Kingdom of the Netherlands

Bangladesh Water Development Board

(BWDB)

Embassy of the Kingdom of the Netherlands

(EKN) Dhaka, Bangladesh

Department of Agricultural Extension

(DAE)




Half-Yearly Progress Report

July to December 2018

Socioconsult Ltd.
for sustainable development

FEMCONSULT

MOTT MACDONALD

Half Yearly Progress Report

July to December 2018

Blue Gold Program

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Issue and Revision Record

Revision	Date	Originator	Checker	Approver	Description
1	17/01/19	TA team	S. M. Shardul Islam		Compile of polder level progress
2	24/01/19	TA Team	Dr Sharmin Afroz		1st draft of HYPR
3	29/01/19	TA Team	Dr Sharmin Afroz		Final draft of HYPR
4	29/01/19	TA Team	Dr Sharmin Afroz	Guy Jones	Finalization of HYPR

Glossary

ADP	Annual Development Plan
ADG	Additional Director General
AEO	Agricultural Extension Officer
AGEP	Agricultural Growth and Employment Program
BAU	Bangladesh Agricultural University
BWDB	Bangladesh Water Development Board
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
CIMMYT	International Maize and Wheat Improvement Centre
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 or DOC	Department of Cooperatives
DoF or DOF	Department of Fisheries
DP III	Department of Planning III
DPP	Development Project Proforma
DTL	Deputy Team Leader
EKN	Embassy of the Kingdom of the Netherlands
EOI	Expression of Interest
EMM	Euroconsult Mott MacDonald
EWM	Equitable Water Management
FFS	Farmers 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
IRRI	International Rice Research Institute
Ha	Hectare
HH	Household
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
IPSWARM	Guidelines for Integrated Planning for Sustainable Water Resources 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
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
PCD	Project Coordinating Director
PCWM	Polder Community Water Management
PD	Project Director
PDP	Polder Development Plan
PMC	Project Management Committee
PM	Progress Marker
PSC	Program Steering Committee
PWMR	Participatory Water Management Rule
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
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

The Blue Gold Program (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. This report presents the progress of the BGP between July-December 2018. In this reporting period, more emphasize was given on strengthening WMOs, specially WMA formation, registration and their capacity building as WMA will take the leadership of polder level water management. Due to improved water management system, farmers of the BGP polders have been able to increase cropping intensity as well as adaptation of HYV of different crops in different seasons. 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 WMGs reported that their collective actions for O&M have an overall value of BDT 11,463,857 through cash, kind and labour. 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.

An Impact study to see the impact of BGP intervention in the phase out 1 and 2 polders in Khulna and Patuakhali zone confirms that annual cropping intensity has increased more than 35% while in Khulna, it increased from 178% in before BGP to 215% in 2018 and in Patuakhali, from 181% in before BGP to 214% in 2018 and resulting in more crop production. In both zones, a significant move from local variety to HYV of different crops, like before BGP, over 70% of Aman was local varieties, but now over half is HYV. Also at homestead level more production has been generated, especially meet up the household level demand and benefitting the women. Better linkages with market actors and private sector also resulted in more profitability from produce sold. The respective 506 WMGs are positive about their performance too: around 65% 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 December 2018). The total cumulative program physical progress is tentatively estimated around 32%.
- The introduction of the Sluice Catchment O&M planning and small scale water management infrastructure approaches and the role out in all polders, and further efforts to make this approach more WMA-led and efficient. O&M committees and sub-committees have been formed to take leadership through training. A total 83 catchment O & M plans has been completed. In addition, 130 application also selected regarding small scale water management infrastructure that would positively impact on efficient IPWM by WMGs.
- Field staff is nowadays directly responsible to train and facilitate WMOs, expecting to result in more functional WMAs and WMGs.
- The effective role out of FFS cycle no. 11 with 166 FFS on homestead & dyke vegetables and fruit production, poultry and livestock rearing, pond fisheries (including a module on market linkage). After the training, the production and consumption of vegetables and fruits multiplied to 2-3 times, and commercial sale increased from an average ~20% to ~80%; also sale of eggs and poultry multiplied on average 3-4 times.

- Awareness creation, demonstration schemes and trainings on new HYV crops and connected water and agri-management practices through 166 TA FFS, 16 batches of additional CII and 25 extra CAWM schemes. At the same, DAE has been able to roll out more 90 field crop FFS. Similar outreach efforts to stimulate aquaculture production were launched through 14 CLF schemes.
- 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 even on average 45% women have adopted these practices. More and more farmers are conspiring agriculture as business while 92% are positive about collective input collection.
- 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 36 WMGs and many success stories have reported. Also, community friendly posters, festoon, videos and drama shows have motivated residents of 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.
- Special training for women on income generating options and market linkage and using gender flipchart for GLD has positively influence on increased women mobility and involvement of women in income generating activities. As a result, now women have better status within the HHs as well as more roles in intra household decision making.

Main remaining challenges and proposed mitigation strategies:

- The infrastructural progress needs to be further accelerated during 2019-20 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. I addition to these, IPWM initiatives were great help for communities. Specially, proper implementation of small scale infrastructure hopfully bring more support for coastal communities
- The delayed registration of WMAs, low progress in implementation of physical infrastructure under BWDB and more over the delayed approval of RDPP affected the Phasing Out schedule, especially for 8 polder under 1st phase.
- WMO capacity building for preparation of catchment O&M planning in 1st phase out polders within the limited time was one of the major challenges. BGP trained the catchment committee members on catchment O&M planning process.
- 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, initiating small scale infrastructure development for IPWM, 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 7+ 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, the half-yearly progress report July -December 2018 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 (Chapter 7) 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 the Department of Agricultural Extension (DAE). In term 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 working for an improved water management system for coastal communities; with the support from BWDB. BGP 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 in practicing an improved cropping system these is in turn ensuring increased production and profitability.

According to ARM 2018, “significant increase in crop coverage is driven by better water management and the introduction of high value crops (HVC) like water melon, mungbean, sesame, brinjal, chili, peanut, bitter gourd, cucumber after the amon rice harvest. Translated in to cost/benefits analysis the payback period for the investments in better drainage/ water storage and WMO capacity building is less than three years. This is remarkable for any water resource and agriculture development investment.”

According to Technical Report 25 (TR-25), many of the communities specially the phase-1 and 2 polders communities took many initiatives to improve their water management system. Although water management problems still exist, they are now less severe. Overall over half of WMGs (55%) of phasing out 1 and 2 polders reported that that the situation is now good or very good, compared with only 8% in the pre-project situation. 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 efficient use and increase cropping intensities of their land and this is one of the main agendas of the Blue Gold program. 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 has intensified the implementation of infrastructural works. TR -25 shows that better water management has contributed to increased crop yields and higher profits. Better water management has allowed increased cultivation of paddy and other crops in the rabi season, and increased areas of HYV aman paddy and aus paddy in the kharif seasons. Mid-term report of Satelligence shows that there is a strong relationship between larger improvement in water management problem and larger increase in cropping intensity (see Figure 1).

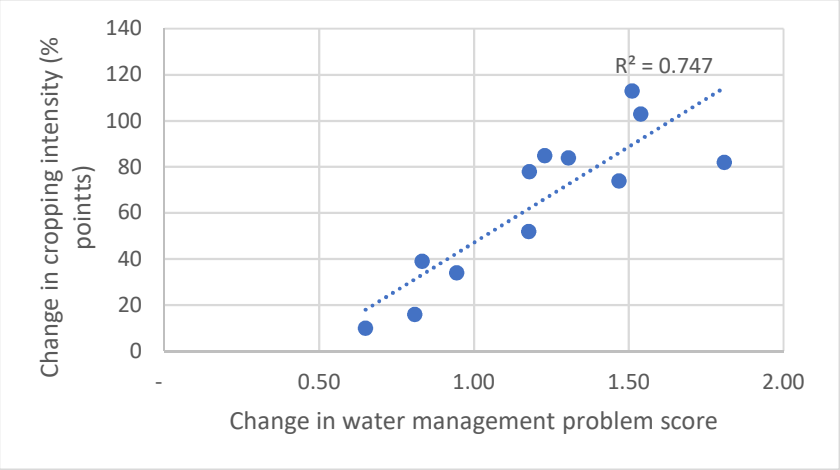

Figure 1: Improvement in water problem score and increase in cropping intensity from Satelligence

Like earlier, the BGP has continued the technical assistance to farmers to increase their cropping intensity and yield. 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 the HYV of Aman paady and cultivating a third crop for the Rabi season in the attempt to promote an alternative profitable annual cropping pattern, especially in the Phase I and 2 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 16 batches on approximately 124 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 Aman paddy followed by HYV of mung bean mustard, sesame and watermelon, and spreading those practices via horizontal learning to other WMGs.

TR-25 shows that overall cropping intensity in Khulna Zone increased from 178% to 215% - an increase of 36%. It is important to note that cropping intensity calculation here consider fish ghers as another crop. Data derived by Satelligence from satellite images gives lower estimates of cropping intensity as this does not take account of land utilised for fish production while. The overall increase in c.i. of

Satkhira zone (only Amodkhali catchment) is 36% points using the WMG data and 23% from the satellite data. The overall c.i. for the polders of Patuakhali zone prior to BGP was 181%, and this has increased by 34 percentage points to 214% (See Table 1). Satelligence data for these same polders shows a much larger increase in c.i. (91 percentage points) due to a much lower pre-project estimate of only 113%.

Table 1: Estimates of cropping intensity for polders in Khulna Patuakhali and Satkhira zone

Polder	TR 25		Satelligence		Change in c.i.	
	before	now	Before	now	WMG	Sat
Khulna (weighted)* 1	178.3	214.7	143.9	166.5	36.4	22.6
Patuakhali (weighted)*	180.6	214.3	113.4	204.6	33.7	91.2
Satkhia	141	172	129	142	31	13

The reporting period (July-December) is mainly concerned with the Kharif-II/Aman season . TR-25 shows small increases in the proportion of land used for aman (as almost all land was growing aman prior to BGP) both in Khulna and Patukhali zone. It is important to note that there has also been a significant move from local varieties of aman to HYV. Before BGP, over 70% of Aman was local varieties, but now over half is HYV (see Table 2).

Table 2: Land use in the kharif-II season in the Khulna zone

Kharif-II crops	Khulna (weighted)*		Patuakhali (weighted)*	
	Before project	Now	Before project	Now
Aman Paddy (Local)	55.4	33.6	87.2	48.5
Aman Paddy (HYV)	21.1	40.7	8.8	51.2
Fish / shrimp gher	16.3	19.6	0.2	0.0
Other crops	3.7	5.9	0.1	0.1
total crops	80.3	80.2	96.2	99.8
total crops & fish	96.6	99.8	96.2	99.8
Fallow	3.4	0.2	3.8	0.2
Total	100.0	100.0	100.0	100.0

TR-25 shows that there has only been limited yield increases for local and HYV Aman in the Khulna zone, but farmers have achieved 50% increase in production by switching from local to HYV Aman varieties (see Table 3). On the other hand, there has been a significant increase in yields both of the LV and HYV Aman while farmers have achieved more than 100% increase in production by switching from local to HYV Aman varieties in the Patuakhali zone

[1] *overall data is the average for all polders weighted by the relative area of each polder

Table 3: Yield of principal crops in Khulna zone (kg per hectare)

	Average production in Khulna zone			Average production in Patuakhali zone		
	Before Project	Now	Increase	Before Project	Now	Increase
Aman Paddy (Local)	2,969	3,095	4%	2,394	2,867	20%
Aman Paddy (HYV)	4,183	4,475	7%	3,915	4,916	26%

2.2.2 Trends among Farmer Field School (FFS) members

BGP completed the implementation of TA FFS cycle 11, a total of 166 FFSs implemented in Khulna (Polders 25, 27/1, 27/2, 28/1, 28/2, 34/2-part, 31-part), Patuakhali (Polders 55/2A, 55/2C, 47/3 & 47/4) and Satkhira (Polder-2) during April to November 2018 on and transferred improved knowledge on home stead production, poultry rearing, beef fattening and fisheries culture. From this cycle of FFS, BGP has taken a demand-based single module approach instead of the bundle of modules approach and emphasized the inclusion of resource poor. These training modules contain information on market orientation issues with a view to transform them as surplus farmers alongside improving their food security and nutrition. In this cycle, BGP trained a total of 4150 farmers, in which 90% and 37% of participants were women and extreme poor respectively. It is important to note that significant percentages of women participated in male dominated Beef fattening (69%) and fish (78%) module (for details please see forthcoming Technical Note-22).

The comparison of baseline and end line after cycle 11 shows positive change in consumption and selling among participating farmers. Due to higher production, farmers are consuming more eggs, poultry, fruits and vegetables compared to the benchmark survey. FFS participants are now considering homestead level small production as a business, thus trying to be surplus and participating in collective selling for making profit.

The Blue Gold Program facilitates horizontal learning (section 2.8) to scale up the agronomic practices adopted by FFS Farmers. A total of 18,190 neighbouring farmers have participated at FFDs organized at the end of TA FFS Cycle 11 and showed tremendous eagerness to join collective actions (CA) groups in procuring inputs and adopting improved practices after witnessing trial results. Based on the data of this FFS, more detailed trends on homestead vegetables, dyke vegetables, fruit production, poultry rearing, beef fattening, and pond fisheries module are given hereafter.

Trends in vegetable and fruit production

FFS Cycle 11 included the homestead garden, dyke vegetable and fruit production module, which aimed to disseminate production technologies into practice and increasing production of vegetables and fruits for HH consumption to fulfil the nutritional need of the rural households as well as for income generation.

Table 4 shows the practice of different technologies among the FFS farmers. The number of different types of vegetables grown within a homestead and the dyke increased significantly. In homestead vegetable production, instead of relying mainly on sunny open areas to grow vegetables farmers started growing their vegetables in different locations within their homestead. After the training, almost all

farmer followed proper pit, raised bed and IPM methods for vegetable production in their homestead and dyke. These percentages were very insignificant during the benchmark time. The training gave them the inspiration to undertake homestead gardening in a more commercial manner, and as a result nowadays around 58% of farmers are selling their homestead vegetables while before the training it was only 24%. On the other hand, dyke vegetable growers had more commercial thinking before the training, as a result, the percentage of seller didn't increase significantly among them but the detail report shows that now 52% farmers are selling more than half of their production compared to 6% during the benchmark time.

Table 4: Comparison of homestead and dyke vegetable production between the benchmark and end line survey

	Homestead vegetable		Dyke vegetable	
Location	**Khulna & Satkhira**		**Khulna**	
Number of participants	Benchmark (n=112)	End FFS (n=112)	Benchmark (n=90)	End FFS (n=90)
Number of different vegetables grown within the same homestead (average)	3.43	6.25	2	3.6
Number of different locations used within the same homestead (average)	3.23	5.87	NA	NA
Have production plan for dyke vegetable production (% of participants)	NA	NA	1%	99%
Follow proper pit method for vegetable production (% of participants)	5%	100%	0%	97%
Follow proper raised bed methods for vegetable production (% of participants)	4%	100%	0%	97%
Use Integrated Pest Management (IPM) methods (% of participants)	0%	97%	7%	87%
Selling of vegetable (% of participants)	24%	58%	56%	58%

Trends in fruit production

Total of seven FFS were implemented regarding fruit production module in Khulna and Patuakhali zone. Due to the demand from farmers a separate module has been developed for homestead fruit production for 11th cycle of the FFS.

Most farmers who participated in the FFS have fruit trees in their homestead area. Table 5 shows the technology adaptation status among the FFS farmer of fruit production. The average number of trees in each homestead area has increased. It is important to note that some saplings were distributed as practical materials. The table shows that during benchmark farmers had less attention on using of improved technologies. During FFS session some easy technologies demonstrated to FFS members. At the end of FFS, farmers utilized their learning in practice as the table shows that almost all farmers started to follow space planning, fertilization, pruning, propagation and IPM. On the other hand, a significant percentage of FFS farmers sold fruit.

Table 5: Comparison of fruit production between the benchmark and end line in Khulna zone

Technology adaptation status	Khulna & Patuakhali	
	Benchmark (n=79)	End FFS (n=68)
Average number of trees	30.61	48.51
Follow space planning (%) of participants	3%	100%
Using fertilizer in fruit trees (%) of participants	1%	100%
Practice Integrated Pest Management (% of participants)	1%	78%
Practice pruning for fruit tree improvement (% of participants)	0%	97%
Practice propagation (% of participants)	0%	99%
Selling of fruit (% of participants)	9%	42%

Trends in poultry production

FFS cycle 11 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 big increase 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. 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.

Table 6: Comparison between benchmark and end line on poultry production

Particulars	Patuakhali, Khulna and Sathkira	
	Benchmark (n=320)	End FFS (n=316)
Average number of birds (Chicken, chick, duck, duckling)	6.5	12.75
Number of Eggs per hen	50	96
Number of Eggs per duck	81	111

With the increase in birds and the increase in egg production we see that households consume more of their own eggs and birds. Table 7 also shows that in the FFS the number of farmers selling eggs increased and also that the number of eggs sold per month increased. On average we see that farmers reported selling more than 3-4 times as many eggs each month.

Table 7: Comparison between benchmark and end line regarding the sale consumption and of eggs and poultry birds

Particulars (average per household)	Patuakhali, Khulna and Sathkira	
	Benchmark (n=320)	End FFS (n=316)
Consume home produced eggs/week	5	10
Consume home produced birds/monthly	1	2
Selling eggs/month	9.7	26
Selling poultry /year	6	30

During the poultry module, the FFS farmers learnt several improved poultry rearing practices, such as vaccination of the birds, the use of hazal, and candling of eggs. Many farmers at the end of the FFS reported that they have adopted these practices, see the results in Table 8.

Table 8 : Comparison between benchmark and end line regarding improved poultry rearing practices

Poultry rearing practices (% of participants)	Patuakhali, Khulna and Sathkira	
	Benchmark (n=320)	End line (n=316)
Vaccinate always	1	70
Vaccinate sometimes	15	30
Vaccinate never	84	0
Use hazal	11	99
Use candling of egg	14	100
Separate chicks after 1 week	3	88
Separate chicks after 2 weeks	3	11
Separate chicks never	89	0

Trend in beef fattening

The objective of beef fattening module is to increase the efficiency of beef fattening, many of the farmers have taken this as an income generating activity, especially in the period before the Eid festival. The module also emphasizes on market orientation. Table 9 shows that cattle housing improved significantly. Farmers also reported significant increases regarding production of green fodder (6% to 99%), urea molasses straw preparation (4% to 99%) and feeding (2% to 99%). A significant number of farmers are taking services from animal health worker and learnt to measure body weight of animal that helped to bargain the animal price with the traders.

Table 9: Comparison of practices of different technologies between benchmark and end line

Practices of different technologies & changes in production	Patuakhali and Khulna	
	Benchmark (n=230)	End line (n=210)
Cattle shed improvement (% of participants)		
Cattle shed has ventilation	37%	100%
Cattle shed has gutter for drainage	23%	92%
Cattle shed is cleaned daily	30%	99%
Fodder production (% of participants)		
Produce Green fodder	6%	100%
Know how to make UMS	4%	99%
Feed UMS to cattle	2%	99%
Services (% of participants)		
De-worming cattle regularly	5%	100%
Receive animal health service	9%	98%
Have phone number of service provider	5%	98%
Know how to measure body weight	3%	99%
Average meat production per farmer (kg)	122	155

Trends in fish production

The objective of fish module is to improve the efficiency and productivity of household ponds. Technical topics in the module includes pond preparation, selection of fingerlings, stocking ratio, stocking density, use of supplementary feed, fertilizing ponds for natural feed, different problems of fish culture, fish diseases, harvesting and market orientation.

Table 10 : Comparison of practices of different technologies and changes in production between benchmark and end line

Use of different technologies and changes in production	**Khulna and Patuakhali**	
	Benchmark (n=267)	**End line (n=266)**
Fish pond preparation (% of participant)	6	94
Fingerling selection (% of participant)	<1	99
Use of Supplementary feed (% of participant)	21	95
Knowledge on stocking density (% of participant)	<1	100
Natural Feed testing (% of participant)	1	100
Knowledge on sampling (% of participant)	<1	100
Fish production per farmer (kg)	49	123
Fish production per decimal (kg)	4	11

Findings of this FFS also show that farmers have changed different practices of fish cultivation. They reported that they have started using different improved technologies for getting better production. Using of these technologies helped them to get a considerable higher fish production from 4 kg to 11 kg per decimal after completion of the FFS fish module (see Table 10).

2.3 Building organizations and WMO capacity Building

2.3.1 Building Organizations

Introduction

BGP has geared up its efforts towards sustainable participatory water management (PWM) through the functional WMOs. The functional WMOs are able to ensure the proper operation and maintenance of water management infrastructures and build partnerships and networks that drive higher productivity and profitability from their livelihood options like agriculture, aquaculture, livestock and poultry. Below progresses have been achieved during the reporting period (July-Dec. 2018) to ensure functional WMOs

- 26 WMGs have been registered by BWDB and 3 WMGs have been formed. In addition, 8 WMAs have been registered by BWDB and 5 WMAs are under the registration process while 3 new WMAs have been formed and 4 WMAs are under process of formation.
- 122 WMGs collected O&M fund of amounting BDT 880,304 and 66 WMGs reported that they have utilized BDT 558,300 for O&M purposes.
- 5 (Five) O&M agreements have been signed between BWDB and 6 WMAs on 23 September 2018 in Khulna.
- 43 catchment O&M sub-committees have been formed and 74 catchment O&M plans have been prepared.
- 382 WMGs and 20 WMAs organized Annual General Meeting (AGM) and 495 WMGs have prepared Annual Action Plans.
- A draft guideline has been prepared for capacity building of WMA and the guideline has been shred with 5 WMAs. The guideline focuses on the issue related to core tasks and responsibilities of WMA, coordination, follow-up and support to WMGs and catchment committees, linkage and partnership with LGIs, different departments of the government and others.

Challenges

- During WMG/WMA formation, major challenges were (i) local political leaders' interference, (ii) personal conflict among political leaders/influential peoples.
- Follow up activities of WMO by the Office of the Chief Water Management (OCWM).
- Establish constructive relation and partnership among the WMOs and OCWM, O&M Divisions of BWDB and Operation and Maintenance (O&M) of water management infrastructures.
- Activation of catchment committees involving concerned actors, channeling required O&M fund from the concerned WMGs and Implementation of catchment O&M plan by the catchment O&M sub-committees were challenging.

Lesson learned

- All the WMGs need to be formed and registered at a time under a WMA. On the other hand, proper attention and time are necessary for WMA capacity building.
- WMGs are more functional where WM infrastructures are in operational conditions.

- WMOs need to give more focus on developing a working relationship with the OCWM and O&M divisions of BWDB at different levels for continuous organizational/institutional support, conducting annual audit, record keeping, election of ECs in due time.

2.3.2 WMO Capacity Building

A functional WMO drives higher productivity and profitability in agriculture based livelihood options like crop farming, aquaculture, livestock, and poultry through water resource management. BGP put significant efforts towards functional WMOs through the initiatives below:

1. Training

2. FFS

3. Horizontal Learning and Communication

Training: Within the reporting period, training program aimed to support on sustained WMA/WMG capacity using the principle of self-sustaining organizations and giving explicit attention to O&M plans. In addition, it is anticipated that WMA will take the leadership of polder level water management for agricultural production, O&M activities, in decision-making process for involving in infrastructure development, maintains linkage and liaison with the LGIs, other govt. organization and NGOs, conflict negotiation among WMGs or with other parties. So before handing over the responsibilities of the polders to the WMOs, it is necessary to ensure that WMOs are also well equipped to take the responsibilities of these mentioned areas. Training program organized the training sessions special focus thus the WMOs could well equipped to carry out the above mentioned activities.

To achieve these objectives, training program gave special emphasize and initiatives thus CDFs could build self-evolving WMGs rather than outsourced training firms. Training approach focused that CDFs are well-placed to build self-evolving WMGs by encouraging WMGs to take control of their own activities using an approach which encourages learning-by-doing. During the reporting period, CDFs are playing key roles to build the capacity of WMOs. Many of the training/capacity building courses have therefore been aimed at developing facilitation skills in BWDB/DAE/TA staff and WMGs (for details pls see 2.7).

FFS: To improve the skill and knowledge of the members of WMOs in modern agriculture practices, BGP implements farmer field school (FFS). During the reporting period, BGP refocused to reach the poorest, be demand driven, responsive to real needs, reach more households; remain true to FFS principles; and to be integrated into the broader polder economic development to align with other BGP activities. This revised approach was incorporated into TA Cycle 11 for homestead FFSs (April to October 2017). To heading these objectives, instead of a multiple module approach, a single module FFS approach was introduced from FFS cycle -11 to allow for better HH targeting and meaningful participation. In this cycle, a total of 166 FFS with 4,150 direct participants have been trained in which 38% participants were extreme poor. For more details of FFS cycle -11 please see section 2.2.2 & 2.5 of this report and forthcoming Technical Note-22.

Horizontal learning and communication: Through horizontal learning and communication, members of WMOs learn from successes elsewhere and then replicate the learning in their areas. Horizontal learning and communication tools are using to achieve scale with agricultural technology, water management, organizational strengthening, and capacity building of the WMOs. Within the reporting period, a number

of WMGs organized their own experience-sharing visits to witness and then replicate good practices/experiences (for details pls see the section 2.8).

2.4 Improved Water Management

2.4.1 Water Resource Management Infrastructure

Introduction

July – December 2018 period is mainly the period for pre-construction activities such as design data collection, design approval, estimation, estimate vetting, tendering and awarding of contract etc.

During this period working site mostly unsuitable for physical works as the khals/embankments are partly under water, paddy harvesting not completed etc. Only carried over work may start with a very limited progress. For new works NoA may be issued for some works in the later part of the period. As such new rehabilitation works not yet started. Only progress is made in carried over works but it is also very little (see Table 11).

Among the carried over works, some cc block manufacturing works in polder 43/1A, 55/2A and 55/2C have been done, and one khal re-excavation in polder 55/2A has been started in Patuakhali area. In Khulna, no earthwork has been started; only two sluice construction works is on-going in polder 31 part and 29. In Satkhira, some earthwork and sluice construction work is on-going but progress is very slow. In addition, one box culvert construction has started in Satkhira. The total cumulative progress in physical works up to December 2018 is not significant and it is almost same as of June 2018 (32%) as the progress of carried over works is very little during this period.

The progress in pre-construction activities during this period is substantial. Design Data Collection and Detailed Design for most of the infrastructure rehabilitation works are still in progress. There has been some improvement in design data collection and designs, but not as much as expected. Table 12 summarizes the total infrastructures planned for data collection and design; and status of design data submitted, design completed, estimated submitted and estimate vetted.

Total bill amount claimed for reimbursement in 2017-18 was 30.07 crore of which RPA was 22.85 crore; total amount recommended for reimbursement was 23.50 crore that included bills from 2017-18 and pending bills from 2016-17 & 2015-16. Total approved cumulative reimbursement till date (4th Nov 2018) is 67.34 crore.

Bringing Change

Insignificant infrastructure rehabilitation works have been done during the reporting period, assessment of specific improvement needs more time and analysis, however, people in almost 90,000 hectares of land (around 84,000 HHs) are getting at least some benefits of improved water management like increased flood protection, reduced water logging and less water stress, more agricultural production and economic development.

WRM team working as an integral part of the entire TA team rather than as a component, and sharing WRM related information with zonal and polder teams as well as the WMOs. Changes/updates of all WRM activities including assessment of rehabilitation needs, engineering assessment, budgeting, preparation of rehabilitation plans, monitoring & quality control of rehabilitation works are done in consultation/along with the polder teams, member of other disciplines, WMOs, UPs, BWDB and DAE.

The central WRM team is continuing field visits attending meetings with the zonal and polder teams, sharing all WRM related information and challenges.

To involve WMGs at sub-catchment level, field level WRM/ zonal team are working in close cooperation with WMGs, BWDB and UPs and sharing all infrastructural related information with them. WRM team is also assisting WMOs in preparation of catchment/ sub-catchment level water management plans and infrastructure maintenance action plans especially in the first phase out polders. Field level WRM/Zonal team also provide necessary assistance/support for small scale infrastructure works along with other members of the zonal team.

TA Team is continuing to provide emergency staffing support to BWDB field offices, for collection of design data, estimation etc. to accelerate the pre-construction activities as well as developing capacity. TA team also continue to support design offices and also DP-III in developing their capacity. TA team also continuing support to DP-III in providing all information, updates and responding to queries.

Trends

The progress of Design Data Collection and Detailed Design for the new structures is showing an uptrend, though the progress is slow but it is continuing. As a result the estimate vetting is in progress and so far vetted estimate amount for 2018-19 is 61.92 crore. This will provide a positive contribution in the progress of the rehabilitation work for 2018-19.

Challenges, Mitigation Measures and Lessons Learned

The delay in RDPP approval creates a lot of challenges on the WRM rehabilitation/construction activities. Many of the works planed for rehabilitation in 2017-18 FY could not be under taken for delay in RDPP approval causing the over burden load for subsequent years. As a result the rehabilitation activities supposed to be completed within 2017-18 and 2018-19 has been delayed accordingly. Thus the implementation load during 2018-19 and 2019-20 will be very high and will be difficult to achieve. The same feelings also reflected in the draft Aide Memoire of ARM-2018.

The main challenge was also the collection of design data and detailed design. Tendering & selection of good & efficient contractor is a great challenge, though TA team has nothing to do in this activity. As mentioned already, the progress is slow and this will have some impact on the expected progress of 2018-19 rehabilitation works. To speed up the progress of design data collection, emergency staffing support has been provided to BWDB field offices, deign offices and also in DP-III. The emergency funding to address the monsoon erosion/damages almost exhausted. It will be great problem to face the situation in the coming monsoon.

Table 11: Carried Over Works Progress from July 2018 – Dec 2018

Work Items	Unit	Works Completed (up to Jun 2018)	Works under implementation (as of Jun 2018)	Works started (as of Dec 2018)
Embankment Re-Sectioning	km	257.63	62.80	11.74
Embankment Retirement	km	2.84	8.84	-
Canal Re-Excavation	km	160.43	82.32	11.52
Repair of Sluices	nos	59	9	5
Repair of Outlet/ Inlet	nos	191	-	-

Construction of Sluice	nos	5	3	3
Construction of Outlet	nos	-	-	-
Construction of Inlet	nos	2	1	-
Construction of Box Culvert	nos.	-	1	1
Low Cost Bank Protection	km	-	0.478	0.478
Closure/ Cross-bundh	km	-	0.135	0.135

Table 12: Plan for Design Data Collection & Design; and Status of Design Data Submitted, Design Completed, Estimated Submitted and Estimate Vetted

Work Items	Unit	Plan	Design Data Submitted	Design Completed	Estimate Submitted	Estimate Vetted
Embankment Retirement	km	16.00	4.96	4.96	4.96	4.96
Canal Re-Excavation	km	301.34	239.29	192.59	138.33	138.33
Repair of Sluices	nos.	107	83	62	47	47
Repair of Outlet	nos	8	3	-	-	-
Repair of Inlet	nos	11	1	-	-	-
Construction of Sluice	nos	23	22	16	14	14
Construction of Outlet	nos	17	15	12	12	12
Construction of Inlet	nos	6	1	1	1	1
Construction of Culvert	nos	32	24	18	5	5
Pump Shed Construction	nos	6	6	6	3	3

2.4.2 In Polder Water Management

Introduction

The Blue Gold Program (BGP) aims to increase profits from agriculture and fisheries through enhanced In-Polder Water Management (IPWM). In-Polder Water Management is the development, operation and maintenance of the water management infrastructure inside the polders, complementing the peripheral structures (sluices, embankments) and the main khals. As IPWM works on a variety of scales and is generally context-specific, a mix of approaches is needed. The BGP mainly uses the following three approaches:

1. ***Catchment O&M Planning (see 2.3.2.1):*** By proper operation of sluices for regulation of water levels of main khals in the catchment, thereby optimizing water levels at the field level.
2. ***Community-Led Agricultural Water Management (see 2.3.2.2):*** The development of showcase sub-catchments, a scale that allows crop synchronization, collective action, intensive inputs and easy-to-show results. This can be used for horizontal learning, policy dialogue on In-Polder Water Management and ultimately governmental mainstreaming of IPWM.
3. ***Implementation of small scale infrastructure (see 2.3.2.3):*** Improving water management infrastructure that does not fall under jurisdiction of the Bangladesh Water Development Board (e.g. secondary and tertiary khals) because it is too small, but is too big an investment for farmers to improve themselves.

2.4.2.1 Catchment O & M Planning

According to the project plan, the catchment level O&M Planning process needs to be accomplished by the WMA during the Project period. The Catchment O&M Sub-Committee will carry out the O&M plan preparation and implementation of the actions with the support of WMA. The question is how the catchment level O&M plan will be completed within the project period as the 1st phased out polders will be handed over to the partners by the end of 2018 where only 10 catchment O&M plan preparation has been completed out of 75 catchments under 8 polders.

To overcome this challenge, in April 2018, the Blue Gold Program (BGP) has initiated a simple approach "Optimized Approach for Catchment Operations & Maintenance Planning Process by the Catchment Committee Facilitators (CCF). WMA has identified the most potential resource persons (1-2 members) from each catchment committee who agreed to dedicate time and facilitate the preparation of Catchment O&M planning at the WMG and Catchment level.

This approach followed 05 steps i.e. WMG wise O&M plan preparation, Pre-workshop Meeting for draft finalization of Catchment O&M Plans, Sharing/validation of plans through day-long workshop, signing of O&M plans through WMA & distribution the plans to the concerned and Implementation. A total of 83 Catchment O&M Plans has been completed up to Dec 2018. Please see Table 13 for the detailed accomplishment in the attachment from July to December 2018.

Table 13: Progress from Jul-Dec'2018

Activities	Participants	Total achievement up to Dec'18	Progress (Jul-Dec'18)		
			Target	Achievement	No of Participants
Training for O&M Sub-Committee Members on O&M Planning Process	Catchment committee members (facilitators)	05	03	03	66
WMG wise O&M Plan Preparation session	Farmers, EC members, catchment representatives	257 out of 262	139	134	1265
Catchment Pre-Workshop Meeting	O&M sub-committee, WMG representatives	55 out of 61	55	54	770

2.4.2.2 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. CAWM is scaled up leading by communities (WMOs) with the support of DAE/BGP with cooperation/linkage of LGIs and other service providers. CAWM activities plan is included in WMOs WAP like other regular integration activities in the plan. The activities are integrated with sluices catchment/sub catchment water management for crops water management in respect of increase production, improve cropping pattern and income. WMOs, DAE, BWDB and UPs are involved in the planning and implementation procedure of CAWM.

Within the reporting period (July-Dec 2018), a total 25 (Patuakhali 12, Khulna 09 and Satkhira 04) CAWM area covers 519 ha (20.76 ha/CAWM) land, 1697 farmers (average 68 farmers/CAWM including 162 female headed HHs. On the other hand, replicated area through HL consists of 1305 ha (average 52 ha/CAWM) land and 2886 farmers (115 farmers/CAWM). Table 14 shows zone wise coverage of CAWM and replicated area through HL

Table 14: Zone wise coverage of CAWM and replicated area through HL

	CAWM up-scaling (July-Dec 2018)						CAWM replicated area through HL	
	No. of Polder	No of WMG	No of WMG members	No. of farmers		Total land (ha)	No. of Farmers	Total land (ha)
				Male	Female			
Satkhira	01	04	1177	271	11	88	538	361
Khulna	03	09	3091	729	56	165	1709	574
Patuakhali	06	12	195	536	95	266	639	370
Total	10	25	4463	1536	162	519	2886	1305

Bringing Change

- CAWM brings community water management within catchment, sub-catchment for changing the cropping pattern, increase production, crop diversification and introducing high valued crops. As result of cultivating short duration Aman, communities can cultivate an early rabi crop.
- CAWM introduces crop synchronizing in the catchment water management through community led small scale infrastructures.
- CAWM provides new technologies to the communities that helped to ensure more crop production and income.
- CAWM introduces horizontal learning for good practices and its replication in the polders.

In sub-catchment, CAWM took initiatives to include communities to excavate/re-excavate of branch and tertiary channels, construction of small infrastructures for crops water management (drainage and storage water for irrigation). Community involved through co-funding with BGP or with their own resources (physical labour/ cash). To get benefit from these infrastructures farmers initiated crop synchronization through maintaining crop-water and regular operation and maintenance of these infrastructures at sub-catchment level. As a result, farmers got increased production and income. On the other hand, through sharing of new technologies, other farmers are also replicating the CAWM learning. For illustration, please see two success stories below.

Story 1: In Polder 43/1A Daskkin Atharogachia WMG constructed a box culver through co-funding in 2016 but 2017-18 by their fund and labour. They re-excavated a small channel to link up the main channel. The main channel was silted-up by water hyacinth since 2011, WMG members cleaned the water hyacinth for drainage water and raised channel bank for fish culture, in this year they initiated community fish culture in the Hartakibaria, channel about 700m, invested Tk. 65000.00, Tk. They sold a portion of the

Figure 2: Construction of Box culvert in polder 43/1A

fish and got 75000.00 Tk and they reported that they are expecting to earn approximately Tk. 200000.00 from the selling of the remaining fish.

Story 2: In Polder 43/2D, 5 members of Choto Aowliapur Uttar WMG participated in the experience sharing (HL) session in Bazergona CAWM/WMG. In this year 26 farmers of this WMG replicated the same concept in their sub-catchment to solve the late water draining problem. They excavated 110m channel to linkage with the main channel and installed a pipe on the road (UP provided the pipe in response to the request of the WMG) that resulted quick drainage around 100 acre land. In the Aman season, 26 farmers cultivated 20 acre BR 52, instead of LV of Aman, BR 23 was cultivated in the rest of the land with an average yield 5 t/ha compared to 2.5 t/ha for the LV Aman. They are planning to have one month early cultivation of Mug bean (BARI-6), sunflower and ground nut in the Rabi season.

Major Trends

In the BGP polders, cropping pattern has been changed through the implementation of the CAWM especially for sub-catchment level water management e.g. implementation of small scale infrastructures. Within the reporting period, it has been observed that the practice of modern verities of Aman has increased compared to the last Aman season). Due to the increased facilities to storage water for irrigation, Boro rice cultivation has increased in polder 2 in Satkhira and polder 47/4 and 47/3 in Patukhali. For early drainage facilities in Khulna areas especially in Polder 22, water melon cultivation has increased. In Patukhali, most of the land of the polder 43/2B and 43/1A most of the land area is under watermelon cultivation. It is important to note that other than marketing, women are involved in all the activities of watermelon cultivation. BGP has organized women groups for capacity development training on marketing linkage in polder 43/1A. Some women are started marketing watermelon in the local market. In this regards their husbands and WMOs leaders created environment for the involvement of women in marketing.

Figure 3: Relay mustard crop with Aman in Polder 34/2

Challenges and Mitigation

- Unpredictable weather e.g. early rain in Aman season, drought in mid-August to mid-September. To mitigate early rain problem farmers raised Aman seeds bed, developed small dyke (aile) around the plots, excavated/re-excavated internal/branch drainage channels, linked internal channels to the main channels. To mitigate drought problem, farmers irrigated by LLP from jointly excavated drainage channels especially in Khulna areas.
- Pest attack during drought (particularly in Khulna and Kalapara, Patuakhali). Farmers / SAAOs took joint effective initiatives with cooperation of CDFs/UAOs, DAE.
- Water logging at Maddya Dharandi Chandipur WMG/CAWM due to construction of X-Dam for protection of Dharandi Drainage Sluice in Polder 55/2A. CAWM farmers, WMGs and UP jointly opened an alternative drainage channel with Maddya Dharandi Chandipur Sluice for drainage.
- Sometime water-logging is creating problem for 1st year CAWM implementation. CAWM tried to reduce water-logging problem by the local initiatives.

- In some CAWM areas, IPWM activities hindered due to land related conflict. Communities have tried to resolve the problems with help of UP chairman and members.

Lessons Learned

- Seeds and drainage facilitates should be available by June otherwise difficult to ensure crop synchronization and early high yield.
- Farmer field School (FFS) needs to be more participatory, selective and practical, implementing with festive mode and informal.
- Strong communication with the UP helps to implement activities and resolve the problems of CAWM.

2.4.2.3 Small Scale Water Management Infrastructure

Expanding the uptake of small scale infrastructure for IPWM by WMGs has been a primary objective in the second half of 2018. Up to then, small scale infrastructure had been implemented only in a relatively resource intensive way - within CAWM. A fund has been made available to use a "hands-off" approach, with a low-level of involvement by the BWDB/DAE/TA team. From September 2018 onwards, WMGs were requested to apply for small scale infrastructure (one application, maximum BGP contribution of BDT 2,00,000) while ensuring co-contribution in labour or cash. The call for proposals for phase 1 and phase 2 polders was very successful: by October 2018 a total of 307 (out of 352 WMGs) applications were received. A second call for phase 3 polders is due for June 2019. After scrutiny, 130 applications were selected for implementation by end of 2019 (see Table 15).

Table 15: Call for applications for small scale infrastructure

	Patuakhali	Khulna	Satkhira
No. of (Phase out 1 + 2) WMGs	187	135	58
Applications	138	116	53
Selected after field verification	65	46	19

An important outcome of the activities already is the awareness of polder staff and WMGs and WMAs for in-polder water management over September 2018 to December 2018 by identifying suitable interventions and criteria etcetera.

The main challenge will be to implement the selected applications before the coming monsoon. Secondly, some conflict has already arisen because the applications were not selected. This is currently under mediation.

2.4.3 Operation and Maintenance

WMGs and WMAs are stimulated to perform activities for Operations & Maintenance through Catchment O&M planning and BWDB-WMA O&M agreements. Firstly, members of the WMA-O&M subcommittee are trained to guide their O&M subcommittee and the WMGs to make Catchment Plans. A major outcome of the activities is that WMG, WMA and the WMA -O&M subcommittees are focussing on and planning for O&M of their water infrastructure (See table 16).

Table 16: Progress of O&M capacity building, catchment planning and O&M agreement signing.

	1. Capacity Building WMA-O&M Subcommittee		2. Catchment Planning		3. O&M Agreements	
Polder phasing	Completed (July-Dec -2018)	Total	Completed (July-Dec 2018)	Total	Completed (July-Dec 2018)	Total
1	76 (21)	76	65 (35)	76	5 (5)	17
2	24 (24)	51	6 (6)	51	1 (1)	9
3	0 (0)	72	0 (0)	72	0 (0)	12
Total	100 (45)	199	71 (41)	199	6 (6)	38
Percentage	50%		28%		16%	

In this process, Operations & Maintenance is actively planned by the communities during Catchment Planning. Partnering with the WMA, but also with DAE, BWDB, BADC, UP and LGED is actively stimulated by inviting these parties in a workshop in every catchment. A major outcome of these activities is the linkage of WMGs not only with their WMA, but with Local Government Institutions and line agencies.

Participation in Operation & Maintenance activities within the polders is coordinated and executed by WMAs and WMGs. The following table indicates that an increase in collective action for O&M can be witnessed over the second half of 2018. Note that the number of participants is growing quite rapidly, with more than 30% since June 2018. They reported a total 20,876 members were involved in collective actions and around 18 % of them were woman (See Table 17). WMGs also estimated 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 11,463,857.00 (see Table 18).

Table 17: Participants involved in collective action for O&M (cumulative) by December 2018

Collective activities	Up to December 2018 (WMG tracker)	
	Total no. of participants	% of Female participants
Cleaning of khals	10656	21%
Excavation of field channel	2240	20%
Repair of embankment	3744	21%
Repair/maintenance Inlets	330	9%
Repair/maintenance Outlet	843	4%
Repair/maintenance Sluice	2910	9%
Others	153	1%
Total	20876	18%

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

Fund or Activities for O&M	Up to December 2018
a. Present O&M fund of WMG	
O&M Fund (cash) available with WMGs (TK)	3,093,338
b. Total Payouts/Contributions made for O&M of infrastructures	
i) Cash expenditure (Tk.) for O&M activities (25% of O & M fund)	2,635,954
ii) Contribution in kinds/labor (man-days converted in value -Tk.) for O&M	5,734,565
Total contribution for O & M in cash and kind/labour	8,370,519
Total (a+b)	11,463,857

Successes: In Khulna, a few months of experience with implementation of the Catchment O&M (action) plans has been acquired. In polder 30, already 4-5 major collective actions for O&M were organized yearly after monsoon. However this now has raised to about 12 major collective actions performed in the past months already, because WMGs are actively planning and organizing.

An important outcome of the increased activities of WMGs and WMAs for Operations & Maintenance is the fact that beneficiaries of the BGP will reap the benefits from the O&M activities and where possible these can still be further enhanced through BGP activities. Nonetheless it remains a challenge to activate WMOs to perform O&M activities (collective action) – though it seems that catchment planning is of help.

Figure 4: In Amtala sluice catchment, 8 WMGs worked together (end 2018) to excavate the outfall canal of the sluice.

2.4.4 Participatory Monitoring of Water Management

Participatory Monitoring (PM) exercise was conducted by 506 Water Management Groups (WMGs) of 22 polders of Blue Gold Program (BGP) in October 2018. Through the PM exercise the WMGs have assessed their own performance [2] against a number of potential targets; the 'indicators of functional WMG' as defined by BGP form the essence of potential targets of WMGs. The performance levels of WMGs vis-à-vis the potential targets have been determined by the WMGs themselves i.e. by the

[2] 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%

progress levels they indicated by putting progress markers (scores). Basing on the scores they gave, the WMGs have been ranked in 5 performance levelsi: Around 40% in grade A, 25% in grade B, 8% in grade C, 8% in grade D and 19% in grade E.

The polder teams by and large agree with the results of self-assessment by the WMGs. The difference between WMGs' self-assessment and polder teams' assessment is shown in the following diagrams. It is noteworthy that performance levels of about 65% of the total number of WMGs are of 2 top grades ('A'& 'B') as per WMGs' self-assessment, and about 66% as per assessment of polder teams.

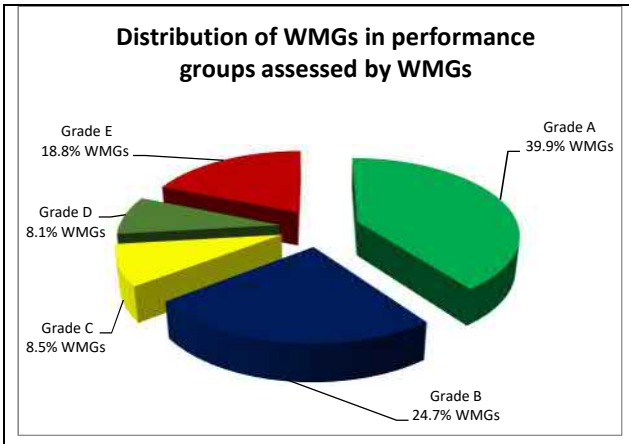

Figure 5: Self assessed performance of the WMGs

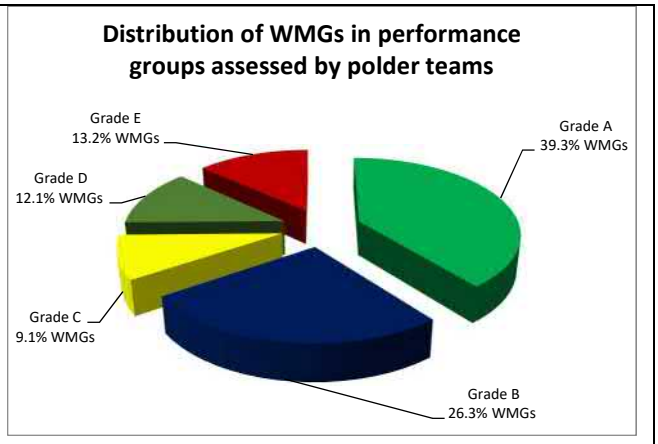

Figure 6: WMG performance assessed by polder team

2.5 Value Chain Improvements

Introduction

Strengthened Value Chains (SVC) activities contributed to improving the livelihoods of polder dwellers- either taking business development initiatives targeted at 'stepping up' farmers by supporting them become 'commercial' or by market development initiatives for marginal group of farmers, termed 'hanging in', by improving agricultural production, trading of agricultural inputs, services, demand for transport by involving WMGs as far as feasible[3].

As part of supporting 'hanging in' farmers, BGP completed implementation of TA FFS cycle 11 (for detail pls see 2.2.2). A total of 166 RFs were trained in 08 batches to organize collective actions using their 'networks' for the overall benefit of TA FFS participants and interested others. Moreover, 161 TA FFS participants took part in market visits in 07 batches where they met different important VC actors to develop their network and incubate collective actions and entrepreneurship.

In support of 'stepping up' group, SVC team organized six VC constraint analysis and intervention designing workshops with mostly forward market actors to learn more and plan precise activities to promote collective actions for collective selling. A great achievement was linking of Square

[3] The farmers who have ownership and access to land are termed as 'stepping up' farmers as their livelihood strategies revolve around agricultural development. BGP focuses on 'business development' - motivating and transforming 'stepping up' farmers -into 'commercial farmers'. This support strategy is largely addressed through DAE FFS, supported by TA. BGP also supports 'hanging in' farmers, by implementing TA FFS for less privileged section of the households with limited access to crop production, compounded by lack of skill and knowledge in modern agricultural practices to improve broader market system aimed by strengthening other actors in the value chains.

Pharmaceuticals with Bashok leaf collectors at polder -2. This effort in strengthening Bashok VC has shown tremendous success. With a view to spread CII ideas and potential for additional crop for more income, a total of 203 farmers were trained in 16 batches that led to 29 demonstration of additional crop on 124 acres of land. The first crop harvesting at CII could attract 1,355 surrounding farmers which was encouraging and it can be hoped that many of them will adopt new crops in the coming season. On the other hand, to explore potential from fisheries, SVC implemented 14 CLF involving 314 farmers during this period to show income earning potential from improved fish culture. SVC group also extended support in BGIF projects e.g. WBC, Pangus projects in providing more business sense and evaluating scale up potentials with VC insights in constraint solving.

Bringing Change

The comparison of TA FFS cycle 11 baseline and end line shows positive impact to fulfil the consumption demand of the HHs as well as increase their income(for detail pls see 2.2.2). On the other hand, 80% of the FFS farmers at end line considered 'poultry rearing is a business' compared to only 16% at base line. Linkages among poultry farmers and DLS staffs increased. 45% of women had market actor's phone number. Interestingly, 100% considered 'beef fattening as a business'. 92% were positive about collective input collection.

In Patuakhali zone, in general, by conducting FFSs (1-11 cycle) on homestead production (vegetables, poultry and beef) BGP reached 11-13% of the lowest income HHs. These HH were involved in economic activities and on average earned no less than BDT 5,000-10,000 per year after family consumption. There have been signs of more and more CA and additional income for TA FFS farmers. In Khulna, through improved market linkages and better business planning training given to RFs, they are now more confident about their potential. As a result, 09 RFs could play significant role in T-Aman rice seed CA, 05 RFs organized Boro rice seed CA, 11 RFs conducted collective selling of agricultural goods. The important thing is, 02 RFs became entrepreneurs and engaged in the purchase of eggs and vegetables. The impact of the market visits is also very vivid. RFs are now more informative about price fluctuation at different levels of the markets. The number of instances of RFs directly communicating with quality feed suppliers, collective selling of vegetables, purchasing ducklings from nurseries instead of passing sellers, is increasing. In Satkhira, about 09 MT of dried Bashok leaf has been supplied to Square Pharmaceuticals with a value of BDT 36,000. This is a great success of strengthening Bashok VC. Similar examples are also observed in Patuakhali and Satkhira zones.

The impact of previous CII efforts in few old polders is also encouraging. Some farmers who took part in HL events of CII tried to implemented CII activities by themselves. For example, this season, 59 farmer in polder 30, 31 part and 29 alone have copied CII promoted patterns in their own field. There is an increased awareness of locally feasible alternatives to higher productivity and profitability among farmers. WMG members and FFS members are effectively linked with different line agencies due to BGP effort. They have improved access to government offices created by ensuring their participation at FFS sessions, HL events and FFDs that are often organized with close association of WMG management. VC workshops and networking events have paved the way for discussion with market actors. As a result, farmers now more easily learn about available embedded services and business offers provided by market actors and service providers. The expansion of poultry vaccination service can be cited as an outcome of such linkages and effort.

Trends

At WMG level, there seems enhanced knowledge on BGP efforts in economic development by adopting profitable agricultural practices. There is adoption of HYV rice and additional crops where improved water resource management has created the environment. Farmers have an increased awareness of -

'Agriculture is a business'. Farmers now seem to be more profit oriented and more aware of sources of goods, services and information. Thus there is gradual shift in cropping pattern in BGP polder areas, farmers are opting for crops that can give more income, a result from cropping pattern choice, increasing land under cultivation and higher yield. More and more farmers are now organizing field channel excavations in CAs to improve the drainage for cultivating HYV rice and taking the opportunity to produce an additional crop. There is tremendous interest in achieving small scale infrastructures, either by group participation or by help from project or other available funding e.g. UP. Increasingly, water resource management and agricultural production come together, resulting in higher or more equitable incomes.

Challenges, Mitigation Measures and Lessons Learned

Proper selection of participants for TA FFS and targeting real poor for organizing FFS with the help of WMG management remains a challenge. It seems, still there is scope to improve targeting and selection of appropriate participants. The session conduction by FTs needs constant supervision and effective feedback from concerned experts. The coordination meetings thus need to be more specific in understanding laps and gaps and proper guidance. Improving linkage with backward and forward market actors were initiated by organizing market visit for RFs and arranging additional capacity building for them. But there is still need for extending support by the BDCs. An alternative way of achieving value chain development can be achieved by linking with existing 'lead farmers' and other VC actors that can be termed as 'local resource networks'. FFS participants can get support from lead farmers and using their networks consisting of local resources. Similarly, lead farmers can also learn few improved technologies from FFS participants. DAE in their FFS session guideline have adopted market oriented (MO) issues. Ensuring proper integration of MO in actual FFS implementation process needs agreement from different levels of DAE management hierarchy. In this regard several sharing events and workshops are planned. There is promising intention from DAE to pay attention in encouraging farmers to keep record of their expenses and income with a view to improve production decision making.

In order to strengthen linkage among producers and forward market actors, few workshops were arranged. The outcome can be a good foundation for future SVC activities. It has been planned to organize several VC events with all stakeholders including DAE, private companies and researchers in coming months. There is continuous effort in promoting CA and networking among WMGs and backward and forward market actors. In future these efforts will continue, even with WMAs, to spread knowledge about adopting more profitable crops in the yearlong cropping system considering sub catchment potential that can be overseen by WMOs in BGP areas.

2.5.1 Collective Actions for Economic Development

Blue Gold Program (BGP) is continuously facilitating to improve collective action (CA) coordination approach among polder dwellers. From the beginning of MFS program, BGP tried to encourage CA, often in the form of new business ideas, so that both buyers & sellers can enjoy economic benefit and there is a win-win situation among all concerned. To achieve collective activities within WMGs, BGP facilitated workshops to promote collective activities and business planning involving concerned public –private entities. Involvement of private companies and input-output market actors were particularly helpful for WMG members as it could strengthen linkages and networking ability. By taking part at CAs, farmers benefit both economically and technically.

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.

They reported 64389 members were involved in collective actions, out of which around 25% were female. WMGs estimated the financial investment of such collective actions was BDT 6,72,90,500.00 equaling about 7,15,856.38 Euro[4] 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 19).

Success Story - Collective Action on Seed collection

Gaoghora Moddo para WMG is located at Polder-31 Part of Khulna district. Farmers of this area collectively purchased T-Aman rice seed to reduce input costs and to ensure having high quality seed timely.

225 farmers of this WMG purchased T-Aman rice seed collectively. Md. Saiful Islam, General Secretary of this WMG took the lead of this collective initiative to take advantage of market opportunities by organizing farmers in CA for reducing input cost. They used their linkages with input retailers, wholesalers as well as with company representatives, as incubated at networking workshops organized by BGP. They purchased 3.4 MT of BR 23 rice seed for 225 WMG members this year covering 61.8 hector of land. It was a timely effort by them as seed price in local market went up and many farmers failed to collect seed in time. BADC seed price at local market was BDT 10-15 per kg higher during peak period. Farmers who joined in CA, had to pay BDT 56 per kg of seed including transportation while many others had to pay around BDT 70 per kg. As a result, farmers were very happy to get seed timely as well as save around BDT 30,600 altogether.

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 ensured a higher probability.

[4] 1 Euro=BDT 94

Table 19 : Participation in different collective activities (source: Blue Gold WMG Tracker)

Economic Activities	Up to December 2018		
	No. of Participants	% of Female	Investment (BDT)
Selling products	5,791	17.6	24,798,476
Tillage land for crops	6,060	11.4	11,741,190
Purchase of seeds	13,452	16.2	9,350,729
Purchase of pesticide	11,195	14.1	6,403,150
Purchase of fertilizer	6,855	14.7	5,126,660
Community-led fish culture	1,740	33.5	4,734,840
Purchase of fingerling	1,773	28.7	1,568,305
Purchase of fish Feed	1,975	25.3	1,217,170
Vaccination of poultry & livestock	12,052	56.0	835,380
Irrigation of Ag. land	614	17.9	774,480
Purchase of lime	2,379	37.9	512,320
Bulking	123	33.3	33,950
Collection & sale of milk at chilling center	48	31.3	8,250
Others	332	38.0	185,600
Total	**64,389**	**24.9**	**6,72,90,500**

2.6 Gender Equality & Women Empowerment

Introduction

The Blue Gold Program aims to contribute to more gender equality and women's empowerment by integrating attention to gender into its interventions and implementing selected gender specific activities.

Major Achievements

- The two gender flipcharts, tools for creating gender awareness, were finalized, published and distributed in September / October 2018, receiving much positive feedback. Reactions on the first actual use of the gender flip charts demonstrate a positive feedback of both men and women beneficiaries. TA staff and Farmer Trainers (FTs) received orientation about the use of the gender flipcharts. (i) Several one-day ToT sessions on gender were provided to 130 FTs of DAE and 65 TA FTs, who reacted very positively, pro-actively thinking along on how to integrate gender issues into the FFS; and (ii) Two 2-days dry run sessions were held with in total 30 CDFs on the new approach of GLD, also using the two flipcharts.
- Three pilot workshops were held to empower these women through utilizing their own potential and resources, complemented with resources available within the UP's budget (vegetable seeds). Workshops were jointly implemented and financed by UP and BGP for the women from low-income households with access to homestead land, who had not participated in any other BGP activity. The

women reported that they successfully practiced homestead gardening that fulfilled their demand of HH consumption as well as they got an average incomes of 2100-3000 taka for a season (4 months) by selling the surplus.

- A 2-day training on market linkage development and women empowerment was held at polder 25 (Dhamalia UP) with 22 women and three input suppliers. This training was also an eye-opener to them; even their (male) relatives asked them to share their learning. Now women have started collective selling of produce and purchasing inputs.

Bringing Change

Feedback from women who participated in Blue Gold activities confirmed women's eagerness to learn, both about production increase and market linkages and about women's empowerment. Changes include increased mobility and increased involvement of women in productive activities, including in marketing. This contributes to increased production and income at household level. There is growing evidence that this increases the respect (of men) for women and improves women's role in intra-household decision-making, apparently also reducing arguments within the household. Especially women FFS participants involved in backyard poultry rearing reportedly control the spending of their own income. However, other women (non-FFS participants) heard whose husbands still sell their surplus produce and have control over income. The increased agricultural productivity and cropping intensity due to BGP interventions, also changed (ie increased) the total workload for women, as confirmed by the various studies.

Selected Trends

- The gender sensitive BGP interventions contribute to increased involvement in production and increased women's empowerment. An observed trend is that BGP staff (sometimes with Union Parishads) became more sensitive to develop initiatives benefiting (also) women, such as Bashak leave collection for poor and landless women.
- The study on outcomes from Blue Gold interventions (TR25) confirmed the trend that women are undertaking an increasing amount of work in the fields, including wage labour. In some polders women now do virtually all tasks in paddy cultivation. This confirms the trend of feminization of agriculture.
- This trend goes hand-in-hand with the increasing workload of women, who see their amount of domestic work remaining the same (on average 8 hours/day – ActionAid information) and report that these Unpaid Care Work (UCW) tasks limit their involvement in productive work. This was also recognised within DAE as an important issue deserving attention.
- Agricultural wages: Overall the shortage of labour appears to lead to higher wages, but usually with women's wages remaining about 60% - 65% of men's wages. The reason is not the lower productivity of women as compared to men (which is usually not observed), rather (i) the opportunity costs for men were higher and (ii) men are considered more "important" than women. In a few polders in Patuakhali a smaller wage gap (80% - 83%) was found, being explained by the shortage of male labour. It is still too early to say whether this will be a new trend.

Challenges, Mitigation Measures and Lessons Learned

- A first challenge is to address the increasing workload of women as a limiting factor for increased women's involvement in income generation and as a "negative" side-effect of BGP's success. Though policies of both GoB and GoN recognize that UCW be addressed in the context of improving food security, the ARM advised against a pilot project by ActionAid. A challenge is creating

awareness, especially among men, for better sharing of UCW, in order to reduce the burden of women. BGP started to address this by including this topic in the gender flipcharts.

- A second challenge is ensuring recognition of the importance of women's participation in WMOs, also above WMG level, also by better facilitating women's participation. With more attention to sub-catchment committees and WMAs –as recommended by the ARM-, this will also receive more attention in 2019.
- A third challenge is measuring women empowerment and the contribution of BGP (it also relates to the gender result at outcome level requested by EKN). Though there is enough evidence that many BGP interventions contribute to improve empowerment of women (and men), proper measurement is still lacking. TR 25 also confirmed this and recommended a separated study to get more insight into this. A first step will be the more explicit documentation of pathways of change towards women's empowerment within BGP as a basis for planning better measurement of women's empowerment in 2019. This is expected to be combined with a study on agriculture and family relations and/or within the end-line study.

2.7 Training

BGP training program focused on WMO capacity building process using experiential learning process for self-sustaining WMG and through - experience sharing, facilitating issue based discussion and problem solving by WMG, horizontal learning, collective action (CA), exchange/exposure visit, good practice expansion (GPE) etc.

The WMOs have been envisioned to become the drivers of change towards a better life. As the WMOs will take the responsibilities of water management in polder areas for the agricultural production; Blue Gold Program to strengthen the capacity of the WMOs so that the organizations can demonstrate the above functions.

Considering the above, BGP training team supported the zonal and polder teams and develop the capacity of WMOs and project partners - representatives of DAE, BWDB, UP and other GoB officials through formal & informal trainings and involvement with different project activities. For detail of training activities see the Table 19

Table 20: List of training during the reporting period (Jul-Dec 2018)

SN	Name of the training	Participants	No. of Participants			Objectives/Rational
			M	F	T	
1.0	Training on Participatory Water Management for CDF, BWDB staff	CDF & XOs-BWDB	21	14	35	To explain the specific roles and activities of the Community Development Facilitator (CDF).
2.0	Catchment O&M planning process					
2.a	Training of facilitators on catchment O&M planning process (5 days)	Catchment committee members (04 batches)	64	02	66	To develop the skill of the members of catchment committee on catchment wise O&M plan preparation (experiential & practice).
2.b	Workshop on	WMA, WMG,	66	75	740	To review and validation of

	Catchment O&M Planning (01 day)	UP, BWDB, DAE, BADC reps.	5			Catchment O&M Plans, identify the areas of support by the UP & GoB departments in implementing O&M actions & ways to strengthen linkages/partnership with them
3.0	CAWM Planning Workshop (02 days) 04 batches	WMG, Lid Farmers, SAAOs (DAE), XO (BWDB)	91	15	106	To improve understanding of the concept of IPWM & CWM specifically; techniques to execute a crop-water system analysis for a CAWM area in a participatory manner through practical/field observations; & prepare an action plan
4.0	Training of Facilitator (ToF) on Year-round T-Aman FFS (5 days)	SAAOs and AEOs (DAE)	53	5	58	Assess the experience & practice of the trainees and to refresh/ improve facilitation knowledge, understanding and practices. Review CAWM T-Aman training module/materials and practice & demonstrate the sessions through experiential participatory training methods and techniques.
5.0	Seminar on O&M agreement signing among BWDB & WMA (06)	WMA, BWDB, DAE, EKN & BGP TA reps.	109	14	123	To make WMA & BWDB agreed on the roles & responsibilities on O&M of water management infrastructures; signing and formal handing over the documents among the partners.

Challenges, Mitigation Measures and Lessons Learned

- Developing capacity of the polder teams to perform their roles as real facilitator was very challenging. Blue Gold continuously supporting to the field staff in accessing WMO capacity, identifying interventions and assisting polder teams for facilitating the process of strengthening WMO capacity as self-sustaining organization.
- WMO capacity building for preparation of catchment O&M planning in 1st phase out polders within the limited time and capacity of WMA catchment committee members was one of the big challenges. To overcome the challenges, BGP trained the catchment committee members on catchment O&M planning process.
- During the catchment planning workshops WMOs got opportunities to build linkages and relationships with the govt. agencies like BADC, LGED, UZP and LGI and other service providing agencies where they can get financial, technical support to implement the catchment O&M plans. Now the challenge is to continue a regular communication and follow up for getting support from these organizations.
- The processes of submitting the application and proposals and continue regular communication and follow up by the WMA where intensive support will be required from the polder teams.

- O&M agreement signing in between WMA and BWDB was one of the major challenges as well as a great success and milestone for BGP which indicates that WMOs are becoming self-sustaining organizations.
- It was very difficult to make aware the DAE higher management that the SAAOs are less competent on facilitation process and less likely to use experiential learning methods. The DAE higher management was engaged in the preparation and facilitating the sessions, they realised and motivated to complete remaining 2 batches (58) SAAOs and AEOs in the reporting period.

2.8 Horizontal Learning & Communications

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 regard to horizontal learning and partnership building:

- All 22 polder teams prepared polder wise HL action plan as part of Annual Work Plan;
- Identification of good practices for horizontal expansion through HL continues;
- Prepared Fact Sheets on 35 verified good practices from the polders of Patuakhali, Khulna and Satkhira zones, printing is under process;
- Shared identified good practices among WMG and WMA members followed by experience sharing visits (formal and informal) resulting replication of good practices;
- Organized 5 experience sharing visits for 195 participants (M-155, F-40) from 36 WMGs towards scaling up of BGP good practices on Summer Tomato cultivation and CAWM.
- With the help of CDFs, WMG members initiated informal HL experience sharing visits to the places of good practices to learn from their peers and replicate according to their needs without project support.
- Replication of improved internal water management and coverage of high yielding varieties of crops increased in more WMGs following HL experience sharing visits and sharing of Factsheets.

Bringing change

Horizontal Learning is connecting WMGs, UPs and relevant departments of the government for sharing and learning from each other's good practices/successes/achievements and replicate according to their needs, ability and context. It also helps to build confidence and positive competitions towards replication of good practices, building partnership for scaling-up of good practices related to improving the productivity and profitability of agriculture, aquaculture, poultry, livestock, operation and maintenance of infrastructure, improving internal water management, planning for operation, including crop synchronization in the polders. Replication of good practices is getting momentum with assistance and support from the BWDB, DAE, DLS, DoF, UP, and private sectors through constructive partnership among the WMGs and above mentioned stakeholders. This is evident in almost all the BGP polders. Please see success stories.

Trends

- Horizontal Learning is getting more acceptable to the WMG members as an easy, accessible and affordable process of learning sharing experiences & good practices among the peers.
- WMGs started organizing spontaneous HL experience sharing visits to the spearhead WMGs to learn and replicating good practices at their own areas. For example, CAWM implemented in 519 ha of

land with support from the project and scaled up in 1,305 ha through Horizontal Learning without support from BGP during the Aman season in 2018 (BG BARTA, Issue 13).

- More WMGs are planning and improving internal water management, O&M of infrastructure, increase agricultural production through constructive partnership with Union Parishad, Upazila Parishad, relevant Government Organizations and private sectors.

Challenges, Mitigation Measures and Lessons Learned

- Polder teams included HL activities in the Annual Work Plan but organize a few HL activities/events during July-December 2018.
- Polder and zonal teams are briefed and encouraged to organize HL activities/events to speed-up extension of BG good practices.
- More WMGs are organizing spontaneous HL experience sharing visits and replication of good practices where Polder team members are encouraging WMGs with information and sharing of good practices. It is also similar for constructive partnership.

Success Stories of Horizontal Learning

Success story 1: Increase cropping intensity through horizontal learning

Lands at Dhunua WMG area are one crop producing area due to cultivation of local variety long duration crops and lack of efficient internal polder water management. In that context, 5 members of Dhanua WMG under polder-34/2 part visited polder-30 and 31 part, learned experience on Crop Intensity Initiative (CII) from the farmers of those polders in 2017. The visiting WMG members/farmers replicated the learning from polder-30 and 31 part and turned their demonstration plot of 3 acres in to cropping intensity three from one . This is now expanding rapidly among the farmers of the poldr-34/2 part.

Figure 7 : Demonstration plot in 34/2 Part

Success Story 2: Cultivation of summer tomato through horizontal learning.

Department of Agriculture Extension (DAE) sponsored 2 demonstration plots of Summer Tomato cultivation at Kulla Amodkhali at polder-2, Satkhira in 2016. 4 neighboring farmers of same area inspired on the achievements of the demonstration farmers, learned from them and successfully cultivated Summer Tomato in 2017. Blue Gold organized HL experience sharing visits for 57 farmers from different WMGs towards learning and replication of good practices on Summer Tomato cultivation for scaling up in 2017; out of 57 visiting farmers 30 farmers successfully cultivated Summer Tomato (3 decimals each). Each of the farmers got profit of around TK. 5,500-7,500/decimal within 3-4 months.

Figure 8 : Cultivation of summer tomato through HL

Major Achievements in Communication

- A poster has been developed by using photos within the logo of BGP to inform the community about the wide range of activities implementing by BGP.
- A poster has been developed for the community where an example of life cycle of a tree is used to demonstrate the processes of a developing an organization and its future potentials.
- A poster is being developed inside the functional WMG house through which, we define how activities such as task allocation, coordination and supervision are directed toward the achievement of BGP aims. The functional WMG house structure is turned in pictorial forma, that considered as the viewing glass through which individuals see their organization and its environment.
- 14 festoons have been developed to aware the community on O & M of water management infrastructures. All the festoons contain slogan and pictures on O&M activities.
- A new drama named "Pani Babosthaponay Amra "(We are for Water Management)" has been developed for 10 phasing out polders at 3 zonal areas to demonstrate the operation and maintenance of water management infrastructure and how WMG can be self-sustained.
- Communication team developed videos on general information, WRM, WMO, agriculture and business development. While screening the number of videos, the category depends on the target audience, demand, time, practical situation. The contents are either motivational; like success stories or instructional; like how to do operation and maintenance of water management infrastructures, crop cutting, proper way of seedling, how to prepare *Hajol* and improved poultry shed etc. The videos of good practices were highlighted in different visual medias and shared on digital platform like training, workshops and seminars. Recently communication team started screening videos through mini projector and converted them to mobile version. So that, CDFs and community people have the access (for the web link of all videos see Annex IV).

3 Polder Level Progress

3.1 Progress of Water Management

Polder	Polder wise trends of water resource management
22	▪ 4 cross dams removed by 4 WMGs. ▪ UP & 2 WMG took part in emergency embankment repairing, where UP provided BDT 45,000. ▪ 1 WMG removed artificial obstacle (net patta) from Gater khal. ▪ Completion of 300-meter interior dyke by a WMG benefited about 650 hector lands.
25	▪ 15 WMGs built 15 field channels. ▪ 21 WMGs and 6 UPs jointly cleaned water hyacinth of 7.8 km of 12 khal in different location that improved WRM of 4550 acres of land. ▪ A WMA constructed cross dam outside of sluice that 1050-acre of land was benefited. ▪ 2 WMGs made earth sack for a dysfunctional sluice that reduced water logging of 1650 acre land. ▪ BWDB protected some vulnerable part of embankment with other parts where re-sectioning of 6 km embankment has been done that protected 390-ha land.
26	▪ 4 WMGs re-excavated 400 meters drainage channel, 3 WMGs removed silt of 212 meters from a river side and 1 WMG cleaned water hyacinth from 200 meters of a khal. ▪ 2 WMGs jointly repaired embankment of 200 meters with the help of Union Parishad. ▪ 350 members from 3 WMGs cleaned 3,500-meter of khal and total 300 hectares of land were benefited.
27/1	▪ 15 members of a WMG repaired different point of embankment. ▪ Members of two WMGs cleaned water hyacinth of 200-meter that facilitated irrigation of 10 acres of land. ▪ During the reporting period a total of 9.114 km khal has been tendered for re-excavation. ▪ Removal of water hyacinth from a canal brought 300 acres land under T-Aman rice cultivation. ▪ Political & local influential leaders hindered re-excavation of khals which were under the grab of them for fish farming and it was challenging to protect the khals from them.
27/2	▪ A WMG repaired a sluice gate that cost BDT 4700 and about 40-45 acre of land was benefited. ▪ 2 WMGs cleaned the field channel that improved water logging situation of 38 acres of land. ▪ A WMG cleaned water hyacinth from 350m Khal, as a result 22-23 acre of land was benefited.
28/1	▪ 22 members of a WMG took initiative for cleaning water hyacinth from 200 feet of Khal. ▪ 50 members of a WMG made drainage channel of 150 m. As a result, water has been drained out early and facilitated cultivation an early T-Aman.
28/2	▪ A WMG removed cross dam in the Shoulmari khal to get water for 100-acres of land for agriculture production. ▪ 25 members of a WMG excavated 200 fit field channel by voluntary labour ▪ A WMG excavated the 200 fit field channels by their own initiative. As a result, total of 22 acres lands has come under effective water management facilities and increase agricultural production gradually. So, this excavated field channel help to increase the 300% cropping intensity in that crop field.
29	▪ Salinity and river erosion were being the big challenges in increasing agricultural productions. ▪ In an emergency, WMG members repaired embankment. ▪ Removed net/pata and hyacinth from canals . ▪ Removed silt from sluice channels (approximate length 1 km). ▪ Cross dams removed from branch of canals and sluice channels. ▪ A total 11 sluices have been repaired that ensured improved WRM of 400-ha of land and a new

Polder	Polder wise trends of water resource management
	sluice construction has been started.
30	▪ 4 Catchment O&M Sub-committees have been formed ▪ WMG members collectively removed 6 cross dams during Aman season again built 5 cross dams during rabi season that improved water logging situation of 200 hectares of land as well as ensured storage of fresh water. ▪ The catchment committees operated and maintained all sluices regularly. ▪ 2 WMGs excavated 900 feet drainage channel by voluntary labour and cash from O&M fund to improve water management of 500-acre land. ▪ Leasing khals by the local administration for fishing was also a challenge for proper WMM. ▪ One Sluice gate is still in hanging condition.
31 part	▪ 45 members of 2 WMGs took part to close Sapa Barobhuiya erosion point as emergency. ▪ 40 members of WMGs and 2 UPs took part in emergency repairing of a sluice. ▪ 37 members of 2 WMGs removed net pata, as a result 900 ha of land was benefited. ▪ Re excavation of 24.2 km Khal opened option to cultivate HYV T. Aman rice in around 1200 ha of land.
34/2 Part	▪ 3 WMGs have made wooden box culvert by using O&M fund around BDT 30,000/ & voluntary labour for improving drainage and water storage facilities of 250 acres of land. ▪ 3 WMGs cleaned water hyacinth from 1.50 km khal for facilitating WRM of about 400 acres of land. ▪ 4 WMGs maintained different erosion point of embankment ▪ 5 field channels have been built by 4 WMGs and they collectively 1450-acres of land cultivated.
43/1A	▪ 1km khal (Choddogonda Khal) survey completed, design data submitted and field survey for an outlet construction work at the east side of Khatashia khal has been completed; design data submitted as well. ▪ Two Khal have been surveyed by BWDB and Kewabunia Khal and Golbunia Khal have been surveyed by BADC for re-excavation, while Amtala Sluice repair work has ongoing. ▪ BWDB re-excavated Sundorgachia Khal 2km, Kewabunia beeler Khal 2km and the constructed a culvert on Raybala Khal . ▪ For 5 nos. sluices and 3 nos. outlets chain-pulleys has been supplied and these are maintaining by the WMOs. ▪ 60% excavation of Golbunia khal (1.4km) and Ramgatir khal (1.1km) has been done. ▪ Under IPWM around 4km canal re-excavation, 8 nos. of pipe culvert with fallboard, 1 no. of box culvert have been taken under construction. ▪ 190m dr. canal re-excavation completed through co-funding between CAWM. ▪ Inlets repaired with earth by the 3 WMGs for improved WRM of around 95ha land. ▪ WMG members removed water hyacinth from400 ft from Narikal Tala khal.
43/2A	▪ As a co-funding initiative with SWIFT project three WMGs have constructed 5 gated drainage pipe, as result 32 ha of land has been benefited. ▪ A WMG project has re-excavated about 470 m of Chakorbari khal through co-funding and as a result 15 ha of land has been benefited and a WMG has constructed about 250 m side Verri. ▪ Jointly with UP, a WMG constructed a gated drainage pipe at Dangar khal for drainage/storage water of 35 ha of land. With the same UP another WMG has repaired erosion of embankment about 10 m and protected crops of 20 ha of land. ▪ BADC re-excavated Kewabunia Khal (5 km) of two WMGs areas for drainage /storage of water of 120 ha of land has been benefited. ▪ BADC and WMOs jointly has installed 70 drainage pipe in three WMGs area for drainage & irrigation of 80 ha of land. ▪ 6 WMGs & respective UP jointly removed water hyacinth and others obstacles from about 3.8 km Khals. ▪ Routine maintenance of Embankment, Sluice, Outlet and Inlet done by WMOs.

Polder	Polder wise trends of water resource management
	▪ WMGs collected BDT. 23,470 as O&M fund for improving water management.
43/2B	▪ A WMG constructed a cross-dam on Sinner Khal for storage of water to irrigate 65 ha of land. ▪ A WMG installed a drainage pipe and constructed one wooden culvert to reduced crop damage in about 80 ha of agriculture land. ▪ Repaired stand pole bottom slab of Amkhola sluice and ghope/hole in Musharikhati Sluice. ▪ Repaired hole of 25m Embankment as well. ▪ A WMG constructed cross band at river side to protect water intrusion. ▪ With the initiatives of WMOs, BWDB issued work order for a sluice and an outlet and design data submitted for two culverts.
43/2D	▪ All 17 sluices and three outlets are being operated by WMGs smoothly. ▪ 5 km of Khal and 0.7 km of field channel have been re-excavated/excavated and ▪ 13 WMGs cleaned water hyacinth from about 20 km of khal from different locations of different khals. ▪ A WMG has installed a gated box culvert and a gated drainage pipe through CAWM. ▪ A WMG allocated BDT 20000 for removal of water hyacinth from Razabaria-Morichbunia Khal. ▪ 2 WMGs have created O&M fund by collecting Mung Bean from WMG members.
43/2E	▪ All Sluices and outlets have been operated by WMGs ▪ Hole and rain cut of embankment repaired by a WMG (55 m). ▪ Removed water hyacinth from 3.5 km of Khal by 5 WMGs. ▪ 12 WMG level O&M plan and 07 catchment O&M plan have been prepared by WMG/Catchment Committee. ▪ Removed 12 nos. of obstacles (Jhai, Gora jal) from Katurataluk Khal.
43/2F	▪ 4 WMGs removed water hyacinth & others obstacles from 4.8 km of khal for improving drainage/storage of water of 344 ha of land. ▪ WMG have installed 23m drainage pipe, excavated 216m field channel ion, removed silt from 5 inlets, repaired rain cut and hole on 25m embankment and in 9 inlets & 1 sluice; thereby accordingly about 20 ha, 133ha, and 60ha of land was benefited. ▪ 3 WMGs prepared and executed CAWM plan including in-polder water management for about 100 ha of land for crop synchronization and reduce water logging condition. ▪ A WMG constructed cross band at river side to protect water intrusion in the crop fields. ▪ 2 WMGs repaired 15 m embankment with the association of UP. 2 WMGs installed drainage pipe and excavated canal through co-funding with BGP.
47/3	▪ Repaired sluice-gate by 2 WMGs to protect 200 ha of land. ▪ A WMG installed a wooden gate in a outlet to protect saline water intrusion in 60 ha land. ▪ A WMG constructed of a cross-dam to store fresh water to irrigate Boro and other Rabi crops in about 40 ha of land. ▪ Re-excavation of 3 Khals by 3 LCSs.
47/4	▪ 2 WMGs prepared wooden fall-board to make sluice gate functional and having improved water management in 35 ha land. ▪ 3 WMGs removed water hyacinth from 3 khals. ▪ 8 cross-dams have been removed by concern WMGs. ▪ In response to request of a WMG, the UP allocated Tk.10, 000 to prepare one gated wooden box culvert, which cost total BDT 25000 that brought 30 ha of land under improved WM.
55/2A	▪ Twelve WMGs removed water hyacinth from 13 khals. ▪ One WMG made wooden gate since the gate of their sluice was broken. ▪ 12 WMGs made 2km field channel to drain out water from crop field. ▪ 7 WMGs removed illegal obstacles from the khals. ▪ WMG members repaired 5 sluices and re-sectioned 9.26 km embankment where 3.72km done by LCS and rest done by contractor.

Polder	Polder wise trends of water resource management
55/2C	▪ WMGs prepared more than 3.5 km long field channel, excavated 1000 ft long drain, installed inlet pipe through embankment for irrigation. ▪ for removing water logging condition from 4 crop fields, two WMGs built a culvert on a rural road for smooth draining out of water from their crop fields. ▪ A WMG cleaned garbage & water hyacinth from Chandpura sluice-gate near Alipura bazar area. ▪ A WMG repaired 70 ft embankment and four WMGs re-sectioned about 10 km embankment.
2 & 2 Ext.	▪ About 15 km khal re-excavation completed and 13 km is running (progress is about 35%) ▪ 27 km embankment re-sectioning work has been completed and 8 km works are running (progress is about 60%) ▪ Re-construction of one sluice is running (progress is about 83%). ▪ One low cost protective work at Chanditola under Himkhali khal WMG started recently (progress is about 20%) ▪ 3 cross dams built by the sluice WMA at set back point of three sluice points to reduce congestion of slushy earth at the gate points. ▪ Completion of small scale micro-infrastructure improvement for water management (550 m drainage channel and 2 pipe culvert). ▪ To drain out water, re-excavated and or cleaned field channels, removed water hyacinth from khals, installed small drainage pipe in 15 WMG areas. ▪ Collaboration with UP, 2 culverts have constructed in the extension part. ▪ WMAs formed Sluice Catchment O&M Committees in 12 Sluice Catchment areas. ▪ 34 WMGs created O&M fund about BDT 1.82 Lac.

3.2 Increased Production & Profitability

<table>
<tr><th>Polder</th><th>Polder-wise trends in agricultural production & profitability</th></tr>
<tr><td>22</td><td>Progress of crop cultivation
<table>
<tr><td>Land area under different crops</td><td>Last year Kharif-II/Aman season (% of land)</td><td>This year Kharif-II/Aman season (% of land)</td></tr>
<tr><td>Aman (local variety)</td><td>2%</td><td>1%</td></tr>
<tr><td>Aman HYV</td><td>98%</td><td>99%</td></tr>
</table>
• Famers cultivated high yielding verities Foundation seed of T-Aman rice and also good quality certified seed of T-Aman rice. As a result, average yield was 4.65 ton/ha.
Progress in other production areas
<table>
<tr><td>Other production areas</td><td>% of FFS HHs practice new technologies</td><td>% of non- FFS HHs practice new technologies</td><td>Average income (BDT) per month after HH consumption</td></tr>
<tr><td>Homestead gardening</td><td>81%</td><td>65%</td><td>BDT 500</td></tr>
<tr><td>Poultry</td><td>78%</td><td>71%</td><td>BDT 1400</td></tr>
<tr><td>Livestock</td><td>46%</td><td>40%</td><td>BDT 800</td></tr>
<tr><td>Pond fisheries</td><td>82%</td><td>78%</td><td>BDT 950</td></tr>
</table></td></tr>
<tr><td>25</td><td>Progress of crop cultivation
<table>
<tr><td>Land area under different crops</td><td>Last year Kharif-II/Aman season (% of land)</td><td>This year Kharif-II/Aman season (% of land)</td></tr>
<tr><td>Aman (local variety)</td><td>4.5%</td><td>3%</td></tr>
<tr><td>Aman HYV</td><td>18%</td><td>21%</td></tr>
<tr><td>Others (Vegetables & Fish)</td><td>71 %</td><td>71%</td></tr>
<tr><td>Fellow land</td><td>6.5%</td><td>5%</td></tr>
</table>
▪ 11 WMGs took collective initiatives to cultivate BRRIdhan-52 in more than 350-acre of land and</td></tr>
</table>

BRRIdhan-49 has been extended in other areas of more than 200 acres.

Progress in other production areas

Other production areas	% of FFS HHs practice new technologies	% of non- FFS HHs practice new technologies	Average income (BDT) per month after HH consumption
Homestead gardening	85%	30%	600 (BDT)
Poultry	95%	25%	1300 (BDT)
Livestock	60%	20%	2100 (BDT.)
Pond fisheries	60%	10%	1800 (BDT.)

- BGP had provided poultry shade to one FFS members for demonstration purpose which was for learning by doing. Sometime it created problems among WMG and FFS members.
- 3 WMGs have been implementing CII and introduced zero tillage mustard cultivation where 38 farmers are involved and 16.4 acres of land covered under CII.

26

Progress of crop cultivation

Land area under different crops	Last year Kharif-II/Aman season (% of land)	This year Kharif-II/Aman season (% of land)
Aman (local variety)	10%	5%
Aman HYV	60%	70%
Others (Fish Gher)	27%	24%
Fellow land	3%	1%

- BR 10 and BRRIdhan 52 were cultivated in the polder areas which increased rice production.

Progress in other production areas

Other production areas	% of FFS HHs practice new technologies	% of non- FFS HHs practice new technologies	Average income (BDT) per month after HH consumption
Homestead gardening	70%	30%	BDT 500 Tk/per month
Poultry	85%	40%	BDT 1000 Tk/per month
Livestock	20%	10%	BDT 1200 Tk/per month
Pond fisheries	60%	20%	BDT 1000 Tk/per month

- The members of 3 WMGs communicated with nursery, procured and planted a total of 600 lemon saplings in their homestead areas.

27/1

Progress of crop cultivation

Land area under different crops	Last year Kharif-II/Aman season (% of land)	This year Kharif-II/Aman season (% of land)
Aman (local variety)	15%	10%
Aman HYV	20%	40%
Others (pls. specify) fish in Gher	60%	48%
Fellow land	5%	02%

- According to land category and availability of water farmers cultivated high yield rice variety (BRRI dhan-52, BRRI Dhan-49).

Progress in other production areas

Other production areas	% of FFS HHs practice new technologies	% of non- FFS HHs practice new technologies	Average income (BDT) per month after HH consumption
Poultry	85%	17%	BDT 1000
Livestock	70%	15%	BDT 2000
Fruit tree management	25%	16%	-

<table>
<tr><td></td><td>

- 53 members from 4 WMGs collectively purchased 760 kg HYV Aman seed and saved BDT 5320. Female members from WMGs collectively sold 320 nos egg amounting of BDT 3200 and 1550 kg vegetables (bitter gourd, bottle gourd, country bean) amounting of BDT 31000.

</td></tr>
<tr><td>27/2</td><td>

Progress of crop cultivation

Land area under different crops	Last year Kharif-II/Aman season (% of land)	This year Kharif-II/Aman season (% of land)
Aman (local variety)	15%	10%
Aman HYV	80%	90%
Fellow land	05%	00%

- A small portion of fish gher areas have been replaced by the Aman rice thus small.
- 3 WMG members involved in CII with 2.5 acre of land and they got HYV BRRI Dhan-49 seed.

Progress in other production areas

Other production areas	% of FFS HHs practice new technologies	% of non- FFS HHs practice new technologies	Average income (BDT) per month after HH consumption
Poultry	85%	20%	BDT 1200 per month
Beef fattening	70%	15%	BDT 2200 per month

- 49 members collectively purchased and vaccinated 160 poultry bird; purchased 200kg and 270kg poultry feed and rice seed respectively thus able to saved money.

</td></tr>
<tr><td>28/1</td><td>

Progress of crop cultivation:

Land area under different crops	Last year Kharif-II/Aman season (% of land)	This year Kharif-II/Aman season (% of land)
Aman (local variety)	60%	50%
Aman HYV Hybrid	35%	47%
Others & fellow land	5%	3%

- 47% crop lands came under HYV & Hybrid rice production which increased overall 17% rice production of the polder. It was observed that local variety rice production is on an average 8 mond per bigha (33 decimal), whereas HYV rice production is on an average 20 mond .

Progress in other production areas

Other production areas	% of FFS HHs practice new technologies	% of non- FFS HHs practice new technologies	Average income (BDT) per month after HH consumption
Homestead gardening	95%	60%	BDT. 750
Poultry	83%	35%	BDT. 950
Pond fisheries	78%	45%	BDT. 2500

- Some farmers increased income BDT 850 to 1100 who cultivated year-round vegetable by effective using of homestead areas.

</td></tr>
<tr><td>Polder</td><td>Polder-wise trends in agricultural production & profitability (ctd.)</td></tr>
<tr><td>28/2</td><td>

Progress of crop cultivation:

Land area under different crops	Last year Kharif-II/Aman season (% of land)	This year Kharif-II/Aman season (% of land)
Aman (local variety)	65%	51%
Aman HYV	28%	43%
Others	5%	5%
Fellow land	2%	1%

- Profitability from cultivating rice has increased by cultivating HYV Aman in more areas as local variety rice production was on an average 8 mond/bigha (33 decimal), whereas HYV rice production was 20 mound.

</td></tr>
</table>

<table>
<tr><td></td><td>
1 WMG (17 members) has set up CII trial plot by cultivating 8 acres land with and adopted cropping pattern of T Aman - Mustard- Vegetable.
Progress in other production areas :
<table>
<tr><th>Other production areas</th><th>% of FFS HHs practice new technologies</th><th>% of non- FFS HHs practice new technologies</th><th>Average income (BDT) per month after HH consumption</th></tr>
<tr><td>Homestead gardening</td><td>95%</td><td>60%</td><td>BDT. 350</td></tr>
<tr><td>Poultry</td><td>83%</td><td>35%</td><td>BDT. 950</td></tr>
<tr><td>Pond fisheries</td><td>78%</td><td>45%</td><td>BDT. 16500</td></tr>
</table>
Total of 75HHs of two WMGs have received training and sat compost pit. They are using this fertilizer in their agricultural land and surplus production selling the market.
</td></tr>
<tr><td>29</td><td>
Progress of crop cultivation :
<table>
<tr><th>Land area under different crops</th><th>Last year Kharif-II/Aman season (% of land)</th><th>This year Kharif-II/Aman season (% of land)</th></tr>
<tr><td>Aman (local variety)</td><td>15%</td><td>5%</td></tr>
<tr><td>Aman HYV</td><td>60%</td><td>70%</td></tr>
<tr><td>Aman Hybrid</td><td>10%</td><td>15%</td></tr>
<tr><td>Others (Vegetables)</td><td>5%</td><td>5%</td></tr>
<tr><td>Fellow land</td><td>10%</td><td>5%</td></tr>
</table>
Progress in other production areas
<table>
<tr><th>Other production areas</th><th>% of FFS HHs practice new technologies</th><th>% of non- FFS HHs practice new technologies</th><th>Average income (BDT) per month after HH consumption</th></tr>
<tr><td>Homestead gardening</td><td>80%</td><td>40%</td><td>BDT 2000</td></tr>
<tr><td>Poultry</td><td>70%</td><td>50%</td><td>BDT 2000</td></tr>
<tr><td>Livestock</td><td>50%</td><td>30%</td><td>BDT 2500</td></tr>
<tr><td>Pond fisheries</td><td>80%</td><td>45%</td><td>BDT 3000</td></tr>
</table>
BGP provided improved technologies on HV, poultry rearing and inputs support like Poultry shed, poultry feed, medicine among the participants.
</td></tr>
<tr><td>30</td><td>
Progress of crop cultivation :
<table>
<tr><th>Land area under different crops</th><th>Last year Kharif-II/Aman season (% of land)</th><th>This year Kharif-II/Aman season (% of land)</th></tr>
<tr><td>Aman (local variety)</td><td>73</td><td>60</td></tr>
<tr><td>Aman HYV</td><td>17</td><td>22</td></tr>
<tr><td>Aman Hybrid</td><td>10</td><td>12</td></tr>
</table>
In the polder area about 455 acres of land has been brought under crop synchronization as well as HYV and Hybrid. Crop production has increased about 10-20%.
Progress in other production areas :
<table>
<tr><th>Other production areas</th><th>% of FFS HHs practice new technologies</th><th>% of non- FFS HHs practice new technologies</th><th>Average income (BDT) per month after HH consumption</th></tr>
<tr><td>Homestead gardening</td><td>40</td><td>22</td><td>BDT 450</td></tr>
<tr><td>Poultry</td><td>78</td><td>42</td><td>BDT 1325</td></tr>
<tr><td>Livestock</td><td>20</td><td>15</td><td>BDT 1500</td></tr>
<tr><td>Pond fisheries</td><td>10</td><td>6</td><td>BDT 1250</td></tr>
</table>
</td></tr>
<tr><td>31 Part</td><td>Progress of crop cultivation :</td></tr>
</table>

Land area under different crops	Last year Kharif-II/Aman season (% of land)	This year Kharif-II/Aman season (% of land)
Aman (local variety)	54%	24%
Aman HYV	46%	76%

Progress in other production areas:

Other production areas	% of FFS HHs practice new technologies	% of non- FFS HHs practice new technologies	Average income (BDT) per month after HH consumption
Homestead gardening	71%	60%	BDT 500 per month
Poultry	78%	71%	BDT 1400 per month
Livestock	40%	38%	BDT 800 per month
Pond fisheries	80%	71%	BDT 950 per month

34/2 Part

Progress of crop cultivation:

Land area under different crops	Last year Kharif-II/Aman season (% of land)	This year Kharif-II/Aman season (% of land)
Aman (local variety)	77%	67%
Aman HYV	15%	28%
Others (Vegetables)	3%	4%
Fellow land	5%	2%

- BGP introduced BR-52 and BRRI Dhan-49 which has expanded in more than 200-acre areas.

Progress in other production areas :

Other production areas	% of FFS HHs practice new technologies	% of non- FFS HHs practice new technologies	Average income (BDT) per month after HH consumption
Homestead gardening	70%	20%	BDT 500
Poultry	74%	30%	BDT 700 per month
Livestock	70%	5%	BDT 2500 per month

Polder | **Polder-wise trends in agricultural production & profitability (ctd.)**

43/1A

Progress of crop cultivation:

Land area under different crops	Last year Kharif-II/Aman season (% of land)	This year Kharif-II/Aman season (% of land)
Aman (local variety)	36	21
Aman HYV	60	75
Others	2	3
Fellow land	2	1

- Profit margin decreased compared to last year as this year the price of rice is less BDT 200-250/mound.
- 129 farmers collectively purchased rice seed of T.Aman, agriculture inputs and sold paddy. They got benefit amounting BDT around 4500.

Progress in other production areas :

Other production areas	% of FFS HHs practice new technologies	% of non- FFS HHs practice new technologies	Average income (BDT) per month after HH consumption
Homestead gardening	90-95	15	BDT 100
Poultry	80-85	10	BDT 1000
Pond fisheries	30	10	BDT 1000

- In a WMG, 5 farmers cultivated Pangus fish cultivation in 5 ponds and a farmer got a fish feed

<table>
<tr><td></td><td>making machine through innovation fund.</td></tr>
<tr><td>43/2A</td><td>Progress of crop cultivation:
<table>
<tr><td>Land area under different crops</td><td>Last year Kharif-II/Aman season (% of land)</td><td>This year Kharif-II/Aman season (% of land)</td></tr>
<tr><td>Aman (local variety)</td><td>75</td><td>57</td></tr>
<tr><td>Aman HYV</td><td>25</td><td>43</td></tr>
</table>
▪ Increase of 18% HYV rice resulting with about 10% more rice production than last year’s season.
Progress in other production areas :
<table>
<tr><td>Other production areas</td><td>% of FFS HHs practice new technologies</td><td>% of non- FFS HHs practice new technologies</td><td>Average income (BDT) per month after HH consumption</td></tr>
<tr><td>Homestead gardening</td><td>70 %</td><td>40-45 %</td><td>BDT 100-120</td></tr>
<tr><td>Poultry</td><td>60%</td><td>30-35 %</td><td>BDT 8,00-1200</td></tr>
<tr><td>Livestock</td><td>50 %</td><td>10%</td><td>BDT 5000-6,000</td></tr>
<tr><td>Pond fisheries</td><td>80%</td><td>25-30%</td><td>BDT 1000-1200</td></tr>
</table>
▪ 25 members of a WMG practiced Community Led Fisheries (CLF) that helped them to earn more
▪ 12 FFS (Poultry Raring) implemented & also DAE conducted 3 FFS with in this Aman season. By vaccinating poultry within the community, 2 BGP community health workers are earning Tk. 8,000-10,000/month.</td></tr>
<tr><td>43/2B</td><td>Progress of crop cultivation:
<table>
<tr><td>Land area under different crops</td><td>Last year Kharif-II/Aman season (% of land)</td><td>This year Kharif-II/Aman season (% of land)</td></tr>
<tr><td>Aman (local variety)</td><td>35%</td><td>30%</td></tr>
<tr><td>Aman HYV</td><td>65%</td><td>70%</td></tr>
</table>
▪ This year cultivation of HYV rice increased about 15% resulting an increment in rice production of about 20% than last year.
Progress in other production areas :
<table>
<tr><td>Other production areas</td><td>% of FFS HHs practice new technologies</td><td>% of non- FFS HHs practice new technologies</td><td>Average income (BDT) per month after HH consumption</td></tr>
<tr><td>Homestead gardening</td><td>75-80</td><td>60-65</td><td>BDT 400 - 800</td></tr>
<tr><td>Poultry</td><td>55-60</td><td>30-35</td><td>BDt 5,000 – 7,000</td></tr>
<tr><td>Livestock</td><td colspan="3">Livestock FFS not held in the polder</td></tr>
<tr><td>Pond fisheries</td><td>55</td><td>35-40</td><td>BDT 6,000 – 8,000</td></tr>
</table>
▪ 61 farmers were involved in a CLF which contributed in increasing fish production and their income.</td></tr>
<tr><td>43/2D</td><td>The progress of crop cultivation :
<table>
<tr><td>Land area under different crops</td><td>Last year Kharif-II/Aman season (% of land)</td><td>This year Kharif-II/Aman season (% of land)</td></tr>
<tr><td>Aman (local variety)</td><td>40</td><td>35</td></tr>
<tr><td>Aman HYV</td><td>60</td><td>65</td></tr>
</table>
Progress in other production areas :
<table>
<tr><td>Other production areas</td><td>% of FFS HHs practice new technologies</td><td>% of non- FFS HHs practice new technologies</td><td>Average income (BDT) per month after HH consumption</td></tr>
<tr><td>Homestead gardening</td><td>90</td><td>25</td><td>BDT 1000-1500</td></tr>
<tr><td>Poultry</td><td>65</td><td>10-15</td><td>BDT 10000-15000</td></tr>
</table></td></tr>
</table>

	Livestock	80	10	BDT 50000-60000
	Pond fisheries	90	30	BDT 12000-16000

43/2E

Progress of crop cultivation:

Land area under different crops	Last year Kharif-II/Aman season (% of land)	This year Kharif-II/Aman season (% of land)
Aman (local variety)	70	45
Aman HYV	30	55

Progress in other production areas:

Other production areas	% of FFS HHs practice new technologies	% of non- FFS HHs practice new technologies	Average income (BDT) per month after HH consumption
Homestead gardening	60	20	BDT 100-150
Poultry	40	10-12	BDT 1000-1500
Livestock	75	20	BDT 4000-5000
Pond fisheries	75	30	BDT 1000-1500

- WMG is implementing a CLF in a leased pond.

43/2F

Progress of crop cultivation:

Land area under different crops	Last year Kharif-II/Aman season (% of land)	This year Kharif-II/Aman season (% of land)
Aman (local variety)	35	30
Aman HYV	65	70

- Cultivation of HYV rice has increased about 5% resulting with about 10% more rice production than last year's season. About 1-1.5mt/ha yield is increased than last year same season.

Progress in other production areas :

Other production areas	% of FFS HHs practice new technologies	% of non- FFS HHs practice new technologies	Average income (BDT) per month after HH consumption
Homestead gardening	90	40-45	BDT 90-100
Poultry	45-50	25-30	BDT 900-1000
Livestock	80	2	BDT 4000-5000
Pond fisheries	90	30-35	BDT 600-900

Polder **Polder-wise trends in agricultural production & profitability (ctd.)**

47/3

Progress of crop cultivation:

Land area under different crops	Last year Kharif-II/Aman season (% of land)	This year Kharif-II/Aman season (% of land)
Aman (local variety)	60%	47%
Aman HYV	33%	50%
Others (Aromatic rice varieties)	2%	2%
Fellow land	2%	1%

Progress in other production areas :

Other production areas	% of FFS HHs practice new technologies	% of non- FFS HHs practice new technologies	Average income (BDT) per month after HH consumption

	Homestead gardening	80%	20%	BDT 70 - 100
	Poultry	80-85%	20-25%	BDT 1250 - 1700
	Livestock	90%	2%	BDT 3000 - 3400
	Pond fisheries	85%	20%	BDT 1000 - 1200

- 4 farmers have practiced Pangus cultivation in pond that has contributed to fish production & income.

47/4

Progress of crop cultivation:

Land area under different crops	Last year Kharif-II/Aman season (% of land)	This year Kharif-II/Aman season (% of land)
Aman (local variety)	70%	47%
Aman HYV	26%	50%
Others (Aromatic rice varieties)	2%	2%
Fellow land	2%	1%

Progress in other production areas:

Other production areas	% of FFS HHs practice new technologies	% of non- FFS HHs practice new technologies	Average income (BDT) per month after HH consumption
Homestead gardening	90%	10%	BDT 70 - 100
Poultry	70-80%	15-20%	BDT 1000 - 1250
Livestock	90%	3%	BDT 4000 - 4500
Pond fisheries	85%	20%	BDT 1000 - 1250

- 75 farmers involved in 3 CLF that contributed to increase fish production and the estimated net profit was about Tk 2300/farmers.
- Homestead Pangus culture through IF also contributes to fish production and income of 6 farmers).

55/2A

Progress of crop cultivation:

Land area under different crops	Last year Kharif-II/Aman season (% of land)	This year Kharif-II/Aman season (% of land)
Aman (local variety)	45	35
Aman HYV	55	65

- HYV rice cultivation has increased about 10%, resulting at about 12-15% more rice production than last year's same season.

Progress in other production areas:

Other production areas	% of FFS HHs practice new technologies	% of non- FFS HHs practice new technologies	Average income (BDT) per month after HH consumption
Homestead gardening	95	40-45	BDT 60-100
Poultry	95	35-40	BDT 700-850
Livestock	80	5	BDT 5000-5500
Pond fisheries	90	40-45	BDT 850-1000

55/2C

Progress of crop cultivation :

Land area under different crops	Last year Kharif-II/Aman season (% of land)	This year Kharif-II/Aman season (% of land)
Aman (local variety)	60%	55%

	Aman HYV	40	45

Progress in other production areas :

Other production areas	% of FFS HHs practice new technologies	% of non- FFS HHs practice new technologies	Average income (BDT) per month after HH consumption
Homestead gardening	95	15	BDT 45 – 85
Poultry	75 - 80	5 - 6	BDT 850 –1250
Livestock	95	2	BDT 3750 - 4000
Pond fisheries	75 -80	15	BDT 850 - 1250
CLF			BDT 200- 250 per beneficiary

- 25 farmers involved in CLF which contributed in increasing fish production and income. While, under IF homestead Pangus culture also contributed to fish production and income.

2 &2 ext.

Progress of crop cultivation :

Land area under different crops	Last year Kharif-II/Aman season (% of land)	This year Kharif-II/Aman season (% of land)
Aman (local variety)	8	2
Aman HYV	24	52
Fisheries (Gher)	30	30
Vegetable & Fellow land	39	16

Progress in other production areas :

Other production areas	% of FFS HHs practice new technologies	% of non- FFS HHs practice new technologies	Average income (BDT) per month after HH consumption
Homestead gardening	100	55	BDT 700
Poultry	100	43	BDT 1250
Livestock	100	45	BDT 1700
Pond fisheries	100	38	BDT 625

- 285 women from 7 WMGs took the new economic opportunity of selling medicinal plant of Bashak leaf and earned BDT 240,000 by selling 6 metric ton dry leaf in the reporting time.

4 Monitoring, Reflection & Learning

Major Achievements

- Collection, quality control and analysis of WMG Tracker data. Output data of all WMGs of 22 polders were collected through WMG tracker for 2 quarters during the reporting period. Based on WMG tracker data, two reports have been prepared and issued during this period: Working Paper 9D "*WMG Tracker Report to June 2018*" (issued on 4 September 2018) and Working Paper 9E "*WMG Tracker Report to September 2018*" (issued on 30 November 2018). A summary of output data of WMGs, collected (in January 2019) for the period up to December 2018, is given in Annex-1.
- Participatory monitoring (PM) by WMGs has become a regular and accepted practice among WMGs. During the reporting period PM exercise was undertaken in October 2018, in which a total of 506 WMGs participated. A summary of PM conducted in October 2018 is given in Section 2.3.4. During the reporting period "*Working Paper 8D Participatory Monitoring*" has been prepared on the PM conducted in April/May 2018 (issued on 12 July 2018).
- Trends Watcher. One issue of Trends Watcher, the seasonal bulletin, has been published during the reporting period (30thAugust 2018).
- In response to the request from the 2017 Annual Review Mission, An impact study was conducted in phase out 1 and 2 polder (total 14 polders) to see the outcomes of BGP interventions (some findings are given in 2.2.1, for details please see Technical Report 25, "*Improving the Productivity of Land in the Coastal Bangladesh: The Outcomes of Blue Gold Program Interventions").*
- An earth observation-based impact study is on-going to assess cultivated area and cropping intensity in the Blue Gold polders and surrounding areas (control area: 385,000 hectares). Mid-term report of this study has been published within this period (for detail pls see "Impact on cropping Intensity and Changes in cultivated Area: preliminary findings of an earth observation-based impact study")
- Development of MIS Dashboard. The 1st phase of development of MIS Dashboard has been completed by the assigned consultant, mPower. Data are arranged following administrative structure of BWDB. A project database has thus been created in Blue Gold server. The server: (a) stores data, collected through various surveys and monitoring activities; (b) is accessible and operationalised by multiple users, specifically BWDB and DAE; and (c) provides reports in standard formats.
- A polder dashboard has been developed to facilitate evidence-based decision-making by the management team. The dashboard provides an overview of the progress of individual polders towards the goals of the Blue Gold Program.

Reflection and Learning

- A substantial amount of data has been assembled in the MIS database which, together with other tools developed by Blue Gold, helps the project team with evidence-based decision making.
- The MRL Team shared the output results of WMG Tracker up to September 2018 with polder teams. The progress and achievements of WMG activities were discussed and reflected upon; thus the polder teams were made aware of the strengths and weaknesses of WMGs.

- The MRL Team shared the outcome results of participatory monitoring up to October 2018 with the 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 – polder teams can encourage the WMGs to discuss and reflect on the participatory monitoring results in their monthly meetings, and instigate appropriate action plans for improvement.
- Impact study in 14 BGP polders documented the economic changes and significant income increases brought about by changes in cropping patterns; there has been remarkable improvement in water management, resulting in significant increase in cropped area and cropping intensity.
- Trends Watcher is circulated among the project partners, EKN and other development agencies. In the last issue of Trends Watcher the focus has been more on results/outcomes rather than the output and the implementation of activities, visualizing impacts of BGP at polder level.

Challenges

- Visits to WMGs revealed that not all data that were given in WMG Tracker were properly documented in the WMGs' books of record.
- Errors were still found in data entry for WMG Tracker.

Mitigation Measures

- The MRL team discussed with zonal and polder teams as regards the need of maintaining proper records in the books of WMGs. The polder teams in turn took measures so that the WMGs start updating their books of record.
- The MRL team discussed with polder teams about the errors in database of WMG Tracker due to wrong entries and advised them how they can avoid making wrong entries.

Lessons Learned

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

5 Innovation Fund Progress

Introduction

The BGIF aims at supporting projects that can address polder level constraints that are not covered by BGP core activities but has potential to contribute economic development of target beneficiaries often involving WMGs where feasible. Implementation works of six projects funded by BGIF are going on successfully. Detail information of BGIF projects are given in Table 20 below.

BGIF identified two priority needs for the BGP area namely 1) the removal of excessive water hyacinth and 2) the implementation of climate smart adaptation of agri-technologies as part of its last call for proposals. After primary evaluation 6 organizations were asked (2 for climate smart adaptation agri-technologies and 4 for removal of excessive water hyacinth) to submit full proposals. Later on, the evaluation committee finally recommended one proposal on climate smart adaptation agri-technologies and one on removal of excessive water hyacinth. A contract was signed (20 December, 2018) with Practical Action to implement a project titled 'Sustaining sack farming practices through agro-met services in coastal polder areas of Bangladesh'. This project will be implemented at Patuakhali. Khulna University submitted project "Development of value- added products from water hyacinth to support alternative livelihoods and ecological resilience in coastal villages of southwest Bangladesh". It is in pipeline for contract signing.

Success stories

1. SWIFT –United Purpose has been implementing this project successfully. So far, they have achieved significantly on their planned activities. They have completed construction of 05 small pipe/ring culvert with wooden gate . The communities contributed with labor, cash and other resources. Interestingly two UPs provided labor and wooden gate, valued at BDT 7,000. The project contributed only 53% of the total project cost by contributing in pipe, cement, sand, bricks and transportation.

2. Pangasius – Innovision Agro Service Ltd. conducted improved striped catfish Pangasius culture in 3 polders of Patuakhali region with 30 farmers, including 7 women farmers. With good quality fish fingerlings, farm made feeds from household prepared by using semi-automatic fish feed pellet machines and improved management practices, the farmers could produce 10-13 MT of fish/ha in their homestead ponds during 5 months of culture period. The farmers have earned well: they achieved a farm gate price of Tk. 95-100/kg Pangasius with 33% profit.

Challenges, lessons learnt and mitigation measures

Only a few BGIF projects struggle with the implementation of their project during Jul-Dec 2018. mPower found it impossible to organise affordable support from a foreign partner for DNA analysis for cattle Breed Identification as per their original plan. WBC project was very good in organizing women entrepreneurs, but yet to pay more attention to the desired sustainability of women business centers. The Pangasius project need more understanding about the business case for feed mills in order to ensure supply homemade pellet feed.

Feedback on all cases was given to BGIF project implementers. United Purpose, responsible for WBCs, were given a two month extension to come up with better representation and analysis of outcomes for the current phase and a plan for a potential third (up scaling) phase to achieve project objectives. BGIF also provided similar feedback and guideline to Pangasius project staff to design their potential next phase. In an open mind and considering overall benefits to target beneficiaries, BGIF fund extended all kinds of support to implementers to adjust and modify according to field reality and also reminded them about the financial consequences. However, though there is no scope for funding new BGIF projects, few on-going projects can be considered for funding for a scale up phase.

Table 21: The summery of on-going BGIF projects

Sl. No.	Name of the Project	Implementing Organization	Partner	Update
01.	Women's Business Centre in Waterlogging Areas of Southwest Bangladesh	United Purpose (UP)	LGI, WMO	WBC project implemented by UP has been given two months extension to consolidate t heir implementation work.
02.	Breed Identification and Digital Registry of Cattle	mPower	DLS, WMO	The implementing organization complemented baseline survey report, selection process for both service providers, AI and Community Livestock Workers, introduction of Shurokkha tele-veterinary service delivery mobile apps and training for users, farmers ID card distribution, leaflet for promotion of Shurokkha to the farmer. An alternative proposal accepted by BGP for DNA testing, organized cattle vaccination and deworming camp by the respective CLWs. There was disagreement on developed promotional video-1. 1st version of phenotypic breed identification algorithm apps to the field for field trial, they made update version of the apps, according to field trial results.
03.	Accelerating Horizontal Learning in Bangladesh Polders: ICT as Force Multiplier	MetaMeta	DAE, DoF, DLS,LGI, WMO	This project is being implemented in 10 polders. Six in Khulna & Satkhira these started earlier than Patuakhali, Three trainings for video makers in Patuakhali were completed in October, 2018. Ten video screenings, 3 rounds of mobile video competition, training of UDCs and production of 3 instructional videos completed. BGP is stimulation the involvement of at least 1/3 females in activities. Two Award Giving Ceremonies was held in Khulna Satkhira.
04.	Sustainable Water Management through Indigenous Finance & Technology	United Purpose	BWDB, LG, WMO	See section 'success stories'.
05.	Augmenting homestead Pangasius, Pangasianodon hypophthalmus aquaculture productivity in Patuakhali	Innovision Agro Service Ltd.	DoF, WMO	See section 'success stories'.
06.	Leveraging decision making science to sustain climate- and market-smart mung bean advisories in Patuakhali region	CIMMYT	DAE, WMO	Mung bean farmers face unpredictable weather difficulties especially in picking time which Mung bean cultivation hindered seriously due . Weather forecasting systems, especially rainfall forecasts, can help to minimize the yield loss. The project will review all existing agri. weather related mobile applications and will develop a user friendly one. This app will be delivered to DAE for dissemination among larger mung-bean communities.
07.	Sustaining Sack Farming Practices through Agro-met Services in Coastal Polder Areas of Bangladesh.	Practical Action, Bangladesh	DAE, LGI, WMO	Blue Gold Program Management has signed a contract with Practical Action to implement a project titled 'Sustaining Sack Farming Practices through Agro-met Services in Coastal Polder Areas of Bangladesh' on 20 December 2018. This project will be implemented from 01 February 2019 to 31 January 2020 at polder 47/3 & 47/4 under Kalapara Upazila, Patuakhali. The main purpose is to promote climate smart water resilient agriculture through growing vegetables in stressed homestead land addressing income and nutritional security.

6 Financial Report

Table 22: Financial report of Blue Gold Program (July- December 2018)

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 30-Jun-18	Claimed Q3 2018	Claimed Q4 2018	Total cumulative	% Spent	Balance Remaining
TA team	14,808,453	17,286,204	17,301,465	12,721,461	584,801	606,323	13,912,585	80%	3,388,880
Durable goods (D)	1,169,053	997,713	996,176	725,875	3,764	2,826	732,465	73%	265,248
Training (T)	2,456,500	1,892,890	1,892,890	1,320,607	47,119	25,637	1,393,363	74%	499,527
Operational cost (O)	1,272,600	2,864,929	3,467,607	2,494,715	109,274	145,270	2,749,259	96%	115,670
Contracted Services	7,542,000	6,826,845	6,225,704	2,828,098	157,498	153,470	3,139,066	46%	3,687,779
Water Management Innovation Fund	2,400,000	1,400,000	1,400,000	924,827	44,358	94,600	1,063,785	76%	336,215
Productive Sectors Innovation Fund	1,900,000	1,050,000	1,050,000	540,475	18,065	22,564	581,104	55%	468,896
Annex B	0	877,058	861,796	592,148	86,122	87,002	765,272	87%	111,786
SUBTOTAL TA contract	**31,548,606**	**33,195,639**	**33,195,639**	**22,148,206**	**1,051,001**	**1,137,692**	**24,336,899**	73%	**8,762,215**
GoN Contribution to BWDB	15,750,000	27,320,000	27,320,000	10,567,950		**2,500,000**	13,067,950	48%	14,252,050
GoN Contribution to DAE	995,000	1,495,000	1,495,000	1,183,446		**118,209**	1,301,655	87%	193,345
Total GoN contribution	**48,293,606**	**62,010,639**	**62,010,639**	**33,899,602**	**1,051,001**	**3,755,901**	**38,706,504**	62%	**23,207,610**

7 Project Management

7.1 Focus activities for zonal and polder teams

BGP TA team is engaged with extended responsibilities following its reframed ToR under the unified approach since the team is reorganized at central and zonal level. The streamlined ToR also helped the BGP Team 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.

During the period of last six months, following the phase out plan zonal team experts were especially active in developing the In-polder water management and O&M plan engaging the WMOs at catchment level. During the same period BGP extended its support to the WMAs for signing of polder level O&M agreement (*following the WMR 2014*) between the concerned BWDB Field Divisions and representatives of WMAs. By end of September 2018 such O&M agreement has been signed by 6 WMAs for 5 polders in Khulna; another 5 polders are also ready for signing of O&M agreement during the 2nd half of January 2019. (Annex III shows the phasing out plan/schedule and present status of WMAs in 22 polders under BGP)

Considering the roles and responsibilities of WMAs described in the agreement, capacity development of WMAs is necessary in effectuating the O&M agreement. In consideration of the situation, BGP emphasized and initiated capacity development of WMAs especially in developing towards functional WMAs.

The Zonal teams are presently exploring the possibilities of WMOs to get involved at Upazila and District level water management committees while the polder teams are exploring the possibilities at Union Parishad (UP) level following provisions indicated in *the Bangladesh Water Rules – August 2018.* However, it appears that the *Bangladesh Water Rules – August 2018* is not very conducive with the WMOs registered under BWDB while it looks much more suitable for the WMOs registered under the Department of Co-operatives i.e., for LGED water sector projects.

The Zonal and Polder teams continued their efforts to 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, BRRI, BARI and a number of seed producing /marketing companies) and WMOs in different BGP polders.

During the last reporting period BGP Zonal teams initiated 'Polder Health Check' using a simple checklist with some support from experts from central TA team. This exercise appeared as a useful tool for better management of field level activities; it is supportive in readjusting the field activities through assessing the concentration of activities and effectiveness.

7.2 Reduction & relocation of staff

During the last reporting period, BGP has engaged one senior and one junior experts in the field of engineering (WRM) against the vacant position of one national senior expert who left the project in

the recent period. BGP has also relocated its reduced inputs of a number of national consultants at central level adjusting with the new situation of field level activities for the extended period.

BGP continued to promote its Polder Coordinators (PCs) and CDFs to improve their confidence and performance level in providing services to the WMOs related with BGP activities. During the last six months BGP has relocated a few PCs from one polder to another and recruited 14 new CDFs (higher number of new CDFs with Agrl. background) against the vacant positions. A one week long formal training was organized for these new CDFs in Kushtia during early August 2018 to upgrade their knowledge/skill and make them suitable for BGP. 15 nos. of low performing CDFs were also included in this training to upgrade their capacity along with 3 Ext. Overseer of BWDB. In order to share experiential knowledge and skill; 3 successful CDFs were engaged as facilitators in the training along with Advisors and senior expert. In addition, the new CDFs were placed in the polders together with senior CDFs so that the former can learn and get support from the latter.

At the same time BGP continued doing performance assessment of CDFs; such assessment was carried out in late October 2018. In the process of assessment 18 CDFs from low performing ones were identified, who were not suitable to address the refocused BGP activities and thus their services were discontinued.

The remaining CDFs are available to continue and mostly address the extended focus on in-polder water management for higher production and income from agriculture, developing catchment level O&M plan engaging the WMOs, signing of O&M agreement at polder level, supporting WMAs (orientating them) towards becoming functional WMAs and enabling them for O&M activities following the phase out plan and schedule.

Especially the CDFs engaged in 1st phase polders will support WMAs for their capacity development/functionality towards implementation of O&M activities. The CDFs in 2nd phase polders will support to WMOs to consolidate the currently on going refocused activities, prepare them for signing (polder level) O&M agreement between the WMAs and BWDB and capacity development of WMAs in enabling them for O&M activities.

The CDFs in new polders will continue to support the WMOs in the process of formation/registration of WMOs, horizontal learning of BGP activities. In addition, they will also address the refocused BGP activities as mentioned above.

BGP has recruited 10 CDFs are placed in Patuakhali and Khulna zones under CWM. These CDFs are engaged in the phase I and II polders and will be assisted by the CDFs until end of the project. BGP also carried out the performance assessment of 10 and recommend to CWM for reviewing their position.

However, the delayed registration of WMOs, delayed approval of RDPP and subsequently low progress in implementation of physical infrastructure under BWDB has already affected the Phasing Out schedule, especially for 8 polder under 1st phase.

A number of additional technical staff were engaged by BGP and are continuing their services to support BWDB in Dhaka and field offices in Khulna and Patuakhali. Presently 1 senior engineer is engaged to support the PCD and 2 junior engineers to support Design offices in Dhaka under the supervision/guidance and management of BWDB.

Taking into consideration the ARM recommendations, refocused BGP activities as mentioned above and the status of phasing out schedule, the EKN has been requested to consider additional resources for Technical Assistance during extend time as indicated in RDPP.

The EWM and SVC teams at central level had been sitting in separate offices in Dhaka. However, from end of December 2018 they all are at the same office space at Motijheel and working closely with the BWDB-offices.

Challenges

Challenge is there 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 has already affected the phasing out schedule especially for the 1st phase polders. Considering the progress of physical works in the polders and recommendations of ARM 2018, the proposed phasing out plan/schedule demands a careful review.

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 WB projects, (b) gradually a number of national consultants are also leaving in search of new jobs with longer contract of employment as their allocated man-months are reduced towards the project end, (c) a number of trained and experienced CDFs also left to join in other BWDB water sector projects and LGED projects where they were offered higher salaries and service benefits with longer employment. The staffing situation is aggravating gradually. 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 replacements with the present remuneration structure of BGP.

7.3 DPP Revision subsequent situation

Revision process of DPP was started in May 2016, while EKN sent “Expression of Intention” on 14 September 2016 with commitment of additional financing (Grant) Euro 11.57 Million for the BGP (BWDB Component) as RPA; it was hoped that the draft DPP will be submitted by October 2016.

Since then it took long time and finally Planning Commission cleared the RDPP in May 2018. The RDPP was signed by the Planning Minister on 22nd May. The same RDPP was presented at ECNEC and it was approved on 21st June 2018. Based on the approval of ECNEC, a minute of the meeting was issued on 16th July 2018. After availability of the minute, the MoWR issued the Administrative Approval on 26th July 2018 to effectuate the RDPP.

This long delay in approval of RDPP, reduced the implementation period from 3 working seasons to 2 working seasons. In addition to the delay in approval of RDPP, delayed registration of WMOs and low progress in implementation of physical infrastructure under BWDB has already affected seriously in execution of phasing out plan and schedule of BGP polders especially for 1st phase polders.

As a part of regular process, the 1st Project Implementation Committee (PIC) meeting was held on 19th August 2018 to review the progress of all donor funded projects under BWDB. Dutch funded Blue Gold Program was also included in this meeting and reviewed the post situation of RDPP – progress of physical works in field and its associate tenders & designs. The senior officials of BWDB,

representatives from MoWR and Planning Commission attended the meeting under the chair of DG BWDB. The PIC gave its decision that BGP will complete all the infrastructural works by June 2020. The minutes of the 1st PIC meeting was issued on 21st October 2018 by Chief Planning, BWDB.

Joint Annual Review Mission (ARM) was commissioned in November 2018 for final review of BGP activities and its progress. The ARM reviewed the BGP activities and presented their report at their warp up meeting held on 19th November 2018 at MoWR. They appreciated the results of integrated approach of participatory water management in the polders under BGP; at the same time they also indicated the challenges for BGP to complete all remaining the physical infrastructural works within the stipulated time (June 2020) as indicated in the RDPP. Considering the total situation, ARM 2018 made 27 recommendations under 7 major captions for BWDB/DAEand EKN. These recommendations included a proposal to form a joint Monitoring Team (JMT) to foresee the implementation progress of all physical works and to recommend next course of action to complete the all infrastructural items of works as included in the RDPP.

Later as part of a regular process, 4th IMSC meeting was held on 12th December 2018 under the chair of the Secretary, MoWR to review the RDPP provisions and its implementation progress. Representatives from BWDB, DAE, MoA, Planning Commission, IMED, and ERD attended the meeting while EKN and Team Leader, BGP were there as observers. Based on the detailed discussion, following decisions were taken: (a) All concerned should expedite the implementation process. All field divisions should expedite the Tender Floating/Invitation & Work Orders. Design Offices should complete the designs on priority basis. (b) Second revision will be initiated considering the status/progress in June 2019 to expedite/enhance the overall progress of the project to achieve maximum benefits.

Annex I – Project Outputs

Membership of Groups

Summary Results of WMG Tracker	**Up to December 2018**
No. of Total WMGs	510
No. of Total HHs in WMG allocated areas	191,121
No. of HHs represented in WMG	117,963
% of HHs represented in WMG	61.7
No. of enrolled WMG male members	77,430
No. of enrolled WMG female members	58,757
No. of enrolled total WMG members	136,187
% of WMG female member	43.0
Average No. of enrolled members in each WMG	267
No. of TA-FFS Groups	1,013
No. of enrolled TA-FFS male members	2,887
No. of enrolled TA-FFS female members	21,920
% of TA FFS female members	88.4
No. of DAE-FFS Groups	567
No. of enrolled DAE-FFS male members	14,378
No. of enrolled DAE-FFS female members	14,155
% of DAE FFS female members	49.6
No. of MFS Groups	200
No. of enrolled MFS male members	2,866
No. of enrolled MFS female members	1,751
% of MFS female members	37.9
No. of LCS groups	472
No. of enrolled LCS male members	19,954
No. of enrolled LCS Female members	10,694
% of LCS female members	34.9

Financial status of WMGs

Summary Results of WMG Tracker	Up to DECEMBER 2018
Items of WMG Funds	Amounts (TK)
Admission fee (TK)	2,345,861
Savings (Tk) from male	15,847,948
Savings (Tk) from female	14,213,117

O&M fee (Tk)	3,093,338
Miscellaneous fees (Tk)	5,325,056
Income/Profit (Tk)	34,321,447
Total WMG Funds (Tk)	75,146,767

Type of Business Investment in individual IGA

Summary Results of WMG Tracker	Amounts (TK)	% of total invested
Agriculture activities	13,313,557	43.22
Fish cultures	5,258,634	17.07
Land mortgage	2,653,550	8.61
Livestock (cow, goat, sheep, buffalo)	2,335,980	7.58
Poultry	2,871,403	9.32
Small business	4,372,897	14.19
Others (Rickshaw/Van, etc.)	4,370,600	14.19
Total WMG Funds invested in IGAs	30,806,021	100.00

Capacity Building

Summary Results of WMG Tracker	Up to DECEMBER 2018	
Training/Orientation/Workshop	No. of Participants (WMG Members)	% of Female Participants
Account Keeping and Audit System	1,614	20.9
Collective Action Group (CAG) Workshop	1,849	33.3
Collective Action Promotion (CAP) Workshop	433	16.2
DRR	26	46.2
Gender and Leadership Development	1,789	47.2
LCS training	12,282	39.4
Management of Agricultural Machinery	4,603	35.3
Organizational Management	2,857	34.7
Participatory Monitoring	1,550	28.1
RF/FT/LF Capacity Development	559	56.9
Savings and Credit	739	18.9
Others	199	32.2
Total	28,500	36.1

Training on Agricultural Development

Summary Results of WMG Tracker	Up to DECEMBER 2018	
Modules/Topics	No. of Participants	% of Female
Boro, Homestead & Nutrition (DAE)	4,850	50.0
CAWM and Nutrition (DAE)	3,496	44.1
Cropping System, Market Linkage & Production Technology & gender(TA)	1,997	22.3
Homestead Vegetables & Fruits, poultry and Nutrition (TA)	12,500	90.2
Mungbean, Homestead Vegetables & Fruits & Nutrition (DAE)	5,850	50.0
Mungbean, Market Linkage and Production Technology & gender (TA)	1,325	18.1
Pond Fish, Beef Fattening & Nutrition (TA)	4,777	72.7
Pond Fish, Dairy Cow & Nutrition (TA)	1,398	77.9
Poultry, Market Linkage &Production Technology & gender (TA)	1,425	89.8
Sesame, Homestead & Nutrition (DAE)	1,000	47.7
Sesame, Market Linkage & Production Technology & gender (TA)	1,446	28.7
T-Aman, Homestead & Nutrition (DAE)	11,700	49.9
T-Aus, Homestead & Nutrition (DAE)	500	50.0
Tilapia, Market Linkage and Production Technology & gender (TA)	635	80.3
Watermelon, Homestead Vegetables & Fruits & Nutrition (DAE)	1,150	48.9
Others	3,880	92.0
Total	57,952	63.3

Agricultural Demonstration/Trail Plots Development

Summary Results of WMG Tracker	Up to DECEMBER 2018	
Demonstration/Trail Plots of Crops	No. of Participants	% of Female Participants
Beef Fattening	175	73.1
Dragon Fruit	78	37.2
Drumstick	131	100.0
FYM	619	84.7
Groundnuts	21	14.3
Mung bean	182	3.8
Mustard	232	5.2
Passion Fruit	23	52.2
Pond Fish	256	62.1
Poultry Housing	655	98.0
Sapodilla	1,426	95.1
Sesame	74	5.4
Summer Tomato	29	10.3

Summary Results of WMG Tracker	Up to DECEMBER 2018	
Demonstration/Trail Plots of Crops	No. of Participants	% of Female Participants
Sunflower	30	-
T-Aman	447	4.0
Tilapia	35	68.6
Vegetables	970	88.1
Wheat	6	33.3
Others	140	38.6
Total	5,529	71.7

Horizontal Learning

Summary Results of WMG Tracker	Up to DECEMBER 2018	
Horizontal Learning Activities	No. of Participants	% of Female
Cage Culture/Fisheries	698	52.6
Exchange of FFS/MFS learning	13,950	56.4
Exchange visits to CAWM schemes	1,083	33.6
Exchange visits to better performing WMGs (WAP, O&M, CII, CA, WM, etc.)	4,602	39.1
Farmer's Field Day (DAE)	49,340	50.6
Farmer's Field Day (TA)	132,402	59.3
Others	6,620	41.6
Total	208,695	55.9

Agricultural Modern Technologies adopted

Summary Results of WMG Tracker	Up to DECEMBER 2018	
Technologies adopted on different crops/items	No. of Participants	% of Female Participants
Beef fattening technique	9,792	47.3
Black Sesame seed	2,973	20.3
Drying Sesame in Blue net	5,055	27.0
Fish feed processing	15,720	35.5
Hajol	28,226	94.0
Hybrid vegetables seed	24,177	46.9
HYV Rice seed	37,097	15.4
IPM (parching, light trap, bait trap, sex pheromone, beneficial insect, etc)	32,665	22.9
Line sowing	24,558	12.0
Napier grass	1,846	33.0

Summary Results of WMG Tracker	Up to DECEMBER 2018	
Technologies adopted on different crops/items	No. of Participants	% of Female Participants
Pond Layering for fish culture	9,438	42.6
Poultry housing	17,252	88.1
Proper use of agricultural inputs (Seeds, Fertilizers, pesticides)	21,486	17.8
Vaccination	30,632	61.6
Vegetables bed technique	23,742	53.1
Others	1,693	71.2
Total	285,324	42.8

Development and Repair/Rehabilitation of Water Management Infrastructure

Summary Results of WMG Tracker		
Infrastructure Activities	Project Target	Achievement
Length of Embankment done (km)	330.0	298.0
Length of Retired Embankment done (km)	20.6	10.7
Total Length of Khals (Canal) done (km)	545.0	196.0
Sluice Repair done (No.)	186	76
Outlet/Inlet repair done (No.)	235	190
Sluice Construction/Re-Construction done (No.)	31	10
Inlet Construction/Re-construction done (No.)	8	2

Annex II – Achievements of BGP in water management and agriculture from July-December 2018 (Non-cumulative)

I. WATER[5]

Ref		Time period		Remarks
	Result	**July-December 2018 (Non-cumulative)**		
I.R1	Number of people benefitting from improved water security and water safety in the project area	0		Cumulative figure is – 214348 (From the start of BGP to June 18)
	Outcome			
I.OC1	Number of people supported in flood protection activities	0		Cumulative figure is – 25660 (From the start of BGP to June 18)
I.OC2	Number of people supported on improving drainage and water availability/irrigation	0		Cumulative figure is -16532 (From the start of BGP to June 18)
I.OC3	Number of people supported for improved water shed/polder protection	0		Cumulative figure is -25660 (From the start of BGP to June 18)
I.OC4	Number of WMA and of WMO supported	WMG	WMA	
		26	8	
I.OC5	Number of professionals trained in water management	66		
I.OC6	Number of people benefitting from operational plans for IWRM			N/A
I.OC7	Number of ha with operational plans for IWRM	31836		

[5] July – December is not the working season for infrastructural works. Very insignificant work has been done in few of the polders for carried over work only; no work has been completed that can lead to improved water security and water safety. As result, I.R1, I.OC1, I.OC2, I.OC3, are reported zero. But the benefit of the cumulative people from start to June 18 is on-going and mentioned in the remarks column.

II. AGRICULTURE

A. Productivity and Income

		Time period
		July-December 2018 (Non-cumulative)
	Result	
IIA.R1	Number of family farms that doubled their productivity and/or income	NA
	Outcome	
IIA.OC1	Number of family farms that increased productivity or income (by male/female headed and age %<35)	35691
	Total(direct)	11897
	Total(Indirect)	23794
	Total (direct + indirect) HHs	35691
IIA.OC2	Number of family farms with improved access to input and/or output markets (by male/female headed and age %<35)	9835
IIA.OC3	Number of family farms whose farming enterprise became more resilient to shocks (by male/female headed and age %<35)	11897
	Output	
IIA.OP1	Number of family farms directly reached by the project (by male/female headed and age %<35)	6144
IIA.OP2	Number of family farms indirectly reached by the project (by male/female headed and age %<35)	2458

B. Sustainable farming and land use

		Time period	Remarks
	Result	**July-Dec. 2018 (Non-cumulative)**	
IIB.R1	Number of hectares converted to sustainable farming and land use (including pastures & fishing grounds)	3629.57	
	Outcome		
IIB.OC1	Number of hectares of farmland used more eco-friendly (including pastures & fishing grounds)	3629.57	
IIB.OC2	Number of hectares of farmland that became part of improved watershed/polder management (including pastures & fishing grounds)[6]	0	Cumulative figure is - 24,846 (From the start of BGP to June 18)
IIB.OC3	Number of hectares of farmland that agro-ecologically become more resilient to shocks (including pastures & fishing grounds)[7]	0	Cumulative figure is - 24,846 (From the start of BGP to June 18)

[6] Please see footnote 5

[7] Please see footnote 5

	Output		
IIB.OP1	Numbers of hectares of farmland directly reached (including pastures & fishing grounds)	3629.57	
IIB.OP2	Number of hectares of farmland indirectly reached (including pastures & fishing grounds)[8]	0	Cumulative figure is -24,846 (From the start of BGP to June 18)

C. Knowledge technology and innovation

		Time period
		July-December 2018 (Non-cumulative)
	Outcome	
IIC.OC1	Number of farmers that adopted research results/knowledge/new technologies (by male/female headed and age %<35 as well as Dutch origin or not)	11897

D. Food- and agribusiness

		Time period
		July-December 2018 (Non-cumulative)
	Outcome	
IID.OC1	Number of jobs supported in agricultural value chains (by male/female headed and age %<35)	205
IID.OC2	Number of value chains performing better	4
IID.OC3	Number of businesses co-investing in food & nutrition agribusiness activities (by Dutch/non-Dutch)	NA

E. Gender

		Time period
	Outcome	**July-December 2018 (Non-cumulative)**
IIE.OC1	Number of women empowered on food security /agriculture/ nutrition	6185
	Output	
IIE.OP1	Number of women that benefitted from FNS interventions	17902

[8] Please see footnote 5

Annex III - Building Organisations

Status of WMO formation and Registration, Catchment committee/Plan preparation and O & M Fund collection and Utilization under BGP (July –December 2018)

Polder	WMG		WMA		O&M Fund				Catchment		AGM		WAP		O&M Agreement signed
					Collection		Utilisation								
	Formation	Registration	Formation	Registration	WMG	Amount (Tk.)	WMG	Amount (Tk.)	Committee formation	O&M Plan preparation	WMG	WMA	WMG	WMA	
22	0	0	0	0	2	2330	0	0	3	2	12	0	12	0	1
26	0	0	0	0	3	5400	0	0	0	5	13	0	15	0	1
29	0	0	0	0	15	31500	9	26550	0	10	56	2	56	2	1
30	0	0	0	0	8	22422	7	11600	0	9	40	0	40	0	1
31 Part	0	0	0	0	2	10000	0	0	0	0	12	0	12	0	1
25	2	4	1	0	5	28780	0	0	0	0	43	0	61	0	0
27_1	0	5	0	0	2	13900	0	0	0	0	2	0	13	0	0
27_2	0	0	0	0	1	20	0	0	0	0	5	0	6	0	0
28_1	0	0	0	1	0	0	0	0	0	0	10	0	10	0	0
28_2	0	0	0	0	1	855	0	0	0	0	7	0	12	0	0
34/2 Part	0	1	1	0	1	8250	0	0	0	0	6	0	19	0	0
Sub-total:	2	10	2	1	40	123457	16	38150	3	26	206	2	256	2	5
43/1A	0	0	0	1	1	30000	1	2000	0	5	14	2	14	2	0
43/2A	0	1	0	0	8	23470	6	8340	6	0	20	1	20	1	0
43/2B	0	0	0	0	8	210100	5	207800	6	0	27	3	27	3	0
43/2D	0	0	0	4	5	128557	2	109420	0	15	27	5	27	5	0
43/2E	0	0	0	0	1	10000	0	0	0	6	12	2	12	2	0
43/2F	0	0	0	0	13	96890	13	61900	0	16	27	3	27	3	0
55/2A	0	1	0	0	11	131325	11	43820	12	0	13	1	13	1	0
55/2C	0	0	0	2	13	40140	5	33900	7	0	16	1	16	2	0
47/3	1	5	0	0	6	23880	3	15800	0	0	0	0	8	0	0
47/4	0	4	1	0	8	14520	2	9320	0	0	0	0	18	0	0
Sub-total:	1	11	1	7	74	708882	48	492300	31	42	156	18	182	19	0
2 & Ext.	0	5	0	0	8	47965	2	19600	12	6	57		57		0
Sub-total:	0	5	0	0	8	47965	2	19,600	12	6	57	0	57		0
Grand Total:	3	26	3	8	122	880,304	66	558,300	46	74	419	20	495	21	5

Details of Phasing out from Polders

	Polder	District	BWDB Division	Upazila	Area (ha)	No. of HH	People per Polder
Phase -1 (June 2018)							
Jun-18	22	Khulna	Khulna O&M-2	Paikgachha	1,630	2,133	9,001
Jun-18	26	Khulna	Khulna O&M-1	Dumuria	2,696	3,962	16,720
Jun-18	29	Khulna	Khulna O&M-1	Dumuria, Batiaghata	8,218	12,348	52,109
Jun-18	30	Khulna	Khulna O&M-2	Batiaghata	6,396	8,233	34,743
Jun-18	43/1A	Barguna	Barguna O&M	Amtali	2,675	5,129	22,619
Jun-18	43/2D	Patuakhali	Patuakhali O&M	Patuakhali Sadar	6,500	10,622	46,843
Jun-18	43/2E	Patuakhali	Patuakhali O&M	Patuakhali Sadar	1,650	2,317	10,218
Jun-18	43/2F	Barguna	Barguna O&M	Amtali	4,453	6,639	29,278
					34,218	**51,383**	**221,531**
Phase -2 (June 2019)							
Jun-19	31 Part	Khulna	Khulna O&M-2	Batiaghata	4,848	4,196	17,707
Jun-19	43/2A	Patuakhali	Patuakhali O&M	Patuakhali Sadar	5,182	8,434	37,194
Jun-19	43/2B	Barguna & Patuakhali	Patuakhali O&M	Galachipa, Patuakhali Sadar, Amtali	5,460	8,885	39,183
Jun-19	55/2A	Patuakhali	Patuakhali O&M	Patuakhali Sadar, Bauphal, Dashmina, Galachipa	7,166	13,966	61,590
Jun-19	55/2C	Patuakhali	Patuakhali O&M	Dashmina, Galachipa	6,275	10,173	44,863
Jun-19	2 & 2 ext*	Satkhira	Satkhira O&M-1	Satkhira Sadar, Assasuni	11,230	25,077	105,825
		Satkhira	Satkhira O&M-1	satkhira Sadar	1,370	3,052	12,879
					41,531	**73,783**	**319,241**
Phase -3 (June 2020)							
Jun-20	25	Khulna	Khulna O&M-1	Dumuria, Fultala	17,400	30,197	127,431
Jun-20	27/1	Khulna	Khulna O&M-1	Dumuria	3,765	4,071	17,180
Jun-20	27/2	Khulna	Khulna O&M-1	Dumuria	495	535	2,258
Jun-20	28/1	Khulna	Khulna O&M-1	Dumuria	5,600	5,012	21,151
Jun-20	28/2	Khulna	Khulna O&M-1	Dumuria	2,590	7,628	32,190
Jun-20	34/2 Part	Khulna	Khulna O&M-2	Batiaghata	4,900	11,227	47,378
Jun-20	47/3	Patuakhali	Kalapara	Kalapara	2,025	3,637	16,039
Jun-20	47/4	Patuakhali	Kalapara	Kalapara	6,600	11,853	52,272
					43,375	**74,160**	**315,898**

WMA Capacity Building under Blue Gold Program

Sl. No.	Topics	Activities	Responsible Person/ Organization
1	Strengthening WMA	Ensure participation of maximum members in all kinds of meeting;	- General Committee & - Executive Committee of WMA **Supported by** - CDF/PC/ZT
		Participatory decision making in meeting;	
		Discussion on WMA's Bye-Laws in meetings;	
		Arrange bi-monthly meeting;	
		Arrange quarterly general meeting;	
		Discussion with UP, BWDB & other Organizations on unsolved issues and take their assistance to solve problems;	
		Prepare and implement Annual Action Plan.	
2	O&M Activities	Share with the Catchment O&M Sub-Committees about their roles and responsibilities in O&M activities;	- EC, WMA - Catchment O&M Sub-Committee **Supported by** - CDF/PC/ZT
		Hand over O&M activities to Catchment O&M Sub-Committees;	
		Share / Consultation with UP about O&M Agreement;	
		Identify O&M problems with Catchment O&M Committees;	
		Assist Catchment O&M Sub-Committee to prepare & implement O&M plan	
		Identify O&M related problems and seek assistance to UP, BWDB, Upazila/District Adm. which was not possible to solve by them.	
3	Monitoring of WM/ O&M activities	Form Monitoring Committee and assist to provide necessary Training on their roles and responsibilities;	- EC, WMA - Catchment O&M Sub-Committee **Supported by** - CDF/PC/ZT - BWDB
		Evaluate and review report on Activities of Catchment O&M Sub-Committees and other related issues submitted by Monitoring Committee and take necessary action;	
		Assist Monitoring Committee to solve their problems.	
4	Generate O&M Fund and spending Fund	Receive 1% from WMGs (Service Charge from LCS money);	- EC, WMA - EC, WMG - Catchment O&M Sub-Committee **Supported by** - CDF/PC/ZT - UP
		Mobilize fund for O&M activities from respective WMGs/Local resources for execution of O&M plan through Catchment O&M Sub-Committees;	
		Collection money from UP & other sources for execution of Catchment O&M plan	
		Assist Catchment O&M Sub-Committees to prepare budget for execution of planned O&M activities.	
5	In- Polder Water Management	Encourage WMGs to identify the right scheme and apply for implementing small structures by co-funding;	- EC, WMA - EC, WMG **Supported by** - CDF/PC/ZT
		Assist and participate in meeting with beneficiaries on IPWM	
		Provide assistance and support to Blue Gold for selecting and implementing CAWM, CII, CLF, SSWMI, CA;	
		Assist WMGs to implement the work properly.	
6	Networking and Linkage	Keep liaison with BWDB, DAE, DoF, DLS, UP and other GO/NGOs for the interest of local stakeholders.	- President, G/S, WMA
7	Monitoring WMGs' Activities	Ensure participation of WMA leaders in WMGs' meeting.	- EC, WMA **Supported by** Polder Team
		Review the progress of different activities of WMGs (WAP) and give necessary advice for their development.	

Annex IV – Water Resources Infrastructure

Target for 2018-19 and Overall Progress

Work Items	Unit	RDPP Provision	Work Completed (up to Jun/18)	Target for 2018-19		On-going Work (as of June/18)	New work started (2018-19)
				Full	Part		
R/S of Embankment	km	330.00	257.68	50.87	17.93	62.80	11.74
Retired Embankment	km	20.58	2.84	4.00	11.50	8.84	-
Re-Excavation of Khal	km	545.00	160.43	227.23	231.46	82.32	11.52
Repair of Sluices	nos	186	59	39	83	09	05
Repair of Outlet/ Inlet	nos	235	191	15	-	-	-
Construction of Sluice	nos	31	05	03	22	03	03
Construction of Outlet	nos	17	-	10	07	-	-
Construction of Inlet	nos	08	02	03	-	01	-
Construction of Box Culvert	nos	32	-	18	-	01	01
Low Cost Bank Protection Works	km	L.S	-	4.00	-	0.478	0.478
Closure/ Cross-bundh	km	L.S	-	-		0.135	0.135

Landless contracting societies (LCS) work for 2018-19

Division	No. of LCS Contract			
	Carried over Work		Plan for 2018-19	
	R/S Embkt	R/E Khal	R/S Embkt	R/E Khal
Patuakhali O&M	3	20	3	9
Patuakhali WD	2	7	3	7
Barguna O&M	0	0	0	0
Khulna O&M - 1	0	2	1	30
Khulna O&M - 2	10	6	5	13
Satkhira O&M - 2	6	1	2	3
Total	21	36	14	62

Annex V – Reports and videos

No	Name	Date
Agro Insight Report		
AIR	BGP Communication interventions and extensions method	Mar, 2018
Inception Report		
IR 01	Blue Gold Inception Report, November 2013	November 2013
Annual Work Plan		
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
Progress Reports		
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
HYPR 03, 2018	Progress Report January – June 2018	July, 2018
Technical Reports		
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

No	Name	Date
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
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	TR 20 Strategic Plan for Community Water Management TR20A: BGP Strategic Plan CAWM 2018-2019	July, 2016 September, 2018
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
TR 25	Improving Productivity of land in Bangladesh Outcomes for Blue Gold Interventions	29oct, 2018
Technical Notes		
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 20	Cycle 9 FFS	4 April, 2018
TN 21	Report on 10th Cycle FFS	25 Sep, 2018
Workshop & Training Report		

No	Name	Date
Training Module Developed and compiled		
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
Training Technical Note		
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
PDP Reports		
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
Working Paper		
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

No	Name	Date
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 WP8B: Participatory Monitoring April-May 2017 WP8C: Participatory Monitoring Oct-Nov 2017 WP8D: Report on Participatory Monitoring WP8E: Report on Participatory Monitoring	 20 Feb, 2017 Feb, 2017 Oct, 2017 5 Apr, 2018 Apr-May 2018
BGP – WP9	WMG Tracker Report-June 2017 WP9A: June 2017 WP9B: WMG Tracker Report - December 2017 WP9C: WMG Tracker Report to MARCH 2018 WP9D: WMG Tracker Report up to JUNE 2018	22 Nov, 2017 22 Nov, 2017 Apr, 2018 20 June, 2018 27 Aug, 2018
Annual Review Mission Action Plan		
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
ARM 04	Aide Memoire – Annual Review Mission 2017	26 Feb, 2018
ARM 05	Aide Memoire – Annual Review Mission 2018	11 Jan, 2019
Mid-term Review Mission Report		
MTR 01	Aide Memoire Annual Review Mission Blue Gold Program	Sep, 2014
MTR 02	Aide Memoire: Mid Term Review Blue Gold Program	Oct, 2015
Development Project Performance		
DPP 01	Blue Gold Program (BWDB component): Program for Integrated Sustainable Economic Development by Improving the Water and Productive Sectors in Selected Polders	March 2013
DPP 02	Blue Gold Program (BWDB component): Program for Integrated Sustainable Economic Development by Improving the Water and Productive Sectors in Selected Polders.	May 2013
DPP 03	Development Project Proposal (DPP) for Transfer of Technology for Agriculture Production under Blue Gold program (DAE Component).	May 2013
Innovation Fund		
IF 00- IF10	10 reports on Innovation Fund	2014-2017
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-Insect for all-Feasibility-study-Ento-Feed	

No	Name	Date
IF 17	No9 -Promoting Dutch SME entrepreneurship	3rd Dec, 2017
IF 18	Feasibility Study Renewable Energy	
IF 19	Cage aqua geoponics	
IF 20	Ecopond and Empowerment Project II	
IF 21	Developing low cost feed and transferring the technology to relevant actors for sustainable intensification of Tilapia Culture	30 Sep, 2017
IF 22	Feasibility study report on Women's Business Centre's in waterlogging areas of SW Bangladesh	29 Oct, 2017
IF 23	Blue Gold Innovation Challange	
IF 24	Moringa Business Plan	
IF 25	Feasibility Study: Coomercializing 'KRISHE' – E Agriculture Services in Blue Gold Polder Areas	Feb, 2018
IF 26	Feasibility Study Report: Sustainable Water Management Through Indigenous Finance & Technology	17 April, 2018
IF 27	Feasibility study on augmenting homestead *Pangasius* aquaculture productivity in three Upazillas of Patuakhali through community participation	21 May, 2018
IF 28	Revised Final Report BSMRAU Pen Culture	March, 2018
M&E Report		
M&E 06	Mid-term Report EO for M&E of Blue Gold Intervention	28 Sep, 2018
Journal		
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
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
News Letter		
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

No	Name	Date
NL 15	BGP Barta Issue-11	March, 2018
NL 16	BGP Barta Issue- 12	8 Aug, 2018
NL 17	BGP Barta Issue- 13	17 Oct, 2018
Value Chain Analysis Report		
VCAR	Mustard Value Chain Analysis Report	20 Feb, 2017
Digital Elevation Model		
DEM 01	Final Report on Preparation of DEM & Delineation of Hydrological Boundaries for Polder-2, 26 & 31-part	July 2015
DEM 02	Final Report on Development of Digital Elevation Model (DEM) and Delineation of Catchment boundaries for 2 Polders (55/2A & 55/2C) of Blue Gold Program	Nov 2015
DEM 03	Final Report on Development of Digital Elevation Model (DEM) and Delineation of Catchment boundaries for Polders (43/2A, 43/2B, 43/2D & 43/2E) of Blue Gold Program	Nov 2016
DEM 04	Final Report on Development of Digital Elevation Model (DEM) and Delineation of Catchment boundaries for Polders (43/1A, 43/2F) of Blue Gold Program	Nov 2016
DEM 05	Final Report on Development of Digital Elevation Model (DEM) and Delineation of Catchment boundaries for Polder 22 of Blue Gold Program	Nov 2016

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	https://www.facebook.com/bluegoldprogram/videos/648147021898302/
2.	FFS member interviewed by Dr. Munir	FFS	15/09/2014	https://www.facebook.com/bluegoldprogram/videos/761455450567458/
3.	Beef fattening FFS field day	FFS	18/09/2014	Desh TV
4.	Paschim Choto Bighai WMG Election, 22 October 2014	Organizational	03/11/2014	https://www.facebook.com/bluegoldprogram/videos/784432451603091/
5.	Nandipara Madarbunia WMG Election	Organizational	06/01/2015	https://www.facebook.com/bluegoldprogram/videos/820267171352952/
6.	Destruction by river erosion	WRM	19/01/2015	https://www.facebook.com/bluegoldprogram/videos/826375310742138/
7.	Water management for development	WRM	21/01/2015	https://www.facebook.com/pg/bluegoldprogram/videos/
8.	Blue Gold Program Orientation Video	General	05/02/2015	https://www.facebook.com/bluegoldprogram/videos/833789133334089/
9.	Blue Gold Mela (fair) 2015	Agriculture	09/03/2015	https://www.facebook.com/bluegoldprogram/videos/847578588621810/
10.	Dutch Minister Visiting Blue Gold Program at Polder 43_2A	Special visit	11/07/2015	https://www.youtube.com/watch?v=QLDSovOmApU&feature=youtu.be
11.	Earthwork technique	WRM	26/08/2015	https://www.facebook.com/bluegoldprogram/videos/927276007318734/
12.	Semi intensive fish culture	FFS	27/09/2015	https://www.youtube.com/watch?v=PxWUYhdzoA4&feature=youtu.be
13.	Women empowerment through local poultry production	FFS	27/09/2015	https://www.youtube.com/watch?v=mJ0xuEehCyU&feature=youtu.be
14.	Broody hen is drinking water while sitting in a Hazzal	FFS	30/12/2015	https://youtu.be/u30XNgVC-ec
15.	WMG exchange visit	Horizontal Learning	17/01/2016	https://www.facebook.com/bluegoldprogram/videos/992210057491995/
16.	Sugar beet	Agriculture	27/02/2016	On aired through 'Mati O Manush' (BTV)
17.	Strawberry demo	Agriculture	28/02/2016	On aired through 'Mati O Manush' (BTV)

Serial No.	Title	Category	Date of publishing	Location
18.	WMG Exchange visit		27/03/2016	https://youtu.be/GFH73r3q1-k
19.	Drama for Horizontal Learning	FFS	24/04/2016	https://www.facebook.com/bluegoldprogram/videos/1052306724815661/
20.	Collective Action	WRM	26/04/2016	https://www.facebook.com/bluegoldprogram/videos/1053461174700216/
21.	Poultry FFS Farmer Field Day: Foyjulapur FFS	FFS	27/04/2016	https://www.facebook.com/bluegoldprogram/videos/1054088674637466/
22.	Water melon	FFS	06/05/2016	On aired through 'Mati O Manush' (BTV)
23.	Blue Gold (নীল সোনা) Popular Theatre	FFS	12/05/2016	https://www.facebook.com/bluegoldprogram/videos/1063282707051396/
24.	Everyone came from water (Music video)	General	21/08/2016	https://www.youtube.com/watch?v=U2wBRa5D3nE&feature=youtu.be
25.	There is no religion except work (Music video)	General	21/08/2016	https://youtu.be/wODsHmm6gWk
26.	Beef fattening	FFS	28/08/2016	On aired through 'Mati O Manush' (BTV)
27.	Dairy farmers field school	FFS	29/08/2016	On aired through 'Mati O Manush' (BTV)
28.	Summer Tomato, Satkhira	Agriculture	30/08/2016	On aired through 'Mati O Manush' (BTV)
29.	BGP core message through popular theatre	General	31/10/2016	https://youtu.be/gDqznlFm-Gw
30.	Blue Gold business messages	FFS	31/10/2016	https://youtu.be/ieb8rFwaSfE
31.	Agomoni a CAWM experience	Agriculture	15/11/2016	https://youtu.be/qVWHCmJeR84
32.	Fish Harvesting	FFS	24/11/2016	https://www.facebook.com/bluegoldprogram/videos/1212047958841536/
33.	Agricultural stories in Blue Gold Program	Agriculture	08/01/2017	https://www.facebook.com/bluegoldprogram/videos/1264652133581118/
34.	Water Infrastructure, Blue Gold	O&M	05/02/2017	https://www.facebook.com/bluegoldprogram/videos/1292243807488617/
35.	Business Development, Blue Gold	General	05/02/2017	https://www.facebook.com/bluegoldprogram/videos/1292247077488290/
36.	Pork production through Hygienic Pig Farming	Innovation Fund	03/06/2017	Documented by Nice Foundation
37.	Crop rotation	Agriculture	05/08/2017	Boishakhi TV

Serial No.	Title	Category	Date of publishing	Location
38.	Increase Cropping Intensity at BGP area	Agriculture	14/08/2017	https://www.facebook.com/bluegoldprogram/videos/1478873002159029/
39.	Re-excavation of Amod Khali khal, Satkhira	WRM	09/11/2017	https://youtu.be/-P2X1LHiEbE
40.	Amod Khali Khal re-excavated at Sathkira	WRM	15/11/2017	https://www.facebook.com/bluegoldprogram/videos/1558865664159762/
41.	Crop Cutting Festival, 2017 Patuakhali	Agriculture	07/12/2017	https://www.facebook.com/bluegoldprogram/videos/1580055562040772/
42.	Pen culture, Satkhira	Innovation fund	08/12/2017	https://youtu.be/Vp-2qhczgV4
43.	Pen culture at polder 2, Satkhira	Innovation fund	09/12/2017	https://www.facebook.com/bluegoldprogram/videos/1582531498459845/
44.	Crop Cutting Festival 2017, Khulna	Agriculture	11/12/2017	https://www.facebook.com/bluegoldprogram/videos/1584164151629913/
45.	Session facilitation on market orientation by CDF at Khulna	FFS	11/12/2017	https://www.facebook.com/bluegoldprogram/videos/1584537138259281/
46.	Blue Gold DAE Fair 2017	Agriculture	20/12/2017	https://www.facebook.com/bluegoldprogram/videos/1593008177412177/
47.	EKN visit Khulna	General	21/12/2017	https://www.facebook.com/bluegoldprogram/videos/1593758870670441/
48.	Crop cutting festival	Agriculture	20/01/2018	Boishakhi TV
49.	FFS farmer awarded while observing Livestock Service week organized by District Livestock Office at Patuakhali	Recognition	28/01/2018	https://www.facebook.com/bluegoldprogram/videos/1632365310143130/
50.	Local poultry production	FFS	30/01/2018	On aired through 'Mati O Manush' (BTV)
51.	ToF course for CDF at kustiya 1st batch	Capacity Dev.	26/02/2018	https://youtu.be/l-Aqsib3VKE
52.	Training of Facilitator course for CDF, BGP	Capacity Dev.	27/02/2018	https://www.facebook.com/bluegoldprogram/videos/1661988843847443/
53.	Women empowerment through local poultry production	FFS	27/02/2018	On aired through 'Mati O Manush' (BTV)
54.	Experience Share on women empowerment through Backyard Poultry rearing	FFS	04/03/2018	https://youtu.be/-PnuR30-GNc
55.	International Women's day observed by BG	Women Empowerment	08/03/2018	https://youtu.be/zFhruEgN2Yw

Serial No.	Title	Category	Date of publishing	Location
56.	Internal water management polder 43/2F	WRM	26/03/2018	https://youtu.be/pH-DZQ_OuM0
57.	Re-excavation of Amkhola khal, Patuakhali	WRM		
58.	Pen Culture	Innovation fund		Channel 9
59.	FT Refreshers Training on FFS modules	FFS	07/05/2018	https://www.facebook.com/bluegoldprogram/videos/1734654133247580/
60.	World Environment Day 2018 observed by Blue Gold Program	General	12/06/2018	https://www.facebook.com/bluegoldprogram/videos/1770875409625452/
61.	Poultry Module Learning Message for horizontal learning	FFS	14/08/2018	https://www.facebook.com/bluegoldprogram/videos/2347589398602233/
62.	Cattle Rearing Message for HL	Capacity Dev.	15/08/2018	https://www.facebook.com/bluegoldprogram/videos/271829140089788/
63.	Homestead Module Message for HL	Capacity Dev.	15/08/2018	https://www.facebook.com/bluegoldprogram/videos/1006095589570924/
64.	Fish Module Learning Message	FFS	15/08/2018	https://www.facebook.com/bluegoldprogram/videos/1997758250269130/
65.	Scaling up summer tomato cultivation at polder 2, Satkhira	Agriculture	19/08/2018	https://www.facebook.com/bluegoldprogram/videos/227676174592585/
66.	Farmer Field day on Beef fattening Module at Khulna and Patuakhal	FFS	28/08/2018	https://www.facebook.com/bluegoldprogram/videos/489245641575390/
67.	Farmer Field Day on Fruit Module	FFS	06/09/2018	https://www.facebook.com/bluegoldprogram/videos/2350852151597742/
68.	The training course on Capacity Building for Catchment Committee Facilitators on Catchment O&M Planning Process	Capacity building	16/09/2018	https://www.facebook.com/bluegoldprogram/videos/303611967132147/
69.	PCD visited Khulna (14-16th September 2018)	General	17/09/2018	https://www.facebook.com/bluegoldprogram/videos/282393569038252/
70.	Agreement Signing Ceremony on O&M in Between WMA & BWDB	WRM	05/10/2018	https://www.facebook.com/bluegoldprogram/videos/328298814642955/
71.	Bangla vision broadcast a news on Bashok leaf business at Satkhira	SVC	29/10/2018	https://www.facebook.com/bluegoldprogram/videos/339895003449480/