitute a shift in cultivation practices e.g. new varieties or crops, and demand higher investments, the production aspects of these efforts are always complemented by value chain development considerations.

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<sup>1</sup> Moringa VC Report: Blue Gold Programme

<sup>2</sup> DAE has implemented a total of 428 FFSs (implementing 142 T. Aman FFSs in 2017), and support the implementation of 25 CAWMs in 10 polders

Our initiative to transform the polder economy through increased cropping intensity has prompted DAE to adopt more field crops e.g. mung bean, water melon and sesame in their FFS program and related demonstrations e.g. mustard. In addition, yearlong cropping system perspectives were adopted. In support of technology adoption, the SVC group included Market Orientation (MO) elements in the FFS curricula, covering a) 'farming as a business aspects' such as financial literacy, record keeping, crop margins, and informed decision making, along with b) developing forward and backward market linkages through networking for goods, services and information, and through utilising bargaining power by collective actions, taking advantage of ICT opportunities in both. Subsequently, several groups of Departmental Trainers (DTs) and Field Trainers (FTs), were trained on these curricula for implementation in the DAE FFS and CAWM FFS initiatives<sup>3</sup>. The CII are much lower resource intensive cropping system demonstrations where local conditions serve as proxy for water resource management and suited for horizontal learning purposes. These farmer sites demonstrate the potential of more profitable cropping pattern, e.g. short duration T. Aman-Mustard (chance crop)-Mung bean/Sesame in areas where early drainage of water is possible due to BGP initiative.

BGP organized extensive Horizontal Learning (HL) events for farmers and WMG members to disseminate all successful implementation activities by different promotional activities that include exchange visit, printed material, audio-visuals and drama. While the most visible impact of these three strategies, DAE FFS, CAWM and CII is the substantial spread of the newly introduced varieties eg mung bean and rice, the impact is well beyond this on improving food security, as well as on shifting labour, input demand along with increasing income from surplus production, through both additional crops and higher productivity, and from being supplemented by reduced costs and better prices in the market through CA.

While care was taken to select sites where imminent improvements could be achieved in water resource management in order to make the most of such demonstrations, further improvements will be made in this on the basis of improved insights in local infrastructure, land, water and production potential. In addition, we will recognise earlier, and in more depth, the potential impact of completed infrastructure works so that we assist farmers to anticipate on the resulting potential through improved production system decision making.

## 5.5 Complementary market development activities

While stimulating CA and supporting production system shifts are largely farmer focused, we pay attention to the broader market system and seek systemic changes by involving and supporting other actors. The SVC group thereby focuses on solving value chain constraints and opportunities which arise when the production systems shift, e.g. the availability of new or quality inputs and additional services. Input and service providers join farmers and WMG representatives in the workshops which are held on catchment and polder basis to identify constraints and seek common solutions.

To anticipate seed supply constraints due to the combination of several years of crop damage in mung bean and the success of introducing BARI Mung-6, an approach was worked out. Farmers were encouraged to submit demand to seed seller in groups early enough to obtain seed delivery on time, while BADC and their dealers were approached and forewarned of joint seed buying initiatives. Similarly, a buyer link was facilitated with EUGLENA, an exporter of mung seed, to give farmers an option of selling their product with a premium price.

As part of capacity building of important actors to ensure sustainability of SVC effort, BGP has organized training for about 100 local input retailers and familiarized them with WMGs for business

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<sup>3</sup> DAE/TA have together built the market orientation capacity of 80 DTs and 150 FTs

expansion. Similarly, about 90 RF (farmer leaders) were given additional capacity building training to help them organize profitable demand based CA for economic benefit. In addition, market orientation issues were included in the curriculum for TA FFS for households, addressing poultry and fish production, dairy and beef fattening and homestead gardening and nutrition. Subsequently the Blue Gold TA FFS facilitators (CDF) were trained to apply this during their sessions and to coach the FTs which are assisting them and who will take over in the next cycle of TA FFS. The FTs are an asset to the polders and become part of the local actor network.

The TA FFS groups consist primarily of women, which poses its own particular challenges in terms of facilitating market linkages but increasingly good role models appear. Moreover, the use of mobile phones to inquire about market prices and to contact traders also enables women to become better involved in purchasing inputs and selling produce, even without physically going to the markets.

In 2016, pilot training had been organised on market linkages and women's empowerment for a group of 44 women and 6 men in Patuakhali (all farmers). The two-day training addressed subjects such as market linkages and analyses, joint-decision-making and women's empowerments. All participants, especially the women, appreciated the training, and many of them started contacting traders and/or buying inputs themselves. This pilot training demonstrated eagerness for knowledge on market linkages, also among women farmers.

## **5.6 Facilitating WMG as network nodes**

WMG are stimulated as important nodes in the 'networking' for inputs, information and services. Network strengthening at catchment level is a primary activity in support of agricultural development and continuously a variety of actors are brought together to address constraints and explore opportunities. Throughout the above activities the WMG members are involved in a variety of workshops to identify and define potential functions for the WMG. The vision for the WMG is to act as farmer representative to improve accessibility to market information, service delivery, extension agents and suppliers of input.

# **6 USING INNOVATIONS TO INCREASE PRODUCTIVITY**

## **6.1 Introduction**

The Blue Gold Innovation Fund (BGIF) is setup to utilize the establishment of linkages between Bangladesh and Netherlands-based businesses / organisations, while at the same time accelerating the development process in the program area of the Blue Gold program, by financing innovative approaches and new initiatives which contribute to socio-economic development.

The Blue Gold Program has two Innovation Funds:

- (a) Water Management Fund (focusing on water resources management)
- (b) Productive Sectors Fund (focusing on agricultural production and food security).

The Water Management and Productive Sector Funds (with an original total budget of EUR 4.2 million) are managed by the TA team since the inception of the project, but accelerated disbursement from the fund only started off in 2015 when a full-time Innovation Fund manager was hired. In the approximate 2.5 years of operation, only EUR 869,000 has been allocated (status as of 30 June 2017). The vast amount of this budget has been granted to projects under the unsolicited proposal procedure.



During the ARM 2016 the low disbursement rate was already noticed and in March 2017, as part of the overall TA budget revision, the Innovation Fund was restructured by Embassy of the Kingdom of the Netherlands (EKN) as follows:

- Water Management Fund with a budget of EUR 1.4 million
- Productive Sectors Fund with a budget of EUR 1.05 million

In addition, a fund of approximately EUR 1.4 million was transferred to the direct administration of EKN and under the joint management of Deltares and Institute of Water Modelling (IWM). This fund enables the Water Management Knowledge and Innovation Program (WMKIP).

Since EUR 1.4 million has been transferred to the direct administration of EKN and joint management by Deltares & IWM, the TA team is expected to manage the remaining part of approximately EUR 1.581 million over the next years.

For a part of the budget allocations have been made:

- (a) Under the Water Management Fund, an approximate amount of EUR 300,000 is allocated to enable river bank protection in polder 29 (expenditure up to 22 August is EUR 214,545).
- (b) Under the Productive Sector Fund, an approximate amount of EUR 533,000 will be spent on innovative approaches towards “Improved Information for Agriculture” assuming 4 project contracts will be signed in February 2018 as a result of the current call for proposals.

This leaves an outstanding amount of about EUR 748,000 to be spent in the coming 2.5 to 3 years. This position paper outlines various options how this budget could be disbursed within the set timeframe.

## **6.2 Options**

### **Option 1: Keeping the status quo**

The first 2,5 years of fund operation have demonstrated that an amount of about EUR 800,000 can be spend under an unsolicited proposal mechanism and within the Dutch rules of procurement making it necessary to award the project budget in phases.

**Advantages:** The BGIF is in the meanwhile known by a large group of companies, SMEs, NGOs, research institutes, universities and government authorities in both Bangladesh and the Netherlands due to mouth-to-mouth communication, announcements in various newsletters, presence of BGIF manager at various events, the Dutch Network Group Campaign, Blue Gold Innovation Challenge, etc. A momentum has been created with many incoming applications and it seems we have plenty options to disburse money through the unsolicited procedure. It would especially enable the Dutch sector parties to participate more prominently in the Blue Gold program area, who are seeking contact more frequently after the Dutch Network Group Campaign (June – Sep 2017).

**Disadvantages:** The obvious and well-established organisations with running projects in Bangladesh have heard first about the BGIF and applied already in earlier phases. The currently incoming applicants are either coming from Dutch SMEs with no experience in Bangladesh or young students or grassroot organisations from the polder communities. They require a lot of coaching to ensure the projects address true local demands as well as have high technical quality and innovativeness. The current BGP TA team is already under a lot of pressure to reach timely all project goals set and is since 2017 operating in a larger area with many new challenges. With 12 running projects, a lot of incoming applications to be reviewed by the TA team and an international Innovation Fund manager working part-time, the situation has become unmanageable already.

**Mitigation measures:** Find smart ways of getting Dutch SMEs quickly introduced to Bangladesh and the Blue Gold Program. For example, by organising a special mission with EKN Economic Affairs department including matchmaking events with local private sector, NGOs, research institutes and others.

Create new TA capacity (part-time nat./int. freelancers) for reviewing of concept notes and proposals and coaching of applicants, while at the same time strong coordination mechanisms at polder and zonal level to guide the relative small projects in the field properly.

Commit to only a few high potential unsolicited proposals in early 2018, and try to let them go through the full cycle of feasibility, piloting, and upscaling until end-2020. Close the fund for applications in mid-2018 and focus on coaching and monitoring the high potentials.

## **Option 2: Stronger focus on ensuring local needs and impact, while getting the best out of the market**

The solicited call for proposals “Improved Information for Agriculture” was carefully developed based on a local need. WMO members indicated that they lack easily accessible information to improve crop production and marketing. At the same time, the call has demonstrated that many organisations are interested to provide these type of services (we received 29 concept notes). Furthermore, 40-50% of concept notes were of higher quality than the average concept note coming in through our unsolicited proposal procedure.

**Advantages:** The solicited procedure shows we can better adhere to local needs, while at the same time the competitive element increases our chances for one or more high-quality project(s) to be implemented. Little time needs to be invested in coaching applicants to develop concept notes or proposals, only the project start-up, monitoring and horizontal expansion will be crucial and demands sufficient time from the TA team.

**Disadvantages:** A successful solicited call procedure falls and stands with good preparations. The “Improved Information for Agriculture” call costed almost one year of planning to investigate the local needs in the polder areas (incl. student internship) and identify interested market parties. It also demands longer and more complex processes of procurement in line with Dutch tender regulations. For the solicited call, we had to promote the call, to do a round of clarification questions and to organise and pay for an evaluation committee.

Moreover, the management of the awarded projects will be more complex and demanding. The volume of works per project will be substantial, so sufficient monitoring capacity from the TA team needs to be mobilised.

It is reasonable to assume that the solicited procedure will not lend itself for every priority issue felt by our target group. For some issues, market parties will not be interested to invest or little innovation can be introduced.

The chances that the TA team can invest sufficient time and resources to identify at least 2 themes for larger projects based on true local demands and with sufficient market interest is small. To ensure sufficient implementation and upscaling time the projects would need to start latest Q2/Q3-2018. That leaves little time for preparations, development of TORs and the actual procurement.

**Mitigation measures:** Stop the unsolicited procedure from January 2018 onwards and completely focus on developing quality TORs for solicited calls. Make sure that by the time the awarded solicited

projects start, the unsolicited small projects have been phased out and administratively closed off, so full attention can go to monitor the larger projects well and make sure they have sufficient horizontal expansion.

### **Option 3: A middle ground**

This option tries to balance between option 1 and 2: spending half of the remaining budget on unsolicited proposals and the other half on one additional solicited call.

In this scenario, the unsolicited procedure would give priority to Dutch sector parties who had no early financing through EKN and secondly to Bangladeshi organisations operating in the polder areas. The well-established international and national organisations operating from Dhaka will be excluded in this stage and rather referred to WMKIP or other funds.

**Advantages:** Allows space for the Dutch sector SMEs and polder based organisations to still participate in the coming years, while at the same time 2 - 3 competitive larger projects can contribute to one specific polder community demand.

**Disadvantages:** It will consume substantial time from the TA team to coach these types of applicants under the unsolicited procedure, while at the same time ground work is required to develop a TOR for a solicited call.

**Mitigation measures:** Close the fund by mid-2018 for unsolicited applications. Be less strict on the origin of the organisation, but just focus on the high potential ones.

Only start with the preparations of another solicited call in mid/end 2018 and allow for less implementation time (just 12 months), so more support can be given in an early stage to unsolicited applicants that require extra coaching.

## **7 GENDER**

### **7.1 Introduction**

Within the Blue Gold Program, gender is addressed by integrating gender perspectives within ongoing activities and by implementing specific gender activities. Activities in 2017 include the support to polder and zonal staff to integrate gender perspectives into their work, including conducting court yard sessions on the importance of women as WMG members; organization of rallies and panel discussions on International Women's Day (8 March 2017) in close cooperation with Union Parishads and WMGs; implementation of Gender and Leadership Development Training to WMGs and Gender and Development Training to polder and zonal TA, DAE and BWDB staff in Patuakhali and Khulna; support to the updating process of the Gender Action Plan of BWDB; developing and implementing the pilot training on market linkages and women's empowerment; contributing to relevant Innovation Fund projects such as liaising with United Purpose on their Women's Business Centres IF project; and providing gender training within other training and orientation programs of DAE.

### **7.2 Gender-balanced WMOs in new polders**

Within Blue Gold, targets for women's participation in new polders are for 40% of the general membership and 5% of the positions of president and secretary to be women. This is in addition to the existing quota of the PWM Rules (30% of WMG EC membership to be female and at least one woman among the four WMG representatives in WMAs). In the new polders, these targets have been achieved by paying attention to gender issues during any awareness raising activities in the new

polders (for example, in meetings and court yard sessions) and by promoting that (ad hoc) committees and collective action activities include men and women.

Achieving targets for women's participation in WMOs in terms of membership, however, is only a first step. One of the next challenges is promoting the active and meaningful involvement of women (alongside men) in WMO and collective action activities. The polder teams play an important role in this by setting examples (treating men and women equally) eg by ensuring that male and female WMG members all speak out in meetings, and not only the local elite. See also Sections 7.4 and 7.10.

### **7.3 Flip Charts for field staff**

So that polder team members, and particularly CDFs, are able to address gender issues more easily within their meetings within FFS (and/or WMG meetings), two sets of flip charts with ten key messages will be developed - with pictures of a "gender situation" and notes and relevant questions on the reverse side for the benefit of the facilitator. Ten potential topics and the key messages related to gender activities have been developed. It is foreseen that the gender flip charts will also be shared with DAE, for use by SAAOs (see Section 7.8).

### **7.4 Gender and leadership development (GLD) training**

Between September 2016 and April 2017, an external provider provided training in gender and leadership development (GLD) to WMGs in 61 batches (2 WMGs/batch). This training is to continue, but using internal BGP staff. CDFs will provide capacity building to WMGs on a needs basis, at a time to suit the individual WMG and its stage of development.

A rapid assessment of the GLD training provided by the external service provider is planned from mid-November to end-December 2017. This will focus on the following three objectives: (i) assessing the quality of the provided GLD training; (ii) assessing the "impact" of the training (ie how was the learning put into practice and what were the effects); and (iii) assessing the pros and cons of the modality of the training, ie the outsourcing to an external service provider. Terms of Reference (ToR) have been developed. The assessment will be independent of the training team, and coordinated by the MRL team.

### **7.5 Gender analyses and gender impact study by university students**

From mid-October 2017, four students from the Patuakhali Science and Technology University (PSTU) started a 3-month internship with Blue Gold. The objective of their internship is to assess and compare the BGP contribution to women empowerment, and the nutrition situation in three old BGP polders and two new BGP polders in Patuakhali to assess Blue Gold's contribution to women's empowerment and nutrition. In addition, they will also make an effort to assess "impact" of the BGP activities in the three old polders, in particular on the gender situation (i.e. gender equality and/or women's empowerment, leadership, mobility and decision-making). For this purpose, an Internship Agreement between BGP and the University has been signed.

### **7.6 Study on Labour Contracting Societies (LCS)**

In 2016, BGP commissioned a local consultancy firm to conduct a study on the impact of LCS work, with a special focus on women LCS members. The contract for this study was however discontinued

in May 2017 – primarily because the inception report and research instruments (especially the survey questionnaire) were weak, and demonstrated insufficient understanding of the LCS concept. The LCS study, will continue but through a lower-key approach, which focuses more on qualitative data collection and with BGP TA playing a coordinating role with data collection and logistical support. The original ToR is being simplified, taking into account the findings of a recent study on LCS groups within LGED programmes (which are differently organized than LCS groups under BWDB projects or programmes). Discussions are ongoing with a potential candidate to lead the simplified study – Dr Sharmind Neelormi, a lecturer in economics who undertook a recent study for IFAD into the performance of LGED LCSs.

### **7.7 Updating BWDB’s Gender Action Plan**

In January 2017, a senior gender consultant (Fawzia Khondker), with experience in working on Gender Action Plans for GoB institutions, started updating BWDB’s Gender Action Plan (GAP), in close cooperation with the PCD and the BWDB Gender Equity Committee. During 2017, information was collected on gender issues within BWDB and on the status of the implementation of the 2006 GAP. In September 2017, the findings and first suggestions for a GAP were presented to BWDB in an inception workshop. Based on BWDB’s feedback a draft GAP is currently in preparation. It is expected that the GAP will be finalized and adopted by BWDB in early-2018.

### **7.8 Support to DAE regarding gender**

Although the FFS approaches by DAE and Blue Gold TA are target women farmers, the increasing role of women in agriculture (the so-called “feminization of agriculture”) and their requirements for extension information has been identified as a priority activity. A first step has been to identify the policy or strategy of MoA/DAE. DAE has developed a gender strategy (2015) with support from the ADB-financed Second Crop Diversification Projects. This strategy is ambitious, containing all elements of a proper gender strategy, but without a mechanism for its implementation within DAE. A discussion on first ideas about potential BGP support to strengthening gender within DAE led to the proposal to develop a gender training trajectory for SAAOs working in the Blue Gold project area, with the potential to be replicated in other parts of Bangladesh. The gender flip charts planned to be developed by BGP are also foreseen as possible tools to be used by DAE SAAOs in their FFS and other extension work. In 2017, TA has supported DAE with training sessions on “women empowerment, gender issues and the importance of women in agriculture” as part of DAE’s capacity building of FTs and SAAOs.

### **7.9 Unpaid Care Work (UCW) as a potential topic for an Innovation Fund project**

The unintended impact of promoting cropping intensification and the involvement of women in productive work, can be to create additional workload so that women’s total work burden (combining domestic and productive work) affects their wellbeing and becomes a limiting factor in productivity increase. The issue of UCW is gradually more recognized, including in Bangladesh’ current five-year plan. In October 2017, a draft concept note for a possible innovation fund project has been developed, which is currently being further discussed. A tentative outcome is inviting a suitable organisation (possibly ActionAid) to discuss their interest in leading a project on UCW through the Blue Gold Innovation Fund project, aimed at investigating the extent that UCW is a limiting factor for increased agricultural production, as well as piloting solutions for reducing the amount of UCW for women, such as increasing the share of domestic work by male family members. This is also one of the gender topics to be tentatively addressed in FFS (refer Section 7.3).

### 7.10 Follow-up gender training for zonal staff

In September and October 2017, all BGP zonal and polder staff, as well as representatives from BWDB and DAE, participated in a two-day gender training in three batches. This training not only aimed to increase the knowledge and awareness on gender issues, but also promoted team building and mutual respect among BGP staff. Feedback from participants was that the training provided insight in what gender actually is (ie gender does not concern women alone) and motivated them to integrate gender perspectives into their work. BGP's gender coordinator will follow-up on this training with the zonal and polder teams, supporting them in applying the gender learnings in their daily work.

### 7.11 Women-friendly working environment

In the second year of the BGP an anti-harassment policy for BGP TA had been developed. The current gender coordinator has taken various initiatives to further promote a good working environment within BGP, eg by placing complaint boxes and flagging practical issues concerning the security of especially women staff. This remains an important area of attention within BGP, with a recent update of the anti-harassment policy as an example.

### 7.12 General support to integrating gender in BGP's work

Other examples of ongoing efforts to promote gender sensitive results within BGP include the following:

- (a) commenting on relevant reports or studies (eg related to relevant Innovation Fund projects, such as the Women's Business Centres, implemented by United Purpose);
- (b) providing gender training (eg at the request of DAE for their FTs);
- (c) In 2018, BGP will support International Women's Day celebrations in its project area in close cooperation with Union Parishads, Upazila and District officials;
- (d) Joint workshops with local government will be organized about the use of the government budget for women's empowerment;
- (e) collecting case studies on women who became "empowered" through BGP as examples or role models for others (eg for the Blue Gold *Barta* newsletter); and
- (f) conducting two more pilot training programmes on women's empowerment and market linkages in Khulna and Satkhira, demonstrating that amongst women there is a great interest to become more knowledgeable about markets. Lessons learnt from this training will be used in strengthening other BGP activities.

### 7.13 Future Gender Program

For the remaining years of the Blue Gold Programme the implementation of gender activities will be based on the following principles:

- (a) Ensuring adequate gender mainstreaming in relevant BGP activities, with a special focus on the new polders
- (b) Learning from gender activities / gender mainstreaming in earlier years of BGP
- (c) Support to institutionalization of gender into the work of the BG partners (BWDB and DAE)
- (d) Continuation of ongoing gender related activities, whenever justified

- (e) Limited and carefully selected new gender activities, which can be well justified, adding value to the BGP.
- (f) Maintaining / improving a gender aware and women-friendly working environment within the BGP.

## **8 MONITORING REFLECTION AND LEARNING (MRL)**

### **8.1 Achievements**

During the last year, the WMG Tracker has been developed, the bulletin Trend Watcher has been published twice, WMG participatory monitoring has been introduced, and a report on the second phase of the baseline survey is available. In its efforts to stimulate reflection on and learning from data generated through monitoring exercises, the results of participatory monitoring and WMG Tracker have been shared and discussed with polder teams using reflection sessions to encourage polder staff to use the data in directing their capacity building of WMGs.

### **8.2 WMG Tracker**

WMG Tracker is an output monitoring instrument used to provide an objective picture of each WMG. The monitoring format has been refined with contributions from zonal staff.

The tracker covers the major activities of WMGs: (a) membership of WMG; (b) use of funds; (c) types of business investments of WMGs; (d) water management support activities in WMG area; (e) capacity development; (f) horizontal learning; (g) collective actions for economic activities; (h) collective actions for infrastructure O&M; and (h) agricultural technologies adopted by farmers. All this information is collected for individual WMGs.

WMG data is recorded by concerned polder teams, and has been collected each quarter since December 2016. After completing each analysis, the results are shared with the polder teams, and reflection sessions are facilitated. Summary results of WMG Tracker up to June 2017 are given in Annex H(i).

### **8.3 Participatory Monitoring**

Participatory monitoring aims that WMGs monitor their own progress and performance, and reflect on what is required to improve. A format was developed for the WMGs to assess their progress against some outcome challenges – the outcome challenges describe the ideal future situations which the WMGs should be aspiring for and BGP would like to ascertain on the pathway to reaching its goal. This is, in the words of Annual Review Mission 2016, a participatory performance assessment and target setting' for WMGs. In effect, PM encourages WMGs to be aware of the potential targets they should achieve and to evaluate their performance/progress (or shortcomings) towards a full achievement of those targets. For the first two rounds of participatory monitoring, twenty outcome challenges under four themes were set as targets of WMGs. The monitoring format was revised for the third round of

monitoring to take account of a refinement in the definition of functional WMGs<sup>4</sup>, the indicators are presented as 17 outcome challenges under three themes.

Participatory monitoring exercises have been conducted three times in fourteen Blue Gold polders: in November-December 2016, April-May 2017 and October-November 2017. A total of 354 WMGs participated in the monitoring exercise during November-December 2016, 351 WMGs in during April-May 2017 and 351 WMGs during October-November 2017. Summary results of exercises conducted in April/May 2017 are given in Annex H(ii). The results of monitoring carried out in April/May 2017 shows that performance levels of about 66% WMGs are medium or higher, WMGs of high performance level being 1.4%.<sup>5</sup> The results show a general trend of improvement in the performance levels of WMGs; results from the second round of monitoring show the overall average achievements of WMGs are slightly higher than that of the first round. The results of the third round of participatory monitoring (in October 2017) have yet to be analysed.

The participatory monitoring results call for actions from WMGs and from the project team. CDFs will encourage the WMGs to discuss and reflect on the participatory monitoring results in their monthly meetings, and instigate appropriate action plans for improvement. As can be seen from the WMG self-assessment results, the level of performance differs widely. Where resources are scarce (with OCWM, for example), consideration needs to be given to whether support should be prioritised – perhaps to the better-performing WMGs, as examples for the community to follow? The consequence of this possible course of action needs consideration - whilst WMGs within a sluice catchment may be categorised across the range of performances, all WMGs need to work together to establish water management practices. So, to obtain this cooperation, the poor performing WMGs should be encouraged/stimulated to improve their performance. More discussion is required.

## 8.4 Baseline Survey Phase II

The socio-economic Baseline Survey Phase II was conducted in 2017 from preparation of survey questionnaire to report writing. Finalization of the survey questionnaire was a joint effort of BWDB and TA staff. An external firm was engaged to collect baseline survey data at household level. Sample households (3,651) were selected from 7 (out of 13) phase-II BGP polders; the polders were selected in discussion with BWDB. The field work was carried out during the period April to June 2017. The data analysis was done by an external expert and a first draft of the baseline survey report is undergoing internal review within the TA team.

## 8.5 MIS Development - Dashboard

Blue Gold Program (BGP) aims to create a database that stores data, collected through various surveys and monitoring activities, in one place (the server), is accessible to multiple users, and provides reports in standard formats. ARM 2016 recommendation 2.3 the development of ‘a dashboard type MIS’. The progress towards this dashboard is presented below:

### Phase-I (completed)

- WMG Registration: design and development. Data to June 2017 for 356 WMGs in 14 polders are stored in the Blue Gold Sever. When new WMGs are formed, information can be uploaded onto the server direct from tablets.

<sup>4</sup>“A functional WMG drives improving productivity and profitability in the primary sector through water resource management, which includes operation of water management infrastructure based on joint production planning and maintenance of water management infrastructure. Furthermore, a functional WMG builds partnerships for development.”

<sup>5</sup> As per Polder Teams’ assessment, the WMGs of high performance level account for 5.4%.



- WMG tracker (design) and standard reports (development). Data collected from the field using smart phones/tablets to June 2017 for 356 WMGs in 14 polders are stored in the Blue Gold sever. Standard output reports are produced for three levels – project, zone and polder.
- Participatory monitoring (design) and standard reports (development). A similar procedure for the WMG Tracker has been followed in case of participatory monitoring.
- Testing Phase-I development - tested in the field.
- Sharing of output reports with BWDB and TA team members – feedback has been incorporated.

**Phase-II (in progress, expected to be completed by end-December 2017)**

- Baseline survey phase-II (design) and reports (development)
- Impact monitoring survey (design) and reports (development)
- Historical data: baseline survey Phase-I, MFS, outcome mapping (all data are in standard form).

## **8.6 Trend Watcher**

Blue Gold Trend Watcher is a seasonal project bulletin which aims to summarize and share updates on project achievements. In 2017, three issues have been published – the first in March 2017 (based on data available from December 2016), the second in October (based on data available from June 2017) and a third is in draft form (in November 2017), ready for comment by BWDB and DAE.

## **8.7 Impact Monitoring**

In order to track changes in agricultural production over time, DAE data on crop production in BGP areas has been collected for 2014/15, 2015/16 and 2016/17. DAE regularly collects production data of various crops through crop-cuts supervised by the Sub-Assistant Agricultural Officers (SAAOs) and then reported to the Upazila Agriculture Officer (UAO). Crop production data from DAE shows a general improvement in crop production over the lifetime of Blue Gold - see Annex H(iii).

Impact monitoring is planned for samples of households included in Phase-I and Phase-II of the socio-economic baseline survey. This will start with crop-cutting for 2017 *aman* conducted by DAE/TA during harvest in November/December 2017.

## **8.8 Annual Work Plan 2017/18**

The Annual Work Plan for July 2017 to June 2018 was prepared using a bottom-up approach - the polder teams prepared annual plans guided by overviews presented by zonal and Dhaka-based colleagues.

The unified working approach has improved the coordination between different experts from different disciplines and has led to more efficient use of staff. Objectives of the planning exercise have been to:

- Establish a functional and sustainable relation among all stakeholders
- Reduce duplication and ensure quality
- Provide support to polder team activities by zonal and Dhaka-based staff
- Promote gender equality and leadership in WMOs

- Promote collective action, business planning and linkage with the private sector
- Scale-up community initiatives
- Establish good coordination, collaboration, and build professional relation among all implementing agencies and stakeholders
- Mobilize and engage stakeholders.

## **9 KEY STAKEHOLDERS**

### **9.1 BWDB**

During November/December 2017, BWDB plan to appoint 24 no SAEs to Field Offices operating in the BGP area.

### **9.2 DAE**

DAE's RDPP has been revised to end-December 2018, which means that DAE's role in Blue Gold for the remaining eighteen months of implementation (to end-June 2020) will rely on the interest and commitment of individual Upazila Agricultural Officers (UAOs), with no management from Khamarbari. For a project where the strategic collaboration between MoWR/BWDB and MoA/DAE/DLS/DoF plays such an important role in addressing the needs of WMG groups, this will be a major setback to effective coordination.

The DPP manpower provisions for DAE provide no permanent project staff. To fulfil the target number of quality FFSSs, DAE's strength should be improved with adequate professional staffing and incentive packages (including overseas training).

The analytical capacity of DAE (impact assessment) could be improved with staffing and training and hands-on TA support.

**ANNEX A**  
**STATUS OF ARM 2016 RECOMMENDATIONS**

**Blue Gold Program**  
**Progress in Implementation of ARM 2016 Recommendations**

1.1	Emergency staff arrangement for water infrastructure in place	<p><b>Design staff</b> - Four junior design engineers were appointed in April 2017 to Design Circles 2 and 5 in BWDB's Green Road complex. And in October 2017, a junior mechanical engineer for ME Khulna was appointed. All staff were identified, selected and approved by the respective BWDB office (DP3, Design Circle, Mechanical Engineer Khulna, and then recruited through the TA team - but are placed under BWDB line managers and remain accountable to them</p> <p><b>Survey and design data collection (SDDC)</b> – After appreciating the range of support likely to be required by BWDB if survey teams were recruited locally (ie recruitment of trained staff, provision of survey equipment, transport, field allowances etc, and the complexity of managing and obtaining transparent financing procedures), preference was given to contracting local survey firms to conduct survey and design data collection. Survey companies were selected and contracted by BWDB Field XENs with TA financing. Seven contract agreements were signed in August/September 2017, with their implementation managed by BWDB.</p> <p><b>Procurement and quality control staff</b> – Additional staff have yet to be appointed in field offices for the preparation of estimates and tendering, and quality control. With respect to estimates and tendering, there is understandable reluctance within BWDB about providing confidential and sensitive information on prices and tendering procedures to part-time staff – for fear of collusion with contractors. Support staff have been provided to assist in PCD's Motijheel office.</p>
1.2	Shared office space by PCD and TA (infrastructure staff) in use	<p>After EKN gives conditional agreement to rent the fourth floor of a new building owned by BCIC in Motijheel almost directly across the road from PCD's Hasan Court office, discussions concerning co-location of staff of DP3 and OCWM, and continuing a presence in Gulshan were held. In early January 2017, a contract was signed with BCIC, and from 2 Feb, the TA infrastructure team occupies the new office and from 3 Apr, are joined by the TA training and gender teams. As a result of the move, meetings between PCD and TA teams are more regular, the meeting room in the BCIC building is frequently used for joint meetings, and there is more regular direct communication between BWDB and TA teams at all levels across a range of subjects. Technical staff of BWDB and the TA team work more closely together and carry out joint field visits.</p> <p>From 2 Aug, the EKN-funded CDSP-IV TA team becomes sub-tenant of BGP Gulshan office and contributes to BGP's operating costs.</p>
1.3	RDPP draft shared for discussion by BGP partners	<p>The draft RDDP was worked on by PCD/TA teams from 8 November to 31 December, in preparation for a review meeting in MoWR on 1 January 2017. After the MoWR meeting, ADG (Planning) took control of the formulation of the programming. The revised RDPP was then submitted via MoWR to the Planning Commission on 19 March.</p>

1.3	RDPP finalized and approved	<p>To review the BWDB BGP RDPP, a Pre-ECNEC Committee (PEC) meeting was held in the Planning Commission on 2 Nov 2017, attended by DG BWDB and his senior officials. The meeting recommended that ECNEC approval was sought for the RDPP, with a <i>proviso</i> that a list of 25 points were addressed before the document was submitted to ECNEC. Since most of these 25 points were raised at the appraisal meeting on 18th September, and PCD/TA teams have made significant effort to address all issues in the revised RDPP in the lead up to the PEC (ie between 18 Sep and 2 Nov), there are only a few further points to address before the RDPP can be submitted to ECNEC. Since the revised RDPP will require BWDB and MoWR approval before it is submitted to ECNEC (in 65 copies), it is possible that the RDPP may only be tabled at an ECNEC meeting in January 2018, and that formal ECNEC approval may follow in another two to three weeks.</p>
1.4	New contractual arrangements worked out and in place for part of the envisaged work	<p><b>Pre-announcement of contracts</b> (tendering to be completed in all aspects with contract issuing conditional on RDPP approval): Despite specific directions from PCD, BWDB Field Offices were reluctant to invest in preparation of survey, design data collection, design, tendering in advance of RDPP approval for works that were not included in the original DPP.</p> <p><b>Multi-year contracts</b> (for at least 20% of works): Multi-year contract for earthwork with specified yearly progress and quality facilitating natural consolidation compaction is not well defined in GOB/BWDB procurement rules. Therefore, field XENs normally do not feel encouraged to enforce such contracts to the contractors. But, there is an understanding that they will try it at least for some contracts after the approval of RDPP. However, though formal multi-year contracts are not yet in practice, most of the present earthwork contracts continue for more than one year passing an unintentional rainy season that helps some natural compaction. As per GOB procurement rules large contracts with several years O&amp;M responsibilities for Blue Gold type programs (in contrast to CEIP) are not possible. Moreover, BWDB Field XENs feel that because of socio-political reasons they need to satisfy as many local contractors as possible. Therefore, in their opinion, this idea is not practical.</p> <p><b>Packaging of works in larger contracts</b> (allowing mechanized operations by better equipped contractors): Because of local political pressures, and the preference to spread risk by having more contractors, BWDB Field Offices continue to rely on the existing contractors.</p> <p><b>Bids below 10% of official estimate:</b> A 2017 GoB circular disqualifies bids below 10% of the official estimate.</p>
1.5	Fact finding visit on implementation of LCS work	<p>A meeting chaired by the Senior Secretary, MoWR was held on 13 Oct 2016 to form a Committee led by CWM to review the arrangements provided in the PWMR 2014 for Labour Contracting Societies (LCSs), to identify practical bottlenecks in implementation, and to make clear recommendations for implementation. From 12-21 Nov DP3/TA staff - and CWM from 20-22 Nov - conducted site visits to assess LCSs. On 15 Dec 2016, PCD issued an office order setting out ToR and</p>

		<p>timeframe for review of PWMR 2014. On 2 Jan 2017, a meeting was held to discuss arrangements for national seminar/workshop concerning PWMR 2014. Minutes of the meeting were issued on 10 Jan 2017 stating the following decisions:</p> <ol style="list-style-type: none"> <li>1 PCD will issue a letter to Field XENs regarding LCS advances and other related issues, referring to PWMR Clause 44 Section 5.</li> <li>2 Committee members will discuss with XEN Patuakhali and Khulna regarding their concerns about LCS problems.</li> <li>3 Before issuing work orders, TA/BWDB Field Offices will discuss about the pre-work arrangements and advise WMG/LCS members about their respective roles and responsibilities;</li> <li>4 LCS contracts should be allocated based on demand and availability of labour/WMG members.</li> <li>5 Before LCS formation, more discussions should be held with WMGs/WMAs to explain respective roles and responsibilities.</li> <li>6 Field XENs are to forward observations and comments to PCD within 15 days.</li> </ol> <p>A follow-up meeting on 8<sup>th</sup> November 2017 agreed that: (a) <i>ad hoc</i> committees will be eligible to organize LCSs for new polders where formal WMGs remain unregistered; (b) LCSs will be paid in three instalments, the first of which will be payable (in place of an advance) after a period of 7 to 10 days from mobilisation of the LCS when the BWDB Field Office can establish that the LCS is active.</p>
1.6	Mouza maps indicating additional land requirements submitted to XENs	<p>From 30 Dec 16, BWDB SDEs &amp; SAEs, with TA zonal staff and CDFs, and WMOs jointly identified and marked preliminary layouts/alignments on <i>mouza</i> maps for a potential seventeen works that involve land acquisition and submit draft acquisition maps to the BWDB Field XEN. However, because of the delay with the RDPP the plan was not finalized; since the original DPP had no provision for land acquisition, the BWDB field offices were reluctant to create an expectation of payments for land acquisition that might create social problems amongst land owners.</p> <p>Note that the recent revision of the Land Acquisition Act 2017 (a revision of the Acquisition and Requisition of Immovable Property Ordinance 1982) has increased the rates for land acquisition which will impact the amount of land acquisition able to be funded through BGP. The issue of land acquisition was discussed at the PEC meeting on 2 Nov 2017 (see also recommendation 1.3 above) who suggested that an increased GoB fund allocation should be provided.</p>
1.7	Release of funds by EKN set in motion and tracked	<p><b>Funds for Jan-Jun 2017</b></p> <p>16 Oct 2016: DAE submits budget forecasts to EKN  x Nov 2016: BWDB submits budget forecasts to EKN  x Nov: EKN submit budget forecasts to the Hague  23 Nov: PCD submits bank statement to EKN  8 Dec: Funds received in BWDB account in Agrani Bank  15 Dec: DAE identified difficulty with EKN fund transfer  3 Jan 2017: TA provide Tk 34 lakh loan to DAE  25 Jan: GoN funds received by DAE</p>

		<p><b>Funds for Jan-Jun 2018</b></p> <p>29 Oct 2017: PCD submits forecast requirement to EKN</p> <p>9 Nov: PD DAE submits first forecast of requirement to EKN</p> <p>Under the present DAE RDPP - which is effective to end-December 2018 – there is likely to be one further fund request from DAE to EKN, in March 2018. Unless the rate of disbursement increases before June 2018, there are likely to be significant amounts of unused funds remaining in EKN’s allocation for DAE.</p>
2.1	Phasing out plan for existing polders completed for review	<p>ARM 2016 recommended withdrawal at end-December 2017 for existing 12 polders. Written instruction issued by PCD (25 Jul 2017) to withdraw from 10 polders by end-June 2018.</p> <p>During EKN/BWDB/DAE/TA coordination meeting on 17 Aug 2017, CWM/PD DAE advise against withdrawal from 12 polders by end-2017, and recommended that OCWM/TA draft a briefing note defining functions of backstopping support to be provided by OCWM/DAE to WMGs after withdrawal of full-time TA polder teams, and to draft an action plan – which takes account of the need to focus on forming and developing WMOs in the new polders - to extend the part-time involvement of CDFs/FTs in ten polders.</p> <p>A report (28 Aug 2017) by the Community Mobilisation Specialist (CMS) questioned the readiness of WMGs and support agencies to meet withdrawal at end-June 2018.</p> <p>A joint meeting of OCWM/PCD/TA (see Position Paper Section 3.5) has agreed the program for a phased withdrawal of TA resources, including measures to strengthen WMO functionality in the period up to mid-2018, and to enhance on-the-ground capacity up to project completion. The key limitation is OCWM’s lack of structural and/or project-based resources to enhance activities in either old or new polders. Because of OCWM’s resource limitations, practical support to WMGs is restricted to basic registration services and very limited organizational activities. TA resources will be used (i) to enhance capacity in the polders (eg WMOs, catchment plans, O&amp;M agreements, resource farmers) up to mid-2018; and (ii) to enhance OCWM capacity in old polders up to 2020 (10 CDFs). A later phase-out of the TA teams from old polders is not desirable as it reduces the resources, time and attention that can be given to new polders.</p>
2.2 (4.2)	New version of Unified Approach prepared for review	<p>The Field Manual of the Blue Gold Approach to Participatory Water Management was reviewed and approved by the stakeholders at a meeting chaired by ADG Planning on 19 Jan 2017, followed by an endorsement by the ARM on 10 Feb. A round of orientation trainings were completed within the first quarter of 2017, and printed versions of the Field Manual (in both Bangla and English) were distributed to all field staff in May 2017, and to BWDB and DAE staff.</p> <p>The new manual is complemented by new job descriptions and by the formation of polder teams (see also recommendation 4.3 below).</p>
2.3	Dash board tracking MIS system operational	The development of MIS/Dashboard has involved identifying data requirements, the use of ODK software to allow direct

		<p>entry by CDFs, and the design of web-based reporting systems.</p> <p>Phase 1 of the dashboard development (WMG registration, WMG tracker and participatory monitoring) was presented to the officials of DP3 and CWM under the chair of PCD on 25 Oct 2017 – minutes of the meeting are available. This will now be followed by fine tuning the data analysis to meet BWDB requirements, operationalising the software, and capacity building of BWDB staff.</p> <p>Phase II will include baseline survey data, FFS/MFS survey data and impact survey results. The program for completion of this phase is end-Dec.</p>
2.4	Agreement and clarity on arrangement for polder apex body	<p>CWM’s letter of 8 Nov 2016 to PCD requested officials and staff involved in WMO formation and development to take necessary steps to form one WMA in each polder. In Dec16/Jan17, DCEO Hafiz was successful in obtaining agreement in four old polders in Khulna (P22, 30, 31-part and 26). P29 in Khulna and P2 in Satkhira were both considered to have too large a population to be represented by a single polder-level WMA, so two polder-level WMAs were formed in P29 and four in P2. On 5/6 Feb 2017, DCEO Hafiz established that the multiple WMAs which had been formed in the eight Patuakhali polders, were reluctant to concede their role and responsibility. Follow-up meetings between CWM/CEO and the WMAs in August 2017 were again unsuccessful. However, a meeting in Patuakhali held by OCWM with WMA representatives on 15 Oct 2017 agreed that the existing WMAs would remain, and <u>one</u> polder level O&amp;M agreement would be signed between the respective BWDB Executive Engineer, and two representatives from each of the existing WMAs.</p>
2.5	Strengthen and give due attention and resources to polder water management	<p>Re-excavation of primary canals and some major secondary canals in first and second batch polders has created scope for internal polder water management (IPWM) and community-led agricultural water management (CAWM) initiatives. The Blue Gold Program has strengthened and upscaled IPWM and O&amp;M practices in 2017 through the following mechanisms:</p> <ol style="list-style-type: none"> <li><b>Operational sluice catchment water management planning workshops</b> with support of BWDB, DAE and LGIs have been piloted tested successfully. ToTs for PCs and orientations for CDFs have started to make sure this new planning approach can be introduced in at least one sluice catchment per polder. WMAs are expected to roll out the approach to other sluice catchments in the same polder with support of PCs, CDFs and BWDB/DAE field staff.</li> <li><b>Existing O&amp;M guidelines have been revised</b> to include operational sluice catchment planning, an O&amp;M framework and agreement. O&amp;M training modules have been developed for use by BGP trainers, and WMA/WMG members and pilot tested successfully.</li> <li><b>About 60 DAE-led CAWM FFS</b> have been conducted to provide intensive technical and agronomic guidance on crop synchronisation, improved varieties management, new crop technologies and on farm and catchment water management. A special CAWM FFS curriculum has officially been published by DAE and ToTs for SAAOs have started.</li> <li><b>CAWM Aman and Rabi crop and water management planning workshops</b> for WMG members have been organised with support of DAE/BWDB (OCWM) and the upcoming ones will be fully led by DAE. During the workshops, a</li> </ol>



		<p>CAWM challenge between WMGs was launched.</p> <p><b>5. Horizontal learning visits, Farmer Field Days and crop cutting festivals on CAWM</b> were attended by more than 760 participants from 125 WMGs in 2016/2017. Since June 2017, DAE is actively supporting another 20 enthusiastic WMGs to adopt CAWM. Recent adopters are already further promoting CAWM to other WMGs through horizontal learning.</p> <p><b>6. Collective action among WMA/WMGs to create financial sustainability of WRM infrastructure</b> is actively promoted through the establishment linkages with UPs, BWDB and DAE group support. UP orientation sessions have addressed IPWM and number of WMGs have managed to get co-funding for small-scale infra through their UP.</p> <p><b>7. Under the Innovation Fund, the feasibility study for “Roads for Improved Water Management and Flood Protection”</b> has been conducted by MetaMeta. Findings are promising and we are actively looking for ways to include the approach as a further means to strengthening IPWM.</p>
2.6	Plan for WMO Strengthening Infrastructure and Equipment completed	A draft concept note has been prepared based on a review of the experience of earlier programmes, exploratory discussions with selected WMG Executive Committees, and a preliminary discussion with CWM. The review suggests that the funds previously allocated for WMO offices should be used to fund small-scale water management infrastructure for about 150 WMGs keen to start CAWM practices (crop synchronisation, collective action, etc).
2.7	Remuneration arrangement for field staff adjusted	Based on an evaluation of the performance of TA polder staff by the zonal coordinators, the polder staff are now assigned to one of three tiers (Grades A, B or C). The salary payments have been backdated to 1 July 2016, and the polder lead or polder co-coordinators (“coco’s”) were provided with an additional allowance of Tk 1,000 per month in recognition of their additional responsibilities. A number of poor-performing polder staff were terminated. The new designation of all polder-level staff is as “Community Development Facilitator”, with a ToR issued on 16 Apr 2017.
2.8	Integrate the two extension program ‘streams’ under BGP	<p>150 DAE Farmer Trainers (DAE-FTs) have been developed under Blue Gold by DAE trainers using DAE facilities at Daulatpur and Rahmatpur Horticultural Training Centres. The DAE-FTs are trained as FFS facilitators, with skills in improved production technology packages for rice, mungbean, sesame, sunflower and watermelon – with familiarisation with simple market economics. 78 DAE-FTs were trained and coached in 2015/16, and training in 2016/17 for a further 72 DAE-FTs was provided in three batches in March/April; April/May; and May/June 2017. Based on the curricula used for DAE-FTs and Departmental Trainers (SAAOs), DAE has prepared a manual/guide which provides an impressive resource.</p> <p>Teams of TA-financed Farmer Trainers (TA-FTs) in the new polders for fisheries and livestock FFSs have been developed with DoF and DLS (to replace the previous FOs, now CDFs). The candidates for training were selected with DoF/DLS advice (Nov-Dec 2016); the first round of training on fisheries, livestock, nutrition and market orientation was provided for 76 TA-FTs – 43 Khulna, 33 Patuakhali - in FFS homestead activities (Jan-Mar 2017); the second round training for 70 TA-FTs (reduction by six from first round training) was provided on poultry, homestead gardens with market orientation (Jul-Nov 2017); twice monthly coaching and mentoring sessions during a season of “apprenticeship” by the TA-FTs to CDFs - former FOs (Apr 2017 – Mar 2018); TA-FTs entrusted directly with FFS homestead training in new polders from</p>

		<p>Cycle 11 (from April 2018) and provided with networking and continued backstopping support when they organize fish/livestock FFS (Apr 2018-March 2020); maintaining working relationships with these FTs beyond Blue Gold period.</p> <p>With DAE agreement, it is expected that DAE FTs will be provided with training in fisheries, livestock and nutrition to augment their expertise in field crops. During this training, it is also planned to add in additional TA FT resources to fill in gaps eg in Satkhira Polder 2.</p> <p>Furthermore, community animal health workers (CAHWs) will be developed under the umbrella of DLS in all new polders to coach and mentor livestock and poultry activities.</p> <p>Despite improved DAE/TA cooperation, further integration is still required, including a phased transfer of bedding-in the TA-FTs to DAE/DLS/DOF.</p> <p>The DPP manpower provisions for DAE is sub-critical, with no permanent project staff. To fulfil the target number of quality FFSs, a strengthened team is required of full-time professional staff.</p>
2.9	Pursue partnership building with closely related programs, such as National Technology Project (NATP)	<p>Through NATP, a large number of new technologies are introduced that will be of relevance to the BGP areas. There are two further projects with which links could be usefully developed: (a) ADB/DAE Second Crop Diversification Project, with special programs on value chain component; and (b) FAO's Village Based Organizations (VBOs) in Mymensingh district where Community Revolving Fund (CRF) has been institutionalized through the VBOs. A separate briefing paper has been prepared, which suggests inter alia the following mechanisms for building closer relations:</p> <ol style="list-style-type: none"> <li>1. Both NATP-II and The Second Crop Diversification Project are specifically referred to in the PWM Field Manual (May 2017), for consultation in the process by the polder teams. NATP-trained community extension agents for livestock (CEAL) and local extension agent for fisheries (LEAF) are located within Blue Gold polders, and a number have been recruited as Blue Gold Farmer Trainers.</li> <li>2. It is now a standard Blue Gold procedure to identify any other projects and programs which have or had an operational overlap with a polder as part of the 'Activation at Entry' and 'Planning for Action' stages. In these phases, polder teams explore lessons learned, revitalise relevant groups and establish contact for opportunities to cooperate if still ongoing.</li> <li>3. There are continuously new contacts being made as polder teams identify projects and programs - recent examples are the Making Markets Work for Women of ActionAid in a polder in Patuakhali and the specific cooperation with the CIMMYT Barisal Hub on mechanization, and the MAX WASH-II Program which has just started its field work in Blue Gold polders.</li> <li>4. In addition, Blue Gold staff identify or get invited, and participate in workshops and platforms of other projects which are of relevance to our activities. Our staff share knowledge and experience, and learn and disseminate knowledge and information to other Blue Gold staff and WMGs.</li> </ol>

3.1	Shelve research and (institutional) studies and implement DRR, gender and environmental mitigation activities as part of the on-going unified approach.	<p>During EKN/BWDB/DAE coordination meetings and discussions about TA budget revisions, the studies budget has been restricted to the following subjects (followed by a brief note on the current status):</p> <ul style="list-style-type: none"> <li>- <b>Updating the BWDB Gender Action Plan (GAP)</b> – findings and suggestions were presented in workshop held in BWDB on 13<sup>th</sup> September 2017, with feedback from the workshop to be incorporated into a draft GAP expected to be finalized in early-2018.</li> <li>- <b>Evaluation of CAWM schemes</b> – contract with outsourced firm was terminated in August 2017 <i>inter alia</i> because inception report and questionnaire were late and sub-standard. The intention is to continue the study led by an independent M&amp;E specialist, drawing on assistance from Blue Gold with data collection and logistical support.</li> <li>- <b>Impact of LCS Work on Poverty Reduction and Women’s Empowerment</b> – contract with outsourced firm was discontinued in July 2017, primarily because the inception report and research instruments (especially the survey questionnaire) were weak, and demonstrated insufficient understanding of the LCS concept. Now propose to continue the study focuses more on qualitative data collection and with BGP TA playing a coordinating role with data collection and logistical support. Discussions are ongoing with a potential candidate to lead the simplified study – Dr Sharmind Neelormi, a lecturer in economics who undertook a recent study for IFAD into the performance of LGED LCSs.</li> <li>- <b>Gender-focused support to DAE</b> - Although the FFS approaches by DAE and Blue Gold TA are both targeting (also) women farmers, the increasing role of women in agriculture (the so-called “feminization of agriculture”) and their requirements for extension information has been identified as a priority activity. A first step has been to identify the policy or strategy of MoA/DAE. First ideas include the development of a gender training trajectory for SAAOs working in the Blue Gold area. Gender flip charts - to be developed by BGP - are foreseen as possible tools to be used by DAE SAAOs in their FFS and other extension work.</li> </ul>
3.2	Calls on dredging and ICT under Innovation Fund issued	<p>Improved Information for Agriculture: A call for proposals was launched on 10 Jun. 29 concept notes were received on or before 10 Aug, of which 27 met the criteria set out in the evaluation guideline. The evaluation committee came to a consensus on 27 Sep and recommended the shortlisting of 10 concept notes which are diverse in that: (a) the data they aim to generate/communicate (general crop data, livestock services, water quality data for aquaculture, weather data); (b) the methodologies proposed (mobile SMS services, TV broadcasts, horizontal learning through extension agents, etc.) and; (c) the type of organisations implementing (private sector, NGOs, governmental bodies). Evaluation of concept notes was finalized and notifications issued to all 10 shortlisted organizations on 5 Oct, for submission before 30 Nov.</p> <p>Dredging: Scope of work of was not able to be clearly defined, and has therefore not progressed.</p>

3.2	Announcements on Innovation Funds among Dutch business sector made	<p>Since the roll-out of the Innovation Fund in 2015, there has been a relatively low-level of participation by Netherlands-based enterprises. As the Innovation Fund is aimed at giving practical implementation to the 'Aid to Trade' policy of EKN in Bangladesh, a larger involvement of Dutch enterprises within the scope of the Innovation Fund is desirable in particular for the opportunities that this provides for collaboration between the Netherlands and Bangladesh. Two initiatives have been taken:</p> <p>One involved announcements about BGIF on 29 Nov 2016 published via EKN, NWP, TNO, WUR, RVO, Nijenrode University, Dutch Bangla Chamber of Commerce &amp; Industry, BiD Network, Crosswiseworks, Global Tenders, MKB Service Desk.</p> <p>The second was a marketing campaign launched with DNG 'Ondernemen in Bangladesh', using email, social media (LinkedIn, Twitter), newsletters (e.g. MKB Service Desk, De Zaak, H20, NWP) and a website (www.oibd.nl) to target SMEs and entrepreneurs from the Netherlands. The campaign enabled Dutch SME to follow on online mini-course on entrepreneurship in Bangladesh and afterwards make an application for a feasibility study under BGIF. The marketing campaign was launched on 1 June 2017 and ran to mid-October. It resulted in 17 requests (as of 24 Oct) for feasibility studies by Dutch organisations.</p> <p>Further promotional activities are under development, to help Dutch sector SMEs to get a better understanding of the local context and possible interventions – these include videos of typical IF projects and a booklet summarising the achievements of ten IF projects.</p>
3.3	Pursue the vocational training component focused on training young persons from landless families – selected through WMOs – in skills that support the agricultural development in the BGP area	<p>14 Aug 2016: pre-bid meeting attended by six firms</p> <p>4 Sep 2016: five firms submit bids (5 firms)</p> <p>21 Nov: pre-contract negotiations finalised with service provider, Concern Universal</p> <p>1 Feb 2017: Because of budget reductions and the need to refocus BBGP funds, EKN advised against continuation of vocational training, and recommended discontinuation of negotiations with the preferred service provider</p>
4.1	New staffing plan for TA first version ready and shared	<p>In Oct 2016, EKN requested TA to take account of ARM/EKN comments and prepare a staffing revision. TA submitted a report on 4 Nov setting out options staffing revision and reductions in TA contracted services, etc. With EKN agreement in principle, staff reductions were implemented in Jan/Feb 2017.</p> <p>The reductions have resulted in a reduction in LT foreign staff from five (GCJ, HB, VP, BS, NvdB) to one (GCJ); a number of national staff have been terminated; CDFs were evaluated and a number of poor-performing CDFs were terminated; Dhaka-based professional staff are now spending 50% time in field; and Gulshan-based staff in infrastructure, training, gender have been relocated to Motijheel.</p> <p>High-performing junior field staff have also been promoted – for example, one CDF has been promoted to the position of Junior Socio-Economist, and opportunities for further promotions are being sought.</p>

4.2 (2.2)	Unified Approach methodology ready for review by ARM	See status of recommendation 2.2
4.3	Adjust the positions and job descriptions of the polder staff to work in a unified manner with a balance between generalists and subject matter specialists.	<p>The closer integration of polder-level staff was given renewed emphasis over the latter part of 2016 through training and coaching. To coincide with the distribution of the first version of the PWM Field Manual in February 2017 (at which stage it was only available in an English language version), a new job description was issued (in both Bangla and English) on 8 Feb 2017 for all CDFs, polder coordinators and co-coordinators. This signalled the formalisation of integrated polder TA teams with a shared responsibility to work on all aspects of BGP implementation. Staff composition per polder has been rebalanced to provide the appropriate skill mix and staff coverage.</p> <p>With the structure, strategy and instructions for ‘water management for development’ in place, the decentralised initiative and integrated demand-driven work is gaining momentum: in addition to CAWM, cropping intensification initiative (CII), community-led fisheries (CLF), annual cropping systems are being introduced under the joint banner of BWDB and DAE. Polder staff encourage WMGs to assess their performance in terms of functionality: agriculture and economic development, water management, and WMG partnerships. Polder teams are assisted in rapid assessment of functionality and in demand-driven identification of priorities.</p>
4.4	Quarterly monitoring bulletin issued	Blue Gold Trend Watcher is a seasonal project bulletin aiming to summarise and share updates on project achievements. In 2017, two issues have been published – March 2017 (based on information available from December 2016) and June 2017 (finalized and issued in November 2017). And a third is in the final stages of review by PCD and PD DAE (in November 2017) to include results from the participatory monitoring and dashboard, and some early results from the baseline survey Phase II.
5.1	All project extension (FFS) activities to come under the control of DAE/DoF/DLS by Mar 2018 with TA role changing to advisory and capacity building.	[Refer also to status of recommendation 2.8]. Seventy TA Farmer Trainers (TA-FTs) based in the new polders have been developed with DoF and DLS to take over fisheries and livestock FFSs (thus replacing the previous TA-funded FOs, now CDFs). The incorporation of these assets under DoF/DLS (as per the example of DAE’s FTs) needs now to be addressed.
5.2	OWCM’s role and responsibility is to support WMOs and to carry forward the support to polder level water management. This should be supported by the placement of XOs from 2017, and handing transfer of TA COs from 2018.	[Refer also to status of recommendation 2.1]. Autonomous WMOs are being coached to concentrate on core functional skills in agriculture and economic development, water management, and WMG partnerships. Ten CDFs were identified by OCWM in May 2017, recruited using TA funds, trained in participatory water management (alongside other new TA CDFs in May 2017) and placed under OCWM management to ensure a stronger OCWM field presence in the phasing-out polders up to BGP completion. Supervision of these OCWM CDFs is required, preferably by OCWM Assistant Extension Officers (AEOs) based in Patuakhali and Khulna. [Note: Two AEOs were previously posted to Blue Gold, but left within weeks to take up full-time government positions].

5.3	Support to a self-organizing network of WMOs is built-in to the field operation from the beginning – with WMOs taking control of their own establishment and the organization of activities to the largest extent possible using a range of horizontal expansion methods.	<p>WMGs have been pro-actively demonstrating their good practices to other WMGs and encouraging their replication during horizontal learning events. A booklet entitled “Compilation of Fact Sheets” (in Bangla) presents 38 examples of good practices. This aims to introduce WMGs (particularly in new polders) to successful achievements by WMG communities – many through collective actions. After exchange visits led by the host WMG, follow-ups by the polder teams assist WMGs to tailor the experience to their own situation. The approach was tested and rolled out to about 760 participants from 125 WMGs in 2016/2017 and internally evaluated for the Community-led Agricultural Water Management (CAWM) activity. Presently a horizontal learning round for all good practices is on-going.</p> <p>Introductions to BGP for communities in the new polders are provided through open air dramas: 12 in the first phase, with a further 12 dramas so that each of the new unions are covered.</p>
5.4	Continued partnership building for WMOs is at the heart of the field operations – first and foremost with the LGIs but also with other programs and parties operating in the polders	<p>To date, BWDB, DAE and BGP TA have held orientation meetings for 49 Union Parishads throughout the Blue Gold polders – providing an introduction to around 1,000 union level officers. From July 2017 to date, orientation sessions have been held for representatives of seven Upazila Parishads. There is both anecdotal and structural evidence of stronger cooperation between WMGs and Union Parishads - see for example to case studies 21, 25, 30 and 37 contained in the 38 examples of good practices in the booklet “Compilation of Fact Sheets”.</p> <p>BGP experience suggests that LGIs could play a more substantial role in the establishment and performance of WMOs.</p>
5.5	Several critical bottlenecks exist within the operations of the BWDB are to be addressed through fact-finding and studies from end-2017.	<p>Areas for study:</p> <ol style="list-style-type: none"> <li>1 LCS fact-finding report</li> <li>2 Accelerating BWDB survey/design data collection, design, procurement and implementation processes with current under-resourced organization</li> <li>3 Suggestions for revision to PWMR 2014 – including <i>inter alia</i> internal polder water management</li> <li>4 OCWM – role and responsibility and resources</li> <li>5 Workshop to exchange experiences with PWM in Bangladesh (with BWDB, DAE, LGED, IRRI, BRAC etc)</li> <li>6 Pre-emptive action to prevent failure of embankments under threat from erosion</li> </ol>

# **ANNEX B**

## **BLUE GOLD PROGRAM INFORMATION**

### **CONTENTS**

- (I) Tables of polder data
- (II) Maps of polders

## Blue Gold Polders

18-Oct-17

Sl. No.	Polder	Previous History	District	BWDB Division	Upazila	Area (hectare)	No. of households of local stakeholders	People per Polder	No. of WMAs	No. of WMGs	HHS per WMG	HHS per WMA		
1	2	3	4		5	6	7		8	9				
<b>Khulna</b>														
Jun-18	1	22	IPSWAM	Khulna	Khulna O&M-2	Paikgachha	1,630	2,133	9,001	1	12	178	2,133	
Jun-18	2	26	none	Khulna	Khulna O&M-1	Dumuria	2,696	3,962	16,720	1	15	264	3,962	
Jun-18	3	29	IPSWAM	Khulna	Khulna O&M-1	Dumuria, Batiaghata	8,218	12,348	52,109	2	56	221	6,174	
Jun-18	4	30	IPSWAM	Khulna	Khulna O&M-2	Batiaghata	6,396	8,233	34,743	1	40	206	8,233	
Jun-19	5	31 Part	none	Khulna	Khulna O&M-2	Batiaghata	4,848	4,196	17,707	1	12	350	4,196	
Jun-20	6	25	KJDRP	Khulna	Khulna O&M-1	Dumuria, Fultala	17,400	30,197	127,431	2	61	495	15,099	
Jun-20	7	27/1	KJDRP	Khulna	Khulna O&M-1	Dumuria	3,765	4,071	17,180	1	15	271	4,071	
Jun-20	8	27/2	KJDRP	Khulna	Khulna O&M-1	Dumuria	495	535	2,258	1	6	89	535	
Jun-20	9	28/1	KJDRP	Khulna	Khulna O&M-1	Dumuria	5,600	5,012	21,151	1	12	418	5,012	
Jun-20	10	28/2	KJDRP	Khulna	Khulna O&M-1	Dumuria	2,590	7,628	32,190	1	12	636	7,628	
Jun-20	11	34/2 part	none	Khulna	Khulna O&M-2	Batiaghata	4,900	11,227	47,378	1	20	561	11,227	
						<b>Sub-Total: Khulna</b>	<b>58,538</b>	<b>89,542</b>	<b>377,867</b>	<b>13</b>	<b>261</b>	<b>343</b>	<b>6,888</b>	
<b>Patuakhali</b>														
Jun-18	12	43/1A	IPSWAM	Barguna	Barguna O&M	Amtali	2,675	5,129	22,619	2	14	366	2,565	
Jun-19	13	43/2A	IPSWAM	Patuakhali	Patuakhali O&M	Patuakhali Sadar	5,182	8,434	37,194	2	22	383	4,217	
Jun-19	14	43/2B	IPSWAM	Barguna & Patuakhali	Patuakhali O&M	Galachipa, Patuakhali Sadar, Amtali	5,460	8,885	39,183	3	28	317	2,962	
Jun-18	15	43/2D	IPSWAM	Patuakhali	Patuakhali O&M	Patuakhali Sadar	6,500	10,622	46,843	5	29	366	2,124	
Jun-18	16	43/2E	IPSWAM	Patuakhali	Patuakhali O&M	Patuakhali Sadar	1,650	2,317	10,218	2	12	193	1,159	
Jun-18	17	43/2F	IPSWAM	Barguna	Barguna O&M	Amtali	4,453	6,639	29,278	3	27	246	2,213	
Jun-19	18	55/2A	WMIP	Patuakhali	Patuakhali O&M	Patuakhali Sadar, Bauphal, Dashmina, Galachipa	7,166	13,966	61,590	1	14	998	13,966	
Jun-19	19	55/2C	none	Patuakhali	Patuakhali O&M	Dashmina, Galachipa	6,275	10,173	44,863	2	16	636	5,087	
Jun-20	20	47/3	none	Patuakhali	Kalapara	Kalapara	2,025	3,637	16,039	1	8	455	3,637	
Jun-20	21	47/4	none	Patuakhali	Kalapara	Kalapara	6,600	11,853	52,272	1	18	659	11,853	
						<b>Sub-Total: Patuakhali</b>	<b>47,986</b>	<b>81,655</b>	<b>360,099</b>	<b>22</b>	<b>188</b>	<b>434</b>	<b>3,712</b>	
<b>Satkhira</b>														
Jun-19	22	2 and 2 ext*	2	none	Satkhira	Satkhira O&M-1	Satkhira Sadar and Assasuni	11,230	25,077	105,825	3	58	432	8,359
			2 Extension	none	Satkhira	Satkhira O&M-1	satkhira Sadar	1,370	3,052	12,879	1	6	509	3,052
						<b>Sub-Total: Satkhira</b>	<b>12,600</b>	<b>28,129</b>	<b>118,704</b>	<b>4</b>	<b>64</b>	<b>440</b>	<b>7,032</b>	
<b>Total</b>						<b>119,124</b>	<b>199,326</b>	<b>856,670</b>	<b>39</b>	<b>513</b>	<b>389</b>	<b>5,111</b>		

**Note:** 1. The information regarding the nr. of WMGs and WMAs given here has been checked/corrected by the Zonal Teams; however, the figures are still tentative.  
2. Average household size in Khulna & Satkhira is 4.22 and in Patuakhali is 4.41 (based on Population Census 2011).



**Blue Gold Program  
Administrative Areas**

<b>Polder</b>	<b>District</b>	<b>Upazila</b>	<b>Unions</b>
P22	Khulna	Paikgacha	Deluti
P26	Khulna	Dumuria	Sobhana, Sahas
P29	Khulna	Dumuria, Batiaghata	Dumuria( Dumuria, Sahas, Bhandar Para, Sarappur); Batiaghata (Surkhali)
P30	Khulna	Batiaghata	Batiaghata, Gangarampur, Surkhali
P31-part	Khulna	Batiaghata	Surkhali
P34/2	Khulna	Batiaghata	Amirpur, Bhanderkote, Baliadanga
P25	Khulna	Dumuria, Fultala and Dighlia	Dumuria (Kharmia, Rudaghara, Dhamalia, Raghunathpur, Rangpur), Fultala (Jamira, Damodar) and Dighlia (????)
P27/1	Khulna	Dumuria	Raghunathpur, Rangpur, Gutudia
P27/2	Khulna	Dumuria	Gutudia
P28/1	Khulna	Dumuria, Batiaghata	Dumuria (Gutudia), Batiaghata (Jalma)
P28/2	Khulna	Dumuria	Jalma
P2 and P2 Extension	Satkhira	Sathkhira Sadar, Assasuni	Sathkhira Sadar (Balli, Jhandandga, Labsa, Satkhira Paurashave, Brahmarajpur, Dhulihar, Fingri) and Assasuni (Kulla, Budhhata)
P43/2A	Patuakhali	Patuakhali Sadar	Chhota Bighai, Bara Bighai
P43/2D	Patuakhali	Patuakhali Sadar	Marichbunia, Madarbunia, Kalikapur, Jainkati, Auliapur
P43/2E	Patuakhali	Patuakhali Sadar	Jainkati
P55/2A	Patuakhali	Patuakhali Sadar, Bauphal, Dashmina & Galachipa	Patuakhali Sadar (Kamalapur), Bauphal (Adabaria, Noamala); Dashmina (Betagi Sankipura); Galachipa (Bakulbaria)
P55/2C	Patuakhali	Dashmina & Galachipa	Dashmina (Alipur, Rangopaldi, Betagi Sankipura); Galachipa (Bakulbaria, Kalyankalas, Chiknikandi)
P47/3	Patuakhali	Kalapara	Mithaganj
P47/4	Patuakhali	Kalapara	Mithaganj, Baliatali, Dalbuganj, Dhulasar
43/2B	Patuakhali & Barguna	Galachipa, Patuakhali Sadar & Amtali	Patuakhali Sadar (Auliapur); Amtali (Atharagashia); Galachipa (Amkhola)
43/1A	Barguna	Amtali	Kukua, Atharagashia
P43/2F	Barguna	Amtali	Gulisakhali
<b>22 polders</b>	<b>4 districts</b>	<b>13 Upazilas</b>	<b>55 Unions</b>

### Blue Gold Program - Statistics

	Area (ha)	No HHs	Population	No WMAs	No WMGs
Average polder	5,415	9,060	38,959	2	23
Average WMA	3,054	5,111	21,977		13
Average WMG	232	389	1,671		

	Area (hectare)	No. of households of	No. of WMAs	No. of WMGs	HHs per WMG	HHs per WMA
old - IPSWAM	42,164	64,740	21	240	270	3,083
old - no history	20,144	36,287	6	91	399	6,048
new	43,375	74,160	9	152	488	8,240
new old	13,441	24,139	3	30	805	8,046
all	119,124	199,326	39	513	389	5,111

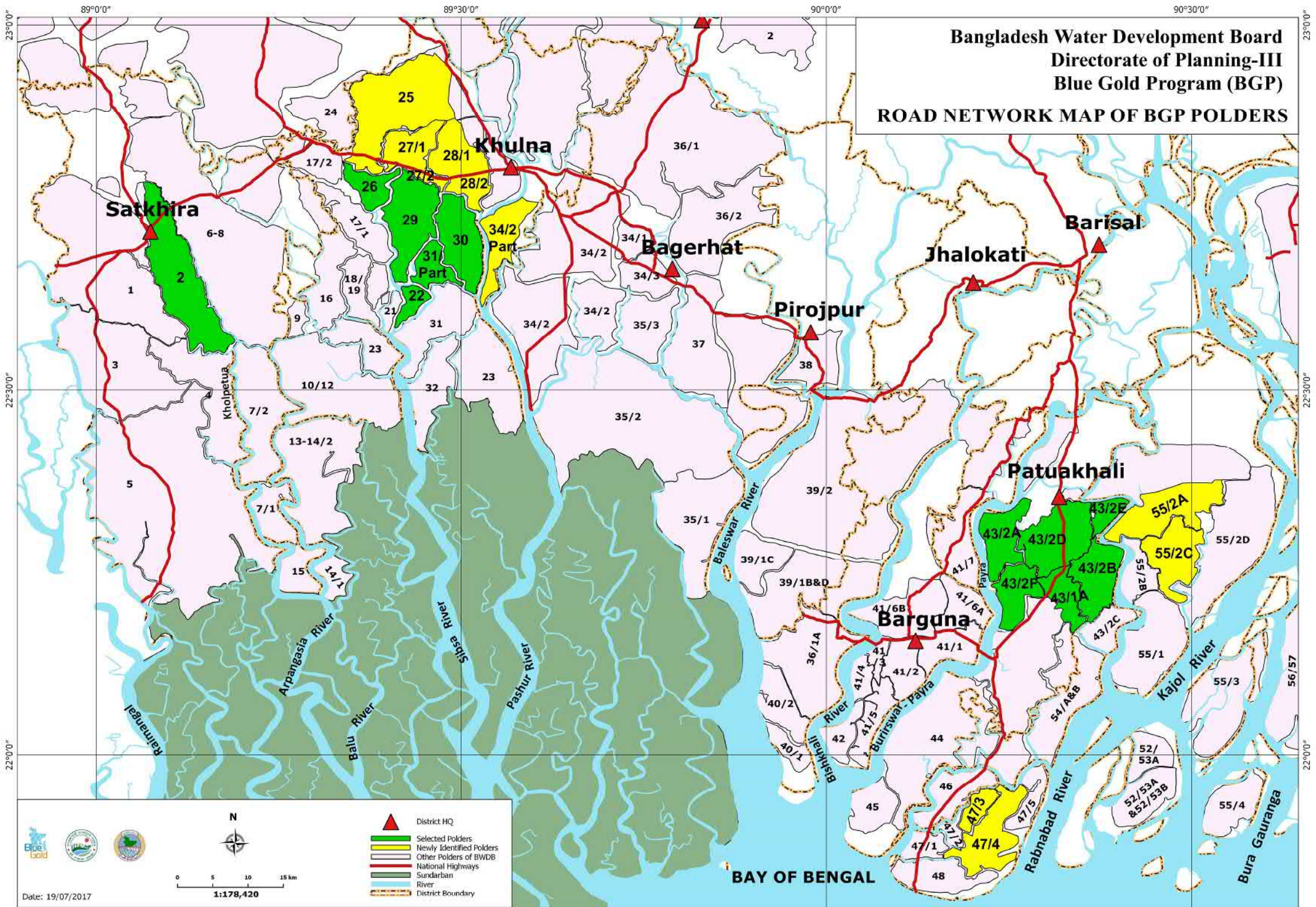
	Av. Area (ha)	Av. nr HHs
old - IPSWAM	9	4,685
old - no history	3	6,715
new	8	5,422
new old	2	6,721
all	22	5,415

K3, P6  
K2, S1  
K6, P2  
P2

### Definitions

Khulna (P22, P29, P30); Patuakhali (P43/1A, 43/2A, 43/2B, 43/2D, 43/2E, 43/2F)  
Khulna (P26, P31 part); Satkhira (P2)  
Khulna (P25, P27/1, P27/2, P28/1, P28/2, P34/2); Patuakhali (P47/3, 47/4)  
Patuakhali (P55/2A, P55/2C)

**Bangladesh Water Development Board  
 Directorate of Planning-III  
 Blue Gold Program (BGP)  
 ROAD NETWORK MAP OF BGP POLDERS**



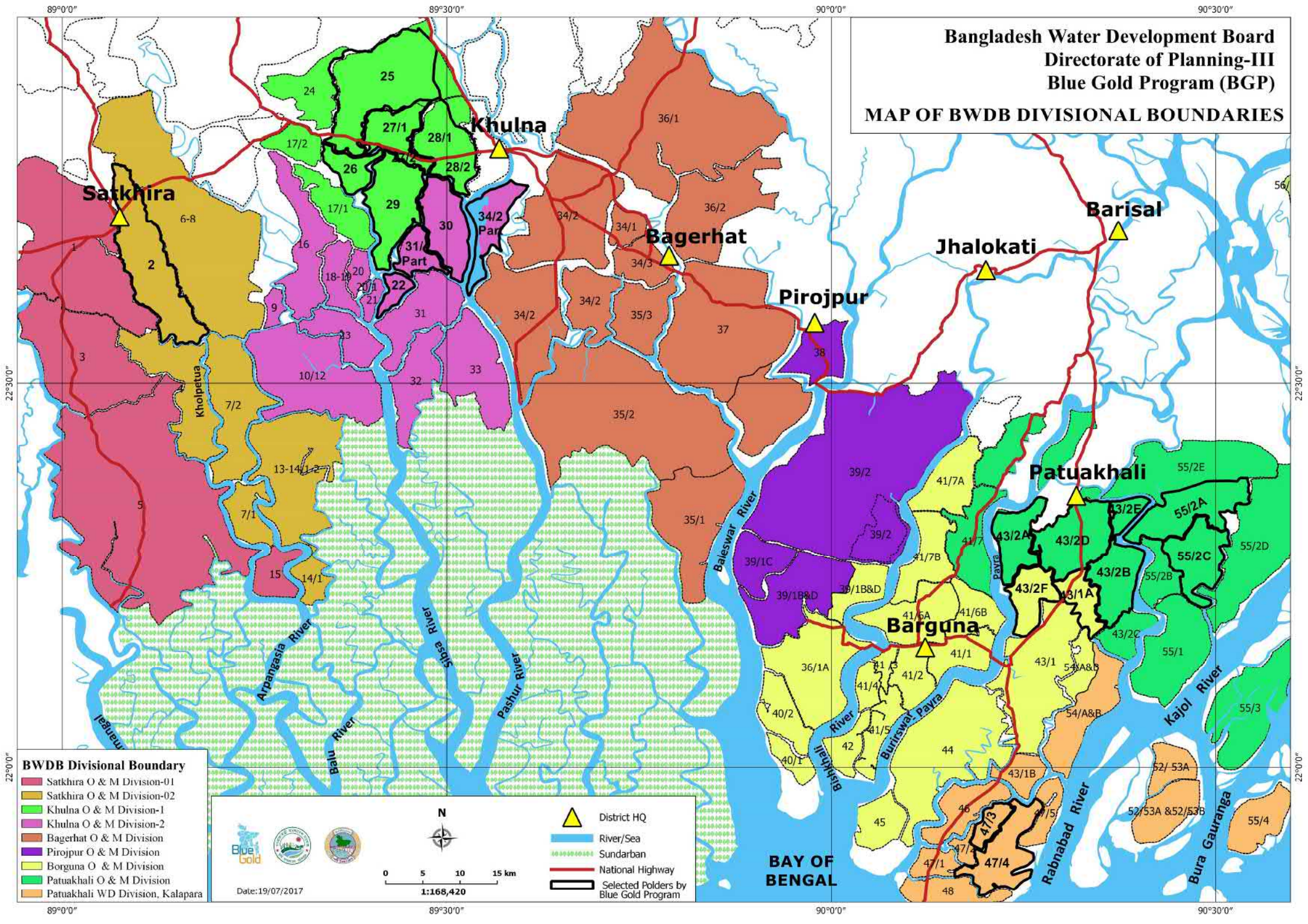
**Legend**

- ▲ District HQ
- Selected Polders
- Newly Identified Polders
- Other Polders of BWDB
- National Highways of BWDB
- National Highways
- Sundarban
- River
- District Boundary

**Scale:** 1:178,420  
 Date: 19/07/2017

**BAY OF BENGAL**

**Bangladesh Water Development Board  
Directorate of Planning-III  
Blue Gold Program (BGP)  
MAP OF BWDB DIVISIONAL BOUNDARIES**



- BWDB Divisional Boundary**
- Satkhira O & M Division-01
  - Satkhira O & M Division-02
  - Khulna O & M Division-1
  - Khulna O & M Division-2
  - Bagerhat O & M Division
  - Pirojpur O & M Division
  - Borguna O & M Division
  - Patuakhali O & M Division
  - Patuakhali WD Division, Kalapara

Date: 19/07/2017

1:168,420

- District HQ
- River/Sea
- Sundarban
- National Highway
- Selected Polders by Blue Gold Program

# **ANNEX C**

## **BUILDING ORGANISATIONS**

### **CONTENTS**

- (I) PCD letter 25 July 2017 on phasing out of old polders

পরিচালকের দপ্তর

পরিকল্পনা-৩

বাংলাদেশ পানি উন্নয়ন বোর্ড

হাসান কোর্ট (৮ম ও ৯ম তলা)

২৩/১, মতিঝিল বা/এ, ঢাকা-১০০০

ফোন : ৫৭১৬৪৩৮০ ফ্যাক্স : ৯৫৬৯৮৪

ই-মেইল : dp3.bwdb@gmail.com



Office of the Director

Planning -III

Bangladesh Water Development Board

Hasan Court (7<sup>th</sup> & 8<sup>th</sup> Floor)

23/1, Motijheel C/A, Dhaka-1000

Phone: 57164380, Fax: 9569843

E- mail: dp3.bwdb@gmail.com

Memo No. DP-III/BG-606/ ৫৩১

Date: 25-07-2017

To

Chief Water management

Office of the Chief Water management


BWDB, Dhaka.

**Sub: Completion of Major repair and reconstruction and preparatory works for O&M Agreement with WMAs.**

Greetings. BGP has completed the 4<sup>th</sup> consecutive years of the activities since March 2013. Recently we have achieved significant progress in Polder level repair and rehabilitation. The recent review of the Polders under BGP indicted that at least 10 numbers of Polder in Khulna and Barisal Zones near to complete the investment for repair and rehabilitation activities. Under BGP we have target to complete 22 numbers of Polder. Therefore after the 4<sup>th</sup> year this is the time to shift from the 10 Polders near to complete to new Polders under BGP. At the joint discussion among the Zonal TA Team, the respective BWDB Divisions, Water management Officials and the Central Planning Team convinced and concluded that, investment under BGP for major repair and reconstruction work in Polder 26, Polder 29 under Khulna O&M Division-1, Polder 22, Polder 30, Polder 31(part) under Khulna O&M Division-2, Polder-2 under Satkhira O&M Division-2, Polder 43/2D & 43/2E under Patuakhali O&M Division, Polder 43/1A & 43/2F under Barguna O&M Division to be completed by 2017-18 fiscal year (by June 2018). After that from July 2018 these 6 polders in Khulna Zone and 4 Polders in Bariasal Zone will enter into O&M phase and O&M Agreement will be signed gradually between respective O&M Divisions of BWDB and the WMAs.

You are requested to take necessary actions in this regard. Thank you for your cooperation

Thanking you,

  
25/07/2017

(Md. Amirul Hossain)

Program Coordinating Director

Blue Gold Program

BWDB, Dhaka.

Copy:

1. Chief Planning, BWDB, Dhaka.
2. Chief Engineer, South-Western Zone, BWDB, Nurnagar, Boira, Khulna.
3. Chief Engineer, Southern Zone, BWDB, BIP, Barisal.
4. Superintending Engineer, O&M Circle, BWDB, Khulna
5. Superintending Engineer, O&M Circle, BWDB, Jessore
6. Superintending Engineer, WD Circle, BWDB, Patuakhali

# ANNEX D

## WATER RESOURCES INFRASTRUCTURE

### CONTENTS

- (I) RDPP – plans for infrastructure rehabilitation and development
- (II) PCD presentation at PEC 2 November 2017
- (III) Status of SDDC
- (IV) Status of SDDC outsourced contracts
- (V) Status of infrastructure rehabilitation progress
- (VI) Erosion damage to BGP polders
- (VII) O&M Agreement (Bangla, draft)

**Blue Gold Program, BWDB**  
**Year Wise RDDP Plan**  
(Updated as of October 2017)


Sl	Work Item	Total RDPP		Done as of June 2017			Plan for 2017-2018			Plan for 2018-2019			Plan for 2019-2020		
		Qty Full	MBDT	Qty Full	Qty Part	MBDT	Qty Full	Qty Part	MBDT	Qty Full	Qty Part	MBDT	Qty Full	Qty Part	MBDT
1.	Embankment R/S, km	360.00	546.72	210.60	48.13	339.93	115.57	10.00	160.00	28.10	0.00	38.91	5.69	0.00	7.88
2.	Rtd. Embankment, km	19.55	209.58	0.20	0.00	1.53	0.15	4.29	1.6	13.48	3.00	144.69	5.75	0.00	61.68
3.	Khal R/E, km	566.97	704.5	106.50	43.90	165.82	153.86	12	180.00	179.72	7.00	210.24	126.88	0.00	148.43
4.	Sluice Repair, nos.	186	459.40	50	16	66.53	66	52	190.00	52	18	150.57	18	0	52.28
5.	Inlet/Outlet Repair, nos.	235	67.40	185	5	7.75	4	0	40.00	8	-00	10.00	8	0	9.65
6.	Sluice Construction, nos.	31	635.30	3	4	84.89	3	22	50.00	18	7	363.65	7	0	136.77
7.	Outlet Construction, nos.	17	130.00	0		0	3	9	26.70	9	5	70.00	5	0	33.30
8.	Inlet Construction, nos.	8	18.00	2	0	5.46	3	0	5.5	2	0	3.92	1	0	3.12
9.	Culvert Construction, nos.	32	124.00	0	0	0	6	0	24.00	13	0	50.00	13	0	50.00
10.	Pumpshed Const., nos.	6	28.00	0	0	0	2	0	8.00	2	0	10.00	2	0	10.00
11.	Low Cost Protection, km	8.00	62.00	0	0	0	2.00	0.00	12.00	3.00	0.00	25.00	3.00	0.00	25.00
12.	Internal Dyke, km	21.00	9.60	0.00		0.00	7.88		3.60	6.50		3.00	6.56		3.00
13.	Closure, km	1.00	2.00	0.00		0.00	0.70		1.40	0.20		0.40	0.10		0.20
14.	Pipe Supply, m	12,800	25.60	0.00		0.00	2,800		5.10	500		10.00	500		10.00
15.	FDR/Breach Closing, LS	LS	60.00	0.00		0.00	LS		10.00	LS		25.00	LS		25.00
	Total, FA, MBDT as per RDPP		3,082.10			671.91			717.90			1,115.38			576.31
	Probable Actual Plan, MBDT		3,082.10			671.91			500.00			650.0			1,260.19

**NOTE** It is most likely that spending an amount of 1,260.19 MBDT during 2019-20 will be almost impossible. A major part of the implementation works during 2019-20 might have to be carried over to 2020-21. In that case BWDB will need to work out some special operation modalities with EKN to complete the work.



**Bangladesh Water Development Board**  
**BLUE GOLD PROGRAM (BGP)**  
 (BWDB Component)

ব্লু-গোল্ড প্রোগ্রাম (বাপাউবো অংশ)  
 উন্নত পানি ব্যবস্থাপনার মাধ্যমে  
 দক্ষিণ এবং দক্ষিণ-পশ্চিমাঞ্চল উপকূলীয় জেলার জীবনমান উন্নয়নে  
 রাজকীয় নেদারল্যান্ডস সরকার এবং  
 গণপ্রজাতন্ত্রী বাংলাদেশ সরকারের  
 যৌথ অনুদান সহায়তায়  
 সমন্বিত উন্নয়ন প্রকল্প



**Blue Gold Program**

**OBJECTIVE:**  
 Reduce poverty in the project area by enhancing the livelihood of the rural population, through efficient water resources management and increase productivity of

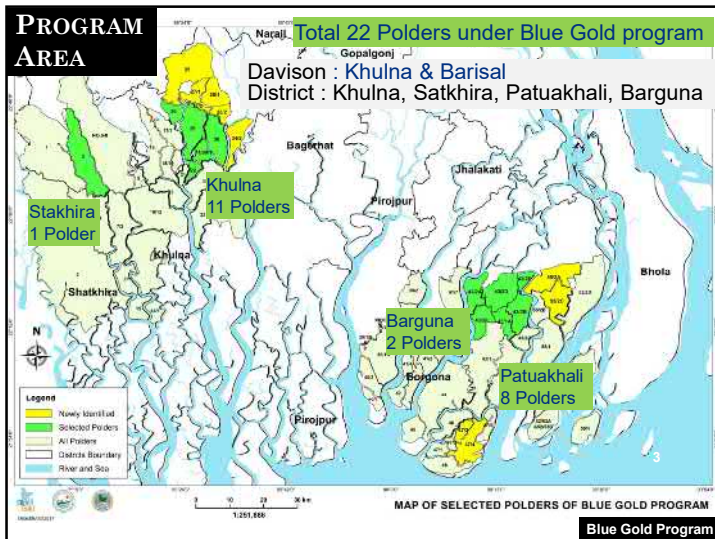
- Crop
- Fish
- Poultry and Livestock

by empowering the communities to be the driving force

BGP is working with four components

Structural	1. Water resources management through structural repair, reconstruction and maintenance
Non-Structural	2. Community empowering - through practicing PWMR-2014
	3. Land and water productivity (crop, fish, poultry & livestock)
	4. Business Development

PWMR – Participatory Water Management Rule



**PROGRAM AREA:**

District	Name of Polders	Number of Polders
Patuakhali	43/2A, 43/2B, 43/2D, 43/2E, 47/3, 47/4, 55/2A, 55/2C	8
Barguna	43/2F, 43/1A	2
Khulna	22, 25, 26, 27/1, 27/2, 28/1, 28/2, 29, 30, 31-P, 34/2 Part Amirpur Vandarcot & Baliadangi	11
Satkhira	2 & 2 Extension	1
<b>Total Area 119,124 ha</b>		<b>Total 22 nos Polders</b>

Blue Gold Program

### AGENCIES INVOLVED:

Development Partners:

Government of the Bangladesh (GoB)  
and

Government of the Netherlands (GoN) **Financial and Technical Assistance GRANT**

Sponsoring Ministry:

Ministry of Water Resource (MoWR)

Executing Agency:

Bangladesh Water Development Board  
(BWDB- Lead Agency)

Partner Agencies  
as per DPP

Department of Agriculture Extension (DAE)

Department of Fisheries (DoF)

Department of Livestock (DoL)

After enactment of the Participatory Water management Rule (PWMR-2014) BWDB entrusted with Formation and Registrtrins of WMOs the role of DoC is not necessary



Blue Gold Program

### COST AND DURATION (BWDB COMPONENT)

Lakh Taka

	DPP Approved	RDPP (1 <sup>st</sup> Revision) Proposed
GoB	7499.00	13152.84
GoN Grant	48850.00 (€48850 thousand) (DPA 33100 + RPA 15750)	53155.11 (€60420 thousand) (DPA 29731.78 + RPA 23423.33)
<b>Total</b>	<b>56349.00</b>	<b>66307.95</b>

**Increased 17.67%**

Duration	December 2018	December 2020
----------	---------------	---------------

#### In approved DPP

No provision for Land,  
Participatory Water Management Rule Passed in 2014  
No provision for Rehabilitation/Re-construction of  
Structure in Fine Tuning Polders



Blue Gold Program

### COST AND DURATION (BWDB COMPONENT)

	DPP Approved	RDPP (1 <sup>st</sup> Revision) Proposed
BCR Econo	2.03:1.00	1.60:1.00
BCR Financial	1.80:1.00	1.43:1.00
IRR Econo	20%	19.45%
IRR Financial	19%	17.94%



Blue Gold Program

### Revision(1st) Justification

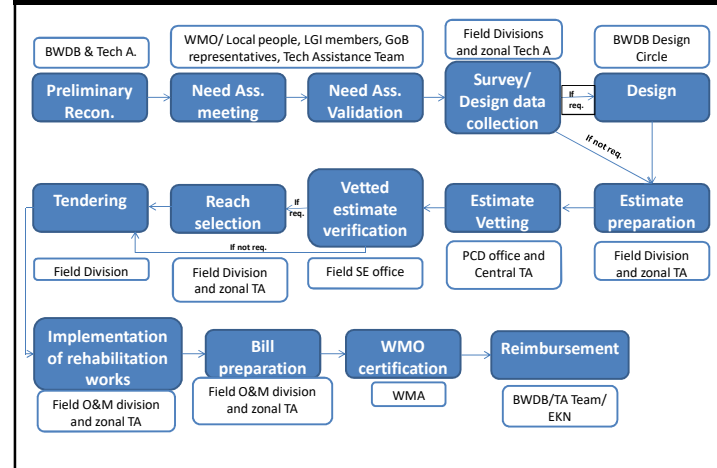
- No provision for land acquisition in Approved DPP
- After approval of DPP in 2013, Participatory Water Management Rule-2014 (PWMR-2014) approved in 2014, practices in the Blue Gold Program. After endorsed, 1<sup>st</sup> time practice facing difficulties.
- PWMR-2014 allowed BWDB to register WMG/WMA/WMF. Formation and registration of WMG/WMA need time
- No provision for Rehabilitation/Re-construction of Structure (sluice/ regulator /inlet etc) in Fine Tuning Polders.
- During implementation, all the Polders need Rehabilitation
- Erosion/Morphology changes
- Cyclones like Mohasen, Komen, Roanu, Mora etc damages
- Rate schedule enhanced.
- Taka Euro(€) exchange rate change  
Approved DPP €1=Tk100 in 2012; present(2016) €1=Tk85

## REVISION(1<sup>ST</sup>) NEEDED

Comparison of Rate Schedule of few common items

Item Code	Item / Component	Unit	Rate 2009 (Tk) to 2012	Rate 2017 ((Tk)	Increase (%)
16-110-10	Earth Filling (upto 3m height)	cum	65.17	167.47	157%
16-130	Earth Cutting	cum	60.45	155.34	157%
28-140-20	RCC work(1:2:4) stone chips, strength 18.00N/mm <sup>2</sup>	cum	6520.23	12505.7	92%
40-220-10	Labour charge in laying CC blocks within 200m	cum	497.38	1236.67	149%
40-320-10	Labour charge, dumping stone boulders/blocks: with 200m	cum	575.56	1123.36	95%
16-520-10	Supply & Filling sand FM>=1.00	cum	444.58	1039.33	134%
28-100-20	Cement concrete(1:4:8) with 25mm down stone chips	cum	5389.77	11078.99	106%

## Flow chart – implementation BGP



Training for capacity enhancement for local participation in crop production



Sluice need repair



Rehabilitated Sluice for better Water Management under BGP

Erosion in Polders under Blue Gold area



Khulna Polder 29



Khulna Polder 26



Patuakhali Polder 43/2D



Patuakhali Polder 55/2A

ACTIVITY:

Community Meeting  
Homestead gardening  
and fish cultivation (Poly  
Culture) by women  
Patuakhali  
April 2016



Community Meeting  
Khulna  
October 2016





**ACTIVITY:**  
No contractor  
Local Community  
Water Management Grup

Khal Re-excavation  
Patuakhali  
April 2016

50% of the Khal  
re-excavated by Female  
And 50% by Male  
Equal opportunity for  
Men and Women  
April 2016

Blue Gold Program



We need  
to  
overcome



3 feet at top

Need culverts  
appropriate  
size and level



12 feet at bottom

Excavated section




**ACTIVITY:**  
No contractor  
Local Community  
Water Management Grup

Khal Re-excavation  
Patuakhali  
April 2016

Re-excavated Khal  
March 2017  
Dry season with irrigation,  
field full of crops, peanut,  
watermelon, sweet  
potato, vegetables etc.  
Monsoon drain properly  
no flood – good crops.




**ACTIVITY:**  
Sluice Construction  
replacing a 40 years  
old inoperative sluice  
Polder-2

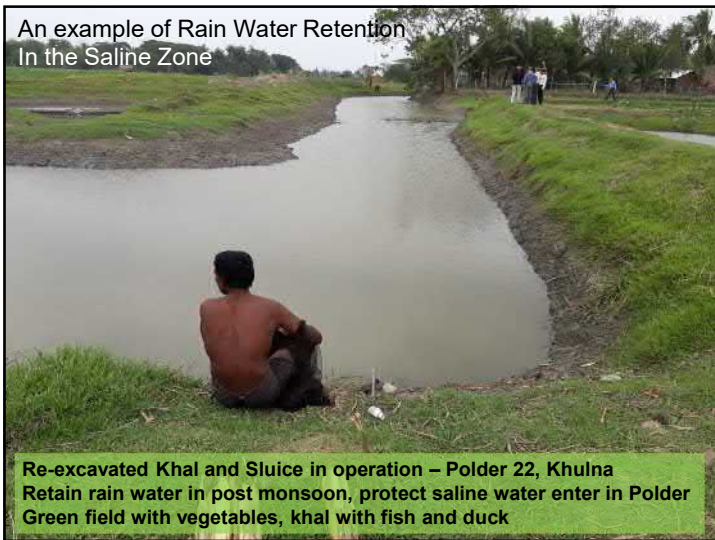
Satkhira  
20/04/2016



Satkhira  
19/11/2016

Blue Gold Program








Progress June 2017	<b>Structural</b>		
	Rehabilitation		
	Repair/Re-sectioning of Embankment (km)	35 km Full 20 km part	40%
	Re-excavation of khals (km)	23.51km Full 13.90 km part	15%
	Rehabilitation of Drainage /Flashing Sluice with gate (no)	2 nos full 3 nos part	14%
	Construction of Drainage Sluice with gate(nos)	3 nos full 5 nos part	50%
	Construction of Inlet(nos)	2 nos full 1 nos part	23%
	<b>Fine Tuning</b>		
	Repair of Embankment (km)	175 km Full 28.29 km part	43%
	Re-excavation of khals (km)	83km Full 30 km part	15%
Repair of Reguletor/Sluice (nos.)	44 nos full 15 nos part	24%	
Repair of Inlets/Outlets with gate (nos.)	185 nos full 5 nos part	30%	



**Progress June 2017**

Non-Structural			
Selection of Polder (nos)		22	84.62%
Formation of WMG (nos)		395	77.14%
Conducted Farmers Field School(FFS)(nos)		180	37.29%
Training of Local community, WMOs, Local elected representatives, Agency Professionals from BWDB, DAE Fishery, Livestock (Nos)		38909	84.88%

**Overall progress 41%**




**Blue Gold Program**

Progress Financial : Upto June 2017  
Taka 227.31 Crore, (40.3%)

Work Plan Financial (Taka Crore, Planned as per RDPP)


2017-18	2018-19	2019-20	2020_21
137.60	175.70	118.15	4.30



**Blue Gold Program**

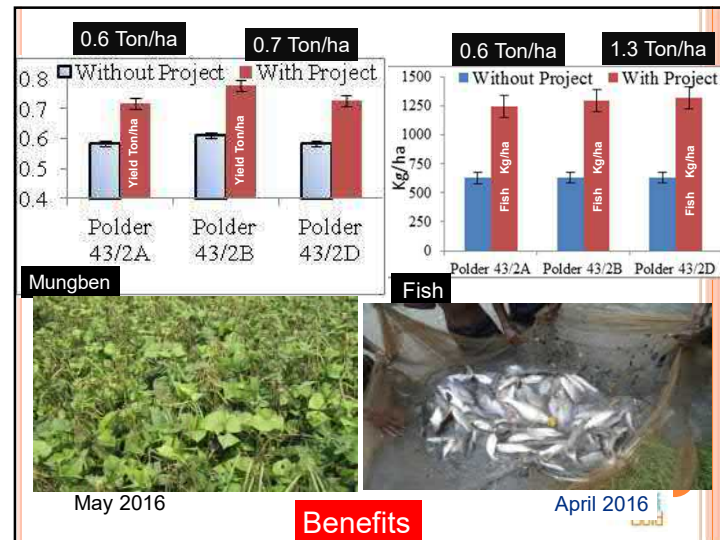
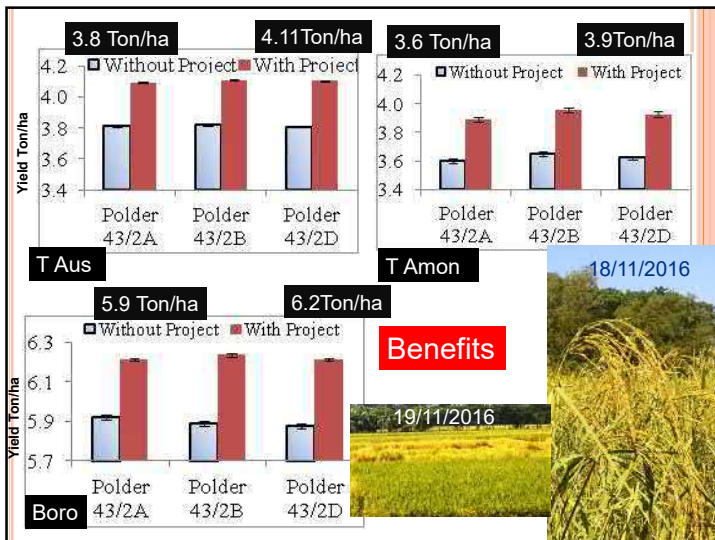
**Work Plan of Blue Gold Program**

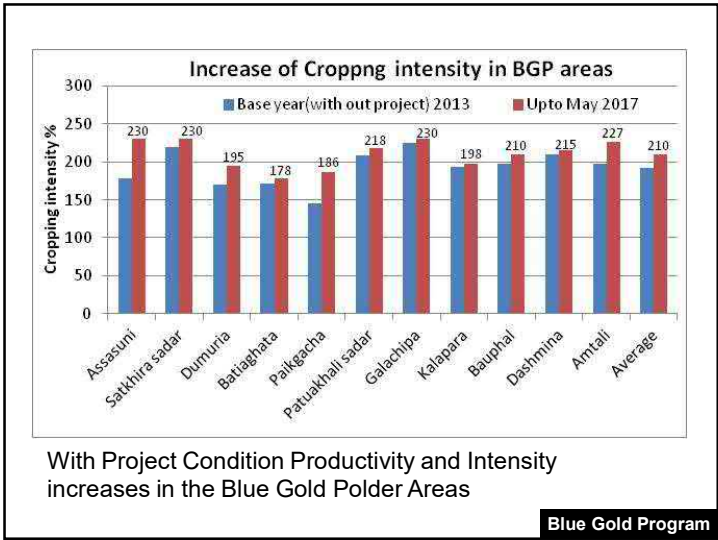
Polder	Description	2013-14		2014-15		2015-16		2016-17		2017-18		2018-19		2019-20		2020-21	
		2013	2014	2014	2015	2015	2016	2016	2017	2017	2018	2018	2019	2019	2020	2020	2021
1	Polder 43-2D																
2	Polder 43-2F																
3	Polder 22																
4	Polder 30																
5	Polder 43-2A																
6	Polder 43-2B																
7	Polder 43-1A																
8	Polder 29																
9	Polder 26																
10	Polder 31-part1																
11	Polder 2 and 2 extension																
12	Polder 43-2E																
13	Polder 55-2A																
14	Polder 55-2C																
15	Polder 27-1																
16	Polder 27-2																
17	Polder 28-1																
18	Polder 28-2																
19	Polder 47-3																
20	Polder 47-4																
21	Polder 25																
22	Polder 34-2																



**Blue Gold Program**







**News clip on Blue Gold Program, Bangladesh Water Development Board (BWDB), Ministry of Water Resources (MoWR), Supported (Grant) by the Netherlands Government. 18 February 2017**



### Cost of slimier projects in the Coastal Area

Project Name	Area (ha)	Cost(lakh Taka)	Taka/ha
CEIP (Package-1)	36455	82749.52	226,991
ECRRP (2008)	201497	75050	37,246
South West Area	83996	48210	57,396
Blue Gold (RDPP)	119124	66308	55,663



Blue Gold Program

# ধন্যবাদ



Khulna, Dumuria Upazilla, Polder 26  
20/11/2016

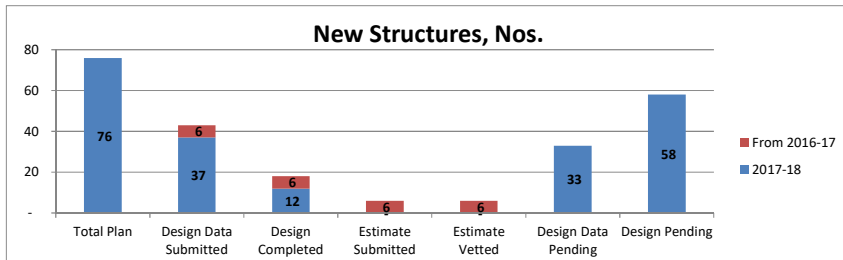
Blue Gold Program

**Status of Design Data Collection and Design for 2017-18**  
as of 12th November 2017

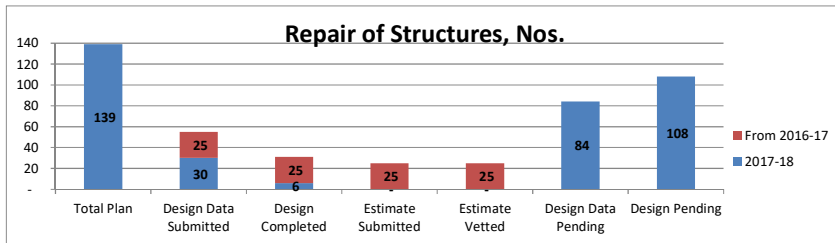
BWDB Division	Work Item	RDPP Provision	Under Program as of June 17	Remaining	2017-18 Implementation Plan			Remarks
					Plan	DD Submitted	Design Completed	
Patuakhali	Retired Embank, km	10.84	2.84	8.00	8.00	2.38	2.38	Some of these Design Data is also planned to be used for 2018-19 implementation year.
	Khal R/E, Km	147.95	39.94	108.01	77.95	62.45	50.45	
	Sluice Repair, nos	51	30	21	19	5	-	
	Outlet Repair, nos	10	7	3	3	-	-	
	Inlet Repair, nos	151	122	29	29	25	25	
	Sluice Const, nos	7	-	7	7	5	2	
	Outlet Const, nos	9	-	9	9	6	6	
	Inlet Const,nos	5	-	5	5	-	-	
	Culvert Const, nos	2	-	2	2	-	-	
Pump Shed Const, nos	-	-	-	-	-	-	-	
Kalapara	Retired Embank, km	0.50	-	0.50	-	-	-	
	Khal R/E, Km	43.33	1.65	41.68	30.83	22.50	8.25	
	Sluice Repair, nos	31	-	31	30	14	5	
	Outlet Repair, nos	2	-	2	2	-	-	
	Inlet Repair, nos	4	-	4	4	-	-	
	Sluice Const, nos	3	-	3	3	3	-	
	Outlet Const, nos	1	-	1	1	1	1	
	Inlet Const,nos	-	-	-	-	-	-	
	Culvert Const, nos	3	-	3	2	-	-	
Pump Shed Const, nos	-	-	-	-	-	-	-	
Barguna	Retired Embank, km	-	-	-	-	-	-	
	Khal R/E, Km	32.74	10.70	22.04	18.61	18.61	-	
	Sluice Repair, nos	20	16	4	2	2	1	
	Outlet Repair, nos	8	8	-	-	-	-	
	Inlet Repair, nos	49	49	-	-	-	-	
	Sluice Const, nos	2	-	2	2	2	2	
	Outlet Const, nos	5	-	5	5	5	5	
	Inlet Const,nos	-	-	-	-	-	-	
	Culvert Const, nos	-	-	-	-	-	-	
Pump Shed Const, nos	-	-	-	-	-	-	-	
Khulna-1	Retired Embank, km	4.74	1.74	3.00	2.50	-	-	
	Khal R/E, Km	219.66	40.87	178.79	87.94	11.34	5.74	
	Sluice Repair, nos	51	4	47	34	8	-	
	Outlet Repair, nos	3	-	3	2	-	-	
	Inlet Repair, nos	-	-	-	-	-	-	
	Sluice Const, nos	6	3	3	3	2	1	
	Outlet Const, nos	2	-	2	2	-	-	
	Inlet Const,nos	-	-	-	-	-	-	
	Culvert Const, nos	7	-	7	5	-	-	
Pump Shed Const, nos	-	-	-	-	-	-	-	
Khulna-2	Retired Embank, km	3.50	-	3.50	3.50	-	-	
	Khal R/E, Km	87.29	55.29	32.00	14.00	2.00	2.00	
	Sluice Repair, nos	23	17	6	6	1	-	
	Outlet Repair, nos	4	4	-	-	-	-	
	Inlet Repair, nos	4	1	3	-	-	-	
	Sluice Const, nos	6	1	5	5	5	1	
	Outlet Const, nos	1	-	1	1	1	-	
	Inlet Const,nos	3	3	-	-	-	-	
	Culvert Const, nos	10	-	10	9	5	-	
Pump Shed Const, nos	2	-	2	2	-	-		
Satkhira	Retired Embank, km	-	-	-	-	-	-	
	Khal R/E, Km	36.00	27.76	8.24	8.24	-	-	
	Sluice Repair, nos	10	-	10	8	-	-	
	Outlet Repair, nos	-	-	-	-	-	-	
	Inlet Repair, nos	-	-	-	-	-	-	
	Sluice Const, nos	7	3	4	3	3	-	
	Outlet Const, nos	-	-	-	-	-	-	
	Inlet Const,nos	-	-	-	-	-	-	
	Culvert Const, nos	10	-	10	6	5	-	
Pump Shed Const, nos	4	-	4	4	-	-		
Overall Program	Sluice Repair, nos	186	67	119	99	30	6	
	Outlet Repair, nos	27	19	8	7	-	-	
	Inlet Repair, nos	208	172	36	33	25	25	
	Sluice Const, nos	31	7	24	23	20	6	
	Outlet Const, nos	18	-	18	18	13	12	
	Inlet Const,nos	8	3	5	5	-	-	
	Culvert Const, nos	32	-	32	24	10	-	
Pump Shed Const, nos	6	-	6	6	-	-		

**BLUE GOLD PROGRAM, BWDB**  
**Design Data Collection & Design Completion for 2017-18 Implementation Program**  
**Overall Status for All Items of Works (Graphical Representation)**

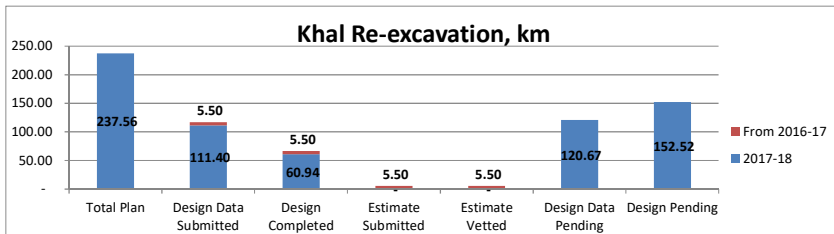
Updated: 12th November 2017



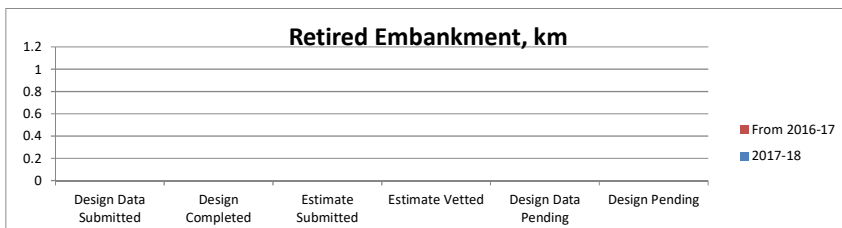
Plan for 2017-18 - New Structures (nos.)						
Total Plan	Design Data Submitted	Design Completed	Estimate Submitted	Estimate Vetted	Design Data Pending	Design Pending
76	37	12	-	-	33	58
	6	6	6	6		
	43	18	6	6	33	58



Plan for 2017-18 - Repair of Structures (nos.)						
Total Plan	Design Data Submitted	Design Completed	Estimate Submitted	Estimate Vetted	Design Data Pending	Design Pending
139	30	6	-	-	84	108
	25	25	25	25		
	55	31	25	25	84	108



Plan for 2017-18 - Khal Re-excavation (km)						
Total Plan	Design Data Submitted	Design Completed	Estimate Submitted	Estimate Vetted	Design Data Pending	Design Pending
237.56	111.40	60.94	-	-	120.67	152.52
	5.50	5.50	5.50	5.50		
	116.90	66.44	5.50	5.50	120.67	152.52



Plan for 2017-18 - Retired Embankment (km)						
Total Plan	Design Data Submitted	Design Completed	Estimate Submitted	Estimate Vetted	Design Data Pending	Design Pending
14.00	-	-	-	-	11.63	11.63
	2.38	2.38	2.38	2.38		
	2.38	2.38	2.38	2.38	11.63	11.63

**Blue Gold Program, BWDB**  
**Design Data Collection and Topographical Survey Contracts**

Date: 12 Oct 2017

SI No.	Company Name	Division	Polder No.	Date of Contract	Scope of Work	Contract Amount (Tk.)	Up to date Payment (Tk.)	Remarks	
1	The Coastal Engineering	Patuakhali O&M Division	43/2A, 43/2B, 43/2D, 55/2A & 55/2C	10-Aug-17	Embnk R/S (km) Embnk Retirement (km) Khal R/E (km) Low Cost protection (km) Sluice Repair (nos.) Outlet Repair (nos.) Inlet Repair (nos.) Sluice Construction (nos.) Outlet Construction (nos.) Inlet Construction (nos.) Culvert Construction (nos.)	15.00 5.70 55.00 1.50 19 3 4 7 4 5 2	1,258,750	415,388	
2	M/S R.S Construction	Patuakhali O&M Division	43/2A, 43/2B, 43/2D & 55/2A	15-Nov-16	Khal R/E (km) Sluice Construction (nos.) Outlet Construction (nos.)	10.00 4 4	252,000	252,000	Finalized
<b>Patuakhali O&amp;M Division</b>					<b>Embnk R/S (km)</b> <b>Embnk Retirement (km)</b> <b>Khal R/E (km)</b> <b>Low Cost protection (km)</b> <b>Sluice Repair (nos.)</b> <b>Outlet Repair (nos.)</b> <b>Inlet Repair (nos.)</b> <b>Sluice Construction (nos.)</b> <b>Outlet Construction (nos.)</b> <b>Inlet Construction (nos.)</b> <b>Culvert Construction (nos.)</b>	<b>15.00</b> <b>5.70</b> <b>65.00</b> <b>1.50</b> <b>19</b> <b>3</b> <b>4</b> <b>11</b> <b>8</b> <b>5</b> <b>2</b>	<b>1,510,750</b>	<b>667,388</b>	
3	Md.Shafiquzzaman Nizam	Patuakhali WD Division	47/3	16-Aug-17	Embnk R/S (km) Khal R/E (km) Sluice Repair (nos.) Outlet Repair (nos.) Inlet Repair (nos.) Culvert Construction (nos.)	4.00 7.00 5 2 3 1	374,050	-	
4	Md.Shafiquzzaman Nizam	Patuakhali WD Division	47/4	16-Aug-17	Sluice Repair (nos.)	21	430,750	-	
5	Md.Shafiquzzaman Nizam	Patuakhali WD Division	47/4	16-Aug-17	Embnk R/S (km) Khal R/E (km) Inlet Repair (nos.) Culvert Construction (nos.)	9.00 11.00 1 2	387,000	-	
6	Md.Shafiquzzaman Nizam	Patuakhali WD Division	47/3	10-Nov-16	Embnk R/S (km) Khal R/E (km) Sluice Repair (nos.) Sluice Construction (nos.)	10.00 9.50 2 1	300,000	198,000	
7	Md.Shafiquzzaman Nizam	Patuakhali WD Division	47/4	10-Nov-16	Khal R/E (km)	17.65	247,100	163,086	
8	Md.Shafiquzzaman Nizam	Patuakhali WD Division	47/4	10-Nov-16	Embnk R/S (km) Sluice Repair (nos.) Sluice Construction (nos.) Outlet Construction (nos.)	15.00 2 2 1	257,653	170,051	
<b>Patuakhali WD Division</b>					<b>Embnk R/S (km)</b> <b>Khal R/E (km)</b> <b>Sluice Repair (nos.)</b> <b>Outlet Repair (nos.)</b> <b>Inlet Repair (nos.)</b> <b>Sluice Construction (nos.)</b> <b>Outlet Construction (nos.)</b> <b>Culvert Construction (nos.)</b>	<b>38.00</b> <b>45.15</b> <b>30</b> <b>2</b> <b>4</b> <b>3</b> <b>1</b> <b>3</b>	<b>1,996,553</b>	<b>531,137</b>	
9	SoftRight Computers & Engineering Services	Barguna O&M Division	43/2F & 43/1A	15-Nov-16	Khal R/E (km) Sluice Construction (nos.) Outlet Construction (nos.)	22.00 1 5	392,000	258,720	
<b>Barguna O&amp;M Division</b>					<b>Khal R/E (km)</b> <b>Sluice Construction (nos.)</b> <b>Outlet Construction (nos.)</b>	<b>22.00</b> <b>1</b> <b>5</b>	<b>392,000</b>	<b>258,720</b>	
10	Md. Reaz Uddin	Khulna O&M Division I	25, 26, 27/1, 27/2, 28/1, 28/2 & 29	4-Sep-17	Embnk R/S (km) Embnk Retirement (km) Khal R/E (km) Sluice Repair (nos.) Outlet Repair (nos.) Sluice Construction (nos.) Outlet Construction (nos.) Culvert Construction (nos.)	15.80 8.50 87.70 34 2 2 1 5	1,388,850	458,320	

**Blue Gold Program, BWDB**  
**Design Data Collection and Topographical Survey Contracts**

Date: 12 Oct 2017

SI No.	Company Name	Division	Polder No.	Date of Contract	Scope of Work	Contract Amount (Tk.)	Up to date Payment (Tk.)	Remarks	
11	M/S Omar Enterprise	Khulna O&M Division I	26 & 29	6-Oct-16	Embnk Retirement (km) Khal R/E (km) Sluice Repair (nos.) Sluice Construction (nos.)	3.00 28.70 10 1	467,100	467,100	Finalized
<b>Khulna O&amp;M Division I</b>					<b>Embnk R/S (km)</b> <b>Embnk Retirement (km)</b> <b>Khal R/E (km)</b> <b>Sluice Repair (nos.)</b> <b>Outlet Repair (nos.)</b> <b>Sluice Construction (nos.)</b> <b>Outlet Construction (nos.)</b> <b>Culvert Construction (nos.)</b>	<b>15.80</b> <b>11.50</b> <b>116.40</b> <b>44</b> <b>2</b> <b>3</b> <b>1</b> <b>5</b>	<b>1,855,950</b>	<b>925,420</b>	
12	M/S Asraf Traders	Khulna O&M Division II	22, 30, 31part & 34/2	4-Sep-17	Embnk R/S (km) Embnk Retirement (km) Khal R/E (km) Low Cost protection (km) Sluice Repair (nos.) Sluice Construction (nos.) Outlet Construction (nos.) Culvert Construction (nos.)	11.50 4.55 12.00 1.20 5 4 1 8	491,975	162,352	
13	SK. Mizanur Rahman	Khulna O&M Division II	21, 22, 30 & 31part	4-Oct-16	Embnk R/S (km) Khal R/E (km) Sluice Repair (nos.) Sluice Construction (nos.)	13.53 12.00 7 3	451,300	297,858	
<b>Khulna O&amp;M Division II</b>					<b>Embnk R/S (km)</b> <b>Embnk Retirement (km)</b> <b>Khal R/E (km)</b> <b>Low Cost protection (km)</b> <b>Sluice Repair (nos.)</b> <b>Sluice Construction (nos.)</b> <b>Outlet Construction (nos.)</b> <b>Culvert Construction (nos.)</b>	<b>25.03</b> <b>4.55</b> <b>24.00</b> <b>1.20</b> <b>12</b> <b>7</b> <b>1</b> <b>8</b>	<b>943,275</b>	<b>460,210</b>	
14	Md. Masud Rana (Rasel)	Satkhira O&M Division II	2	17-Sep-17	Embnk Retirement (km) Khal R/E (km) Low Cost protection (km) Sluice Repair (nos.) Pump Shed (nos.) Culvert Construction (nos.)	10.00 15.00 1.00 8 3 10	789,450	260,518	
15	M/S Rafid Enterprise	Satkhira O&M Division II	2	5-Sep-16	Embnk R/S (km) Embnk. Repair (km) Khal R/E (km) Sluice Construction (nos.) Pump Shed (nos.) Culvert Construction (nos.)	22.74 0.28 33.28 3 1 1	816,700	539,022	
<b>Satkhira O&amp;M Division II</b>					<b>Embnk R/S (km)</b> <b>Embnk. Repair (km)</b> <b>Embnk Retirement (km)</b> <b>Khal R/E (km)</b> <b>Low Cost protection (km)</b> <b>Sluice Repair (nos.)</b> <b>Sluice Construction (nos.)</b> <b>Pump Shed (nos.)</b> <b>Culvert Construction (nos.)</b>	<b>22.74</b> <b>0.28</b> <b>10.00</b> <b>48.28</b> <b>1.00</b> <b>8</b> <b>3</b> <b>4</b> <b>11</b>	<b>1,606,150</b>	<b>799,540</b>	
<b>Total for All Divisions</b>					<b>Embnk R/S (km)</b> <b>Embnk. Repair (km)</b> <b>Embnk Retirement (km)</b> <b>Khal R/E (km)</b> <b>Low Cost protection (km)</b> <b>Sluice Repair (nos.)</b> <b>Outlet Repair (nos.)</b> <b>Inlet Repair (nos.)</b> <b>Sluice Construction (nos.)</b> <b>Outlet Construction (nos.)</b> <b>Inlet Construction (nos.)</b> <b>Pump Shed (nos.)</b> <b>Culvert Construction (nos.)</b>	<b>116.57</b> <b>0.28</b> <b>31.75</b> <b>320.83</b> <b>3.70</b> <b>113</b> <b>7</b> <b>8</b> <b>28</b> <b>16</b> <b>5</b> <b>4</b> <b>29</b>	<b>8,304,678</b>	<b>3,642,414</b>	



**Blue Gold Program, BWDB**  
**Cumulative Progress as of June 2017**  
(Updated as of October 2017)

SI	Work Item	Total RDPP Provision		Up to June 2017 as per RDPP			Actual up to June 2017			
		QTY	MBDT	Qty Full	Qty Part	MBDT	Qty Full	Qty Part	Part %	MBDT
1.	Embankment R/S, km	360.00	546.72	210.60	48.13	339.93	211.80	44.12	59%	275.57
2.	Rtd. Embankment, km	19.55	209.58	0.20	0.00	1.53	2.84	1.74	56%	34.04
3.	Khal R/E, km	566.97	704.50	106.50	43.90	165.82	109.28	55.615	34%	143.78
4.	Sluice Repair, nos.	186	459.40	50	16	66.53	45	19	53%	106.52
5.	Inlet/Outlet Repair, nos.	235	67.40	185	5	7.75	186	5	80%	20.02
6.	Sluice Construction, nos.	31	635.30	3	4	84.89	3	4	29%	84.89
7.	Outlet Construction, nos.	17	130.00	-	-	-	-	-	-	-
8.	Inlet Construction, nos.	8	18.00	2	-	5.46	2	1	0%	5.46
9.	Culvert Construction, nos.	32	124.00	-	-	-	-	-	-	-
10.	Pumpshed Const., nos.	6	28.00	-	-	-	-	-	-	-
11.	Low Cost Protection, km	8.00	62.00	-	-	-	-	-	-	-
12.	Internal Dyke, km	21.00	9.60	-	-	-	-	-	-	-
13.	Closure, km	1.00	2.00	-	-	-	-	-	-	-
14.	Pipe Supply, m	12,800	25.60	-	-	-	-	-	-	-
15.	FDR/Breach Closing, LS	LS	60.00	-	-	-	-	-	-	-
	<b>Total, FA, MBDT</b>		<b>3,082.10</b>			<b>671.91</b>				<b>670.28</b>

The progress as of June 2017 as anticipated in the RDPP is almost 100% achieved for all the items and for some items, specially retired embankment, it is much more.

## **ANNEX D(vi) - Erosion Damage and Emergency Provisions**

### **Polder 29**

Closure of breach at Chandghar by small-scale contractor (Biswas) has subsequently reopened (in September 2016) because earthworks were not completed to adequate quality; the breaches were subsequently closed during May-June 2016, but the embankment was not completed to the full scale. The hard protection in breach locations were yet to be done. Anticipating contractor's inability/unwillingness to complete the retired embankment and possible threats to this inchoate embankment as well as to the locality, TA Team under direct EKN financing and FRERMIP technical support stabilized the river bank with sand-filled geotextile bags barge-dumped under the low water line for a length of about 950m and placed on the slope (above low water) for a length of about 200m. Due to this intervention the erosion was stabilized for the time being and no additional erosion occurred during this monsoon at Chandghar region.

Construction of the pilot semi-permeable spur at this site is still under consideration, provided FRERMIP agrees to fund this study, as Blue Gold Program does not have provision for this work.

Apart from this erosion zone, there were two additional erosions which threatened the safety of the polder in the month of July 2017. Among these two zones, one was at Chandghar region just 200m north of the existing dumping site and the other one occurred at Bara Aria region. In both places the threat was dealt after BWDB declared emergency and instigated the protection work. In Chandghar region, the protection work included dumping of synthetic bags along the eroding bank line for 110m, driving bamboo and bullah and doing some earth filling for backing purpose. In Bara Aria region, the threat was dealt by dumping synthetic bags along the eroding line for 30m and doing some earth filling works. Whole emergency work was funded from BGP O&M fund by the order of PCD.

### **Polder 22**

During May-June 2017, serious erosion occurred to a 300m length of river-facing embankment in Bigordana (resectioned by BGP in 2014/15). Retirement of the embankment was not possible because of inadequate space for a new embankment as there are many infrastructures like primary schools, UP complex, temple and a BWDB building and WMA Training Centre which are situated just behind the embankment. It was therefore, decided to do some geo-bag revetment with embankment backing. The contract was awarded to the contractor in August 2017 but the contractor was not procuring specified quality materials, and these were subsequently sent to Khulna University for testing, and this delaying the whole process. In the meantime, the XEN was transferred and now the new XEN is following it up. No work has been initiated yet, the sieve analysis of the sand was found satisfactory and the test results for the geo bags are due till 2<sup>nd</sup> of November.

### **Polder 55/2C**

Serious erosion on 9<sup>th</sup> August 2016 at Alipur Bazar near Chandpura Sluice.

Toe line of the (from 150 north of Alipura sluice) embankment cum road has been affected due to wave action. Although not yet been breached but 360m of embankment is under severe threat. The estimate for retired embankment has already been vetted but due to the torpidity of RDPP approval process, Executive Engineer was unable to instigate tendering process

### **Polder 43/2A**

In May 2016, serious erosion occurred to a 1km length of river-facing embankment in Bhajna-Nandipara (re-sectioned by BGP in 2014/15) and which now requires construction of a new retired embankment;

Serious erosion was observed during a visit in May 2016 to a retired embankment constructed by LCSs in 2014/15 under BGP in Bhutumiar Bazar (and visited by the Minister MoWR and GoN Minister in June 2015). BGP proposed to construct a 4km long retired embankment by keeping at least 100m setback distance from the eroding line. Some agreed to donate land where as other equivocated as there was no land acquisition allocation in the current DPP and those people from affected zone were unable to agree on the donation of land. So far, BGP has vetted estimates for 2km retired embankment (out of 4km) for Bhajna-Nandipara during FY 2016-17 and Field Executive Engineer's office has prepared a land acquisition plan for whole 4km which will be implemented upon RDPP approval in which adequate provision for land acquisition was kept.

Serious erosion in May 2016 of road constructed by LGED on river-facing embankment at Bashtola (backing work/retirement required). BGP vetted the estimates for backing in FY 2016-17 but the LCS which was contracted to do the job abnegated to perform. As a result the contract has been cancelled BWDB field Executive Engineer intends to use professional contractors to finish the job during FY 2017-18. For the time being, LGED had done some backing work to maintain the traffic flow.

Embankment was breached at two points at Purba Kewabunia WMG near Khatashia Sluice. Executive Engineer intends to close the breach in next dry season preferably by December.

Retired embankment in these locations can only be made after approval of RDPP as in in the original DPP there is no provision for retired embankment and land acquisition.

### **Polder 43/2B**

Serious erosion has occurred in Boloikhathi area over the last two to three years – during a visit in May 2016, about 350m of embankment had breached, and a further 1km was under serious threat. Under BGP, it is proposed that the embankment will be retired a substantial distance from the actively eroding river bank. However, the community are unwilling to donate land, and land acquisition can only proceed after approval of the revised DPP (where a budget for embankment retirement as well as land acquisition will be provided).

Erosion at Boloikhathi started before the selection of polder 43/2B approximately during 2011-12. The situation deteriorated extremely at two reaches (near ch. 27+900km and 28+600km) during FY 2014-15 as part of the embankment was breached overnight flooding almost half of Boloikhathi WMG. As BGP could only offer retired embankment for protection, several attempts were taken to elicit a decision regarding the alignment for a new embankment during the period of December 2014 and January- February, 2015. All of them were unfruitful and finally WMG sent an official resolution stating that they will not be able to donate any land for retirement purpose. In FY 2015-16 BWDB closed the breaches by erecting ring dikes with some protective works to reduce the eroding effect. The dike near ch. 28+600 is currently prone to erosion, although the rate is very low. BGP has kept the provision for constructing 1km retired embankment and for land acquisition.

### **Polder 43/1A**

There is a 100m erosion near Budhbaria Bazar of Dakshin Shonakhali WMG at polder 43/1A. Already the design data for 200m temporary protection has been sent to design circle.

# ৩০০/- টাকার নন-জুডিসিয়াল স্ট্যাম্প

## পরিচালন, মেরামত ও রক্ষণাবেক্ষণ চুক্তিনামা

বাংলাদেশ পানি উন্নয়ন বোর্ডের আওতাধীন \_\_\_\_\_ পোল্ডার এর  
আওতাভুক্ত পানি ব্যবস্থাপনা অবকাঠামো  
পরিচালন, মেরামত ও রক্ষণাবেক্ষণের নিমিত্তে  
বাংলাদেশ পানি উন্নয়ন বোর্ড এবং পানি ব্যবস্থাপনা এসোসিয়েশন এর মধ্যে সম্পাদিত চুক্তিনামা।

বাংলাদেশ পানি উন্নয়ন বোর্ড  
স্থায়ী ঠিকানা: ওয়াপদা ভবন, মতিঝিল বা/এ, ঢাকা-১০০০ এর পক্ষে  
নির্বাহী প্রকৌশলী, \_\_\_\_\_ পওর বিভাগ, বাপাউবো, \_\_\_\_\_

### প্রথম পক্ষ

এবং

\_\_\_\_\_ পোল্ডার এর পক্ষে

ব্লু গোল্ড প্রোগ্রাম এর আওতায় গঠিত পানি ব্যবস্থাপনা এসোসিয়েশন/এসোসিয়েশনসমূহের মনোনীত প্রতিনিধিবৃন্দ

### দ্বিতীয় পক্ষ

যেহেতু প্রথম পক্ষ কর্তৃক ব্লু গোল্ড প্রোগ্রাম এর আওতাভুক্ত \_\_\_\_\_ পোল্ডার এর বিভিন্ন পানি ব্যবস্থাপনা  
অবকাঠামো নির্মাণ/পুনঃনির্মাণ করা হয়েছে বা হবে (এসোসিয়েশনভিত্তিক ক্যাচম্যান্ট এর সীমানা ও অবকাঠামোসমূহের  
মানচিত্রসহ তালিকা সংযুক্ত)।

যেহেতু প্রথম পক্ষ কর্তৃক নির্মিত বা নির্মিতব্য এমন সকল পানি ব্যবস্থাপনা অবকাঠামো যথাযথ সংরক্ষণ, নিয়মিত  
পরিচালন ও রক্ষণাবেক্ষণে স্থানীয় সুবিধাভোগীদের অংশগ্রহণ ও সম্পৃক্ততা একান্ত প্রয়োজন বিধায় প্রকল্পের  
স্থানীয় সুবিধাভোগীদের সমন্বয়ে গঠিত পানি ব্যবস্থাপনা এসোসিয়েশন নির্ধারিত দায়িত্ব পালন করবে। এতদ  
উদ্দেশ্যে সরকারের নীতি অনুযায়ী উভয় পক্ষের সুনির্দিষ্ট দায়িত্ব বিষয়ে অবগত হয়ে অদ্য \_\_\_\_\_/\_\_\_\_\_/২০১৭  
খ্রিঃ তারিখে নির্ধারিত শর্ত সম্বলিত চুক্তিপত্র স্বাক্ষর করলাম।

### শর্তাবলী:

- ১। পানি ব্যবস্থাপনা অবকাঠামোর মালিকানা বাংলাদেশ পানি উন্নয়ন বোর্ডের উপর ন্যস্ত থাকবে।
- ২। এই চুক্তিনামা স্বাক্ষরিত হওয়ার পর হতে উপরে উল্লেখিত পানি ব্যবস্থাপনা এসোসিয়েশন/এসোসিয়েশনসমূহ  
পানি ব্যবস্থাপনা অবকাঠামোর ব্যবস্থাপনা, পরিচালন ও ছোট-খাটো রক্ষণাবেক্ষণ এর দায়িত্ব পালন করবে।
- ৩। বাংলাদেশ পানি উন্নয়ন বোর্ড (১ম পক্ষ) এবং পানি ব্যবস্থাপনা এসোসিয়েশন/এসোসিয়েশনসমূহ (২য় পক্ষ)  
এর দায়িত্ববলী নিম্নলিখিত নির্দেশনা অনুযায়ী অর্পিত হবে।

ক্র: নং	অবকাঠামো	কাজের বিবরণ	কাজের ধরণ	দায়িত্ব
১।	বাঁধ	(ক) নিয়মিত রক্ষণাবেক্ষণ	বেড়ি বাধের টো, ভার্ম কাটা প্রতিবোধ করা, ঢালে চাষ না করা, বাড়ি-ঘর ও দোকান নির্মাণ না করা। যোগ মেরামত, রেইন কাট মেরামত এবং ঐ সকল জায়গায় ঘাসের চাপড়া লাগানো/ মেরামত, জঙ্গল/ আগাছা পরিষ্কার, বাঁধের ক্ষতি করে এমন গাছ না লাগানো, ইত্যাদি।	পানি ব্যবস্থাপনা এসোসিয়েশন
		(খ) মেয়াদী	৪/৫ বছর অন্তর ডিজাইন অনুযায়ী বাঁধ পুনঃনির্মাণ,	বাপাউবো

ক্র: নং	অবকাঠামো	কাজের বিবরণ	কাজের ধরণ	দায়িত্ব
		রক্ষণাবেক্ষণ	ফাটল মেরামত করা, বিকল্প বাঁধ নির্মাণ করা।	
		(গ) আপদকালীন বা জরুরী রক্ষণাবেক্ষণ	বাধের ভাঙ্গা মেবামত ও ভাঙ্গন প্রতিবোধ করা।	বাপাউবো
২।	হাইড্রলিক কাঠামো: (ক) বড় কাঠামো (পানি নিষ্কাশন, ফ্ল্যাশিং স্লুইস)	(ক) পরিচালন	নিয়মিত রক্ষণাবেক্ষণ: মাছ ধরা/জাল দেয়া/প্রতিরোধ/অপসারণ করা	পানি ব্যবস্থাপনা এসোসিয়েশন
		(খ) নিয়মিত রক্ষণাবেক্ষণ	গ্রিজ লাগানো, গেট ও হোয়েস্ট-এর ছোট-খাট মেরামত, প্রয়োজনে নাট ও বল্টু বদলানো, গেটের কাছে খালের আবর্জনা পরিষ্কার স্লুইস গেটের ফ্লোর থেকে পলি সরিয়ে ফেলা, সি.সি. ব্লক স্থানচ্যুত হলে পুনঃস্থাপন করা, রেইন কাট মেরামত, অবকাঠামোর চারপাশ পরিষ্কার, বড় অবকাঠামোর পাশে স্থাপনা না করা, কাঠের গুড়ি না রাখা এবং পারাপার না করা ইত্যাদি।	পানি ব্যবস্থাপনা এসোসিয়েশন
		(গ) মেয়াদী রক্ষণাবেক্ষণ	প্রটেক্টিভ এ্যাপরোন সহ প্রধান অবকাঠামো মেরামত/পন:নির্মাণ করা। তলা/পাস দিয়ে পানি চূয়ানো প্রতিরোধ করা। হোয়েস্টিং যন্ত্রপাতির বাৎসরিক ওভারহলিং করা, গেট রং করা, গেট পুনঃস্থাপন করা, ইত্যাদি।	বাপাউবো
		(ঘ) আপদকালীন রক্ষণাবেক্ষণ	যে কোন ধরনের জরুরী কাজ যেমন: স্লুইচ এর ভিতর ও বাইরের দিকে ক্ষয় রোধের ব্যবস্থা করা।	বাপাউবো
	(খ) ক্ষুদ্র কাঠামো (পানি সেচ ইনলেট ও নিষ্কাশন আউটলেট, ইত্যাদি)।	(ক) পরিচালন	গেট পরিচালন	পানি ব্যবস্থাপনা এসোসিয়েশন
		(খ) নিয়মিত রক্ষণাবেক্ষণ	গ্রিজ লাগানো, গেট ও হোয়েস্ট-এর ছোট আকারের মেরামত, প্রয়োজনে নাট ও বল্টু বদলানো, গেটের কাছে খালের আবর্জনা পরিষ্কার, স্লুইচ গেটের ফ্লোর থেকে পলি সরিয়ে ফেলা, সি.সি. ব্লক স্থানচ্যুত হলে পুনঃস্থাপন করা, রেইন কাট মেরামত, অবকাঠামোর চারপাশ পরিষ্কার, ইত্যাদি।	পানি ব্যবস্থাপনা এসোসিয়েশন
		(গ) মেয়াদী রক্ষণাবেক্ষণ	যে কোন বড় ধরনের পরিবর্তন অথবা পুনঃস্থাপন, গেট রং করা, ইত্যাদি।	বাপাউবো
৩।	পানি নিষ্কাশন খাল: (ক) বৃহৎ	(ক) নিয়মিত রক্ষণাবেক্ষণ	কচুরীপানা ও অন্যান্য জলীয় আগাছা পরিষ্কার; সেই সাথে পানি প্রবাহের ব্যাঘাত ঘটায় এমন সব জিনিস সরিয়ে ফেলা।	পানি ব্যবস্থাপনা এসোসিয়েশন
		(খ) নির্দিষ্ট সময় অন্তে রক্ষণাবেক্ষণ	প্রয়োজন অনুযায়ী প্রধান খাল/শাখা খাল পুনঃখনন করা।  প্রশাখা/সংযোগ খাল খনন-পুনঃখনন করা	বাপাউবো পানি ব্যবস্থাপনা এসোসিয়েশন
		(গ) আপদকালীন রক্ষণাবেক্ষণ	যে কোন ধরনের জরুরী কাজ।	বাপাউবো
	পানি নিষ্কাশন নালা: (ক) ক্ষুদ্র	(ক) নিয়মিত রক্ষণাবেক্ষণ	কচুরীপানা ও অন্যান্য জলীয় আগাছা পরিষ্কার; সেই সাথে পানি প্রবাহের ব্যাঘাত ঘটায় এমন সব জিনিস সরিয়ে ফেলা।	পানি ব্যবস্থাপনা এসোসিয়েশন
		(খ) নির্দিষ্ট সময় অন্তে রক্ষণাবেক্ষণ	পলি অপসারণ করা	পাউবো LCS গঠনের মাধ্যমে ন্যূনতম খরচে করতে পারে
৪.	অভ্যন্তরীণ কৃষি পর্চিন	(ক) অভ্যন্তরীণ পানিব্যবস্থাপনা	মাঠ নালা, নিষ্কাশন ক্ষুদ্র পর্চিন জলকাপাট সহ/ছাড়া, ছোট কালভার্ট, ফুটব্রিজ এবং কমপার্টমেন্টাল বাধ নির্মাণ করা।	পানি ব্যবস্থাপনা এসোসিয়েশন

ক্র: নং	অবকাঠামো	কাজের বিবরণ	কাজের ধরণ	দায়িত্ব
৫.	ব্যবস্থাপনা পাম্পসেড এবং পাম্প	পাম্পসেড এবং পাম্প নির্মাণ	বেড়িবাধের সংরক্ষণ কাজ, স্টেলিন বেসিন, বিদ্যুৎ সংযোগ, সরবরাহ, স্থাপন, পাম্পের পরিচালনা ও রক্ষণাবেক্ষণ, বিদ্যুৎ বিল, স্থাপনা রক্ষণাবেক্ষণ	পানি ব্যবস্থাপনা এসোসিয়েশন

#### ৬। উপরে উল্লেখিত বিষয়সমূহ ছাড়াও

##### (ক) বাংলাদেশ পানি উন্নয়ন বোর্ড (১ম পক্ষ) এর দায়িত্বঃ

- ক-১) এই চুক্তিনামায় উল্লিখিত কাঠামোর ব্যবস্থাপনা, পরিচালনা ও রক্ষণাবেক্ষণের জন্য সংশ্লিষ্ট পানি ব্যবস্থাপনা এসোসিয়েশনকে কারিগরী সহায়তা ও প্রশিক্ষণ প্রদান করা;
- ক-২) বাপাউবো সকল সুবিধাভোগীদের চাহিদা অনুযায়ী পানি ব্যবস্থাপনা এসোসিয়েশনকে গেট পরিচালনার পরিকল্পনা তৈরী করতে সহায়তা করবেন;
- ক-৩) এই চুক্তিনামায় উল্লিখিত পানি ব্যবস্থাপনা কাঠামোর বড় ধরণের মেরামত এবং নির্দিষ্ট সময় অন্তে ও আপদকালীন রক্ষণাবেক্ষণ করা;
- ক-৪) প্রকল্প চলাকালীন এবং প্রকল্প পরবর্তী সময়ে মাটির কাজে সরকার কর্তৃক নির্ধারিত (বর্তমানে ন্যূনতম শতকরা ২৫ ভাগ) কাজ এলাকার LCS এর মাধ্যমে করা;
- ক-৫) খালে/নদীতে পানি প্রবাহের বাধা সৃষ্টি করলে পাউবো আইনগত ব্যবস্থা নিবে।

##### (খ) পানি ব্যবস্থাপনা এসোসিয়েশন (২য় পক্ষ) এর দায়িত্বঃ

- খ-১) পানি ব্যবস্থাপনা অবকাঠামোর দৈনন্দিন ব্যবস্থাপনা, পরিচালনা ও নিয়মিত রক্ষণাবেক্ষণের দায়িত্ব সংশ্লিষ্ট পানি ব্যবস্থাপনা দলকে অর্পণ করবে এবং নিয়মিত পরিবিক্ষণ ও সহযোগিতা করবে;
- খ-২) বনায়ন নীতিমালা ও বৃক্ষ রোপন ম্যানুয়াল অনুযায়ী সংগঠন কর্তৃপক্ষের অনুমতি স্বাপেক্ষে বেড়ি বাঁধে বৃক্ষ রোপণ বা বিনা চাে অন্যান্য ফসল বিধি সম্মতভাবে করতে পারবে।
- খ-৩) এই চুক্তিনামায় উল্লিখিত স্লুইস গেট ও অন্যান্য অবকাঠামোর “ছোটখাট মেরামত” এবং “নিয়মিত রক্ষণাবেক্ষণ” করা;
- খ-৪) বাঁধ যাতে কেউ না কাটে বা কোনরূপ ক্ষতি সাধন না করে তা নিশ্চিত করা, এবং কেউ যদি বাঁধ কেটে ফেলে বা ক্ষতি করে তবে তার বিরুদ্ধে আইনানুগ ব্যবস্থা গ্রহণ করা। প্রয়োজনে কর্তৃপক্ষের সহায়তা গ্রহণ;
- খ-৫) কেউ যাতে স্লুইচ গেট বা ইনলেটের মধ্য দিয়ে কাঠের গুড়ি পার করার চেষ্টা না করে তা নিশ্চিত করণ;
- খ-৬) বর্ষাকালের পূর্বে, বর্ষার সময় এবং বর্ষাকাল শেষে স্বার্থ-সংশ্লিষ্টদের পানির চাহিদা অনুযায়ী স্লুইস গেট সঠিকভাবে বন্ধ ও খোলা হচ্ছে কি-না তার প্রতি লক্ষ্য রাখা;
- খ-৭) এই চুক্তিনামায় উল্লিখিত পানি ব্যবস্থাপনা কাঠামোর ব্যবস্থাপনা, পরিচালনা ও রক্ষণাবেক্ষণের জন্য তহবিল গঠনের খাত সমূহ চিহ্নিত করবে (এর মধ্যে অধিগ্রহণকৃত ভূমি, বরোপিট, বাঁধের ধার, খাল/জলাশয় ইত্যাদি উল্লেখযোগ্য) এবং বিধি মোতাবেক যথাযথ কর্তৃপক্ষের অনুমতি সাপেক্ষে ব্যবহার করতে পারবে।

৭। প্রকল্পের অধীনস্থ মৎস্য চাষ উপযোগী জলাশয়ে পানি চলাচলে কোনরূপ বাধা বিঘ্ন না ঘটিয়ে ২য় পক্ষ ১ম পক্ষের সম্মতি সাপেক্ষে বিধি অনুযায়ী মাছ ধরা/চাষ করতে পারবে।

৮। বাংলাদেশ পানি উন্নয়ন বোর্ড (১ম পক্ষ) ও পানি ব্যবস্থাপনা এসোসিয়েশন (২য় পক্ষ) যৌথভাবে নিম্নোক্ত দায়িত্ব পালন/কাজগুলো সম্পাদন করবে।

- (ক) স্লুইস গেট তত্ত্বাবধান করা। যদি কোন সংশোধনমূলক বা শাস্তিমূলক ব্যবস্থা গ্রহণ করার প্রয়োজন হয়, তবে উভয় পক্ষের সম্মতি সাপেক্ষে উপযুক্ত ব্যবস্থা গ্রহণ করা।
- (খ) পানি ব্যবস্থাপনা এসোসিয়েশন এর পক্ষ থেকে পানি ব্যবস্থাপনা, পরিচালনা ও রক্ষণাবেক্ষণের জন্য কারিগরী প্রশিক্ষণ বা কোন প্রকার সাহায্য সহযোগিতার প্রয়োজন হলে বাংলাদেশ পানি উন্নয়ন বোর্ড কর্তৃক প্রয়োজনীয়

সহযোগিতা প্রদানের ব্যবস্থা গ্রহণ।

৯। এই চুক্তিনামা পরিবর্তনের প্রয়োজন হলে উভয় পক্ষের ঐক্যমতের ভিত্তিতে পরিবর্তন করা যাবে, তবে পরিবর্তনের স্বপক্ষে পানি ব্যবস্থাপনা এসোসিয়েশন/এসোসিয়েশনসমূহের Resolution এর প্রয়োজন হবে।

১০। এই চুক্তিনামার ব্যাপারে যদি কোন বিবাদ সৃষ্টি হয়, তথা যদি কোন এক পক্ষ মনে করে যে অন্য পক্ষ চুক্তির কোন বিশেষ শর্ত ভঙ্গ করছে, তবে দুই পক্ষ আলোচনার মাধ্যমে বিবাদ মীমাংসা করবে। তবে প্রয়োজনে, উভয়পক্ষের সম্মতিক্রমে বিবাদ মীমাংসার জন্য পানি উন্নয়ন বোর্ডের সংশ্লিষ্ট তত্ত্বাবধায়ক প্রকৌশলী অথবা তদূর্ধ্ব কর্মকর্তাকে মধ্যস্থতাকারী নিয়োগ করা যেতে পারে।

১১। এই চুক্তিনামা স্বাক্ষরিত হবার পর হতে কার্যকর হবে এবং পরবর্তীতে প্রতি ৩ বছর পর পর তা নবায়ন করা হবে।

১২। উপরোক্ত শর্তে উভয় পক্ষের সম্মতিক্রমে নিম্নোক্ত স্বাক্ষীগণের উপস্থিতিতে অদ্য ...../...../..... বাং /...../...../২০১৭ খ্রিঃ তারিখ রোজ ..... বার ..... পওর বিভাগ, পাউবো, ..... দপ্তরে এই চুক্তিপত্র সম্পাদন করা হলো।

১ম পক্ষ

(.....)  
নির্বাহী প্রকৌশলী  
..... পওর বিভাগ  
পাউবো, .....

স্বাক্ষী

২য় পক্ষ

১। ..... পানি ব্যবস্থাপনা এসোসিয়েশন এর  
পক্ষে,

সাধারণ সম্পাদক

সভাপতি

২। ..... পানি ব্যবস্থাপনা এসোসিয়েশন এর  
পক্ষে,

সাধারণ সম্পাদক

সভাপতি

৩। ..... পানি ব্যবস্থাপনা এসোসিয়েশন এর  
পক্ষে,

সাধারণ সম্পাদক

সভাপতি

স্বাক্ষী

স্বাক্ষী

সংযোজনী- ১

পানি ব্যবস্থাপনা এসোসিয়েশন এর আওতাধিন ক্যাচমেন্ট/সুইসভিত্তিক  
পানি ব্যবস্থাপনা অবকাঠামোর বিস্তারিত বিবরণ  
পোল্ডার নং .....

ক্যাচমেন্ট এলাকা/সুইস: .....

পানি ব্যবস্থাপনা অবকাঠামোর বিস্তারিত বিবরণী (নমুনা)

ক্রঃ নং	পানি ব্যবস্থাপনা অবকাঠামো	বিবরণ	বর্তমান অবস্থা	অবস্থান ( যে পানি ব্যবস্থাপনা এসোসিয়েশন এর এলাকায় অবস্থিত)	অবস্থান ( যে পানি ব্যবস্থাপনা দলের এলাকায় অবস্থিত)
১।	বেড়ি বাঁধ				
২।	সুইস				
৩।	ইনলেট				
৪।	আউটলেট				
৫।	খাল				
৬।	শাখা খাল				
৭।	CAWM এর ক্ষুদ্র অবকাঠামো				



বিঃদ্র: এছাড়া অত্র পোল্ডারে প্রস্তাবিত কোন আউটলেট, ইনলেট ইত্যাদি অবকাঠামো নির্মিত হলে তাও এই চুক্তি নামার অন্তর্ভুক্ত হবে।

**১ম পক্ষ**

(.....)  
নির্বাহী প্রকৌশলী  
পওর বিভাগ  
পাউবো, .....

স্বাক্ষর

**২য় পক্ষ**

১। ..... পানি ব্যবস্থাপনা এসোসিয়েশন এর পক্ষে,

সাধারণ সম্পাদক

সভাপতি

২। ..... পানি ব্যবস্থাপনা এসোসিয়েশন এর পক্ষে,

সাধারণ সম্পাদক

সভাপতি

৩। ..... পানি ব্যবস্থাপনা এসোসিয়েশন এর পক্ষে,

সাধারণ সম্পাদক

সভাপতি

স্বাক্ষর

স্বাক্ষর

সংযুক্তি-২

**পরিচালন ও রক্ষণাবেক্ষণ চুক্তিনামার মূল বিষয়**

অবকাঠামো পরিচালন ও রক্ষণাবেক্ষণের নিমিত্তে বাংলাদেশ পানি উন্নয়ন বোর্ড এবং পানি ব্যবস্থাপনা এসোসিয়েশন এর মধ্যে স্বাক্ষরিত চুক্তিনামার মূল বিষয়

**পানি ব্যবস্থাপনা সংগঠনের দায়িত্ব:**

১।	বাঁধ মেরামত: ঘোগ মেরামত, রেইন কাট মেরামত এবং ঐ সকল জায়গায় ঘাসের চাপড়া লাগানো/মেরামত, জঙ্গল/আগাছা পরিষ্কার ইত্যাদি।
২।	স্লুইস/ইনলেট রক্ষণাবেক্ষণ: গ্রিজ লাগানো, গেট ও হোয়েস্ট-এর ছোট আকারে মেরামত, প্রয়োজনে নাট ও বল্টু বদলানো, গেটের কাছে খালের ময়লা পরিষ্কার, গেট রং করা, স্লুইস গেটের ফ্লোর থেকে পলি সরিয়ে ফেলা, সিসি ব্লক স্থানচ্যুত হলে পুনঃস্থাপন করা, রেইন কাট মেরামত, অবকাঠামোর চারপাশ পরিষ্কার, নিয়মিত রক্ষণাবেক্ষণ ইত্যাদি।
৩।	খাল পরিষ্কার: কচুরিপানা ও অন্যান্য জলীয় আগাছা পরিষ্কার করা। সেই সাথে পানি প্রবাহের ব্যাঘাত ঘটায় এমন সব জিনিস সরিয়ে ফেলা।
৪।	পানি ব্যবস্থাপনা অবকাঠামোর দৈনন্দিন ব্যবস্থাপনা, পরিচালন ও নিয়মিত রক্ষণাবেক্ষণের দায়িত্ব সংশ্লিষ্ট পানি ব্যবস্থাপনা দলকে অর্পণ করবে এবং নিয়মিত পরিবিক্ষণ ও সহযোগিতা করবে;
৫।	পানি উন্নয়ন বোর্ড বেড়ি বাঁধে বনায়ন নীতিমালা ও বৃক্ষ রোপণ ম্যানুয়াল অনুযায়ী বেড়ি বাঁধে বৃক্ষ রোপণ

	করা বা বিধিসম্মতভাবে বিনা চাষে অন্যান্য ফসলের চাষাবাদ করা।
৬।	বাঁধ যাতে কেউ না কাটে বা কোন রূপ ক্ষতি সাধন না করে তা নিশ্চিত করা এবং কেউ যদি বাঁধ কেটে ফেলে তার বিরুদ্ধে আইনানুগ ব্যবস্থা গ্রহণ করা। প্রয়োজনে পানি উন্নয়ন বোর্ডের সহযোগিতা গ্রহণ।
৭।	কেউ যাতে স্লুইচ গেট বা ইনলেটের মধ্য দিয়ে কাঠের গুড়ি পার করার চেষ্টা না করে তা নিশ্চিত করা।
৮।	বর্ষাকালের পূর্বে, বর্ষার সময় এবং বর্ষাকাল শেষে স্বার্থসংশ্লিষ্টদের পানির চাহিদা অনুযায়ী স্লুইস গেট সঠিকভাবে বন্ধ ও খোলা হচ্ছে কিনা তার প্রতি লক্ষ রাখা।
৯।	এই চুক্তিনামায় উল্লিখিত পানি ব্যবস্থাপনা কাঠামোর ব্যবস্থাপনা, পরিচালন ও রক্ষণাবেক্ষণের জন্য তহবিল গঠনের খাতসমূহ চিহ্নিত করা (এর মধ্যে অধিগ্রহণকৃত ভূমি, বরোপিট, বাঁধের ধার, খাল/জলাশয় ইত্যাদি উল্লেখযোগ্য এবং বিধি মোতাবেক যথাযথ কর্তৃপক্ষের অনুমতি সাপেক্ষে ব্যবহার করা।
১০।	প্রকল্পের অধীনস্থ মৎস্য চাষ উপযোগী জলাশয়ে পানি চলাচলে কোন রূপ বাধা বিঘ্ন না ঘটিয়ে সংগঠন সংশ্লিষ্ট কর্তৃপক্ষের সম্মতি সাপেক্ষে বিধি অনুযায়ী মৎস্য চাষ করতে পারবে।

### বাংলাদেশ পানি উন্নয়ন বোর্ডের দায়িত্ব:

১।	বাঁধের কাজ: ৪/৫ বছর অন্তর ডিজাইন অনুযায়ী বাঁধ পুনঃনির্মাণ, পুনরাকৃতিকরণ, ফাটল মেরামত করা, বিকল্প বাঁধ নির্মাণ করা।
২।	স্লুইস/ইনলেট রক্ষণাবেক্ষণ: হোয়েস্টিং যন্ত্রপাতির বাৎসরিক ওভারহলিং করা, গেট পুনঃস্থাপন করা ইত্যাদি।
৩।	খাল পুনঃখনন: সংগঠনের সাথে আলোচনা ও সিদ্ধান্ত ক্রমে প্রয়োজন অনুযায়ী খাল পুনঃখনন করা। সংগঠনের এর সহযোগিতায় খালের পলি অপসারণ। খালের পানি প্রবাহের বাধা সৃষ্টি করলে আইনগত ব্যবস্থা গ্রহণ অথবা আইনগত ব্যবস্থা গ্রহণে সংগঠনকে সহায়তা প্রদান
৪।	এই চুক্তিনামায় উল্লিখিত পানি ব্যবস্থাপনা কাঠামোর বড় ধরনের মেরামত এবং মেয়াদী ও জরুরী বা আপদকালীন রক্ষণাবেক্ষণ করা।
৫।	বনায়ন নীতিমালা ও বৃক্ষ রোপণ ম্যানুয়াল অনুযায়ী বেড়ি বাঁধে বৃক্ষ রোপণ করতে আত্রহী সংগঠনকে সার্বিক সহায়তা প্রদান।
৬।	প্রকল্প পরবর্তী সময়েও পানি ব্যবস্থাপনা অবকাঠামো মেরামত/সংস্কার করার প্রয়োজন দেখা দিলে সংগঠনের সাথে আলোচনা করে প্রয়োজনীয় ব্যবস্থা গ্রহণ।

### ১ম পক্ষ

(\_\_\_\_\_)

নির্বাহী প্রকৌশলী

পওর বিভাগ, পাউবো, \_\_\_\_\_

### ২য় পক্ষ

১। \_\_\_\_\_ পানি ব্যবস্থাপনা এসোসিয়েশন এর পক্ষে,

সাধারণ সম্পাদক

সভাপতি