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(BWDB)



Kingdom of the Netherland

**Embassy of the Kingdom of the Netherlands**  
(EKN) Dhaka, Bangladesh



**Department of Agricultural Extension**  
(DAE)



## Half-Yearly Progress Report January to June 2018



# Half Yearly Progress Report

January to June 2018

## Blue Gold Program

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# Glossary

ADP	Annual Development Plan
ADG	Additional Director General
AEO	Agricultural Extension Officer
AGEP	Agricultural Growth and Employment Program
ARM	Annual Review Mission
BAU	Bangladesh Agricultural University
BGP	Blue Gold Program
BWDB	Bangladesh Water Development Board
CAWM	Community-led Agricultural Water Management
CAHW	Community Animal Health Worker
CBO	Community-Based Organisation
CDMP	Comprehensive Disaster Management Program
CDSP IV	Char Development and Settlement Project Phase IV
CEIP	Coastal Embankment improvement Project
CGIAR	Consultative Group on International Agricultural Research
CII	Cropping Intensity Initiative
CIMMYT	International Maize and Wheat Improvement Centre
CLF	Community-led Fishery
CO	Community Organizer
CPWF	Challenge Programme on Water and Food (CPWF)
CSISA	Cereal Systems Initiative for South Asia
DAE	Department of Agricultural Extension
DAM	Department of Agricultural Marketing
DLS	Department of Livestock Services
DoC	Department of Cooperatives
DoF	Department of Fisheries
DP III	(BWDB) Department of Planning III
DPP	Development Project Proforma
DRR	Disaster Risk Reduction
DTL	Deputy Team Leader
EKN	Embassy of the Kingdom of the Netherlands
EOI	Expression of Interest
EMM	Euroconsult Mott MacDonald
EWM	Equitable Water Management
FFD	Farmer Field Day
FFS	Farmer Field School
FGD	Focus group Discussion
GAP	Gender Action Plan
GESAP	Gender Equality Strategy and Action Plan (of BWDB)
GoB	Government of Bangladesh
GoN	Government of the Netherlands
GPWM	Guidelines for Participatory Water Management (of 2000)
IRRI	International Rice Research Institute
ha	Hectare
HH	Household
HYV	High Yielding Variety
IF	Innovation Fund
IFMC	Integrated Farm Management Component
IGA	Income Generating Activity

IMRC	Inter-Ministerial Review Committee
IPM	Integrated Pest Management
IPSWAM	Integrated Planning for Sustainable Water Management
IWM	Institute of Water Modelling
IWMI	International Water Management Institute
IWRM	Integrated Water Resources Management
LCG	Local Consultative Group
LCS	Landless/Labour Contracting Societies
LG	Local Government
LGED	Local Government Engineering Department
LGI	Local Government Institutions
M&E	Monitoring and Evaluation
MFS	Market-Oriented Field Schools
MRL	Monitoring, Reflection & Learning
MoU	Memorandum of Understanding
MoWR	Ministry of Water Resources
MTR	Mid-Term Review Mission
NGO	Non-Governmental Organisation
O&M	Operation and Maintenance
OCWM	(BWBD) Office of the Chief of Water Management
PCD	Project Coordinating Director
PCWM	Polder Community Water Management
PD	Project Director
PDP	Polder Development Plan
PM	Participatory Monitoring
PMC	Project Management Committee
PSC	Program Steering Committee
PWMR	Participatory Water Management Rule (of 2014)
RDPP	Revised Development Project Proforma
RF	Resource Farmer
SDE	Sub-Divisional Engineer
SVC	Strengthened Value Chains
SWAIWRPMP	Southwest Area Integrated Water Resources Planning and Management Project
TA	Technical Assistance
T&C	Training & Communications
TL	Team Leader
TNA	Training Needs Assessment
TOT	Training of Trainers
UAO	Upazila Agricultural Officer
UP	Union Parishad
UZP	Upazila Parishad
WAP	Water Management Group Action Plan
VC	Value Chain
VCA	Value Chain Analysis
VCD	Value Chain Development
VCS	Value Chain Selection
WASH	Water Sanitation and Hygiene education
WMA	Water Management Association
WMG	Water Management Group
WMIP	Water Management Improvement Project
WMO	Water Management Organisation
WRM	Water Resource Management
WUR	Wageningen University and Research Centre
XEN	Executive Engineer (BWDB)

ZSEs

Zonal Socio-Economists

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## Executive summary

This report presents the progress of the Blue Gold Program between January and June 2018. The BGP aims to reduce poverty and stimulate economic development in 22 coastal polders in Bangladesh through improved water resource management and enhanced agricultural productivity and profitability.

In this reporting period, many farmers residing in the 8 polders under Phase I, but also in other polders, have been able to successfully establish and harvest additional crop. Many farmers have introduced HYV T.Aman in the monsoon of 2017, followed by a chance crop (e.g. Mustard) and planted afterwards a Rabi crop to close their annual cropping cycle. They have been able to do so, because they adopted improved water and agriculture management practices. The WMGs reported that their collective actions for O&M have an overall value of BDT 6,460,094 in cash and kind. This has been supported by many reported activities related to cleaning water hyacinth and removing obstacles from canals, repairing infrastructure and excavating field drains and canals. A Pilot study to see the impact of BGP intervention in the polder 43/2B confirms that annual cropping intensity has increased from 155% in before BGP to 204% in 2018, resulting in more crop production. Also at homestead level more production has been generated, especially benefitting women. Better linkages with market actors and private sector also resulted in more profitability from produce sold. The respective 500 WMGs are positive about their performance too: 68% of WMGs believes that they have achieved more than 60% of BGP objectives, which is confirmed by polder team assessments.

During this reporting period, the following activities of BGP contributed to this success:

- The acceleration in design data collection and design preparation benefitting WRM infrastructure implementation. Rehabilitation works could be executed in all 22 polders, with estimated completion of 50% for FY 2017-2018 (as of June 2018). The total cumulative program physical progress is tentatively estimated around 32%.
- The effective role out of FFS cycle no. 10 on homestead vegetables and fruit production and poultry rearing (including a module on nutrition). After the training, the production of vegetables and fruits cultivated increased 2 to 3 times, and commercial sale increased from an average ~20% to ~88%; the sale of eggs and poultry also increased on average by 3 to 4 times.
- Awareness creation, demonstration schemes and trainings on new HYV crops and connected water and agri-management practices through 40 additional Cropping Intensity Initiatives (CII) and 25 extra Community Agricultural Water Management (CAWM) schemes. At the same, DAE has been able to roll out more 100 field crop FFS. Similar outreach efforts to stimulate aquaculture production were launched through 14 Community-led Fisheries schemes.
- The introduction of the Sluice Catchment O&M planning approach and the role out in all Phase I polders, and further efforts to make this approach more WMO-led and efficient. O&M committees and sub-committees have been formed to take leadership.
- Activities on strengthening value chains and collective action for economic development have resulted in a tremendous increase in adoption. While on average only 1-2% of WMG members trained use to keep records, contact market actors, use ICT and do collective purchase & sale, now on average 84-99% has adopted these practices.
- A program-wide agro-extension approach has been developed and is being rolled out. As part of that training messages and good practices on water management, agriculture and collective action have been spread further by Horizontal learning activities targeting 94 WMGs and many success stories have reported. Also, 24 drama shows have motivated residents of phase II and III polders to form strong WMGs and a new experiential learning approach for field staff has resulted in better facilitation towards polder communities. Printing and distribution of Blue Gold Barta targeting

WMOs towards sharing and replication of good practices, success, and innovation for confidence and capacity building of WMOs.

- Field staff is nowadays directly responsible to train and facilitate gender and leadership among WMGs, expecting to result in more effective gender mainstreaming. The acceptance of the updated BWDB Gender Action Plan has also been a major milestone.
- BGP also organised special awareness raising activities around environment and DRR on national celebration days and after.

Main remaining challenges and proposed mitigation strategies:

- The infrastructural progress needs to be further accelerated during 2018-19 and 2019-20. With the approval of the revised DPP, mobilisation of additional resources by BWDB will help to reach the targets for rehabilitation / construction works.
- The delayed registration of WMOs, low progress in implementation of physical infrastructure under BWDB and more over the delayed approval of RDPP will affect the Phasing Out schedule, especially for 8 polders under 1<sup>st</sup> phase, reschedule may be required.
- Collective action around water management and economic development can be further expanded and scaled out, especially paying more attention on local needs and community based service providers. BGP aims to continue the activities under collective action further, increased the number of beneficiaries through the recent launch of unbundled FFS module, more experiential training for WMOs, catchment level O & M planning, expanded implementation of horizontal learning on good practices, results those are already tested and found successful and effective.

# 1 Introduction

After the independence of Bangladesh, the Governments of Bangladesh and Netherlands have been working closely together in the coastal zone of Bangladesh to create a sustainable environment for a better livelihood of the coastal communities. The Blue Gold Program (BGP) is designed systematically on the experiences and the lessons learnt over the past ten years of the different coastal project like IPSWAM and considered new insights in how to deal with the challenges created in the environment. The BGP aims to reduce poverty and stimulate economic development through improved water resource management that ultimately supports to improve agricultural and economic development in the polders.

The Blue Gold Program became operational in March 2013 and extends over a 8 year period, until December 2020. Its operations concentrate on 22 polders of four districts: Khulna, Satkhira, Patuakhali, and Barguna. This project aims to reduce poverty and improve food security through equitable water management and strengthened value chains-resulting in improved livelihoods for communities. The expected outcome of the project is that crop and water management practices will be reduced poverty for 199,326 households living in 119,124 ha of selected coastal polders by creating a healthy living environment and a sustainable socio-economic development the Southwest Coastal Zone of Bangladesh.

BGP is being implemented by the Bangladesh Water Development Board (BWDB) in the lead, and the Department of Agricultural Extension (DAE) with separate DPP– in association with Department of Livestock Services (DLS) and Department of Fisheries (DoF) through MoU with support of the Technical Assistance Team jointly funded by the Governments of Bangladesh and the Netherlands. The BGP is also guided by different national policies of Bangladesh like the National Water Policy (NWPo, 1999), the Guidelines for Participatory Water Management (GPWM, 2000), the National Water Management Plan (NWMP, 2000) and the Participatory Water Management Rule (PWMR, 2014).

After the introductory chapter, this half-yearly progress report presents a discussion and description on major trends and achievements within the Blue Gold Program (Chapter 2). The following chapter illustrates polder wise changes in term of agricultural productions and water management (Chapter 3). The next three chapters focus on the update on Monitoring, Reflection and Learning (Chapter 4), the progress of the Innovation Fund (Chapter 5) and Financial Report (Chapter 6). The last chapter of this report highlights on the Project management.

## 2 Major Blue Gold Trends & Achievements

### 2.1 Households Reached & Area Covered

BGP is working with its full efforts in all the selected polders (22), covering an estimated 199,326 households and an estimated area of 119,124 ha

The household coverage is around 19% higher than the initial beneficiary target as set out in the original Development Project Proformas (DPPs) with the Bangladesh Water Development Board (BWDB) and Department of Agricultural Extension (DAE). In terms of land coverage, the Blue Gold working area is 26% smaller than originally envisioned in the DPP.

### 2.2 Increased Production and Profitability

#### 2.2.1 Improvement of cropping system

Blue Gold Program is giving main emphasize on an improved water management system for coastal communities, while it is also supporting them to adopt improved crop management technologies and efficient marketing of their products. These interventions all together helped the coastal communities in 22 BGP polders to increase cropping intensities of their land and this is one of the main agendas of the Blue Gold program. With the support from BWDB many of the communities specially the phase-1 polders communities took many initiatives to improve their water management system. It is important to note that WMGs have taken some initiatives like small repairing of inlet and outlets and making of field channel for internal water management. In addition, the approval of the RDPP by the planning commission will intensify the implementation of infrastructural works. Like earlier, the BGP has continued the technical assistance to farmers to increase their cropping intensity. Following steps were continued:

- *Assist implementation of DAE activities:* Complement DAE activities by facilitating horizontal expansion of improved agronomic practices through WMGs and selection of FFS sites that have a year-round cropping potential;
- *Assist implementation of CAWM:* Complement CAWM by bringing in technical assistance on improved agronomic practices and through horizontal expansion of proven CAWM interventions;
- *Implement demonstrations:* Initiate demonstration plots (with inputs such as improved seeds and fertilisers) to show farmers the potential of cropping system improvements.

In this period, one could see the successful harvesting of a third crop in the attempt to promote an alternative profitable annual cropping pattern, especially in the Phase I polders. This started with the introduction of short duration HYV T. Aman, followed by a chance crop (e.g. Mustard) and ending the yearly cropping cycle with a variety of different Rabi crops (e.g. Okra). The Cropping Intensity Initiatives (CIIs) were organised at 40 WMGs on approximately 50 hectares in the Phase I polders and spread across three zones. They either made use of improved water resource management (WRM) opportunities following BGP rehabilitation or made the most of an existing WRM situation in suitable sub-catchments. Farmer Field Day (FFDs) was organized for each new crop to spread the information among farmers about the potential economic gain. There were also horizontal learning events for sharing the success of adopting new profitable cropping patterns with surrounding WMG members. The CAWM initiative has also stimulated the synchronisation of crops and the cultivation high-yielding varieties (HYV) of mung bean mustard, sesame and watermelon), and spreading those practices via horizontal learning to other WMGs.

The reporting period (January to June) is mainly concerned with the Rabi season (From November to April). Normally, WMG members cultivate local/Modern varieties of Rabi e.g. mung bean BARI-6, watermelon, sunflower, groundnut, sesame and vegetables and Boro paddy. A pilot study in 2018 to see the impact of

BGP interventions in the polder 43/2B shows that following implementation of BGP, the area of crops has increased significantly; with an increase in the overall cropping intensity from 155% to 204% see the Table 1. This study also shows a much larger area is under a different Rabi season cropping pattern: there has been a switch from keshari (grass pea) to mung bean and watermelon (Table 2). Although the percentage of felon (cowpea), chilli and groundnuts has fallen as part of the total area of Rabi crops for, the actual area of these crops have increased as there has been a large increase in the total area of Rabi crops (Table 3).

**Table 1: Seasonal crop area in the polder 43/2B**

Sub-catchment	Total land area and coverage in different seasons
Area of land ( ha)	3158
<b>Before BGP</b>	
Land coverage in Kharif –II	87%
Land coverage in Kharif –I	20%
Land coverage in Rabi	48%
total (ci)	155%
<b>After BGP</b>	
Land coverage in Kharif –II	93%
Land coverage in Kharif –I	30%
Land coverage in Rabi	81%
total (ci)	204%

**Table 2: Rabi crops in the polder 43/2B**

	Percentage of total area of rabi crops		Percentage of total cultivable area	
	before BGP	now	before BGP	now
Sesame	8.2%	0.6%	3.9%	0.5%
Sweet-potato	2.8%	0.0%	1.4%	0.0%
Keshari (grass pea)	42.5%	0.6%	20.3%	0.5%
Felon (cow pea)	2.9%	2.8%	1.4%	2.3%
Chilli	5.3%	3.2%	2.5%	2.6%
Mung bean	27.3%	67.5%	13.1%	54.4%
Watermelon	0.0%	17.4%	0.0%	14.0%
Groundnut	11.0%	7.8%	5.3%	6.3%
Total	100.0%	100.0%	47.9%	80.6%

This change in cropping pattern has been driven by a combination of improved water management (better drainage and availability of irrigation water), awareness and knowledge of new crops (paddy HYV, improved varieties of mung bean, watermelon) and financial incentives. Discussions with WMG indicated that much of the improved knowledge came from BGP – with MFS (Market Field Schools) introducing BR52 (short-

duration Aman HYV) and improved methods of mung bean cultivation, and FFS introducing line sowing for paddy and mung bean, improved paddy seedbeds and better use of fertiliser.

In BGP area, farmers have experienced bad periods for cultivation due to regular events of erratic rainfall in the last couple of years. As a result, crop production has been badly affected, and crop loss was up to 30 percent. Results from the CAWM areas of Khulna, Patuakhali and Satkhira zone show that this year Rabi production was better compared to previous 2/3 years (see Table 3)

**Table 3: CAWM area of land under different Rabi crops, main varieties, production and market price by zone**

Name of the Zone	Rabi Crops	Main varieties	Total cultivated land (ha)	Production Average T/ha	Market price (BDT)/mound
Patuakhali Zone	Mungbean	BARI Mung 6	133	1.3	2800
	Watermelon	Big family (mainly)	9	30	800
	Boro Dhan	BR 28	86	6.5	700
	Others	Ground nut, sunflower etc.	27	1.3	250
Khulna Zone	Mungbean	BARI Mung 6	5	0.7	2200
	Watermelon	Big family, Jaguar (mainly)	32	38	800
	Borodhan	BR 28 & hybrid	13	6	750
	Others	Vegetables etc.	35	9	1200
Satkhira Zone	Boro	BR 28 and hybrid	49	6.1	800



### 2.2.2 Trends among FFS Farmers

A total of 67 FFS (i.e. cycle 10 FFS) completed on poultry and homestead production modules with emphasis on market orientation in Khulna and Patuakhali during October 2017-April 2018. A total of 1675 members were trained, where 95% were women. In Khulna the FFS implemented in the polders are 25, 27/1, 27/2, 28/1, 28/2, 34/2-part and in Patuakhali, the polders are 55/2A, 55/2C, 47/3 & 47/4 were included.

The data shows that after completion of this FFS, farmers got better production results than earlier. Due to a higher production, farmers are consuming more eggs, poultry, fruits and vegetables compared to the benchmark survey. It is noteworthy to mention that data indicates that modules like homestead vegetables and fruits and poultry production helped to increase the household income while the nutrition module ensured a better nutrition of the farmer households.

The Blue Gold Program facilitates horizontal learning (Chapter 2.6) to scale up the agronomic practices adopted by FFS Farmers. The Blue Gold Program works together with BTV's Mati-0-Manush for this purpose. The television program regularly reports about Blue Gold activities and promoted agronomic practices. Mati-0-Manush is watched by 55% of the surveyed farmers.

Based on the data of this FFS cycle, more detailed trends on homestead vegetables and fruits, poultry production and nutritional status of these households are given hereafter.

#### FFS Survey Methodology

At the beginning of a Farmer Field School (FFS), the FFS facilitator interviews the participating farmers with a short questionnaire about their farm management and production (benchmark survey). The objectives of this benchmark survey are: (i) To establish benchmarks that can be used by the participants for measuring their progress or changes in behaviour and (ii) to generate interest and introduce the topics which will be discussed and practiced in the FFS.

At the end of the FFS the questions are repeated so that participants can assess their own progress (end line survey). The differences between the end data and the benchmark data (for example, an increase of production) can then be presented by the farmers during farmer field days to motivate other farmers to replicate FFS practices. By facilitating the organisation of HL, the BGP aims at expansion of good agricultural practices.

More detailed information about the results and methodology of the FFS surveys will be found in detail report of FFS Cycle-10 (on progress).

### Trends in Homestead Gardening (vegetables and fruits)

The 10th FFS cycle included a module on homestead gardening, which aimed to disseminate production technologies into practice and increasing production of vegetables and fruits for home consumption as well as for income generation.

Table 4 shows that among the participants, a considerable percentage (90%) in Khulna practised homestead gardening while the practice was significantly lower with 60% in Patuakhali at the start of the FFS. At the end of the FFS, all FFS farmers have started growing vegetables at their homestead. An increasing number of farmers are now efficiently growing more than one vegetable and using a number of locations within the homestead. The training gave them the inspiration to undertake homestead gardening in a more commercial manner, and as a result around 90% of farmers are selling their homestead vegetables nowadays while before the training only about 20% sold their homestead vegetable.

**Table 4: Comparison of homestead vegetable production between the benchmark and end line in Khulna and Patuakhali district**

Homestead vegetables	Khulna		Patuakhali	
	Benchmark (n=825)	End FFS (n=825)	Benchmark (n=750)	End FFS (n=750)
<b>Farmers growing homestead vegetables (% of participant)</b>	89%	100%	60%	100%
<b>Average number of different vegetables grown within the homestead</b>	3.5	7.9	2	5.8
<b>Average number of different locations used within the same homestead</b>	2	7.9	1.7	6.5
<b>Selling of vegetable (% of participant)</b>	23%	86%	19%	90%

Table 5 shows the average number of trees in each homestead area before and after the training. Before the FFS training, around 15% of participants practised the use of fertilizers in fruit tree management while the end survey shows that now almost all of them are practising this. The result also shows a significant percentage of participants have adopted pest management where most of them use the integrated pest management methods.

**Table 5: Comparison of homestead fruit production between benchmark and end line in Khulna and Patuakhali district**

Fruit trees in homestead garden	Khulna		Patuakhali	
	Benchmark (n=825)	End FFS (n=825)	Benchmark (n=750)	End FFS (n=750)
<b>Average number of trees</b>	22	33	21	30
<b>Using fertilizer in fruit trees (% of participant)</b>	15%	100%	14%	99%
<b>Practice pest management (% of participant)</b>	15%	97%	30%	80%

### Trends in poultry

FFS cycle 10 also included the poultry module. The objective of this module is to increase the production of birds and eggs and reduce losses due to diseases. Technical topics in the poultry module include housing, feeding, use of hazal, separating chicks from the mother hen, candling, and vaccination. Linkages with input providers, community poultry workers and with the staff of the department of livestock have been strengthened.

Table 6 shows the average number of chicken, chicks, ducks and ducklings per household. The end survey shows big increases in the number of birds. This can be partly attributed to improved rearing methods and is also partly explained by some chicks or ducklings being distributed to the FFS participants.

**Table 6: Comparison between benchmark and end line regarding average number of poultry per HH in Khulna and Patuakhali district**

Number of birds	Khulna (average per HH)		Patuakhali (average per HH)	
	Benchmark (n=825)	End FFS (n=825)	Benchmark (n=750)	End FFS (n=750)
<b>Chickens</b>	4	9	5	11
<b>Chicks</b>	6	19	10	24
<b>Ducks</b>	4	6	5	10
<b>Ducklings</b>	3	12	5	15

In the FFS, the participants learnt techniques to increase egg production (e.g. separating chicks from hen after 1 week). Table 7 shows how the farmers estimated the egg production per year for their chickens and ducks. These numbers are estimates.

**Table 7: Comparison between benchmark and end line regarding eggs per bird per year per HH in Khulna and Patuakhali district**

Eggs per bird	Khulna (number per year)		Patuakhali (number per year)	
	Benchmark (n=825)	End FFS (n=825)	Benchmark (n=750)	End FFS (n=750)
<b>Eggs per hen</b>	50	83	40	70
<b>Eggs per duck</b>	44	134	49	73

The results from table 8 show that in the FFS the number of farmers selling eggs augmented and the number of eggs sold per month increased over the time. On average we see that farmers reported selling more than 3-4 times each month. In addition, the table shows that the percentage of farmers selling poultry has increased. On average they reported selling over 3 to 6 times every year.

**Table 8: Comparison between benchmark and end line regarding the sale of eggs and poultry per HH in Khulna and Patuakhali District**

Poultry	Khulna		Patuakhali	
	Benchmark (n=825)	End FFS (n=825)	Benchmark (n=750)	End FFS (n=750)
<b>Selling eggs (% of participants)</b>	45%	74%	37%	75%
<b>Selling poultry (% of participants)</b>	55%	89%	42%	76%
<b>Average number of egg sold per month</b>	7.3	21	5	22
<b>Poultry sold per year</b>	4	11	5	32

During the poultry module, the FFS farmers learned several improved poultry rearing practices, such as vaccination of the birds, the use of hazals, and candling of eggs. Many farmers at the end of the FFS reported that they have adopted these practices, see the results in table 9.

**Table 9: Comparison between benchmark and end line regarding improved poultry rearing practices in Khulna and Patuakhali District**

Poultry rearing practices	Khulna (% of farmers)		Patuakhali (% of farmers)	
	Benchmark (n=825)	End FFS (n=825)	Benchmark (n=750)	End FFS (n=750)
<b>Vaccinate always</b>	2%	51%	96%	60%
<b>Vaccinate sometimes</b>	12%	47%	3%	18%
<b>Vaccinate never</b>	87%	2%	<1%	21%
<b>Use hazal</b>	3%	98%	1.7%	80%
<b>Use candling</b>	6%	98%	2%	81%
<b>Separate chicks after 1 week</b>	2%	85%	1%	64%
<b>Separate chicks after 2 weeks</b>	<1%	13%	0%	13%
<b>Separate chicks never</b>	97%	<1%	99%	22%

### Trends in Nutritional Aspects

The nutrition module was included in all FFS. The module includes cooking procedures, hygiene, and ingredients of a balanced diet. Emphasis is given on the “thousand day food requirements” which refers to special requirements for mothers during pregnancy and the first 2 years of the child. Farmers also learned about health benefits of Moringa. To stimulate farmers to think about their own diet, questions were asked in the benchmark survey on what type of food they eat each week.

**Table 10: Comparison between benchmark and end line regarding correct cooking procedures, health benefits of drum stick (moringa) and 1000-day nutrient requirements in Khulna and Patuakhali district**

	Khulna (% of farmers)		Patuakhali (% of farmers)	
	Benchmark (n=825)	End FFS (n=825)	Benchmark (n=750)	End FFS (n=750)
<b>Knows correct cooking procedures</b>				
<b>Does not know</b>	49.82%	0.48%	83%	<1%
<b>Knows partly</b>	39.03%	13.70%	7%	3%
<b>Knows fully</b>	11.15%	85.82%	9%	96%
<b>Knows health benefit of moringa</b>	21%	99%	1%	99%
<b>1000 days nutrient requirements</b>				
<b>Does not know</b>	63%	<1%	92%	<1%

	Khulna (% of farmers)		Patuakhali (% of farmers)	
	Benchmark (n=825)	End FFS (n=825)	Benchmark (n=750)	End FFS (n=750)
<b>Knows partly</b>	33%	13%	8%	3%
<b>Knows well</b>	4%	87%	<1%	97%

Table 10 shows that 50% and 83% farmers in Khulna and Patuakhali respectively did not know the correct cooking procedures. After attending the FFS, about 86% and 96% farmers in Khulna and Patuakhali respectively reported that they now fully know the correct cooking procedures. In addition, farmers of both districts were almost unaware about the health benefit of moringa and now 99% farmers aware about this. Furthermore, 63% and 92% farmers in Khulna and Patuakhali respectively did not know the 1000 days nutrient requirements while after attending the FFS 87% and 97% farmers in Khulna and Patuakhali respectively reported that they are now fully aware of the nutrient requirements.

The comparison between benchmark and end line data regarding food habit (especially days of consumption of meat, fish, eggs, fruits, milk and vegetables in a week), illustrates that after attending the FFS and at the same time practicing of homestead vegetables and fruits and poultry practices, positively contributed to an increase in the number of days consuming nutritious foods per week in both districts (see Table 11).

**Table 11: Comparison between benchmark and end line regarding food habit Food in Khulna and Patuakhali district**

Food habits	Khulna		Patuakhali	
	Benchmark (n=825)	End FFS (n=825)	Benchmark (n=750)	End FFS (n=750)
<b>Meat (times per week)</b>	<1%	1.23%	<1%	1.47%
<b>Fish (times per week)</b>	3.28%	3.69%	1.72%	3%
<b>Eggs (times per week)</b>	1.92%	2.62%	1.19%	2%
<b>Fruits (times per week)</b>	1.43%	2.90%	.95%	2%
<b>Amount vegetables per week (g)</b>	1239	1654	849	1885

### Trends in market orientation

From cycle-10, market orientation issues were incorporated within FFS sessions to enable farmers producing quality products and increasing their income from sale. More emphasis was put on improving linkages with value chain actors. To stimulate farmers to think about market orientation, questions were asked in the benchmark survey and end line survey on record keeping, networking, information and communication technologies, collective action, linkages etc.

Table 12 shows that before the FFS, farmers hardly kept records on their income and expenditure for homestead production, but at the end they started to keep records by using different means. Training inspired them to keep linking with markets, as a result a considerable percentage of participants reported that they have communicated with market actors and used ICT for agricultural information collection after the training. In addition, in the training session, farmers got motivated hearing the benefits of collective action. The table shows the positive changes among the members on collective action in practice.

**Table 12: Comparison between benchmark and end line regarding food habit in Khulna and Patuakhali district**

Record keeping	Khulna		Patuakhali	
	Benchmark (n=825)	End FFS (n=825)	Benchmark (n=750)	End FFS (n=750)
<b>Record keeping</b>	1%	98%	0%	99%
<b>Communicate with market actors</b>	1%	100%	2%	94%
<b>Use of ICT</b>	2%	84%	2%	77%
<b>Collective purchase &amp; sale</b>	1%	90%	1%	99%

### 2.2.3 Collective Actions for Economic Development

Blue Gold Program (BGP) is connecting farmers who are growing and selling high value crops (e.g. watermelon) to a steady pool of collectors and buyers. BGP is promoting “Agriculture is a Business” approach that enables farmers with small plots to take advantage of market opportunities by forming producer groups and organizing collective actions (CA). BGP created Water Management Groups (WMGs), are thus generating sufficient volume of commercial activities, and reducing transaction costs (e.g. lower margins, reduced transportation costs). These collective business initiatives are creating social and business networks that are promoting market information sharing, as well as improving agricultural production technologies through WMGs.

BGP has been linking Resource Farmers (RFs), WMG leaders with private seed companies and input retailers. So that WMG members can play a role to purchase quality seed from reliable sources within a reasonable price. BGP is also facilitating linkages among WMGs and different private sector value chain actors. In the meanwhile, WMG members can take decisions and participate in CA for input purchase and for output selling independently.

WMGs were asked how many of their members are involved in collective actions for Agricultural Development. They reported 429197 members were involved in collective actions, out of which around 21% were female. WMGs estimated the financial investment of such collective actions was BDT 5,15,51,210.00 equalling about 537888 Euro<sup>1</sup> Most common collective actions include joint purchase of seeds, pesticides and fertilizers, joint tillage, joint sale of products and joint purchasing of agricultural inputs (see table 13).

#### Success Story - Collective Action on inputs collection



Figure 1: Collective purchase of watermelon seed

Kalinogor WMG is located at Polder-22, Deluti under Paikgacha Upzila of Khulna district. Farmers of this area collectively purchased water melon seed to reduce input costs and to acquire high quality seed.

BGP facilitated the respective watermelon farmers to purchase quality seed, like the ‘Dragon variety’ from Syngenta and the Pakija variety through collective action. In Khulna region, Dragon and Pakija are the most demanded watermelon seed varieties. For this reason, Taposh Bawali, a RF, took lead in purchasing watermelon seed directly from companies like A R Malik and Syngenta. He purchased 10.10 kg Dragon seed from Syngenta and 16.25 kg Pakija. Both companies gave a discount of BDT 250-320 per packet of seed containing 100 gm. As a result, farmers saved BDT 84,320. This is a good example that BGP initiated CA involving RF, WMG and producer groups. These initiatives ensured significant economic gains and farmers also got a good production and could improve their market access.

<sup>1</sup> 1 Euro=BDT 95.84



**Table 13: Participation in collective actions in different economic activities (source: Blue Gold WMG Tracker)**

Row Labels	Up to June 2018		
	Total participants	% of female	Economic Activities-Investment (BDT)
Purchase of seeds	9416	12.1	74,07,850.00
Purchase of pesticide	8536	11.3	48,89,085.00
Vaccination of poultry & livestock	6849	48.9	2,42,110.00
Tillage land for crops	4478	8.3	97,71,400.00
Selling products	4191	13.7	2,14,57,065.00
Purchase of fertilizer	3722	15.2	26,51,515.00
Purchase of lime	1322	43.9	3,31,900.00
Community-led fish culture	1266	37.9	19,96,200.00
Purchase of fish Feed	1168	29.3	8,21,000.00
Purchase of fingerling	1135	32.7	12,05,305.00
Irrigation of Ag. Land	440	15.0	6,43,880.00
Bulking	105	34.3	31,750.00
Collective sell of milk	40	37.5	5,250.00
Others	251	17.9	96,900.00
<b>Grand Total</b>	<b>42919</b>	<b>20.7</b>	<b>5,15,51,210.00</b>

## 2.2.4 Value Chain Improvements

### Summary of Strengthening Value Chain Progress

A spectrum of activities aiming to strengthen value chains (SVC) has been incorporated in the Polder Development Plans with the ultimate goal to achieve increased economic development in the polder areas. TA activities involve WMGs as far as feasible when improving linkages among different value chain (VC) actors and promoting market access, along with enhancing awareness of cropping systems for improved productivity and profitability.

As reported in section 2.2.2, BGP ended successful implementation of TA FFS cycle 10 (a total of 67 FFS) on homestead production-poultry-nutrition by March (for detailed results see 2.2.2). BGP has also started implementing 166 modified TA FFS from April to transfer improved knowledge on home stead production, poultry rearing, beef fattening and fisheries culture. In the meantime, the TA team also provided support to 214 DAE FFS (covering 168 WMGs) in promoting market linkage for 10,700 direct beneficiaries.

### Major Achievements in strengthening value chains

- The 'initiation and launching of a modified TA FFS cycle-11' being developed as a single module. These are demand driven FFS sessions run by Farmer Trainers (FTs) and aiming better at the poorest members within the polder communities. This module has been developed during a series of workshops and sharing events with experts from different disciplines. 'Community Led Fisheries (CLF)', programs have been initiated to promote fish culture involving WMG members. Fisheries



offer potential economic benefits. The CLF programs do not only promote improved fish culture but also promote market linkages among CLF participants. As a result participants will be able to earn more from managing their water resources. BGP has also organized capacity building trainings for 124 RFs and market visits for RF group leaders and other farmers (133 participants in total) during TA FFS cycle 9 & 10 to increase knowledge on market systems. We expected that these capacity building efforts and market visits will contribute in strengthening the networking ability of RFs and RFs will be able to organize collective actions in future, benefiting FFS farmers. BGP is organizing regular 'networking' events, VC actor meetings (3), linkage workshops involving private sector actors (10), RFs and WMG members as part of its VC and market development effort. This will enhance information flow among different actors in VC and result in smooth exchange of products and services that will increase income earning potential. BGP lately organized a VC development workshop on Water Melon and T. Aman rice to discuss VC constraints and to create linkages among VC actors. The economic impact could be achieved by either reducing production related costs or by initiating different types of 'collective actions' among farmers. Another option would be assisting collective sales with a premier price where forward actors and producers enjoy a win-win business relationship. At Patuakhali, a total of 31 WMGs were linked with Grameen Euglena, a social enterprise and exporter. Through this linkage, 1752 farmers could receive a premium price (an additional income of 4.36 million BDT) by supplying quality mung bean to Grameen Euglena. Moreover, different private companies (e.g. Ispahani, Northern Consumers, Syngenta and ACI) were linked with WMG members to promote their products by organizing joint demonstrations. Similarly, at Khulna, a total of 30 demonstrations were organized with WMG members for promoting private company (e.g. Lal Teer, A R Malik & Metal) linkages. At Satkhira, BGP arranged a private company seed demonstration with 25 WMG members (Lal Teer). The effort of relationship building among WMG members and private companies will be able to generate more income from adopting high quality seed, improved production technology and better market linkages. BGP is also still supporting 'Moringa' collective actions and more farmers are participating in the process. 'Moringa' success prompted BGP to initiate collective actions for 'Bashok' supply (at polder 2). There has been initial success in supplying 'Bashok' leaf to a pharmaceutical company by a collector in Satkhira. Steps are taken to establish a sustainable supply chain of Bashok leaf to a renowned pharmaceutical company. This initiative will help farmers, particularly women of poor households, to earn more income by supplying leaves to companies.

### Challenges, Mitigation Measures and Lessons Learned

Modification and launching of TA FFS under an unbundled module being more appropriate for the local communities, it was challenging to design the unbundled module and to implement FFS accordingly. A series of workshops, idea sharing events, support from fellow experts, helped to achieve the goal of implementing cycle 11 FFS. This cycle 11 with unbundled module will help BGP reach higher number of beneficiaries, and enhance better market linkages, thus can be considered a step toward sustainability.

The development of 'Market Orientation and Value Chain Development Training Manual' was a lengthy process, but ensured a high-quality document considering different stakeholder opinions. BGP realise it the publication is one step, but the follow up support to those implementing in the field is even more important, and will be committed to do so.

Though collective action (CA) seems to have taken root, it is important to keep on promoting proper, effective, need- based and transparent CA organization processes for enhancing economic benefit among WMGs, RFs and VC actors. RFs require regular support to reap the benefits of BGP capacity building efforts and market visits, so that RFs can put their learning into practice for overall economic benefit of participants. One of the major challenges is the seed crisis (market failure to supply sufficient high quality seeds on time) in BGP polders. RFs could play a vital role to overcome this. This would require more awareness about how market systems actually work, coordinated networking efforts, and timely/ proper CA.

## 2.3 Improved Water Management

### 2.3.1 Water Resource Management Infrastructure

#### Introduction

Infrastructural rehabilitation works have been carried out in all the 22 polders during January to June 2018. Many implementation works could not start timely, because of late issuing of work orders. Some work orders were issued in March and late April and therefore could not be completed timely. Despite all these limitations, new works have been undertaken and TA Team along with BWDB contributed to achieve the targeted progress as much as possible. TA Team continued providing emergency staffing support to BWDB field offices, design offices and also DP-III in developing their capacity. TA team also provided continuous support to DP-III in providing all information, updates, responding to queries/ changes in relation to RDPP processing and approval.

Table 14, 15 and 16 below summarize the progress of design completed, estimate submitted and estimate vetted; overall progress of the infrastructural works from January to June 2018 and the Cumulative Progress from 2013-14 to 2017-18. An overall progress calculation of the new rehabilitation works during 2017-18 FY is not yet finalized, after all post-work measurements have been done, the progress calculation will be finalized and minor changes incorporated. It is anticipated that the progress of new works will be around 50% and the of carried over works from 2016-17 and 2015-16 is expected to increase from 32% to around 70%. The cumulative progress for new works and carried over works will be around 60%. This might result in a total cumulative program physical progress of around 32%.

#### Major Achievements

- The BWDB RDPP was signed by Minister MoWR in May 2018. During an ECNEC meeting on 21<sup>st</sup> June 2018, the BWDB RDPP was approved.
- A report on Polder 29 erosion protection study and geo-bag placement has been published in June 2018. The report provides an analysis of the effectiveness of the temporary protection works in place and recommendations for future long-term sustainable interventions to prevent erosion in polder 29.
- All TA topographic surveys have been completed, except in Patuakhali and Kalapara. Maps and reports have been shared with BWDB.
- Design data collection and development of designs accelerated during this reporting period. More improvements could be made and BGP TA team will keep on supporting in this endeavour.
- Significant repair works (re-excavation of silted up khals, and repair of sluices, inlets and outlets) have been completed in the first 12 polders; as a result, the canals, sluices, outlets and inlets are now mostly functional. The remaining works are on-going and are expected to be completed by 2018-19, except construction of new structures. Operations and Maintenance Sluice Catchment Planning (OMSCP) approach and outreach to WMOs is in full swing. In the TA team retreat in March 2018, an optimised approach for OMSCP has been developed to efficiently scale up operations and ensure the targets of exit strategy. By now we have been able to reach all Phase I polder catchments.

#### Trends

- Design and implementation of infrastructural works is accelerating and can be further speeded up with the acceptance of the revised DPP. The WMOs and Polder Teams are receiving priorities in respect of polder planning and rehabilitation works. Overall outcome of works completed so far is an improved water management system ensuring an estimated 90,000 hectares of land having somewhat increased flood protection, reduced water logging and less water stress. The expectation is that with increasing infrastructure completion rates even more hectares of land will be covered and the people residing there will get more benefit.

- The OMSCP has been developed and the number of people profiting from it will increase sharply from now onwards. The objective for the OMSCP approach is to start catchment planning for the full Blue Gold area, and depending on the polder, achieve successes of 50-70%.

### Challenges & Mitigation Measures

The delay in the RDPP approval (supposed to be approved by June 2016) put a lot of challenges on the WRM rehabilitation/ construction activities. Many works included in the rehabilitation plan for 2017-18 FY could not be undertaken. Due to this delay most polder infrastructural works, which were supposed to be completed within 2017-18 FY and 2018-19 FY, needed to be postponed. The required implementation peaks during 2018-19 and 2019-20 are very high and will be difficult to achieve. With the mobilisation of extra engineering staff and full dedication, the BGP will put everything in place to reach the targets for rehabilitation/construction works as much as possible.

There has not been any major embankment breach or erosion during the period January to June 2018. Some previous erosion points still exist in polder 29, 31part, 34/2, 22, 26, 25, 28/2, 2, 43/2A, 55/2C, and 47/4. The retired embankments for all these erosion areas have been planned, but could not be implemented because of the delayed RDPP approval.

Improving internal polder water management starts with proper operations and maintenance of existing infrastructure. The WRM Team worked closely together with zonal coordinators and training team to develop an O&M approach that creates technically sound catchment and infrastructure maintenance plans that also acknowledge local contexts. While OMSCP is an efficient approach, it will still require quite some manpower from TA team and BWDB to ensure quality catchment plans. An efficient planning was prepared in this reporting period.

**Table 14: Progress of Design Completed, Estimate Submitted & Estimate Vetted (Jan- June, 2018)**

Work Items	Unit	Plan	Design Completed	Estimate Submitted	Estimate Vetted
<b>Embankment R/S</b>	km	17.93	N/A	44.42	44.42
<b>Embankment Retirement</b>	km	15.50	2.585	2.585	2.585
<b>Canal Re-Excavation</b>	km	324.85	133.62	133.62	133.62
<b>Repair of Sluices</b>	nos.	86	18	18	18
<b>Repair of Outlet/ Inlet</b>	nos.	25	2	2	2
<b>Construction of Sluice</b>	nos.	22	4	4	4
<b>Construction of Outlet</b>	nos.	10	2	2	2
<b>Construction of Inlet</b>	nos.	3	-	-	-
<b>Construction of Culvert</b>	nos.	20	5	5	5
<b>Low Cost Bank Protection</b>	km	Ls	0.56	0.56	0.56
<b>Pumpshed</b>	nos.	4	4	0	0
<b>Closure/ Cross Bundh</b>	km	Ls	0.135	0.135	0.135

- vetting of estimate includes works for 2017-18 and 2018-19.

**Table 15: Rehabilitation Work Progress (January 2018 – June 2018)**

Work Items	Unit	Works Completed (January to June 2018)	Works still on-going (as of June 2018)
<b>Embankment Re-Sectioning</b>	km	45.832	62.799
<b>Embankment Retirement</b>	km	-	8.835
<b>Canal Re-Excavation</b>	km	51.150	82.318
<b>Repair of Sluices</b>	nos	11	12
<b>Repair of Outlet/ Inlet</b>	nos	4	1
<b>Construction of Sluice</b>	nos	1	4
<b>Construction of Outlet</b>	nos	-	-
<b>Construction of Inlet</b>	nos	-	1

**Table 16: Cumulative Rehabilitation Work Progress up to June 2018**

Work Items	Unit	Works Completed (Start of BGP to June 2018)	Works still on-going (As of June 2018)
<b>Embankment Re-Sectioning</b>	km	257.632	62.799
<b>Embankment Retirement</b>	km	2.840	8.835
<b>Canal Re-Excavation</b>	km	160.43	82.318
<b>Repair of Sluices</b>	nos	56	12
<b>Repair of Outlet/ Inlet</b>	nos	190	1
<b>Construction of Sluice</b>	nos	4	4
<b>Construction of Outlet</b>	nos	-	-
<b>Construction of Inlet</b>	nos	2	1

### 2.3.2 In Polder Water Management

#### Collective Action for Operation and Maintenance of Water Infrastructures

Collective operation and maintenance of water infrastructure is now a common scenario in the area of BGP. BGP encourages the coastal communities to take collective action so that they can use their collective ability/power to pursue their collective goals. The table below shows different types of collective actions related to O&M of water infrastructure taken by the members of WMGs. This data is taken from WMG Tracker.

WMGs mentioned how many of their members were involved in collective actions for O & M and the cost of those activities (see Table 17). They reported a total 15,289 members were involved in collective actions and around 19 % of them were woman. WMGs were asked to estimate the amount of money, labour (value in BDT) and in-kind contributions (value in BDT) to O&M. In total, they reported that collective actions for O&M amounted for BDT 64, 60,094.00 (see Table 18).

### Success Story: Collective Action to Reduce Waterlogging



**Figure 3: Water logged condition**



**Figure 2: WMG members in action**

**Success Story:** Dakshin Paschim Kalibari is an area under WMG at polder 43/2F in Amtali upazila of Barguna district, that experienced waterlogged condition due to unexpected heavy rain during March-April 2017. It resulted in severe Mungbean crop damage covering around 350-400 acres of land. Farmers tried to recover Mungbean loss by cultivating T-Aus, but inadequate tertiary drainage systems were the main obstacle. Potential fields were waterlogged with 1-1.5 feet or more water due to absence of drainage facility. It hampered Aus rice seedling production and timely transplanting, even if farmers were ready and willing.

In this circumstance, BGP polder team met with WMG EC members and advised them to call a general meeting in the locality to discuss waterlogging situation. In the meeting, BGP staffs explained to local farmers that they had already lost about 56 — 65 MT of Mungbean that can be valued at BDT 3,920,000 — 4,550,000. At the same time, farmers were going to lose additional 480 MT of Aus rice with potential market value of BDT 8,400,000 due to water logging situation. But farmers can still make money from cultivating Aus and subsequent crop if only they agree to organize collective efforts in digging a channel for removing stagnant water. The WMG members agreed to dig a field channel and accordingly fixed a date and time to excavate the canal with collective effort.

According to the decision, in the following day, 40 WMG members took part in excavating field channel. It took 4 days of hard collective labour to excavate the field channel. The field channel was 2,000 feet long, 5-6 feet wide and 3-4 feet deep. The immediate result was- about 350-400 acre of land became free from waterlogged situation and farmers could go for timely transplantation of T-Aus rice. Not only that, farmers could grow one additional Rabi crop after harvesting Aus. The channel not only helped them remove stagnant water but also helped them recover loss from damaged Mungbean along with additional income from Rabi crop since reserved water from this channel could be used for irrigation. This is a great example how WMGs could solve waterlogging problem in collective actions for economic benefit.

**Table 17: Participation and financial value of collective actions for operation & maintenance (source: Blue Gold TA WMG Tracker)**

	Up to June 2018	
	Total participants	% of female
Cleaning of khals(silt removal, cleaning of water-hyacinth, removal of cross-dam, net-pata, etc)	7707	21.9
Excavation of field channel	1544	18.5



	Up to June 2018	
	Total participants	% of female
Repair of embankment	2805	23.0
Repair/maintenance of structures-Inlets	285	9.1
Repair/maintenance of structures-Outlet	609	5.9
Repair/maintenance of structures-Sluice	2297	9.9
Others	42	11.9
<b>Grand Total</b>	<b>15289</b>	<b>19.0</b>

**Table 18: Contribution by WMG members and community people for O&M of Infrastructure**

Fund or Activities for O&M	Up to June 2018
<b>a. Present O&amp;M fund of WMG</b>	
O&M Fund (cash) available with WMGs (TK)	23,90,853.00
<b>b. Total Payouts/Contributions made for O&amp;M of infrastructures</b>	
i) Cash expenditure (Tk.) for O&M activities (25% of O & M fund)	22,50,214.00
ii) Contribution in kinds/labor (man-days converted in value -Tk.) for O&M	42,09,880.00
Total contribution for O & M in cash and kind/labour	64,60,094.00
Total (a+b)	88,50,947.00

### Other Major Trends in Participatory Water Management

The overall major trend is that a larger number of WMOs has built effective partnerships among LGIs, DAE, BWDB and WMOs for using water effectively. In many polders UP worked jointly with WMOs for water management improvements: keeping khals clean, taking necessary measures to stop salinity intrusion in the khals, removing silt from khals, repairing embankments and sluices, installing drainage pipes or culverts and taking initiatives for removing obstacles in the khal with the help of Upazila Administration. This resulted in the cultivation of HYV rice in a larger area instead of only local varieties. The farmers also started growing Rabi crops utilizing stored water in the canals/khals after successful harvest of T- Aman. In chapter 3.2 on Polder-wise trends in PWM details can be found. Below we highlight a number of major trends:

- The cleaning of water hyacinths and removing of obstacles in khals was undertaken by more than 45 WMGs in polders 22, 25, 26, 27/1, 43/1A, 43/2A, 43/2B, 43/2E, 43/2F, 55/2A and 55/2C. The collective efforts of 12 WMGs in polder 55/2A are especially remarkable, since earlier the WMGs in this polder showed little motivation to participate in water management activities.
- In polders 22, 28/1, 31-part, 43/2A and 43/2D, a total of 7 WMGs have excavated khals on their initiative.
- More than 30 WMGs in polders 25, 27/1, 34/1-part, 43/2A, 43/2D, 47/3, 55/2A and 55/2C have prepared field channels.
- A large number of infrastructural repairs were conducted. In total 13 WMGs worked on sluice gate repairs in polders 31-part, 34/1 part and 55/2A. 5 WMGs repaired an embankment in polder 55/2C and 1 WMG did a small embankment restoration work in polder 43/2D. In polder 22, a WMG had to do an

emergency repair of the embankment and successfully did so with support of UP. In polder 43/2D also a road was repaired by a WMG to avoid overflow, which could potentially destroy crops.

- In a substantial number of polders (e.g. polder 47/3, 47/4, 43/2F, 22, 30), where sluice gates have not been functional, WMG members ensured to maintain water flow during kharif-II season and preserve sweet water during Rabi season. For example, Tegachia Azimuddin outlet gate under 47/3 has been operated by a setting wooden gate and a box culvert on Varanir khal under polder 47/4 was constructed by wooden materials by WMG members themselves. Also new small-scale infrastructure was developed by WMGs. Culverts were constructed in polders 55/2C (by 2 WMGs) and 43/2B (by 4 WMGs). One WMG in polder 43/2D constructed a drainage, box culvert and removed silt from a tertiary khal to reduce water congestion. Erosion protection at one point in polder 22 was also initiated by one WMG.
- In polders 22, 30 and 43/1 part, WMG members reserved sweet water and prevented intrusion of saline water by making cross dam to irrigate crop in Rabi season and they removed the cross dam in June to drain out water for cultivating T. Aman. For example, a large collective action of 8 WMGs together took place in polder 22 to develop cross dams to reserve fresh water for water melon cultivation.
- Gher owners want to keep excess water into the polders for fish culture, creating a waterlogging problem for other agricultural lands. To mitigate this problem, WMGs in polder 47/3 sat together with Union Parishad and took decision jointly for ensuring equitable water distribution considering high land and low land in the polders and removed an illegal cross-dam.
- In all phasing out polders, more than 70% WMGs have mobilised an O&M fund, and in many other polders progress substantial progress has been made in establishing an O&M fund.
- WMA level catchment O&M committee and WMG level O&M sub-catchment committees have been formed in all phasing out polders and the committees are performing well. LGIs, DAE and BWDB representatives were present during formation of committees and organising training for them.
- Next to building partnerships with LGIs, BWDB, DAE, the respective WMGs also developed better relationships with DoF, DLS, BARI, BARRI, BINA, CIMMYT and many other private organizations with help from TA team through formal workshops, meetings and different informal activities. Results can be found in chapter 3.2 on Polder-wise trends.

### 2.3.3 Participatory Monitoring

Participatory Monitoring (PM) exercise was conducted by 500 Water Management Groups (WMGs) of 22 polders of Blue Gold Program (BGP) during April–May 2018. Through the PM exercise the WMGs have assessed their own performance<sup>2</sup> against a number of potential targets; the ‘indicators of functional WMG’ as defined by BGP form the essence of potential targets of WMGs. On the basis of monitoring results, the WMGs can make their own plan of actions to sustain progresses achieved and to improve further.

The polder teams have generally agreed with the results of self-assessment by the WMGs; however, in some cases the polder teams have a different view on the progress levels of WMGs. According to the polder teams, some WMGs have over-rated their achievements and some others have under-rated their achievements. The difference between WMGs’ self-assessment and polder teams’ assessment is shown in the following diagrams.

<sup>2</sup> WMGs have been ranked in to 5 performance grades A-E; ‘A’ => 80%; ‘B’ =70% -79%; ‘C’ =60% -69%; ‘D’ =50%- 59%; and ‘E’ =< 50%

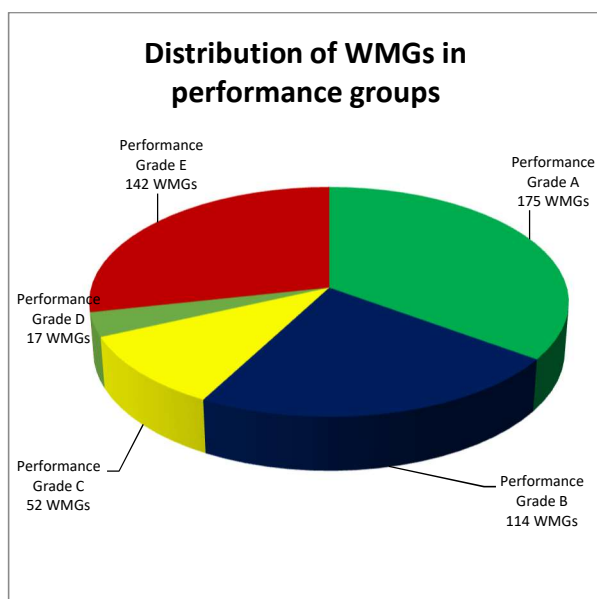


Figure 4: Self-assessment by WMGs

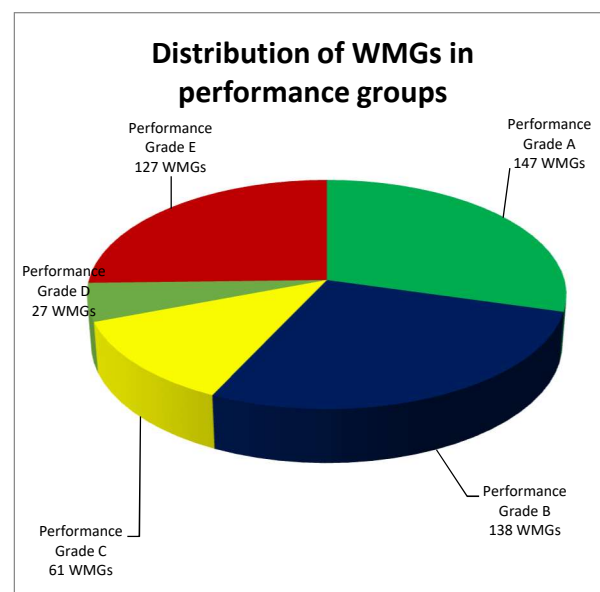


Figure 5: Polder Team's assessment

### 2.3.4 Community-led Agricultural Water Management (CAWM)

#### Introduction

CAWM has the objective to strengthen project-wide Participatory Water Management efforts and WMGs' internal and external coordination with WMAs, UP, BWDB, DAE and others. It is an intensive outreach approach in which field staff of DAE, BWDB and TA team have an active role strengthening the motivation and leadership of WMGs, stimulate crop synchronization and diversification, and improve community ownership over water management infrastructure. During the reporting period (January-June'18) a total of 25 new CAWM areas were successfully established in the different sub-catchments of Blue Gold Polders, next to a total of 25 schemes already initiated in 2016 and 2017. On average each scheme has more or less 20 hectares of land synchronized and cultivated by WMG farmers receiving a special DAE-led FFS program on CAWM. Modern variety (MV) crops are dominant in the up-scaling areas.

In the BGP area, farmers have been experiencing erratic rainfall in the Rabi season (November to April) in the past few years. In 2017, estimated crop damage in Rabi season especially for mung bean and watermelon was about 60-80% due to off-season (late February-March) heavy rainfall (*our field observation and farmers' opinion*). Damage in CAWM areas was much lower, only 20-30%. Due to the risk of early rain, Boro rice is rapidly extending in the Rabi season, if irrigation facilities are available. WMG members cultivate local/MV varieties of Rabi e.g. mung bean, *khasari*, water melon, ground nut, sesame and vegetables. In the CAWM area farmers have cultivated y chance crops e.g. mustards.

#### Progress

Fortunately, this year Rabi production is rather good compared to previous 2 to 3 years (see Table 3). During Rabi season we have observed a good number of IPWM activities initiated by WMGs to ensure irrigation facilities for Rabi crops and to reduce drainage congestion through contribution by community resources. For illustration, we present two success stories below.

**Story 1:** In Polder 2, Satkhira the WMG Jeala-Badandanga members, including female members, have re-excavated the canal depicted in the picture below, according to the prescribed design. They started the work on 7 May 2018. By the first week of June the excavation works were completed. BGP checked the work quality: overall work was carried out well. The canal length is 500 metres: in some places they had to excavate plain land and even a homestead. Some more works were constructed - one gated drainage pipe



and other two pipes to drain water. Another 40 meter long drainage canal was re-excavated by the WMG themselves without any Blue Gold contributions. Around 500 ha land will benefit from the works.



**Figure 6: Story 1- The work initiated by WMG in Polder 2**



**Figure 7: Story 2 – Improved water management condition in Polder 43/2A**

**Story 2:** In polder 43/2A (Paschim Barobighai WMG), an 1110 meter drainage canal has been re-excavated under CAWM through co-funding during FY 2017-18. In addition, a 300 metre canal re-excavation was done by the WMG through their own initiative. Last 10 to 12 years, the channel was fully silted and the land was therefore under water. Only local Aman was cultivated. About 800 ha land will be benefited now from the improved drainage conditions. The WMGs/farmers are planning to cultivate three crops (e.g. MV Aman rice-Boro/Mung bean and Aus), instead of one.

### Challenges, Mitigation Measures and Lessons Learned

The greatest challenge remains to achieve scale while at the same time encourage local initiatives. Achieving scale is part of the new strategy for CAWM. A shortage of facilities and man power, both with BGP and DAE, remains a burden to further upscale CAWM. Keeping dialogue with DAE, as well as with all zonal offices of BGP is important to get full results in CAWM. In addition, linking CAWM activities with in-polder water management initiatives may help in scaling up the areas under CAWM.

BGP drainage engineer is becoming very efficient in implementing small infrastructure, with the help of CDF-CAWM. A lesson learnt is that stimulating WMGs to keep progress is important. T. Aman seed distribution preparation already started in June for the next round of CAWM. The importance of earlier preparation is a lesson learnt from last year and the mitigation measure is now implemented. Since fresh water and irrigation facilities are available now in CAWM areas, farmers can avoid climate risks (erratic rains especially) by growing Boro rice. Boro rice is now quickly expanding and giving good profits. It is advisable to consider it in other BGG areas where appropriate.

## 2.4 Gender Equality & Women Empowerment

### Introduction

The Blue Gold Program aims to contribute to more gender equality by integrating attention to gender into its interventions, also known as 'gender mainstreaming', complimented by some specific gender-targeted activities. Many gender-related achievements of Blue Gold are continuous in the sense that they are achieved gradually over the years of BGP implementation. These include the inclusion of women and men in WMG membership (over 40% women achieved) and their Executive Committees (33% women) and the high proportion of women in Farmer Field Schools (over 80% in TA FFS; about 50% in DAE FFS).

## Major Achievements

The report of January 2018 on the rapid assessment of the Gender and Leadership Development Training, which was imparted to representatives of 122 WMGs in 2016- 2017, discussed the impact and the modalities of this training. The findings show that the GLD training was highly valued at all levels, however, a revised implementation modality has been developed and is being finalised while writing this report. Since the course was considered too lengthy to be combined with ongoing works of the WMG members, its content has been reduced. Instead of an external service provider doing formal classroom sessions, CDFs will facilitate the course directly at field level with help of a poster flipchart .

- The update of the Gender Action Plan for BWDB, prepared by an external consultant in close coordination with the PCD and BWDB's Gender Equity Committee was completed. Compared to the earlier action plan, more realistic target setting and budgeting has been included and task division between head office and project/field level has been clarified.
- The report on the gender impact of Blue Gold by comparing the gender situation in two 'old polders' with two 'new polders' was submitted in April 2018. A significant improvement in women's empowerment is found which is attributed to the Blue Gold interventions.
- Success stories of women's poultry keeping were shared through an effective HL event.
- Two gender flipcharts were developed as a new tool for creating gender awareness that will be used in different sessions of BGP.
- International Women's Day 2018 was successfully celebrated in Patuakhali, Khulna and Dhaka.
- An article on Blue Gold's contribution to women's empowerment was written by a professional journalist.
- Regular conducted courtyard sessions with new WMG members to increase their leadership and mobility

## Bringing Change and Major Trends

Several gender-related change and trends were observed in the BGP working area, such as:

- Feminization of agriculture, meaning that women's role in agriculture as compared to men is increasing. A main explanation is men taking up jobs outside agriculture (including male migration) and the intensification of agriculture, but also the increased awareness of men that women are able to conduct tasks that were previously seen as typically male. Blue Gold addresses this trend by ensuring that agricultural extension also targets women. Moreover, in contacts with DAE the importance of targeting women as farmers is stressed; a gender trajectory for DAE SAAOs in the Blue Gold area is therefore being planned.
- Potential and increased participation of women in marketing, both in input purchases and in sales of produce. This does not necessarily mean that more women visit markets (though some women do), but the use of mobile phones to contact traders and to find out information on actual prices facilitates women arranging purchases and sales without physically going to markets. BGP supports women's (and men's) involvement in marketing by a pilot training on market linkages and women's empowerment, mainly targeting women farmers in 2017. This 2-day training was well received, showing that women actually picked-up marketing activities, and is planned to be repeated. Moreover, more attention to marketing has now been integrated in all FFS curricula.
- A third gender-related trend is the increased workload of women, due to their participation in water management and agriculture related activities and production. Women usually accept this as long as household income increases; at the same time, their overload of domestic work limits their participation in productive work and social and community activities. BGP aims to address this by exploring options to reduce the amount of Unpaid Care Work by women, especially by promoting more sharing with other

household members, particularly men. At the moment, the BGP is in touch with Action Aid to potentially role out an awareness raising and capacity building program for WMOs and DAE staff.

### Challenges, Mitigation Measures

A main recent challenge is the resistance in the new polders towards women's participation in BGP interventions, in particular in active participation in leadership positions. Not only husbands are reluctant to 'allow' their wives to participate, but also women themselves often cannot imagine taking up roles outside their homestead. This challenge is mitigated by motivation and awareness raising by BGP staff.

A second challenge is the capacity of staff –both of BGP and its partners- in effectively integrating gender perspectives in their daily work. Many staff members are in principle willing, but their mind-set is still influenced by more traditional sociocultural concepts, including thinking in gender stereotypes. This has been mitigated by gender training for all zonal and field staff (end 2017). A lesson learnt in this respect is that once examples of successes are available, the attitude of staff (and beneficiaries) towards the active inclusion of women in interventions and promotion of gender equality tend to become more positive.

## 2.5 Environmental Sustainability and Disaster Risk Reduction (DRR)

### Environmental awareness creation

To create awareness about environmental sustainability, the BGP observed on 5th June World Environment Day with the theme of "Beat Plastic Pollution" with organizing a campaign on 10<sup>th</sup> June, comprising different programs including i) Cleaning of plastic waste at the surroundings of meeting venue at least one WMG in each polder and the zonal office premises ii) discussion on plastic waste at all zonal offices. iii) using social media for uploading awareness leaflet and videos. Plastic waste affects the achievement of BGP objectives, by blocking the flow of water and accelerating the siltation of water bodies.

### DRR Capacity Support

To increase awareness on disaster preparedness and to strengthen resilience of our beneficiaries, BGP observed National Disaster Preparedness Day (NDPD) 2018, titled "We will not be afraid of calamities, but overcome those", on 10 March and a "Disaster Preparedness Week" at the end of March. A one-page leaflet on cyclone preparedness was developed and about 5,000 were printed for dissemination and discussions at WMOs' regular meetings, FFDs, educational institutions, religious institutions, UP meetings and people's gatherings. We observed the Preparedness Week in all 22 BGP polders. The polder teams, the president and secretary of WMOs, DRR counsellors, teachers, religious leaders and UP chairmen led discussions on awareness messages using the one-page leaflet.

Thunder storms associated with lightning strikes are a serious threat in Bangladesh. The death tolls from lightning strikes are around 300 people in 2018 (SAARC Meteorological Research Centre in Dhaka). This made BGP to raise awareness at the WMOs regular meetings, FFDs, educational institutions, religious institutions, UP meetings and people's gatherings. For facilitating the discussions and dissemination, a one-page leaflet was developed, explaining what one needs to do during the season of lightning striking, BGP printed 6000 leaflets, which were circulated by the Ministry of Disaster Management and Relief officially, and distributed the leaflets up to WMG level.

### Lessons Learned

Awareness raising activities have demonstrated that community people are more interested in environmental and DRR issues.

## 2.6 Horizontal Learning & Partnerships

According to BGP principles, WMOs are the driving force for change. Blue Gold's Horizontal Learning (HL) program is led by WMGs and supported by the implementing agencies (BWDB and DAE) and LGIs. HL and partnerships are contributing to agricultural and economic development, environmental sustainability and finally to livelihood improvement.

### Major achievements in horizontal learning and partnership building:

- Organized 16 experience sharing visits for the 94 WMGs between Jan-Jul 2018 towards scaling up of BGP good practices, more than 482 WMG members and representatives from BWDB, DAE, UP participated in these visits. Demonstrating WMGs were briefed in advance. Visiting WMGs learned on different good practices and prepared draft replication plan as next step. Participants visited Good practices on CAWM, CII, Organisational Management, WM during HL experience sharing events;
- Preparation of draft factsheets on verified good practices are on-going and will be added to the factsheet booklet on good practices produced in 2017.
- Identification of good practices for horizontal expansion continues. WMG members initiated informal HL experience sharing visits (as their own initiative) to the places of good practices to learn from their peers and replicate according to their needs without project support, CDFs are facilitating WMGs with sharing information of good practices and connecting with host WMGs.
- Replication of improved internal water management increased in more WMGs following HL experience sharing visits and sharing of Factsheets;

### Summary of major success on Horizontal Learning (HL) and Partnership building:

- External study (Agro-Insight) on effectiveness of extension methodologies used by BGP recognized the contributions of HL activities and recommended to intensify HL activities for quick and sustainable expansion of BGP results through community initiative In the Agro-Insight study mentioned that "Informal horizontal learning can be highly effective, spontaneous, by word mouth between farmers, a new practice will only become widespread if there is at least some spontaneous horizontal learning";
- The external study also mentioned in the conclusion that "Horizontal learning is a valuable way to communicate successful initiatives to a large audience";
- Instances of results of HL and partnership building are now visible at local level, for example in relation to the improvement of in-polder water management, CAWM,O&M of WM structure, improving the profitability of agriculture, poultry, and livestock
- Partnership and cooperation among host and visiting WMGs and UPs increased while replicating the CAWM concept in the neighbouring WMGs of pilot areas;
- BGP prepared strategic action plan for effective use of useful and recommended extension approaches including Horizontal Learning, and those are reflected in the BGP Annual Action Plan 2018-19;

### Challenges, Mitigation Measures and Lessons Learned

- The challenge is to follow up with the visiting WMGs, facilitate and provide technical support for replication of good practices they learned from their peer- WMGs. CAWM and poultry rearing are scaling up at a faster rate in the BGP polders through Horizontal Learning. It is still a challenge to create more awareness on other good practices and ensuring scaling up.
- As a mitigation measures, polder and zonal teams are briefed and encouraged on the importance of follow up and technical support to the visiting WMGs towards replication of good practices.

## Success Stories of Horizontal Learning

### Success story 1: Scaling up of Poultry rearing through Horizontal Learning

The female WMG members of Betagi Chickerbandh WMG under polder-55/2A, Patuakhali achieved success on local poultry rearing at their homesteads. This improved their livelihood and also enhanced their status within their family. Each of them are nowadays earning BDT 5,000-8,000 per month through the sale of chickens and eggs. Their family members also consume a portion of chickens and eggs, which is contributing to their improved nutritional status. This success was achieved after following a FFS on poultry provided by the BGP TA and in partnership with the District office of the Department of Livestock Services. 25 interested couples from neighbouring WMGs participated in a HL experience sharing visit to Betagi Chickerbandh WMG on 28 February 2018 and learned from the female members of the host WMG on poultry rearing, visited the poultry sheds, and prepared draft replication plans at the end of their visit. Most of the visiting couples have initiated replication of poultry rearing at their homestead.



**Figure 8: HL Experience sharing visit at Betagi Chickerbandh**

### Success Story 2: Removal of obstacles from the canals through joint initiative of WMG and LGIs

Some of the local influential people have created obstacles (fixing nets, cross bandhs for catching fish) in the main canals of polder-43/2E. This is disrupting normal flow of water in the canals and the farmers were being deprived of utilizing water for crop production for long period of time. They were facing waterlogging problems during the rainy season and a scarcity of water during the dry season. WMGs raised this issue to the Joinkathi Union Parishad (UP) Chairman and requested for his support to overcome the problem. UP Chairman raised this issue in the Upazila Coordination meeting and the Upazila decided to take necessary steps in this regard. Upazila and Union Parishad jointly made a public announcement on 24 May 2018 to remove all kinds of obstacles from the canals within 3 days otherwise punitive actions would be taken against those failing to remove obstacles; many obstacles were removed after this public announcement and water flow improved in the canals. The LGI representatives hope that the remaining obstacles will be removed soon, otherwise legal action will be taken against the defaulters through organizing a mobile court.





**Figure 9: Public announcement through loud speaker to remove obstacles from canals at polder-43/2E by UP**

## 2.7 Training & Communication

### Introduction

The overall objective of providing training is to develop the capacity of staff from government institutions, non-government organizations and Union Parishad involved in BGP, as well as the members of polder level water management organizations (WMOs). Main objective of communication in BGP is to establish constructive connection and partnership through providing necessary information and receiving feedback, to/from different stakeholders towards smooth implementation, documentation, extension and sustainability,

### Major Achievements of Training & Communication

- The TA team developed methodologies to change the capacity of its field level staff (CDFs) to facilitate the process for self-sustaining WMGs.
- According to the project plan, BGP supposed to phase out 8 polders by June 2018 handing over the O&M responsibly to the WMOs. A unique approach/process for catchment O&M planning was developed to strengthen the leadership and capacity of the WMO, so they can carry out these activities by themselves after phasing out.
- This year also a training course on facilitation skills and CAWM for the SAAOs of DAE, who are actively involved in capacity building of farmers, was designed and implemented, as joint collaboration between the TA team, DAE and BWDB.
- Publication of Agro-Insight's report "Communication interventions and extension methods: a study of sharing information with farmers" (March 2018). Based on this report, a Strategic Action Plan to maximize the impact of extension methodologies was incorporated into the Annual Work Plan 2018-19.
- Print materials like Blue Gold Barta (Quarterly news bulletin in Bangla) published one issue during this period (for detail see BGP Barta Issue-11). Trend watcher is published in English targeting the top levels, one pager on thunder storm, poster, different signboards are developed and used.

- Developed videos and organized screening (See Annex 4: Video Materials Published by Blue Gold Program). BGP publications and good practices were highlighted in different print and visual medias, and shared on digital platform, workshops and seminars.
- Over 24 dramas were demonstrated in the new polders, named Unnayone Pani Babosthapona. In total, 7,560 males and 4,785 females attended in 11 different polder areas. Through this drama show community people became aware about the Blue Gold Program.

### Trends

Experiential learning based training methods are inductive and very helpful to develop the capacity of the members of the WMOs. During this period, it has been observed that the WMG members prefer the experiential based trainings instead of formal/room based trainings. Sometimes the participation in formal trainings becomes very difficult for them to engage in fully and during consecutive days, especially during cultivation and harvesting times. This informal and experiential training is cost- and time-effective, does not require travel, and provides a maximum opportunity to share/interact.

It is observed from the frequent feedback on Blue Gold Barta that WMO members, farmers like Barta to share and replicate each other's successes/good practices towards confidence building. Interactive drama and videos are also effective for mass mobilization.

### Challenges, Mitigation Measures and Lessons Learned

- Proper diagnosis is the precondition identifying interventions and designing/delivering messages for WMG capacity building. We are supporting field staff in diagnosing WMO capacity, identifying interventions and assisting Polder Teams to facilitate the process of strengthening WMO capacity for self-sustaining organization;
- According to the DPP, BGP needs to phase out from the 8 polders by June 2018. But before that every WMO requires to prepare a Sluice Catchment O&M plan and practice its execution at least during one monsoon. Some WMOs could not complete the planning process before the end of June 2018. To overcome the challenge, BGP developed an optimized approach which supporting the WMA Catchment Committee to complete the Catchment O&M planning process.
- The formation of WMGs has been problematic in some parts of Phase II and III polders. The drama shows provided have mitigated this problem to a great extent and increased enthusiasm for WMG formation.
- Publication of print materials are limited but we are distributing, sharing and using those in a manner to maximize its utilization through all WMOs, LGIs, polder team members and other stakeholders and entertaining the useful feedback from them. Collecting feedback and address those is very important to make the communication effective.

### 3 Polder Level Progress

#### 3.1 Increased Production & Profitability

Polder	Polder-wise Trends in Agricultural Production & Profitability
22	<ul style="list-style-type: none"> <li>▪ Members of eight WMGs collectively purchased 57 kg watermelon seed from Syngenta seed Company and A R Malik seed company. RF/FT/WMG leaders were linked with the private company, so that they collectively purchased seeds and save BDT 118400.</li> <li>▪ Members of two WMGs collectively did tillage on their lands and saved money and time for seed sowing.</li> <li>▪ Blue Gold DAE facilitated 12 FFS on watermelon to increase knowledge and capacity of FFS farmers.</li> <li>▪ Overall, watermelon, sesame and others Rabi crops production increased compared to last year. This has also increased the household income of the community in polder 22.</li> </ul>
25	<ul style="list-style-type: none"> <li>▪ Three WMGs have started cropping intensity initiatives and four WMGs have started CAWM. Two WMGs have started community-led fisheries.</li> <li>▪ After completion of FFS 9 &amp; 10 cycle, 2887 farmers have adopted modern technology on poultry rearing, beef fattening and vegetable cultivation.</li> <li>▪ Four hundred members from ten WMGs have started the cultivation of HYV rice collectively instead of Local Varieties (LV).</li> </ul>
26	<ul style="list-style-type: none"> <li>▪ Farmers cultivated Boro paddy in their land and used the learning from FFS. They used the modern variety and technologies and that has increased yield and income.</li> <li>▪ The farmers also used the HYV variety for vegetable cultivation in their homesteads, dykes of ponds and ghers. As a result, total agricultural production and income increased.</li> <li>▪ An increasing number of farmers cultivated Boro paddy after participation in the DAE paddy FFS. Farmers drained out water from the rice fields after the panicle initiation stage of their rice. This enabled them to cultivate Rabi crops.</li> <li>▪ Fish production in ponds is increasing after farmers learned about modern technologies from the FFS.</li> <li>▪ The WMG members individually planted Moringa in their homestead areas, road sides and other suitable places.</li> <li>▪ Fifteen WMG members have planned for the plantation of fruit tree saplings (Lemon, guava, mango, kul etc.) in their homestead areas.</li> <li>▪ Polder Team assisted all WMGs to make liaison and communicate with the horticulture centre and different nurseries for the procurement of fruit tree saplings.</li> </ul>
27/1	<ul style="list-style-type: none"> <li>▪ Compare to the last year the cultivation of HYV crop has increased. More farmers are cultivating HYV rice and other HYV and hybrid vegetables.</li> <li>▪ In the last Boro season, the production has been decreased due to Blast disease. Farmers faced a big problem due to unexpected rainfall during the harvesting period of Boro rice.</li> </ul>



	<ul style="list-style-type: none"> <li>▪ The production and involvement of farmers in carp fish cultivation is increasing compared to prawn cultivation. BGP assisted the WMGs to make functional linkages with different input, output and service markets actors.</li> </ul>
27/2	<ul style="list-style-type: none"> <li>▪ After completion 10 cycle FFS many families have started beef fattening and fish cultivation in their ponds.</li> <li>▪ After completion of 10 cycle FFS, 125 farmers have adopted modern technology on homestead vegetable and poultry rearing.</li> <li>▪ Two WMGs have been starting cropping intensity initiatives and one WMG started CAWM.</li> <li>▪ One WMG has been selected for CII. Two members from a WMG were participated in market orientation workshop and 2 members from a WMG were participated training on fish cultivation organised by DOF.</li> <li>▪ Two WMGs have collectively purchased seed and fertilizer and collectively sold the vegetables.</li> <li>▪ DAE has implemented 1 FFS on HYV rice production and Blue Gold TA has implemented 4 FFS on poultry and beef fattening involving 94 females and 6 males that helped farmers to increase productivity.</li> </ul>
28/1	<ul style="list-style-type: none"> <li>▪ Two WMGs have completed 10<sup>th</sup> cycle FFS on 3 modules namely; homestead gardening, poultry rearing, and nutrition with 50 female participants. End of the cycle, WMGs organized FFD with 350 farmers. As a result, more farmers are using new technologies in turn, they are getting better production.</li> <li>▪ In the meantime, 7 WMGs started 11<sup>th</sup> cycle FFS with 175 participants (41 males, 134 females) on fish culture &amp; market orientation and poultry rearing &amp; market orientation module.</li> <li>▪ This year polder team selected one WMG for expansion of CII activities by setting trial on 600 decimal lands where 10 farmers have participated and got 70 kg foundation BRRI dhan-49 rice seed and technical orientation for adopting new modern agricultural technologies. This influenced other farmers to adopt new technologies for more production.</li> <li>▪ Three WMGs initiated collective action activities by established business linkage with input &amp; output market actors. A total 177 farmers collectively purchase and selling their products. They sold 576 kg moringa at higher market price, beside collectively purchased 30 kg fingerlings.</li> <li>▪ Syngenta Pesticide Company has organized and facilitated two batch training for 95 farmers for 2 WMGs on HYV rice production by safely use pesticide. In addition, Jagorany Chakra Foundation has organized training on improved fish culture activities for 30 farmers. Our polder team helped to develop a linkage between these organization and farmers.</li> <li>▪ A DAE technical expert, input providers, company service providers and fish nursery owners visited and provide technical assistance to 5 WMGs where approximately 130 farmers got assistance on field crops management and fish culture activities.</li> </ul>
<b>Polder</b>	<b>Polder-wise Trends in Agricultural Production &amp; Profitability (ctd.)</b>
28/2	<ul style="list-style-type: none"> <li>▪ Four WMGs have completed 10<sup>th</sup> cycle FFS on 3 modules namely; homestead gardening, poultry rearing, and nutrition with 100 female participants. End of the cycle, WMGs organized FFD with 560 farmers.</li> </ul>

	<ul style="list-style-type: none"> <li>▪ In the meantime, 7 WMGs started 11<sup>th</sup> cycle FFS with 175 participants (30 males, 172 females) on fish culture &amp; market orientation and poultry rearing &amp; market orientation module.</li> <li>▪ Two WMGs were selected for implementing cropping intensity initiative (CII) activities with 180 decimal lands for trial.</li> <li>▪ Two WMGs started CAWM activities with 50 farmers</li> <li>▪ Due to the above intervention, more farmers are using new technologies, in turn, they are getting better production.</li> <li>▪ This year polder team selected one WMG for expansion of CII activities by setting trial on 800 decimal lands where 17 farmers have participated and got 90 kg foundation BRRI dhan-49 rice seed and technical orientation for adopting new modern agricultural technologies. Adopting new technologies supported them to reap a better production.</li> <li>▪ In addition, one national seed company named Lal Teer Ltd establish vegetable (Okra) trial with 30 decimal lands by the assistance of WMG.</li> <li>▪ In this reporting period, 7 WMGs initiated collective action activities by established business linkage with input &amp; output market actors. In this reporting period total of 177 farmers collectively purchased and sold their products.</li> </ul>
29	<ul style="list-style-type: none"> <li>▪ In the reporting period, farmers cultivated HYV varieties for Boro paddy, sesame, vegetables instead local varieties thus their overall production and income has increased.</li> <li>▪ CAWM introduced mustard with zero tillage. Immediately after harvesting mustard, the CAWM scheme facilitated Boro (BRRI 28, 58, 67 and HIRA-2)/vegetable/sesame in the same land. The possibility of doing triple cropping had a great impact on the minds of the farmers and they are keen to keep on adopting this approach</li> </ul>
30	<ul style="list-style-type: none"> <li>▪ The farmers have adopted new technologies, HYV of crop (paddy, okra, string bean, cucumber), improved feeds of fish and poultry etc. thus the farmers of this polder are getting more profit compared to last year.</li> <li>▪ Profit from agriculture, aquaculture, poultry and livestock increased too., They are using improved seeds and management, using quality fingerlings and feed in aquaculture and using hazal and improved feed in poultry farming.</li> <li>▪ Members of several WMGs purchased agricultural inputs jointly to reduce costs.</li> </ul>
31 part	<ul style="list-style-type: none"> <li>▪ During the reporting period, 50 acre land came under watermelon cultivation. Farmers purchased Hybrid watermelon seeds. 100 kg Hybrid Boro rice collectively purchased by Ghater Khal WMG and Boro rice cultivation increased to 100 ha.</li> <li>▪ Okra cultivated in CII trial plot and Mustard FFD organized. Through FFD, farmers became aware about cropping intensity initiatives benefits.</li> <li>▪ Farmers cultivated short duration HYV T-Aman that opened path to cultivate a third crop, like mustard, between T-Aman and Boro/ Sesame cultivation periods.</li> </ul>
34/1 part	<ul style="list-style-type: none"> <li>▪ After completion of 10 cycle, 300 farmers have adopted modern technologies on poultry rearing and getting more poultry production. Three WMGs started cropping intensity initiatives and one WMG started CAWM. As a result, more Farmers cultivated HYV paddy instead of LV.</li> <li>▪ The polder team also facilitated WMGs in creating linkages with Union Parishad, BWDB, DAE, DLS, DoF, resource farmers, private sectors and different market actors for getting support regarding agriculture production and water management.</li> </ul>

	<ul style="list-style-type: none"> <li>3 collective actions have identified in the 7 WMGs, such as seed-purchasing, vegetable-selling and packet-making.</li> </ul>
<b>Polder</b>	<b>Polder-wise Trends in Agricultural Production &amp; Profitability (ctd.)</b>
43/1A	<ul style="list-style-type: none"> <li>About 70-75% increased mungbean production in the reporting period compared to last year. This is resulting in more income and profitability.</li> <li>765 WMG's members/farmers participated in different economic collective actions like land preparation, agro inputs (seeds/fertilizers/pesticides) and product selling, which costed Tk. 779,400 in land preparation and Tk.145,670 for input purchase. It resulted in Tk. 1,345,000 for product selling.</li> <li>Cultivated Boro rice in 150 acre of land, which is first time since 30 years in polder 43/1A. In the reporting period, DAE conducted mungbean and boro rice FFS, which helped to increase agriculture production and productivity.</li> </ul>
43/2A	<ul style="list-style-type: none"> <li>Through HL farmers learned more about internal water management practices from CAWM activities and took does into account in their crop field practices. This helped them to get more production.</li> <li>WMG members have been better linked with different public and private agencies and got more extension services. Strengthened farmers' network and linkage also with input &amp; output market actors and private companies as well, resulting farmers get modern high yielding crops' variety and better price.</li> <li>About 5% extra area has been under rabi crop production than last year during the same time period.</li> <li>In the reporting period, DAE conducted Mungbean and Boro rice FFS which helped to increase agriculture production and productivity.</li> <li>25% of WMG members have adopted poverty-targeted technologies e.g. hajol, HYV Rice seed, poultry housing, proper use of agricultural inputs (seeds, fertilizers, pesticides), vaccination.</li> </ul>
43/2B	<ul style="list-style-type: none"> <li>More WMGs members are running income generating activities (IGA) like poultry, homestead vegetable, fish culture and cow rearing etc.</li> <li>In the reporting period, for the first time in the Polder, 27 acres of land was brought under HYV Boro rice cultivation, average yield was 667 kg/acre.</li> <li>128 acres of land was prepared through collective action during the Boro and the Rabi season by contracting 8 service providers, which allowed the farmers to save Tk.600.00/acre. Framers also bought 22020 kg fertilizers and saved average Tk. 4.50/kg.</li> <li>One Community Led Fishery activities (including 2 WMGs) has been initiated through training on water-body operators and stocking fingerlings and expecting a better fish production.</li> <li>As part of collective actions, 10 WMG areas sold a total 46200 Kg Mungbean (BARI-6) to Grameen Euglena for a better price.</li> </ul>
43/2D	<ul style="list-style-type: none"> <li>A total of 420 farmers in 16 WMGs have cultivated HYV rice varieties in 500 acre of land during last Rabi season.</li> <li>Farmers of all WMGs have cultivated BARI Mung-6 in about 80% of their crop fields, which is 30% more than the last year.</li> </ul>

	<ul style="list-style-type: none"> <li>▪ In last Rabi season, 3 Private companies have supported 48 WMG members for the implementation of 48 Sunflower and boro rice trials. With the direct support of a private company, 57 WMG members in 3 WMGs have cultivated sunflower in last robi season.</li> <li>▪ A total of 96 farmers from 12 WMGs were trained on organic pest management. 50 farmers were trained on sunflower cultivation, 50 farmers were on Boro rice cultivation. Most of them are using these new technologies for getting a better production.</li> <li>▪ In the reporting period, cropping intensity has increased from 210% to 225%.</li> <li>▪ A total of 6 WMGs cultivated 550 acres of land collectively for mung bean and Boro rice in last Rabi season, and collectively purchased mung bean and Boro rice seed, fertilizer and pesticide.</li> <li>▪ A producer group in Pachim Pochakoralia WMG has broadcasted mung bean in line by using Power tiller-operated seeder (PTOS) in 7 acres of land.</li> <li>▪ Farmers' awareness on crop synchronization is enhanced and it seems that farmers in some sub-catchments are cultivating same types of crops for minimization of risks as well as increased cropping intensity.</li> <li>▪ About 900 farmers from 16 WMGs have sold 80 MT mungbean collectively through 7 collection points. It is noteworthy that Grameen Uglena, a private company, purchased most of the mung bean through a good linkage with Blue Gold as well as WMGs.</li> <li>▪ Production of poultry and fish has significantly increased during this reporting period. Use of commercial feed in fish culture and poultry rearing is increasing.</li> <li>▪ Farmers who got dragon fruit cuttings from Blue Gold are getting a lot of fruits in this season.</li> </ul>
43/2E	<ul style="list-style-type: none"> <li>▪ Overall cropping intensity has increased up to about 200%-230% which is 12% more than the last year.</li> <li>▪ A total of 95 farmers in 5 WMG have cultivated HYV rice varieties in 113 acre of land in the Rabi season. Farmers of all WMG have cultivated BARI Mung-6 in about 80% of crop land, which is 30% more than last year.</li> <li>▪ A producer group of one WMG cultivated water melon in 4 acres of crop land and has a good production and margin.</li> <li>▪ Another producer group of a WMG cultivated bottle gourd jointly at a specific field site with the technical support of Blue Gold and DAE and expecting a good production.</li> <li>▪ A total of 6 WMGs collectively cultivated 200 acres of land for mung bean and Boro rice, they collectively purchased mung bean and Boro rice seed, fertilizers and pesticides.</li> <li>▪ A total of 3 producer groups sold 3.5 MT mung bean through 3 collection points and got a higher price than before. It is noteworthy that Grameen Uglena, a private company, purchased most of the mung bean.</li> <li>▪ Production of poultry and fish has significantly increased during the reporting period. Use of commercial feed in fish farming and poultry rearing is significantly increasing.</li> </ul>
<b>Polder</b>	<b>Polder-wise Trends in Agricultural Production &amp; Profitability (ctd.)</b>
47/3	<ul style="list-style-type: none"> <li>▪ In the Rabi season, Boro (BRRI Dhan 28, 47, HYV, TIA) was cultivated in about 70 acres of land that was fallow before.</li> <li>▪ Four WMGs took the initiative to store fresh water &amp; constructed cross dam on the canal and one WMG installed a wooden gate on an outlet.</li> </ul>

	<ul style="list-style-type: none"> <li>▪ Earlier farmers cultivated fish in a traditional way, now they are using new technologies, like catch giant fishes, use lime &amp; fertilizers, stock fingerlings and maintain water levels according to pond size, use complements foods according to fish size.</li> <li>▪ Poultry &amp; duck rearing are a common activity in the polder area; After the BGP's FFS on poultry rearing, hazol, chick separation, improved poultry housing, vaccination &amp; complementary feeding are well known practices and became the prevailing technologies. 15 WMG members (non-FFS members) made poultry houses.</li> <li>▪ WMG/FFS members are also using improved technologies for cultivating vegetables and fruit in their homesteads, like the improved <i>mada</i> system, using proper fertilizer dosage and cultivating in a planned way as per land availability.</li> <li>▪ Five vaccination camps were organized in five (5) WMGs jointly by Upazila Livestock department, WMGs, Union Parishad and Blue Gold in March-June, 2018. A total 1510 of cow, 510 of goats, 1423 of hen &amp; duck were vaccinated through those camps.</li> </ul>
47/4	<ul style="list-style-type: none"> <li>▪ Boro (BRRI Dhan 28, 48, 14 HYV-Rajkumar, TIA) cultivated in 700 acres land. WMGs and UP took joint initiatives and constructed a cross dam on the canal to store fresh water.</li> <li>▪ Blue Gold Program and Upazila Agricultural Extension Department jointly trained WMGs members about the use of high quality seed, application of water, fertilizer, pesticide; perching, light trap etc. They are using new technologies and getting more production.</li> <li>▪ Earlier farmers cultivated fish in a traditional way, now they are using new technologies like catch giant fishes, use lime &amp; fertilizers, stock fingerlings and maintain water levels according to pond size, use complements foods according to fish size.</li> <li>▪ Poultry &amp; duck rearing are a common activity in the polder area; After the BGP's FFS on poultry rearing, hazol, chick separation, improved poultry housing, vaccination &amp; complementary feeding are well known practices and the prevailing technology. 50 members (non FFS member) made poultry houses.</li> <li>▪ WMG/FFS members are also using improved technologies for cultivating vegetables and fruit in their homesteads, like the improved <i>mada</i> system, using proper fertilizer dosage and cultivating in a planned way as per land availability.</li> <li>▪ Members of WMGs are using the bank of the pond, home yards and other fallow land in their houses for cultivating vegetables and fruits. They are following the year calendar for cultivating vegetables without using pesticides and other harmful chemicals; they are using IPM, sex feromen trap, and light trap.</li> <li>▪ Thirty-six vaccination camps were organized in eighteen WMGs jointly by Upazila Livestock department, WMGs, Union Parishad and Blue Gold in February-March, 2018. 7110 cows, 2890 goats, 4250 hens and 2990 ducks were vaccinated through these camps.</li> <li>▪ Polder team inspired the WMGs members showing videos on success stories, &amp; organizing informal horizontal learning.</li> </ul>
55/2A	<ul style="list-style-type: none"> <li>▪ About 60-65% increased mung bean production in the reporting period than last year. DAE conducted 12 FFSs on mung bean production which helped to increase agriculture production and productivity</li> <li>▪ 45% more homestead production (vegetables and poultry) in the reporting period than the same period of last year.</li> <li>▪ 30% increased participation of WMG in different collective actions including O&amp;M and economic development activities compared to last year.</li> </ul>

	<ul style="list-style-type: none"> <li>▪ Cultivated Boro rice in 150 acres of land, which was the 1<sup>st</sup> time since 30 years in polder 55/2A. New cropping system with Boro rice was practised that contributed to increased production.</li> <li>▪ As a consequence of CAWM activities improved internal polder water management contributed to increased crop production and crop diversification resulting in increased income.</li> <li>▪ The WMG's members increased their farm profitability through participating in collective land preparation, input purchase and product selling. Formal and informal HL on different agricultural issues helped to increase agricultural productivity and profitability.</li> </ul>
55/2C	<ul style="list-style-type: none"> <li>▪ Mung bean (BARI Mung-6), watermelon and potato cultivation are increasing in the polder area during the Rabi season by replacing grass pea and by covering fallow lands.</li> <li>▪ Farmers cultivated 320 acres HYV Boro rice, the first time in this season since many years. Due to motivational work by the CDFs as well as implementation of TA-FFS, homestead vegetable cultivation, local poultry production, fish culture in ponds and beef fattening activities have increased in this polder area.</li> <li>▪ During the reporting period, about 28% more people (excluding direct beneficiaries) were involved with efficient homestead production system and many fallow lands in the homestead area were converted to cultivate vegetables.</li> <li>▪ For diversification and introduction of new species, cuttings of vitamin-A rich sweet potato were distributed in 16 WMG areas, trials on strawberry production in 4 WMG areas were set in place and trials on dragon fruits in 8 WMG areas by getting support from BAU (through BGP Innovation Fund).</li> <li>▪ Besides these, collective actions by the farmers/WMGs for land preparation (tillage), inputs purchase (seeds, fertilizers, pesticides etc.), fish &amp; poultry feed purchase allowed them to make more profit than earlier.</li> </ul>
2 & 2 ext.	<ul style="list-style-type: none"> <li>▪ Two CAWM have been completed successfully. As scaling up 4 new CAWM programs have started in May 2018. One CFWM pilot started in May 2018.</li> <li>▪ 9 FFS at 9 WMGs area, of which 6 are on homestead vegetables and 3 are on local poultry birds have started under 11th cycle. Started at mid-May,18 and 3<sup>rd</sup> session already been conducted.</li> <li>▪ High Yielding Mustard has been introduced at 9 WMG areas under Cropping Intensity Initiatives (CII) activities. BRRRI dhan 67 was introduced in the Boro season and BRRRI dhan 48 was introduced in Aus season. With collaboration of service providers (i.e. Lal Teer) polder team provided HYV/hybrid vegetable seeds to 25 farmers in 6 WMG areas for cultivation of okra, long bean and bitter gourd.</li> <li>▪ One batch training was held on Community-led Fisheries (CLF). After the training 2 WMGs started CLF in 2 khal areas of which in 1 is supported by BGP and 1 is only technically supported by BGP.</li> <li>▪ Community-Livestock Workers (CLW) received foundation training on livestock vaccination. 10 RFs received training on market linkage development.</li> <li>▪ Above mention interventions are helping farmers to adopt new technologies in their production system. For agriculture and economic development, 47 WMGs obtained DAE grants of which 20 WMGs already started utilising those after taking a joint decision during a meeting.</li> <li>▪ Scaling up summer tomato cultivation with involvement of 29 farmers from 9 WMGs has started in April, 2018. About 90% of the costs come from their own pocket.</li> </ul>



	<ul style="list-style-type: none"> <li>2 horizontal learning events were held at HYV Mustard demonstration plots. 14,448 kg Bashak leaf collected by the members of 6 WMGs, which were sold to the national collector of ACME. They earned amount Tk. 74,480.</li> </ul>
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### 3.2 In Polder Water Management

Polder	Polder wise trends Water Management initiated by local communities
22	<ul style="list-style-type: none"> <li>This Rabi season eight WMGs have built cross dams in their canals to reserve water for irrigation. As a result they are able to use this reserved water for irrigation in watermelon field. After accomplished of irrigation they removed the cross dam.</li> <li>Catchment committee closed all inlets and main sluice to protect polder from saline water intrusion.. BGP earlier took initiative on sluice operation, but this year BGP observed the process and facilitated the process when needed. All stakeholders like WMG, WMA and UP took part in this process.</li> <li>Three WMGs took the initiative to excavate canals at sub catchment level for improved water management facilities.</li> <li>There was a breach of the embankment at Darunmollick WMG. WMG members (70 persons) participated in emergency repairing with the help of the Union parishad.</li> <li>Members of Fulbari WMG took a lead to repair Muchimara Outlet and Telikhali WMG members took part in creating temporary obstacle by bamboo and braches of trees in Telikhali erosion point to protect embankment from river erosion.</li> </ul>
25	<ul style="list-style-type: none"> <li>Thirty-nine WMGs have prepared WMG action plan (WAP) for effective use of water for crop production. Seven WMGs already have made field channel and prepared high land low land farmers list for using water collectively.</li> <li>Three WMG members have removed cross dam for smoothly flow of the water within the polder area.</li> <li>Rudaghora WMG has been operating Kewratola sluice regularly and collected operation fund.</li> <li>Sixty WMGs have been raising O&amp;M fund for maintenance of infrastructures.</li> <li>6.4 Km embankment re-sectioning work has been completed by contractor.</li> <li>Ten WMGs have cleaned water hyacinth from around 7 Km of different khals.</li> </ul>
26	<ul style="list-style-type: none"> <li>Previously all sluice gates were controlled by the UP. WMOs took the responsibility. The Zialtola sluice is now operated jointly by WMG and UP.</li> <li>The water management plan of WMGs was implemented to increase agriculture production in the polder areas.</li> <li>For the effective water management and to increase agricultural production, the excavation of Sindurtola Khal completed and the work on Boro biller khal and Bayorer khal is going on. After completion of all sluices a remarkable amount of land will come under HYV rice cultivation. Farmers will be also able to cultivate the different Rabi crops in the next season.</li> <li>Three WMGs removed silt from both sides of 3 sluices with the assistance of UP.</li> </ul>

Polder	Polder wise trends Water Management initiated by local communities
	<ul style="list-style-type: none"> <li>▪ There was a big conflict with one of the WMG and community people. This conflict resolved by the joint initiatives of WMA, WMG, community people and UP.</li> </ul>
27/1	<ul style="list-style-type: none"> <li>▪ During Boro rice season WMG's have been using nearby canal water for the cultivation and accordingly they cleaned the canal for timely available irrigation water. On the other hand, some WMG's have made drainage channel to drain out excess water from the field.</li> <li>▪ One WMG cleaned a canal around 0.5 km. The canal was fully covered with water hyacinth which hampering smooth water movement. A total of 38 women and 32 men actively participated in the activity.</li> </ul>
27/2	<ul style="list-style-type: none"> <li>▪ This polder consists of 2 unions and has 3 drainage sluices where 2 are non-functional. As it is a new polder of BGP, the WMOs are yet not well organised to take responsibilities for water. UP chairmen and political leaders are currently taking decisions on water management, but BGP has identified with stakeholders the catchment and existing situation. Most of the Khals are silted up and gates are broken. There are illegal fish cultivation that initiated cross dam and unauthorised sluice gate operation. Therefore, BGP is mobilizing the community about proper water management through awareness raising drama, community mass meeting, small meeting courtyard meeting.</li> <li>▪ Many WMGs have started collecting O&amp;M fee.</li> </ul>
28/1	<ul style="list-style-type: none"> <li>▪ One WMG has re-excavated 30 meter branching khal by their own initiative. Thirty-five members participated in this maintenance activity. This initiative will make a great impact to early drain out the excess water and reduce the waterlogging condition of 25 acre lands.</li> <li>▪ 12 WMG already generated different types of funds (in total BDT 161620) for their organization by the contribution of their general members .</li> </ul>
28/2	<ul style="list-style-type: none"> <li>▪ During reporting period, 2 LCS groups formed for the re-excavation 900 meter of Bashbaria khal. Bashbaria and Joykhali WMGs formed one male &amp; one female LCS group and each group contains 65 members.</li> <li>▪ 12 WMG already generated different types of funds (in total BDT 14,33,165) for their organization by the contribution of their general members.</li> </ul>
29	<ul style="list-style-type: none"> <li>▪ WMG members are developing good relationships with UP's and getting involved in UP's standing committees purposefully to take control over the water infrastructure. Therefore, WMGs can regulate sluices and other water Infrastructures nowadays.</li> <li>▪ In this reporting period, the work of constructing a retired embankment has improved significantly (87% completed).</li> <li>▪ WMGs emphasized on creating O&amp;M fund and 54 WMGs having a total fund of BDT 159540.</li> </ul>
30	<ul style="list-style-type: none"> <li>▪ This year farmers were very much aware about water storage in canals and they also stored water in their canals and water reservoirs. In canals they created temporary cross dams to store sweet water for cultivating Rabi crops (watermelon). To reserve water in reservoirs they operated the sluice and inlets properly with support of BGP.</li> </ul>



Polder	Polder wise trends Water Management initiated by local communities
	<ul style="list-style-type: none"> <li>▪ In this year catchment level sub-committee and O&amp;M Sub-committee have been formed at catchment level to maintain water management infrastructure effectively. This year WMGs have collected more funds for effective management of infrastructures compared to last year.</li> </ul>
31 part	<ul style="list-style-type: none"> <li>▪ This year farmers were very much aware about water storage in canals and they also stored water in their canals and water reservoirs. In canals they created temporary cross dam to store sweet water for cultivating Rabi crops. To reserve water in reservoirs they operated the sluice and inlets properly with support of BGP.</li> <li>▪ One WMG took initiative to excavate canals in at sub-catchment level for improved water management.</li> <li>▪ All WMGs have been oiling and maintaining the infrastructure regularly.</li> <li>▪ Four WMGs repaired sluice gate covers.</li> </ul>
34/1 Part	<ul style="list-style-type: none"> <li>▪ WMGs have prepared WMG action plan (WAP) for effective use of water for crop production.</li> <li>▪ 3 WMGs have made field channels and prepared high land and low land farmers list for using water collectively.</li> <li>▪ One WMG made cross dam in the Katakhal khal for protecting saline water.</li> <li>▪ Re-sectioning of embankment (baking) 470 metre work completed by contractor and 100 metre of work still ongoing by LCS.</li> <li>▪ One WMG repaired 100 feet breach in front of Purbo Halia Sluice. Two WMGs repaired 180 feet breach near Kajibacha sluice.</li> <li>▪ Nineteen WMGs have been raising O&amp;M fund for O&amp;M of infrastructures.</li> </ul>
43/1A	<ul style="list-style-type: none"> <li>▪ This reporting period, every WMG has a WMG Action Plan for performing different operation of water management infrastructures.</li> <li>▪ All sluices and inlets have been repaired and 90% of 17.2 km khals re-excavation has been completed.</li> <li>▪ Many WMGs have taken different initiatives to excavate field channels, removing obstacles for water flow and removing water hyacinth for fish cultivation and using water for the Rabi crop.</li> <li>▪ More WMGs' members participated/contributed in regular fund collection for operation &amp; maintenance through cash and kinds.</li> </ul>
43/2A	<ul style="list-style-type: none"> <li>▪ All of the WMGs have WMG Action Plan (WAP) for performing different activities including operation of water management infrastructures in order to increase their agricultural productivity.</li> <li>▪ In the reporting period, 7 WMGs &amp; Union Parishad took initiatives to remove water hyacinth from 7 Khals.</li> <li>▪ Two WMGs appointed gate operator for the operating of two sluices.</li> <li>▪ In the reporting period, more WMGs' members participated/contributed in regular fund collection for operation &amp; maintenance through cash and kind;</li> </ul>

Polder	Polder wise trends Water Management initiated by local communities
	<ul style="list-style-type: none"> <li>▪ WMGs have excavated total 400m field channel for internal/field water management for irrigation purposes during the Rabi season as well as during monsoon it will be used as drainage channel;</li> <li>▪ One WMG has re-excavated 300m branches khal of Jintola to drain the waterlogged land. Using a volunteer group of 20 to 30 people, the re-excavation work was completed in four days.</li> </ul>
43/2B	<ul style="list-style-type: none"> <li>▪ Four WMGs have cleaned/removed water hyacinth from 3.5 Km long Khal area.</li> <li>▪ For water management as well as to reduce waterlogging from Beel (crop field), four WMGs and UP built culvert on the road.</li> </ul>
43/2D	<ul style="list-style-type: none"> <li>▪ Three WMGs have excavated about 8km long field channel,</li> <li>▪ One WMG has removed silt from a tertiary canal and installed a drainage pipe and a box culvert to improve the catchment/sub-catchment water management situation, which is essential for draining out of water from some particular crop fields as well as for the irrigation of robi crops.</li> <li>▪ A total of 6.05 km khal re-excavated by contractor and LCS for smooth water management for crop cultivation.</li> <li>▪ A WMG repaired a rural road to control the overflow of water in a sub-catchment.</li> <li>▪ A total of 2400ft. secondary Khal re-excavated in Uttor Bazarghona CAWM.</li> </ul>
43/2E	<ul style="list-style-type: none"> <li>▪ Most of the water infrastructures of this polder are under control and operation of WMA/WMG, although some conflicts have arisen in particular sluice catchment areas, but WMG and UP played a vital role in conflict resolution.</li> <li>▪ Most of the O&amp;M committees are doing required maintenance work, including painting of sluice gates, inlets and outlets, greasing of chains and wheels, use of mobile, maintenance of loose aprons, checking of nuts &amp; bolts, cleaning opening of sluice/inlet/outlet, removal of obstacles from the canal.</li> <li>▪ A total of 4 WMGs have removed 26 illegal sanctuary/fish traps with direct support of UP.</li> <li>▪ In the reporting period, a total of 5 WMGs have cleaned water hyacinth from 2.8 km of canal by direct participation of WMG members with the support of UP.</li> <li>▪ With the support of UP, one WMG has done small restoration work of 1.5 km of the embankment.</li> </ul>
43/2F	<ul style="list-style-type: none"> <li>▪ In the reporting period, WMGs took more initiatives than last year to improve drainage and water storage facilities in their sub-catchment.</li> <li>▪ More WMGs took part in cleaning the Khal by removing water hyacinth, and removing obstacles for water flow from the Khal at the monsoon period.</li> <li>▪ More WMGs' members participated/contributed in regular O &amp; M activities of WRM infrastructures</li> <li>▪ Community people took part in repairing rain cuts of embankments micro maintenance (colour burnish, tight screws etc.) of sluice, outlet, and inlets</li> <li>▪ More WMG's members have contributed financially to make field channels/drains for improving drainage systems.</li> </ul>

Polder	Polder wise trends Water Management initiated by local communities
47/3	<ul style="list-style-type: none"> <li>▪ 0.52 km Khal re-excavation and re-sectioning of 3.14 km embankment completed.</li> <li>▪ UP, BWDB, Blue Gold Program and Golbunia-Aramgonj Khal WMGs jointly took initiatives of removing illegal cross dam from Golbunia Khal.</li> <li>▪ WMGs are operating the non-functioning sluice using rope, bamboo, wooden gate, Galvanized iron (GI) wire through their own initiatives.</li> <li>▪ WMGs excavated total 300 m field channel for internal/field water management for irrigation purposes during the Rabi season as well as during monsoon it will be used as drainage channel.</li> </ul>
47/4	<ul style="list-style-type: none"> <li>▪ 7.2 km Khal re-excavation and re-sectioning of 7.2 km embankment completed.</li> <li>▪ UP, BWDB, Blue Gold Program &amp; WMGs jointly took initiatives for removing 10 illegal cross dam from four khal.</li> <li>▪ WMGs are operating the non-functioning sluice using rope, bamboo, wooden gate, GI wire through their own initiatives.</li> <li>▪ Two WMGs have installed two shallow tube-wells for fresh water using in the Rabi season. Around 70 acre land is now under irrigation.</li> <li>▪ WMGs has excavated total 1000m field channel for internal/field water management for irrigation purposes during Rabi season as well as during monsoon it will be used as drainage channel.</li> </ul>
55/2A	<ul style="list-style-type: none"> <li>▪ Twelve WMGs removed water hyacinth from 13 khals.</li> <li>▪ One WMG made wooden gate since the gate of their sluice was broken.</li> <li>▪ 12 WMGs made 2km field channel to drain out water from crop field</li> <li>▪ 7 WMGs removed illegal obstacles from the khals.</li> <li>▪ WMG members repaired 5 sluices and re-sectioned 9.26km embankment where 3.72km done by LCS and rest done by contractor</li> </ul>
55/2C	<ul style="list-style-type: none"> <li>▪ WMGs prepared more than 3.5 km long field channel, excavated 1000 ft long drain, set inlet pipe through embankment for irrigation.</li> <li>▪ Besides this, for removing water logging condition from 4 crop fields, two WMGs have prepared a plan for water management and accordingly, they built a culvert on a rural road for smooth draining out of water from their crop fields.</li> <li>▪ As per WMG plan, for smooth water management, about 16 km long Khal has ordered to be re-excavated by LCS groups and contractors.</li> <li>▪ One WMG has cleaned garbage &amp; water hyacinth from Chandpura sluice-gate near Alipura bazar area.</li> <li>▪ One WMG did repair work for 70 ft embankment and four WMGs have repaired &amp; re-sectioned about 10 km embankment.</li> </ul>
2 & 2 Ext.	<ul style="list-style-type: none"> <li>▪ About 15 km khal re-excavation completed and 13 km is running (progress is about 35%)</li> </ul>

Polder	Polder wise trends Water Management initiated by local communities
	<ul style="list-style-type: none"> <li>▪ 27 km embankment re-sectioning work has been completed and 8 km works are running (progress is about 60%)</li> <li>▪ Re-construction of one sluice is running (progress is about 83%).</li> <li>▪ One low cost protective work at Chanditola under Himkhali khal WMG started recently (progress is about 20%)</li> <li>▪ Organized 2 events for Crop and Aquaculture Zoning Mapping Exercise to identify current situation and potential of the polder in relation to cropping patterns and aquaculture, and get commitment from stakeholders for proposed changes.</li> <li>▪ 3 cross dams established by the sluice WMA at set back point of Sagla Sluice gate, Shalley sluice gate and Beradangi sluice gate point to reduce congestion of slushy earth at the gate points.</li> <li>▪ Small scale micro-infrastructure improvement for water management (550 m drainage channel and 2 pipe culvert) is completed.</li> <li>▪ To drain out water re-excavated and or cleaned field channel, removed water hyacinth from khals, installed small drainage pipe at 15 WMG areas.</li> <li>▪ Collaboration with union parishad 2 culverts were constructed at the extension part</li> <li>▪ WMAs formed Sluice Catchment O&amp;M Committees at 12 Sluice Catchment areas</li> <li>▪ 34 WMGs created O&amp;M fund about TK. 1.82 Lac.</li> </ul>

## 4 Monitoring, Reflection & Learning

### An overview of different tools of MRL

**Participatory Monitoring at WMG Level:** Participatory monitoring of WMG takes place every 6 months. WMGs assess their performance with respect to 17 potential targets of their development under three themes: (1) agriculture and economic development, (2) water management (operation and maintenance (O&M) of infrastructure), and (3) water management group (WMG) and water management partnership. The achievements against potential targets are determined on a scale of 4 progress levels, from 0=no progress to 3=full achievement.

**WMG Tracker:** WMG Tracker is an output monitoring instrument for showing visible achievement of each WMG. It provides information, among others, on (1) Economic Development of WMGs- e.g. WMG funds, types of business investments (IGAs), collective actions for economic activities, (2) Water Management - e.g. collective actions for O&M of infrastructures, development and repair/rehabilitation of water management infrastructures, (3) Organizational Management - e.g. household coverage and membership in WMGs, (4) Capacity Development - e.g. horizontal learning, skill training on modern agricultural technologies, adoption of modern agricultural technologies by farmers, etc.

**Dashboard:** Dashboard is an information management tool of MRL that visually tracks, analyzes and displays to monitor the progress and key performance of BGP activities. The MRL Team reviewed and refined different tools for Dashboard and MIS development through discussion with BWDB, DAE, other members of TA Team and the assigned Consultant, mPower.

**Trends Watcher:** Trends Watcher aims at summarizing the latest results and achievements of the Blue Gold Program.

### Major Achievements related to MRL

Major achievements during the last six months (January – June 2018) include:

- Finalization of Report of the 'Socio-economic Baseline Survey' Phase II (for detail, please see Technical Report 23)
- Output data of all WMGs were collected through WMG tracker quarterly – in January 2018 for the quarter ending on 31 December 2017 and in April 2018 for the quarter ending on 31 March 2018; the data were analysed and reports were written. A summary of output data of WMGs to end-March is given at Annex-I.
- Participatory monitoring (PM) at WMG level was implemented during April-May 2018. (Please see 2.3.3 and Working Paper 8D)
- Report on the Pilot Study on Economic Analysis of BGP in the polder 43/2B and 2 & 2 Ext (for detail please see Result from Blue Gold: Interim report).
- Developed a format (draft final) with parameters and progress markers for participatory monitoring at WMA level.
- Development of MIS Dashboard by the assigned Consultant, mPower is in its Phase-2, which include development of software for the impact monitoring study and other “probable studies”, participatory monitoring at WMA level and updating of WMG registration form.
- The MRL Team shared the outcome results of participatory monitoring with zonal and polder teams. The outcome results were reflected upon, strengths and weaknesses of WMGs were assessed and

learning issues were identified so that polders teams can plan for improvement of performance of WMGs.

- The MRL Team also shared the output results of WMG Tracker with zonal and polder teams. The progress and achievements of WMG activities were discussed and reflected upon.
- The MRL Team has achieved its targets as regards development, implementation and revision of monitoring tools and produced respective reports.

## Challenges, Mitigation Measures and Lessons Learned

### Challenges

- Errors still persist in data entry for WMG Tracker
- Polder Teams need to make greater use of monitoring results at field level.

### Mitigation Measures

- MRL Team has been holding sharing meetings and participating in zonal coordination meetings to improve data quality and to motivate polder teams to use data properly.

### Lessons Learned

- MRL Team needs to continue sharing of monitoring results with the polder teams and facilitate reflection and learning.
- MRL Team needs to assist polder teams to improve quality of data they provide in WMG Tracker.

## 5 Innovation Fund Progress

### Summary of progress up to Jun 2018

The BGIF aims to accelerate the development process in the geographical area of the Blue Gold Program, by financing innovative approaches and new initiatives to socio-economic development. Since its roll-out in 2015, the Blue Gold Innovation Fund (BGIF) has completed 25 projects and has currently 5 projects under implementation. In the period Jan- June 2018, six new BGIF contracts were signed. Table 19 shows detail of the completed and running BGIF projects (for more detail please see *The BGIF quarterly progress Q1 and Q2-2018 reports*).

### Success stories

Below 2 success stories are outlined. One of running project and one of completed project:

**1. United Purpose – Pilot project on Women Business Centres (WBC):** At the four WBCs in polder 28/2 and 31-part, the first self-initiated activities and positive results are emerging. The women have increased knowledge of agro-chemicals, are in close contact with input providers, like Lalteer Seeds Ltd. and Isphahni, and have established three vegetable demonstration plots with them and business plan for good quality seed marketing. Other achievements are the regular collection of dry basak leaves from 26 producers for sale to ACME, the preparation of 1000 basak saplings, the installation of a solar panel for 16 households in Roypur and the establishment of WISH ponds for aquaculture. 80% of the profits are being reinvested in the centres (while 20% are used for HH expenditure). The total income of the 4 WBCs has increased rapidly: from BDT 4607 in January 2018 to BDT 114,980 in June 2018.

**2. Bangabandhu Sheikh Mujibur Rahman Agriculture University (BSMRAU) – Introduction of fish polyculture:** The project tested whether seasonal stagnant waters in polder 2 can be productively used for food production and livelihood improvement of two farming communities by introducing fish pen culture (with tilapia). The project suffered from two unfortunate events. In one area, water drained too earlier due to the re-excavation of a canal under the BGP, and in the other area the WMG suffered from illegal cutting of fish nets by neighbouring communities. Nevertheless, the communities showed that they have learned from these experiences, made proposals for adapted interventions and local leaders openly expressed their support to coordinate better and prevent illegal catch in the future.

### Challenges, lessons learnt and mitigation measures

From the onset, the major challenge of the BGIF is to attract innovative conceptual thinking from Bangladeshi and Netherlands' based applicants to invest in an economically low developed area with complex reality and a difficult implementation landscape. One of the lessons learnt from this period is that the Dutch Network Group campaign amongst SMEs and entrepreneurs in the Netherlands and SBYA's Blue Gold Innovation Challenge for Youth, unfortunately did not result in realistic concepts addressing local needs. There was also little interest among the Dutch applicants to join an in-country mission specially devoted to demonstrating local requirements and do matchmaking with national and local actors.

- To ensure we would receive sufficient relevant applications during this reporting period, the following mitigation actions were taken. Since local needs are not always evident for "outsiders", we have identified 2 main local priority needs for the BGP area and specified them clearly in problem description sheets; 1) the removal of excessive water hyacinth growth and 2) the implementation of climate smart adaptation agri-technologies. On 29 May 2018, we launched a Final Call for concept notes among all Bangladeshi and Netherlands' based organisation. This resulted in sufficient interest and applications. The expectation is that the remaining non-allocated funds (ca. EUR 270k) can be spent effectively on 2 to 4 selected projects.

- We have continued our close communication and coordination with the complementary Water Management Knowledge and Innovation Program (WMKIP), led by Deltares/IWM. In this reporting period, BGP has assisted the WMKIP with identifying local NGOs and consultancies, who could support in participatory action research.



Table 19: Completed and running BGIF projects in Jan-Jul 2018

Sl. No.	Name of the Project	Implementing Organization	Present Status	Partners					2018						Project Update	
				BWDB	DAE	DoF/DLS	LGI	WMO	J	F	M	A	M	J		
1	Low cost river bank protection measures for polder 29, khulna	LA TTSL, NHC, Deltares, IWM	Completed													Final report "Emergency works - polder 29" has been published in June 2018. Brief conclusion is that emergency works have been effective so far, but permanent solutions are required for long term sustainability.
2	Participatory Action Research on Fruits and Vegetables	BAU Germ Plasm Center	Completed													Contracted prematurely ended; monitoring part of distribution of fruits and vegetables will be done independently.
3	Aquaculture intervention in seasonal water logged areas in southwest region of Bangladesh	BSMR-AU Gazipur	Completed													See section 'succes stories' on the outcomes.
4	Pilot Women Business Centres in BGP area Khulna	United Purpose	Going on													4 women business centres (WBC) in polder 28/2 and 31-part (Khulna region) have become fully operational and 10 technical sessions about IPM for vegetables, cow rearing, poultry rearing and fish culture management for 195 women and 55 men and a vaccination campaign took place. The expectation is that this will bring a change in profitability for women of agriculture produce and other household consumption products. Under the section 'success stories', results so far are highlighted.
5	Breed Identification and Digital Registry of Cattle	mPower	Going on													This new 18-month project was one of the best evaluated proposals from the solicited call "Improved Information for Agriculture" and recently started. The project will support a number of WMG members to register their cow including its pedigree and keep record of its performance, deliver tele-veterinary services, test low-cost breed identification techniques and provide recommendations on artificial insemination. This is expected to improve agricultural productivity and profitability.
6	Accelerating horizontal learning in Bangladesh polders: ICT as force multiplier	MetaMeta	Going on													This project was also one of the best evaluated proposals from the solicited call "Improved Information for Agriculture" and started in June 2018. The project will strengthen ongoing horizontal learning BGP activities by training WMG members to produce their own best practice videos with their mobile phone and best productions will be awarded and widely circulated. This expected to lead to improved O&M of water infrastructure and practices strengthening agricultural productivity and profitability.
7	Sustainable water management through indigenous finance and technology	United Purpose	Going on													Since the end of May 2018, United Purpose has started piloting an innovative approach stimulating WMOs to finance and maintain their small-scale water infrastructure through active engagement and lobbying with LGIs, governmental departments or NGOs, or by generating their own revenues contributing to O&M through income generating activities. This is expected to contribute to improved O&M.
8	Augmenting homestead Pangasius aquaculture productivity in three Upazillas of Patuakhali region through community participation	Innovision Agro Service Ltd.	Going on													In April-May 2018, Innovision conducted a feasibility study to introduce Thai Pangasius in a few polders in Patuakhali and presented its outcomes with success to BWDB and DOF representatives in Dhaka. Therefore, a 9-month pilot started in June 2018. The project is expected to contribute to improved productivity and profitability of aquaculture.

## 6 Financial Report

Budget Line	Original Budget converted to new budget set-up	Revised Budget 4th contract amendment converted to new budget set-up	Revised Budget Jan18 (new budget set-up)	Total claimed 31-Dec-17	Claimed Q1 2018	Claimed Q2 2018	Total cumulative	% Spent	Balance Remaining
<b>TA contract</b>									
TA team	14,808,453	17,286,204	17,301,465	11,662,085	544,755	514,622	12,721,461	74%	4,580,004
Durable goods (D)	1,169,053	997,713	996,176	694,716	9,324	21,835	725,875	73%	271,838
Training (T)	2,456,500	1,892,890	1,892,890	1,243,180	57,551	19,876	1,320,607	70%	572,283
Operational cost (O)	1,272,600	2,864,929	3,467,607	2,233,731	131,943	129,041	2,494,715	87%	370,214
Contracted Services	7,542,000	6,826,845	6,225,704	2,450,693	146,010	231,395	2,828,098	41%	3,998,747
Water Management Innovation Fund	2,400,000	1,400,000	1,400,000	824,161	61,182	39,483	924,827	66%	475,173
Productive Sectors Innovation Fund	1,900,000	1,050,000	1,050,000	406,934	69,698	63,843	540,475	51%	509,525
Annex B	0	877,058	861,796	452,818	64,178	75,151	592,148	68%	284,910
<b>SUBTOTAL TA contract</b>	<b>31,548,606</b>	<b>33,195,639</b>	<b>33,195,639</b>	<b>19,968,317</b>	<b>1,084,641</b>	<b>1,095,246</b>	<b>22,148,205</b>	67%	<b>10,777,785</b>
GoN Contribution to BWDB	15,750,000	27,320,000	27,320,000	10,567,950			10,567,950	39%	16,752,050
GoN Contribution to DAE	995,000	1,495,000	1,495,000	1,183,446			1,183,446	79%	311,554
<b>Total GoN contribution</b>	<b>48,293,606</b>	<b>62,010,639</b>	<b>62,010,639</b>	<b>31,719,713</b>	<b>1,084,641</b>	<b>1,095,246</b>	<b>33,899,601</b>	55%	<b>27,841,389</b>



## 7 Project Management

### 7.1 Focus activities for zonal and polder teams

In mid-2016, the TA team was reorganized (see memo 19 June 2016 “Rational Reorganization”)<sup>3</sup>, and the ToR for TA team at central and zonal levels was further streamlined, to inspired them to take up the extended responsibilities under the unified approach (see manual for unified approach February 2017). This streamlined ToR also helped the BGP Teams to provide services and implement program activities with an emphasis on scaling up the successful initiatives through horizontal learning involving the partner agencies of Blue Gold program in the field.

As a part of their responsibility, zonal team experts were in this reporting period especially active in developing the Water Management and O&M plan engaging the WMOs at catchment level. The Zonal and Polder teams were also active to further develop linkages and networking with public and private sectors in the polders with the support from senior technical experts at central level. Linkages and partnerships related with agriculture and market development activities were established in between public-private sector agencies (BADC, BRRRI, BARI and a number of seed producing /marketing companies) and WMOs in different BGP polders.

An example of new successful partnership establishment is the fact that a few WMAs presented their water management issues at the Upazila Coordination Meeting during this early monsoon with the support of UPs, which resulted in a public announcement by the Upazila Parishad to remove illegal bunds and obstacles from canals along with some legal actions (see Section 2.6 & Figure 9).

### 7.2 Reduction & relocation of staff

In the light of polder phasing out schedule, a number of Polder Coordinators and CDFs were relocated from one polder to another based on the polder size, demand of their experience, expertise and workloads. Blue Gold program is in the further process of distributing and reshuffling its CDFs following the suggestion of ARM, especially in new polders, CDFs are being placed based on the population density. BGP is also continuing the performance assessment of CDFs, and based on the performance they are appreciated or discontinued accordingly. BGP has initiated to recruit new CDFs against the vacant/ discontinued positions. BGP recruited 10 CDFs and engaged them under CWM as additional support to BWDB. In the meantime, one CDF of CWM has been discontinued for his low performance and BGP has already recruited one new CDF against this discontinued position. BGP made a request to CWM to engage all 10 CDFs in phase out polders to continue the institutional support from BWDB.

Blue Gold is in the process of phasing-out from old IPSWAM 8 polders by end of June 2018 (except the implementation of infrastructure development activities) as the 1st batch, phasing out from 4 polders by June 2019 as the 2nd batch and phasing out from 8 remaining polders in June 2020 as the 3rd batch. Ten CDFs engaged under the field officials of CWM are already posted in the 1st batch phase out polders, and will be assisted by existing CDFs until end of the project.

Thereafter, a reduced number of BGP CDFs will continue to ensure O&M activities in the 1st batch phase out polders as per suggestion of ARM 2017. However, it may be noted here that BWDB requested BGP to continue the O&M activities for one monsoon after phasing out date as period of practical exercising and learning.

<sup>3</sup> See also TOR for EWM, SVC, and IL work groups of 15 June 2016; CDF’s job descriptions on 25 January 2017 and TOR Zonal Coordinators

However, the delayed registration of WMOs, low progress in implementation of physical infrastructure under BWDB and more over the delayed approval of RDPP will affect the Phasing Out schedule, especially for 8 polder under 1<sup>st</sup> phase.

Reduced inputs of international consultants and a number of national consultants have been relocated in the field for extended period under a new arrangement was reported in the 2<sup>nd</sup> HYPR of 2017. Moreover, BGP has engaged some national junior experts in the field of agriculture, fisheries and socio-economy against the vacant positions of few national senior experts who left the project in the recent period.

A number of additional technical staff were engaged by BGP and are continuing their services to support the BWDB in Dhaka and field offices in Khulna and Patuakhali. BGP has also engaged 4 junior engineers to support Design offices in Dhaka under their supervision, guidance and management. The engineering team is relocated office at Motijheel and working closely with the BWDB-offices.

**Challenges:** Challenges are increasing for regular staffing in BGP; they are (a) a number of senior/mid-level experts left the project for higher remuneration and better facilities in ADB and World Bank Projects, (b) Gradually a number of national consultants are likely to leave in search of new jobs with longer contract of employment in new projects as their allocated man-months are being reduced towards the project end, (c) a number of trained and experienced CDFs also left to join in South West and LGED projects where they were offered higher salaries and service benefits with longer employment. The situation may aggravate further immediate after the announcement of starting date Climate Smart Agriculture Water Management Project (CSAWMP). These departures of BGP staff/experts are disrupting the regular activities in Blue Gold Program. In addition, it is also difficult to find experienced and good quality staff with the present remuneration structure of BGP.

Another challenge is to complete the project maintaining the Phase-out schedule of Blue Gold Polders because of the delay in registration of WMOs, low progress in implementation of physical infrastructures under BWDB, low capacity of the OCWM and BWDB field offices to achieve target of ADP. Moreover, the delayed approval of RDPP will also affect the Phasing Out schedule. Based on the total situation the proposed Phasing Out schedule demands a careful review.

### 7.3 DPP Revision

During this reporting period, Division Chief visited the BGP areas and the final version of the RDPP was submitted to the Planning Commission in January 2018 for presenting it at ECNEC. In the meantime a new Division Chief joined and he raised few new questions for further information. Incorporating the information on new additional quarries the document was resubmitted to the Planning Commission in March 2018. Planning commission cleared the RDPP in May 2018. RDPP was signed by the Planning Minister on 22<sup>nd</sup> May. The same RDPP was presented at ECNEC and approved on 21<sup>st</sup> June 2018. The ECNEC minutes have yet to be published.

## Annex I – Project Outputs

### Membership of Groups

Summary Results of WMG Tracker	Up to June 2018
No. of Total WMGs	510
No. of Total HHs in WMG allocated areas	186,163
<b>% of HHs represented in WMG</b>	<b>62.7</b>
No. of enrolled WMG male members	76,576
No. of enrolled WMG female members	57,740
<b>% of WMG female member</b>	<b>43.0</b>
Average No. of enrolled members in each WMG	263
No. of TA-FFS Groups	747
No. of enrolled TA-FFS male members	2,570
No. of enrolled TA-FFS female members	16,157
<b>% of TA FFS female members</b>	<b>86.6</b>
No. of DAE-FFS Groups	487
No. of enrolled DAE-FFS male members	12,071
No. of enrolled DAE-FFS female members	11,950
<b>% of DAE FFS female members</b>	<b>49.7</b>
No. of MFS Groups	286
No. of enrolled MFS male members	2,823
No. of enrolled MFS female members	1,745
<b>% of MFS female members</b>	<b>38.2</b>
No. of LCS groups	430
No. of enrolled LCS male members	18,128
No. of enrolled LCS Female members	10,118
<b>% of LCS female members</b>	<b>35.8</b>

### Financial situations of WMGs

Summary Results of WMG Tracker	Up to June 2018
<i>Items of WMG Funds</i>	<i>Amounts (TK)</i>
Admission fee (TK)	2,299,446
Savings (Tk) from male	13,347,926
Savings (Tk) from female	11,017,640
O&M fee (Tk)	2,390,853
Miscellaneous fees (Tk)	3,602,694
Income/Profit (Tk)	26,737,764
<b>Total WMG Funds (Tk)</b>	<b>59,396,323</b>

### Capacity Building

<b>Summary Results of WMG Tracker</b>	<b>Up to June 2018</b>	
<i>Training/Orientation/Workshop</i>	<i>No. of Participants (WMG Members)</i>	<i>% of Female Participants</i>
Account Keeping and Audit System	1,623	21.4
Collective Action Group (CAG) Workshop	1,793	34.2
Collective Action Promotion (CAP) Workshop	392	17.3
DRR	24	50.0
Gender and Leadership Development	1,789	47.2
LCS training	12,264	39.4
Management of Agricultural Machinery	4,603	35.3
Organizational Management	2,857	34.7
Participatory Monitoring	1,546	28.1
RF/FT/LF Capacity Development	377	45.4
Savings and Credit	739	18.9
Others	43	16.3
<b>Grand Total</b>	<b>28,050</b>	<b>36.0</b>

### Training on Agricultural Development

<b>Summary Results of WMG Tracker</b>	<b>Up to June 2018</b>	
<i>Modules/Topics</i>	<i>No. of Participants (WMG Members)</i>	<i>% of Female Participants</i>
Boro, Homestead & Nutrition (DAE)	4,551	50.0
CAWM and Nutrition (DAE)	1,887	40.7
Cropping system, market linkage, production technology & gender (TA)	1,905	21.2
Homestead Vegetables & Fruits, poultry and Nutrition (TA)	10,190	90.1
Mungbean, Homestead Vegetables & Fruits & Nutrition (DAE)	5,501	50.4
Mungbean, market linkage, production technology & gender (TA)	1,225	16.2
Pond Fish, Beef Fattening & Nutrition (TA)	4,627	73.1
Pond Fish, Dairy Cow & Nutrition (TA)	1,063	77.9
Poultry, market linkage, production technology & gender (TA)	1,450	88.5
Sesame, Homestead & Nutrition (DAE)	850	48.8
Sesame, market linkage, production technology & gender (TA)	1,322	29.1
T-Aman, Homestead & Nutrition (DAE)	9,130	49.7
T-Aus, Homestead & Nutrition (DAE)	300	50.0
Tilapia, market linkage, production technology & gender (TA)	650	80.8
Watermelon, Homestead Vegetables & Fruits & Nutrition (DAE)	1,000	48.7
Others	1,465	79.7
<b>Total Participants/Farmers</b>	<b>47,116</b>	<b>61.0</b>



## Agricultural Demonstration/Trail Plots Development

Summary Results of WMG Tracker	Up to June 2018	
	<i>No. of Participants (WMG members)</i>	<i>% of Female</i>
<i>Demonstration/Trail Plots of Crops</i>		
Beef Fattening	169	72.8
Dragon Fruit	75	38.7
Drumstick	131	100.0
FYM	455	85.3
Groundnuts	21	14.3
Mung bean	171	1.8
Mustard	77	9.1
Passion Fruit	23	52.2
Pond Fish	235	58.7
Poultry Housing	478	96.9
Sapodilla	1,426	95.1
Sesame	70	2.9
Summer Tomato	19	10.5
Sunflower	28	0.0
T-Aman	337	4.5
Tilapia	34	70.6
Vegetables	699	90.0
Wheat	6	33.3
Others	86	50.0
<b>Total</b>	<b>4,540</b>	<b>74.2</b>

## Horizontal Learning

Summary Results of WMG Tracker	Up to June 2018	
	<i>No. of Participants (WMG members/ Community people)</i>	<i>% of Female Participants</i>
Horizontal Learning Activities		
Cage Culture/Fisheries	256	34.8
Exchange of FFS/MFS learning	13,448	56.0
Exchange visits to CAWM schemes	1,019	34.5
Exchange visits to better performing WMGs (WAP, O&M, CII, CA, WM, etc.)	4,038	40.5
Farmer's Field Day (DAE)	42,156	50.3
Farmer's Field Day (TA)	108,941	59.0
Others	6,496	41.9
<b>Total</b>	<b>176,354</b>	<b>55.5</b>

### Agricultural Modern Technologies adopted

Summary Results of WMG Tracker	Up to June 2018	
Technologies adopted on different crops/items	No. of Participants (WMG members)	% of Female Participants
Beef fattening technique	6,100	45.5
Black Sesame seed	2,973	20.3
Drying Sesame in Blue net	4,794	25.7
Fish feed processing	11,776	32.1
Hajol	17,457	94.5
Hybrid vegetables seed	16,537	45.0
HYV Rice seed	29,156	12.7
IPM (parching, light trap, bait trap, sex pheromone, etc)	25,110	21.2
Line sowing	18,765	9.8
Napier grass	1,380	32.0
Pond Layering for fish culture	6,189	38.7
Poultry housing	14,083	89.9
Proper use of agricultural inputs (Seeds, Fertilizers, pesticides)	15,893	15.2
Vaccination	20,328	60.2
Vegetables bed technique	17,092	53.0
Others	1,651	70.5
<b>Total</b>	<b>209,284</b>	<b>39.9</b>

### Development and Repair/Rehabilitation of Water Management Infrastructure

Summary Results of WMG Tracker	Up to June 2018
<i>Infrastructure Activities</i>	<i>Achievement</i>
Length of Embankment done (km)	275.032
Length of Retired Embankment done (km)	4.485
Total Length of Khals (Canal) done (km)	172.52
Sluice Repair done (No.)	62
Sluice Construction/Re-Construction done (No.)	3
Outlet Repair done (No.)	15
Outlet Construction/Re-Construction done (No.)	8
Inlet Repair done (No.)	188
Inlet Construction/Re-construction done (No.)	2
Culvert construction work done (No.)	6
Pump shed construction work done (No.)	0
Pipe supply work done (meter)	41.00
Internal dyke work done (km)	2.100
Low Cost Bank Protection work done (km)	1.250



## Annex II – Reports Published

No	Name	Date
<b>Agro Insight Report</b>		
AIR	BGP Agro-Insight report	Mar, 2018
<b>Inception Report</b>		
IR 01	Blue Gold Inception Report, November 2013	November 2013
<b>Annual Work Plan</b>		
APR 01	Annual Plan 2014	06 Feb, 2014
APR 02	Annual Plan 2015	29 Apr, 2015
APR 03	Annual Work Plan 2015 - 2016	14 Jul, 2015
APR 04	Annual Work Plan 2018 - 2019	16 Jun, 2018
<b>Progress Reports</b>		
QPR 01, 2013	Progress Report 2013, Q2+Q3 (April – September 2013)	10 Dec, 2013
QPR 02-03, 2013	Progress Report 2013, Q4 (October – December 2013)	26 Feb, 2014
QPR 01, 2014	Progress Report 2014, Q1 (January – March 2014)	15 May, 2014
QPR 02, 2014	Progress Report 2014, Q2 (April – June 2014)	04 Aug, 2014
QPR 03, 2014	Progress Report 2014, Q3 (July – September 2014)	17 Nov, 2014
QPR 04, 2014	Progress Report 2014, Q4 (October – December 2014)	15 Feb, 2015
QPR 01, 2015	Progress Report January-March 2015	Apr, 2015
QPR 02, 2015	Progress Report April-June 2015	Jul, 2015
HYPR 01, 2015	Progress Report July – December 2015	Mar, 2016
HYPR 01, 2016	Progress Report January - June 2016	Sep, 2016
HYPR 02, 2016	Progress Report July – December 2016	Apr, 2017
HYPR 01, 2017	Progress Report January – June 2017	Aug, 2017
HYPR 02, 2017	Progress Report July – December 2017	Feb, 2018
<b>Technical Reports</b>		
TR 01	Proceedings of the Workshop on Blue Gold Draft Inception Report Presentation, 26 June 2013	Sep, 2013
TR 02	Health & Safety Measures	18 Dec, 2013
TR 03	WMO Functionality Assessment in four polders	12 Dec, 2013
TR 04	Introduction to the M&E Manual	17 Dec, 2013
TR 05	Geo information for Blue Gold: Inventory of needs, data collection and roadmap for implementation	01 Dec, 2013
TR 06	Household Survey Report – Polder 22, 30, 43/2D and 43/2F	31 Mar, 2013
TR 07	Field Trip Reports 2013	31 Mar, 2014
TR 08	Operational Manual for Output and Outcome Monitoring	Apr, 2014
TR 09	Water Management Organizations - Comparative Analysis	Apr, 2014
TR 10	Outcome of WMO functionality assessment, Volume 2 (five polders)	02 Sep, 2014
TR 11	Training Plan 2013-2019	15 Jan, 2015
TR 12	Partnership Strategy 2014-2019 of the Blue Gold Program	12 Jan, 2015
TR 13	Engaging Local Government Institutions in Water Management – DRAFT Sourcebook	19 Mar, 2015
TR 14	Baseline Survey Report	31 Mar, 2015

No	Name	Date
TR 15	Communication Strategy	05 May, 2015
TR16 (A & B)	Field Trip Reports of 2014	09 Jun, 2015
TR 17	Semi Annual Outcome Monitoring Report TR 17. A - Second OUTCOME Monitoring Report up to September 2015	05 May, 2015 September 2015
TR 18	Farm Level WM - Pilot CWM P30_FINAL.PM.08092016	July, 2016
TR 19	Improved water management levels (Community Water Management Pilot Polder 30, Batiaghata, Khulna)	July, 2016
TR 20	Strategic Plan for Community Water Management	July, 2016
TR 21	Field Trip Reports of 2015	July, 2016
TR 22	Agricultural Changes in Blue Gold Polders from 2012 - 13 to 2016 – 17	Mar, 2018
TR 23	Agro- Economic Baseline Survey Report	May 2018
<b>Technical Notes</b>		
TN 01	Use of ODK software in FFS Cycle 3 FFS	May, 2015
TN 02	Tilapia Value Chain Analysis	July, 2015
TN 03	Benchmark Report on Mung Bean	Sep, 2015
TN 04	Local Poultry Value Chain Analysis	Sep, 2015
TN 05	Mung bean Value Chain Analysis	Sep, 2015
TN 06	Moringa oleifera Cuttings	Dec, 2015
TN 07	FFS Cycle 4 Benchmark and End Data	Dec, 2015
TN 08	Nursery Management in Khulna and Patuakhali	Jan, 2016
TN 09	Trial ponds of fish FFS 2015	Mar, 2016
TN 10	Nursery Management training	Jun, 2016
TN 11	FFS Cycle 5	Jun, 2016
TN 12	FFS Cycle 6	Sep, 2016
TN 13	Water melon cultivation & fish culture in mini pond, polder 22	Oct, 2016
TN 14	Trail ponds 2017	May, 2017
TN 15	Report data FFS Cycle 7	May, 2017
TN 16	Report data FFS Cycle 8	May, 2017
TN 17	Market Oriented Farmer Field Schools (MFS): Impact Assessment report	Nov, 2017
TN 18	TN 18A: Report data FFS Cycle 9 TN 18B: Comparing benchmark & end data FFS Cycle 9 TN 18C: Cycle 9 FFS report	Nov, 2017 Nov, 2017 Mar, 2018
<b>Workshop &amp; Training Report</b>		
<b>Training Module Developed and compiled</b>		
TM 01	Module on Organizational Management Training (3 Days) for WMGs	2014 (revised 2016)
TM 02	Module on LCS Works Management (one Day)	2014 (revised 2016)
TM 03	Module on Management of Agricultural Machineries Training (2 Days) for WMGs	2015
TM 04	Module on Saving and Credit Management Training (2 Days) for WMGs	2015
TM 05	Module on Accounts Keeping and Audit System training for WMGs (2 Days)	2015 (revised 2016)
TM 06	Module on Gender and Leadership Development Training (3 Days) for WMGs	2016

No	Name	Date
TM 07	Outline for Training on Construction Monitoring and Quality Control for WMAs	2014
TM 08	Outline on BGP Orientation for Union Parshad	2015
TM 09	Module on Community Agriculture Water Management Farmers Field School (CAWM-FFS) (Part-1: T Aman)	2017
<b>Training Technical Note</b>		
TTN 01	TNA Report on Gender Training for WMG	2015
TTN 02	Report on Training Need Assessment (TNA) for IGA Management Training for WMGs members	Dec, 2015
TTN 03	Report on Training Performance Evaluation of Organizational Management (OM) for WMG	May, 2016
TTN 04	Workload assessment of CDF	May, 2016
TTN 05	Concept Note_Refocusing Training	Jan, 2018
<b>PDP Reports</b>		
PDP 22	Polder Development Plan for Polder 22	Apr, 2015
PDP 43-2F	Polder Development Plan for Polder 43-2F	15 Jun, 2015
PDP 43-2D	Polder Development Plan for Polder 43-2D	30 Sep, 2015
PDP 22-29-30	Polder Development Plan for Polder 22-29-30	10 Nov, 2015
PDP 2	Polder Development Plan for Polder 2	15 Dec, 2016
PDP 43/1B	Polder Development Plan for Polder 43/2B	28 Nov, 2016
PDP 27/1	Polder Development Plan for Polder 27/1	10 Apr, 2017
PDP 28/1	Polder Development Plan for Polder 28/1	10 Apr, 2017
PDP 25	Polder Development Plan for Polder 25	10 Apr, 2017
PDP 22	Polder Development Plan for Polder 22 v2	Dec, 2017
PDP 26	Polder Development Plan for Polder 26	Dec, 2017
PDP 29	Polder Development Plan for Polder 29	Dec, 2017
PDP 30	Polder Development Plan for Polder 30	Dec, 2017
PDP 31 Part	Polder Development Plan for Polder 31 part	Dec, 2017
PDP 2	Polder Development Plan for Polder 2	Dec, 2017
PDP 43/1A	Polder Development Plan for Polder 43/1A	Dec, 2017
PDP 43/2A	Polder Development Plan for Polder 43/2A	Dec, 2017
PDP 43/2E	Polder Development Plan for Polder 43/2E	Dec, 2017
PDP 43/2F	Polder Development Plan for Polder 43/2F v2	Dec, 2017
PDP 43/2D	Polder Development Plan for Polder 43/2D v2	Dec, 2017
PDP 43/1B	Polder Development Plan for Polder 43/1B	Dec, 2017
<b>Working Paper</b>		
BGP - WP1	Theory of Change	30 Nov, 2015
BGP - WP2A	Exit Strategy v2	Feb, 2016
BGP - WP3	Building organization	2 Jun, 2016
BGP - WP4	Vocational Training	23 Aug, 2016
BGP - WP5	Theory of Change rev 2	25 May, 2016
BGP - WP6	MRL Plan	31 Aug, 2016
BGP - WP7	Polder Growth & Business Development	31 Aug, 2016
BGP - WP8	Participatory Monitoring Report WP8A: Participatory Monitoring Oct-Nov 2016	20 Feb, 2017 Feb, 2017



No	Name	Date
	WP8B: Participatory Monitoring April-May 2017	Oct, 2017
	WP8C: Participatory Monitoring Oct-Nov 2017	5 Apr, 2018
BGP – WP9	WMG Tracker Report-June 2017	22 Nov, 2017
	WP9A: June 2017	22 Nov, 2017
	WP9B: WMG Tracker Report - December 2017	Apr, 2018
<b>Annual Review Mission Action Plan</b>		
ARM 01	Action Plan 2014	5th August, 2015
ARM 02	Action Plan 2015	26 November, 2015
ARM 03	Blue Gold Draft Report 2016	24 October, 2016
<b>Innovation Fund</b>		
IF 01	Planning design and monitoring of community-based WM systems in Polder-30	Jan, 2014
IF 02	Deltares-Feasibility-pump-drainage-system-BG-Polders.8Dec2014	Dec, 2014
IF 03	Report-Quicksan-Freshwater-Pearl-Culture-Feasibility-1	21st Jan, 2015
IF 04	Blue Gold GIS report-Nelen & Schuurmans	3 Sep, 2015
IF 05	WUR - Opportunities for development of the Moringa sector in Bangladesh.Jul 2015	July, 2015
IF 06	Greyshack-Feasibility-study-on-renewable-energy.21-Dec-2015-2-SZ	Dec, 2015
IF 07	World-Fish-Final-Report-Ecopond-Project-5-February-2016-4-Small	Feb, 2016
IF 08	Acacia_Feasibility study Aquifer Recharge for Agriculture	25 Feb, 2015
IF 09	IWM-Final-Report-Study-of-River-Bank-Erosion-P29	April, 2016
IF 10	Securing the livelihood through improvement of Kawra/pig rearing community of southwest Bangladesh	Dec, 2016
IF 11	Deltares-Feasibility-study-Water-App-prototype-polder-42-2B	2017
IF 12	MetaMeta-Opportunity-Study-Roads-for-Water	
IF 13	MarGen-Feasibility-study-Natural-Cold-Storage	2017
IF 14	FHRC-Final-Report-Pilot-Community-Based-IWM	14 Sep, 2017
IF 15	Just-Farming-Final-Report-Pilot-Increasing-Quality-in-Mungbean-Production	23 Dec, 2017
IF 16	Aspire-Insectforall-Feasibility-study-Ento-Feed	
IF 17	No9 -Promoting Dutch SME entrepreneurship	3rd Dec, 2017
<b>M&amp;E Report</b>		
M&E 01	Blue Gold Baseline Survey Technical Proposal	April 2014
M&E 02	Manual for Outcome monitoring Data Collection: Guideline for collecting information by using tablet through ODK system.	
M&E 03	Operational Manual for Output and Outcome Monitoring: Mission report 11 March – 13 April 2014	April 2014
M&E 04	Proceedings of the Internal Meeting on Lessons Learned on ODK Usage of Blue Gold Baseline Survey (BGBS)	12 June 2014
M&E 05	Report on Sharing results of Outcome Mapping WMG	9-11 March 2015
<b>Journal</b>		
J 01	Impact on Production and Consumption of Orange Sweet Potato Varieties in Homestead Vegetable Production System of Poor Farming Households in Bangladesh	1 June 2016

No	Name	Date
J 02	Effect of sugar beet silage on milk production of dairy cows in Bangladesh	31 August 2016
J 03	Development of year-round vegetable farming technologies on brackish water shrimp Gher dykes in southern Bangladesh	2016
<b>Mission report</b>		
MR 01	Short-term Institutional Advisor: Exit Strategy Review	April 2016
MR 02	Environment Mission Report: March – April 2016	April 2016
MR 03	Mission Report: Monitoring and Evaluation 2-10 October 2015	8 Oct, 2015
MR 04	Short-Term Advisor Internal Polder Water Management & PDP Mission Justification and Recommendations: 16 May – 16 June 2016	18 June 2016
<b>Mid-term Review Mission Report</b>		
MTR 01	Aide Memoire Annual Review Mission Blue Gold Program	Sep, 2014
MTR 02	Aide Memoire: Mid Term Review Blue Gold Program	Oct, 2015
<b>News Letter</b>		
NL 01	Blue Gold Barta 1 April – June 2015	June 2015
NL 02	Blue Gold Barta 2 July- September 2015	Sep, 2015
NL 03	Blue Gold Barta 3 October- December 2015	Dec, 2015
NL 04	Polder Tidings	May, 2016
NL 05	New Age - Blue Gold Innovation Challenge	25 Dec, 2016
NL 06	SIAGI project brief	
NL 07	Dynamics of rural growth in Bangladesh sustaining poverty reduction full booklet	
NL 08	Blue-Gold-Barta Issue 4 March-2016	March 2016
NL 09	Blue-Gold-Barta Issue 5	June 2016
NL 10	Blue-Gold-Barta Issue 6	Sep, 2016
NL 11	BGP Barta Issue-7-	Dec, 2016
NL 12	Blue-Gold-Barta 08	June, 2017
NL 13	Blue-Gold-Barta-Final issue 9	Sep, 2017
NL 14	BGP Barta Issue-10	Dec, 2017
NL 15	BGP Barta Issue-11	March, 2018
<b>Environmental Assessment Report</b>		
EIA	EIA Report - Polder 43/1A	May 3, 2016
EIA	EIA Report - Polder 43/2B	May 3, 2016
EIA	EIA Report - Polder 43/2E	May 3, 2016
EIA	EIA Report - Polder 2	Aug 17, 2016
EIA	EIA Report - Polder 26	Aug 17, 2016
EIA	EIA Report - Polder 29	Aug 17, 2016
EIA	EIA Report - Polder 31-part	Aug 17, 2016

No	Name	Date

## Annex III: Video Materials Published by Blue Gold Program

Serial No.	Title	Category	Date of publishing	Location
1.	A short video overview of the BGP	General	09/01/2014	<a href="https://www.facebook.com/bluegoldprogram/videos/648147021898302/">https://www.facebook.com/bluegoldprogram/videos/648147021898302/</a>
2.	FFS member interviewed by Dr. Munir	FFS	15/09/2014	<a href="https://www.facebook.com/bluegoldprogram/videos/761455450567458/">https://www.facebook.com/bluegoldprogram/videos/761455450567458/</a>
3.	Beef fattening FFS field day	FFS	18/09/2014	Desh TV
4.	<a href="#">Paschim Choto Bighai WMG Election, 22 October 2014</a>	Organizational	03/11/2014	<a href="https://www.facebook.com/bluegoldprogram/videos/784432451603091/">https://www.facebook.com/bluegoldprogram/videos/784432451603091/</a>
5.	<a href="#">Nandipara Madarbunga WMG Election</a>	Organizational	06/01/2015	<a href="https://www.facebook.com/bluegoldprogram/videos/820267171352952/">https://www.facebook.com/bluegoldprogram/videos/820267171352952/</a>
6.	<a href="#">Destruction by river erosion</a>	WRM	19/01/2015	<a href="https://www.facebook.com/bluegoldprogram/videos/826375310742138/">https://www.facebook.com/bluegoldprogram/videos/826375310742138/</a>
7.	Water management for development	WRM	21/01/2015	<a href="https://www.facebook.com/pg/bluegoldprogram/videos/">https://www.facebook.com/pg/bluegoldprogram/videos/</a>
8.	<a href="#">Blue Gold Program Orientation Video</a>	General	05/02/2015	<a href="https://www.facebook.com/bluegoldprogram/videos/833789133334089/">https://www.facebook.com/bluegoldprogram/videos/833789133334089/</a>
9.	Blue Gold Mela (fair) 2015	Agriculture	09/03/2015	<a href="https://www.facebook.com/bluegoldprogram/videos/847578588621810/">https://www.facebook.com/bluegoldprogram/videos/847578588621810/</a>
10.	Water melon	FFS	07/06/2015	On aired through 'Mati O Manush' (BTV)
11.	Dutch Minister Visiting Blue Gold Program at Polder 43_2A	Special visit	11/07/2015	<a href="https://www.youtube.com/watch?v=QLDSovOmApU&amp;feature=youtu.be">https://www.youtube.com/watch?v=QLDSovOmApU&amp;feature=youtu.be</a>
12.	<a href="#">Earthwork technique</a>	WRM	26/08/2015	<a href="https://www.facebook.com/bluegoldprogram/videos/927276007318734/">https://www.facebook.com/bluegoldprogram/videos/927276007318734/</a>
13.	Semi intensive fish culture	FFS	27/09/2015	<a href="https://www.youtube.com/watch?v=PxWUYhdzoA4&amp;feature=youtu.be">https://www.youtube.com/watch?v=PxWUYhdzoA4&amp;feature=youtu.be</a>
14.	Women empowerment through local poultry production	FFS	27/09/2015	<a href="https://www.youtube.com/watch?v=mJ0xuEehCyU&amp;feature=youtu.be">https://www.youtube.com/watch?v=mJ0xuEehCyU&amp;feature=youtu.be</a>
15.	Broody hen is drinking water while sitting in a Hazzal	FFS	30/12/2015	<a href="https://youtu.be/u30XNgVC-ec">https://youtu.be/u30XNgVC-ec</a>
16.	LCS Animation video	WRM	2015	BGP server > 5 Communication Material> Video > BGP Video
17.	<a href="#">WMG exchange visit</a>	Horizontal Learning	17/01/2016	<a href="https://www.facebook.com/bluegoldprogram/videos/992210057491995/">https://www.facebook.com/bluegoldprogram/videos/992210057491995/</a>
18.	Sugar beet	Agriculture	27/02/2016	On aired through 'Mati O Manush' (BTV)

Serial No.	Title	Category	Date of publishing	Location
19.	Strawberry demo	Agriculture	28/02/2016	On aired through 'Mati O Manush' (BTV)
20.	WMG Exchange visit		27/03/2016	<a href="https://youtu.be/GFH73r3q1-k">https://youtu.be/GFH73r3q1-k</a>
21.	Drama for Horizontal Learning	FFS	24/04/2016	<a href="https://www.facebook.com/bluegoldprogram/videos/1052306724815661/">https://www.facebook.com/bluegoldprogram/videos/1052306724815661/</a>
22.	<a href="#">Collective Action</a>	WRM	26/04/2016	<a href="https://www.facebook.com/bluegoldprogram/videos/1053461174700216/">https://www.facebook.com/bluegoldprogram/videos/1053461174700216/</a>
23.	Poultry FFS <a href="#">Farmer Field Day: Foyjulapur FFS</a>	FFS	27/04/2016	<a href="https://www.facebook.com/bluegoldprogram/videos/1054088674637466/">https://www.facebook.com/bluegoldprogram/videos/1054088674637466/</a>
24.	Water melon	FFS	06/05/2016	On aired through 'Mati O Manush' (BTV)
25.	Blue Gold <a href="#">(নীল সোনা) Popular Theatre</a>	FFS	12/05/2016	<a href="https://www.facebook.com/bluegoldprogram/videos/1063282707051396/">https://www.facebook.com/bluegoldprogram/videos/1063282707051396/</a>
26.	Everyone came from water (Music video)	General	21/08/2016	<a href="https://www.youtube.com/watch?v=U2wBRa5D3nE&amp;feature=youtu.be">https://www.youtube.com/watch?v=U2wBRa5D3nE&amp;feature=youtu.be</a>
27.	There is no religion except work	Music video	21/08/2016	<a href="https://youtu.be/wODsHm6gWk">https://youtu.be/wODsHm6gWk</a>
28.	Beef fattening	FFS	28/08/2016	On aired through 'Mati O Manush' (BTV)
29.	Dairy farmers field school	FFS	29/08/2016	On aired through 'Mati O Manush' (BTV)
30.	Summer Tomato, Satkhira	Agriculture	30/08/2016	On aired through 'Mati O Manush' (BTV)
31.	BGP core message through popular theatre	General	31/10/2016	<a href="https://youtu.be/qDqznlFm-Gw">https://youtu.be/qDqznlFm-Gw</a>
32.	Glue Gold business messages	FFS	31/10/2016	<a href="https://youtu.be/ieb8rFwaSfE">https://youtu.be/ieb8rFwaSfE</a>
33.	Agomoni a CAWM experience	Agriculture	15/11/2016	<a href="https://youtu.be/qVWHCmJeR84">https://youtu.be/qVWHCmJeR84</a>
34.	Fish Harvesting	FFS	24/11/2016	<a href="https://www.facebook.com/bluegoldprogram/videos/1212047958841536/">https://www.facebook.com/bluegoldprogram/videos/1212047958841536/</a>
35.	<a href="#">Agricultural stories in Blue Gold</a> Program	Agriculture	08/01/2017	<a href="https://www.facebook.com/bluegoldprogram/videos/1264652133581118/">https://www.facebook.com/bluegoldprogram/videos/1264652133581118/</a>
36.	<a href="#">Water Infrastructure, Blue Gold</a>	O&M	05/02/2017	<a href="https://www.facebook.com/bluegoldprogram/videos/1292243807488617/">https://www.facebook.com/bluegoldprogram/videos/1292243807488617/</a>
37.	<a href="#">Business Development, Blue Gold</a>	General	05/02/2017	<a href="https://www.facebook.com/bluegoldprogram/videos/1292247077488290/">https://www.facebook.com/bluegoldprogram/videos/1292247077488290/</a>
38.	Pork production through Hygienic Pig Farming	Innovation Fund	03/06/2017	Documented by Nice Foundation
39.	Crop rotation	Agriculture	05/08/2017	Boishakhi TV
40.	<a href="#">Increase Cropping Intensity at BG area</a>	Agriculture	14/08/2017	<a href="https://www.facebook.com/bluegoldprogram/videos/1478873002159029/">https://www.facebook.com/bluegoldprogram/videos/1478873002159029/</a>
41.	Re-excavation of Amod Khali khal, Satkhira	WRM	09/11/2017	<a href="https://youtu.be/-P2X1LHiEbE">https://youtu.be/-P2X1LHiEbE</a>

Serial No.	Title	Category	Date of publishing	Location
42.	<a href="#">Amod Khali Khal re-excavated at Sathkira</a>	WRM	15/11/2017	<a href="https://www.facebook.com/bluegoldprogram/videos/1558865664159762/">https://www.facebook.com/bluegoldprogram/videos/1558865664159762/</a>
43.	Crop Cutting Festival 2017, Patuakhali	Agriculture	06/12/2017	<a href="https://youtu.be/iA2pl6TvpZ8">https://youtu.be/iA2pl6TvpZ8</a>
44.	<a href="#">Crop Cutting Festival, 2017 Patuakhali</a>	Agriculture	07/12/2017	<a href="https://www.facebook.com/bluegoldprogram/videos/1580055562040772/">https://www.facebook.com/bluegoldprogram/videos/1580055562040772/</a>
45.	Pen culture, Sathkira	Innovation fund	08/12/2017	<a href="https://youtu.be/Vp-2qhcZgV4">https://youtu.be/Vp-2qhcZgV4</a>
46.	<a href="#">Pen culture at polder 2, Sathkira</a>	Innovation fund	09/12/2017	<a href="https://www.facebook.com/bluegoldprogram/videos/1582531498459845/">https://www.facebook.com/bluegoldprogram/videos/1582531498459845/</a>
47.	Crop cutting festival 2017, Khulna	Agriculture	10/12/2017	<a href="https://youtu.be/7zfzv0lJA_8">https://youtu.be/7zfzv0lJA_8</a>
48.	<a href="#">Crop Cutting Festival 2017, Khulna</a>	Agriculture	11/12/2017	<a href="https://www.facebook.com/bluegoldprogram/videos/1584164151629913/">https://www.facebook.com/bluegoldprogram/videos/1584164151629913/</a>
49.	<a href="#">Session facilitation on market orientation by CDF at Khulna</a>	FFS	11/12/2017	<a href="https://www.facebook.com/bluegoldprogram/videos/1584537138259281/">https://www.facebook.com/bluegoldprogram/videos/1584537138259281/</a>
50.	<a href="#">Blue Gold DAE Fair 2017</a>	Agriculture	20/12/2017	<a href="https://www.facebook.com/bluegoldprogram/videos/1593008177412177/">https://www.facebook.com/bluegoldprogram/videos/1593008177412177/</a>
51.	Blue Gold DAE Fair 2017, Khulna	Agriculture	20/12/2017	<a href="https://youtu.be/PcckWSmtnoM">https://youtu.be/PcckWSmtnoM</a>
52.	EKN visit	General	20/12/2017	<a href="https://youtu.be/kt9BhAWTgpU">https://youtu.be/kt9BhAWTgpU</a>
53.	<a href="#">EKN visit Khulna</a>	General	21/12/2017	<a href="https://www.facebook.com/bluegoldprogram/videos/1593758870670441/">https://www.facebook.com/bluegoldprogram/videos/1593758870670441/</a>
54.	Crop cutting festival	Agriculture	20/01/2018	Boishakhi TV
55.	FFS farmer awarded while observing Livestock Service week organized by District Livestock Office at Patuakhali	Recognition	28/01/2018	<a href="https://www.facebook.com/bluegoldprogram/videos/1632365310143130/">https://www.facebook.com/bluegoldprogram/videos/1632365310143130/</a>
56.	Local poultry production	FFS	30/01/2018	On aired through 'Mati O Manush' (BTV)
57.	ToF course for CDF at kustiya 1 <sup>st</sup> batch	Capacity Development	26/02/2018	<a href="https://youtu.be/l-Aqsib3VKE">https://youtu.be/l-Aqsib3VKE</a>
58.	<a href="#">Training of Facilitator course for CDF, BGP</a>	Capacity Development	27/02/2018	<a href="https://www.facebook.com/bluegoldprogram/videos/1661988843847443/">https://www.facebook.com/bluegoldprogram/videos/1661988843847443/</a>
59.	Women empowerment through local poultry production	FFS	27/02/2018	On aired through 'Mati O Manush' (BTV)
60.	Experience Share on women empowerment through Backyard Poultry rearing	FFS	04/03/2018	<a href="https://youtu.be/-PnuR30-GNc">https://youtu.be/-PnuR30-GNc</a>

Serial No.	Title	Category	Date of publishing	Location
61.	International Women's day observed by BG	Women Empowerment	08/03/2018	<a href="https://youtu.be/zFhruEgN2Yw">https://youtu.be/zFhruEgN2Yw</a>
62.	Internal water management polder 43/2F	WRM	26/03/2018	<a href="https://youtu.be/pH-DZQ_OuM0">https://youtu.be/pH-DZQ_OuM0</a>
63.	Re-excavation of Amkhola khal, Patuakhali	WRM		
64.	Pen Culture	Innovation fund		Channel 9