



Bangladesh Water Development Board (BWDB)



Kingdom of the Netherlands



Department of Agricultural Extension (DAE)



Half-Yearly Progress Report July to December 2020



Socioconsult Ltd.
for sustainable development



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Half Yearly Progress Report

July to December 2020

The Blue Gold Program

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Issue and Revision Record

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2	17 January 2021		Dr Sharmin Afroz		Final draft of HYPR
3	21 January 2021	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
HL	Horizontal Learning
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	Upazilla 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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1 Summary

The Blue Gold Program (BGP) aims to reduce poverty and stimulate economic development in 22 polders in four coastal districts of Bangladesh through improved water resource management and enhanced agricultural productivity and profitability. This report presents the progress of the BGP between July-December 2020. The main achievements during the reporting period are as follows:

Record construction achievement in FY 2019/20: A record total contract expenditure of BDT 803 million was made during the FY 2019/20 season for works to strengthen the water infrastructure serving the 22 polders under the Blue Gold Program. By a significant margin, this is the highest contract expenditure during the seven years of implementation of Blue Gold, an outstanding achievement by BWDB and the civil engineering contractors. The previous highest total in FY 2018/19 was BDT 643 million (refer Annex D Table 3). This brings the cumulative total expenditure to end-June 2020 to BDT 2,433 million, which is 77% of the total defined in MoWR's revised Development Project Proforma (of September 2020). Polder safety against tidal floods, storm surges, river erosion and salinity has been greatly enhanced through embankment strengthening, breach closing and erosion protection measures, and the re-excavation of primary canals and some major secondary canals, and rehabilitation of water management structures (sluices, outlets etc) now allows water levels inside the polders to be controlled throughout the year, as well as creating enormous scope for in-polder water management (IPWM).

Uptake of small-scale water management infrastructure: There has been an enthusiastic response from polder communities to small-scale water management infrastructure made popular through the community-led water management (CAWM) program but expanded significantly through the small-scale water management infrastructure (SSWMI) initiative. SSWMI funds are provided to successful applications prepared and submitted by WMGs. Grants to a cumulative total of 143 WMGs amounting to BDT 22.3 million (equivalent to approximately €223,000 or €1,570 per WMG) have been provided to end-December 2020 to assist with khal re-excavations (77% of funds), and the construction of gated culverts (23% of funds).

Commercialisation of water hyacinth products – an innovation by Khulna University: Starting from January 2019, Khulna University assisted communities in Dumuria, Khulna (in Polder 25) to process water hyacinth into art paper, and to use hyacinth in the production of compost. On 16th November 2020, Khulna University hosted a milestone event to summarise their achievements through the Blue Gold Innovation Fund towards commercialising water hyacinth products. The event was attended in person by the Vice Chancellor and Pro Vice Chancellor and selected university colleagues, and by a virtual audience which included Blue Gold representatives. The event included the award of prizes to five artists whose paintings (on water hyacinth paper) had been selected from the 34 competition entries.

DAE decision to mainstream in-polder water management across the coastal zone The 8th DAE Project Steering Committee meeting on 10th September 2020 recommended the continuation of BGP activities in a future project. On 17th November 2020, DAE Director General appointed PD DAE Humayoun Kabir as Focal Point to organise a feasibility study for the new project, prepare the DPP in coordination with DAE's Planning, Project Implementation and ICT Wing, and to assist in obtaining DPP approval. A mandate for preparing the Development Project Proforma for a new

project with GOB funding was issued on 2nd December 2020. A committee headed by ADG (Project Preparation) had been appointed for the feasibility study.

Capacity building for self-assessment of WMG performance: During the post-project period, information will be required by WMAs - the key players for water management in the polders - on the progress and performance of the constituent WMGs, so that they are well-placed to take decisions on management, operation and maintenance of infrastructures within polders. With the support of BWDB's Office of the Chief of Water Management (OCWM), the TA team initiated an arrangement by which WMAs and WMGs collect and enter data about their activities, status and progress, and upload the data to a web-platform. An IT solution provider was contracted to develop a web-based dashboard, built upon an android mobile application and a responsive web-panel. The dashboard has been developed and the WMOs can now collect data through and view results on their mobile phones; the monitoring results can also be viewed in web-panel. Caution has been taken to minimise data collection, but sufficient to generate the information required for management decisions by WMAs. The first round of self-monitoring (i.e. data collection by WMOs) has been done in October - November 2020. 507 out of 511 WMGs and, 35 out of 36 WMAs participated in the self-monitoring exercise.

2 Progress against 2020/21 Annual Work Plan

2.1 Building organizations and WMO capacity Building

2.1.1 Building Organizations

Blue Gold has continued to support sustainable participatory water management (PWM) through WMOs. The following activities have been completed during the reporting period:

- 35 WMAs reviewed progress with WMG Action Plans (WAPs)
- WMAs reviewed 190 Catchment O&M plan and its' implementation process.
- Polder team participated in Annual General Meetings of 509 WMGs and 35 WMAs.
- 35 WMAs have developed linkage with different GO/NGO and Private agencies.
- Identified good practices and arranged horizontal learning visits.

2.1.2 WMO Capacity Building

During the reporting period, Blue Gold worked to strengthen WMOs as self-sustaining organizations, through the activities shown in Table 1.

Table 1: Capacity building of WMOs

Sl	Activities	No of batch	Participants	No of participant	Objectives
1	ToT on WMO Health Dashboard APP	2	CDF, CoCo & BWDB Xos	46	Two-day ToT course on "WMO Health Dashboard APP" organised to develop knowledge/skills of BWDB XOs and Blue Gold polder team on the Monitoring App. to train WMOs to use the App for self-monitoring.
2	WMO Health Dashboard App	51	WMG & WMA representatives	1082	A one-day training on "WMO Health Dashboard APP" for WMO members on organizational health monitoring systems. The WMOs will quarterly self-monitoring of their performance.
5	Gate operator training - on the job training	45	Gate operator & WMA members	334	To improve knowledge and skills on gate operation and maintenance through practical through on Job training (OJT).
6	Crop cutting, festival & experience sharing	01	LGI, BWDB, WMG members, school teachers	97	The objective was to disseminate the bumper yield and cultivation techniques of BRRRI dhan 52 through CAWM interventions in polder 47/3 & 47/4 and share benefits of establishing partnership with the UPs and line departments of GoB for getting support for water management conflict resolution.
7	Review workshop on WMA capacity building & catchment plan	10	UP, BADC, DAE, LGED, BWDB, NGO & private sector.	197	Re-assessment of WMA capacity "as a self-sustaining organization" through review of the progress of implementation WAP and catchment plans

2.2 Water Management

2.2.1 Water safety infrastructure

Polder safety against tidal floods, storm surges, river erosion and salinity has been enhanced through embankment strengthening, breach closing and erosion protection measures. The RDPP has provision for 330 km of embankment, out of which 325.7 km embankment has already been completed (for example, Annex F Picture 9). Out of a total program area of 119,124 ha, some 110,000 ha of land in 22 polders is already under improved safety, with the target of providing protection to the full area by end-June 2021.

2.2.2 Water management infrastructure

Under contracts awarded by BWDB, re-excavation of primary canals and some major secondary canals, and rehabilitation of water management structures (sluices, outlets etc) – for example, see Annex F Picture 10 - now allows water levels inside the polders to be controlled throughout the year, as well as creating enormous scope for in-polder water management (IPWM) and community-led agricultural water management (CAWM) within the polders.

During the monsoon and post-monsoon season of the reporting period, the TA team has focused on checking estimates so that tenders can be finalised in preparation for the award of new contracts for the 2020/21 construction season. The target for completing the vetting of estimates by 31st December has been largely achieved (refer to Annex D Table 2), apart from some lengths of retired embankments, low cost bank protection, khal re-excavation and flood damage repair works.

During the monsoon and post-monsoon seasons (July to December), no new earthworks can be undertaken, and only limited progress with construction activities for carried-over and new contracts is possible. For this reason, progress with physical works has been relatively low during the reporting period (see Annex A Table 1).

Annex D Table 1 summarises the work which has been achieved during the reporting period, for which interim payment certificates amounting to BDT 44.42 million were approved. Specific achievements at end-December 2020 were the completion of 15 of 29 regulators, 8 of 17 outlets, the supply of RCC pipes, and the installation of gates.

Annex D Table 3 provides a summary of expenditures by season for each of the sixteen items defined in the RDPP. This shows the cumulative total expenditure on infrastructure to June 2020 is some 77% of the total allocation, with a balance of BDT 709 million remaining. The expenditure during FY 2019/20 has been BDT 803 million, 33% of the cumulative total infrastructure expenditure of BDT 2,433 million.

2.2.3 In-Polder Water Management

Where infrastructure works are complete, unobstructed flow of water is made possible through the cleared main *khals*, and the rehabilitated sluices/outlets allow improved water regulation. Previously, many areas were either unable to be drained and remained inundated, or – conversely - suffered from water shortages as their main outlets and inlets were obstructed or poorly functioning. Now, there is the potential for WMGs to resolve water management problems by using field channels and minor structures to connect to main canals. Because of improved water

management - especially early drainage during post monsoon and rapid drainage after post-germination rains in February – the planting of early *rabi* crops is now possible. Moreover, due to reduced flooding and improved water supply during monsoon, *aman* production has also increased.

Within the polders, the following initiatives have allowed farmers to have greater control over water levels, thereby encouraging higher levels of investment in agriculture through cropping intensification and the adoption of higher-value crops.

(a) Community-Led Agricultural Water Management (CAWM) aims to improve sub-catchment agricultural production and profitability by an integrated approach. CAWM introduces improved cropping varieties, enhanced crop (and crop-fish) practices in combination with timely and well-coordinated drainage of fields and khals by the involved WMG members. Attention is paid to operational coordination at the catchment level (sluice), as well as conflict management at WMA level to make sure khal blockages are removed and water can drain smoothly (see example Annex F, Picture 7). CAWM improves the local situation with respect to water management, and 75 CAWM areas have been used to demonstrate the benefits of better local water management, through horizontal learning. During July to December 2020, BGP implemented 17 no. CAWM in the 3 Zones (Patuakhali-10 +Khulna-5 + Satkhira-3, see Table-2).

Table 2: Zone wise CAWM summary July to December 2020

Zones	WMG members	CAWM members	CAMW land/ha	CAWM Yield ton/ha	Non CAWM Yield ton/ha	SSWMI Yield ton/ha	Non SSWMI yield ton/ha
Patuakhali	2863	524	200	5.14	3.03	5.00	4.02
Khulna	1634	393	100	5.35	4.51	5.10	3.95
Satkhira	635	189	40	6.51	4.99	4.93	4.05
Total BGP	5,132	1,106 (22%)	340	5.66	4.18	5.01	4.15

The CAWM initiative started in 2016 when the HYV aman land coverage was only 30% in Patuakhali. Since 2016, the CAWM area has increased every year, and at present, HYV aman coverage has increased to 70% of the net-cropped area (41,669 ha) resulting in a significant increase in production (average yield of local aman paddy is 3 ton/ha as compared to 5 ton/ha for HYV aman – see example in Annex F, Picture 4.)

Challenges faced by farmers included heavy rainfall during rice flowering stage were mitigated by WMGs in CAWM areas, by draining excess water from the fields by operating the sluices/outlets and taking prompt action to repair breached embankments and damaged infrastructure. However, in other areas, farmers lost their transplanted rice because of waterlogging and were forced to transplant aman seedlings on two or three occasions. Although COVID-19 has affected livelihoods, farmers remained active. In CAWM areas, collective purchase of fertilizers and pesticides helped to reduce input costs.

In Polder 29, in the area drained by the Dolvanga Khal, five MWGS under the leadership of Gajendrapur Uttar WMG, have campaigned for assistance in overcoming a water management problem. Farmers wish to retain water to irrigate land at the end of the monsoon season and during the Rabi (dry) season. Most plots have too little water at the end of the Kharif II (wet) season and during the Rabi (dry) season, and suffer from saline surface water intrusion since the gates of Telikhali Sluice remain open for most of the dry season to serve other interests. With Blue Gold support, a two-vent gated structure in the Dholvanga Khal was constructed and commissioned at end-October 2020 (see Annex F Picture 2) at a total cost of BDT 2.6 million (equivalent to €26,100). The five WMGs have formed an 11 person committee to ensure that the operation arrangements serve the interests of all five WMGs.

- (b) **Small-Scale Water Management Infrastructure (SSWMI)** provides financial assistance to WMOs to improve the drainage and irrigation conditions in their sub-catchments. The WMOs submit proposals for secondary and tertiary infrastructure which are evaluated by Blue Gold, and - if approved – provided with a grant which covers part of the overall cost. A low-level involvement by the TA team includes evaluation of the applications by WMOs for financial assistance, field checks before approval of payment during implementation of the infrastructure, and then follow-up visits to monitor the changes in farming practices resulting from the initiative. Since 2018/19, funding through SSWMI has allowed farmers to plan, design and implement *beel/kola/crop* field-based water management. Table 3 below shows that grants to a cumulative total of 143 WMGs amounting to BDT 22.3 million (equivalent to approximately €225,000 or €1,570 per WMG) have been provided to end-December 2020 to assist with khal re-excavations (77% of funds), and the construction of gated culverts (23% of funds).

Table 3: Progress of SSWMI up to December 2020

Achievement	as of December 2020
Contracted WMGs	143
Total Contracted Value	BDT 22.3 million (equiv €225,000)
Gated Pipe Culverts	75
Gated Box Culvert	8
Khal Re-excavation	124 (73 Km)
Others (Fallboards & drain)	1
Overall achievement	98.6%

- (c) **Catchment plans** prepared by WMA O&M sub-committees (also known as ‘catchment committees’) aim to identify immediate achievable actions so that water levels can be optimised for crop production. WMAs also use their catchment plans to seek financial support for proposed infrastructure improvements from Union Parishads, BWDB, DAE, LGED and BADC. In June 2020, WMAs finalized 190 catchment plans for the period from July 2020 to June 2021. During the reporting period, follow-up visits were made by polder teams to 190 catchment committees to assess the progress with the catchment plans. Some 55% percent of the targeted actions had been achieved, including the removal of water hyacinth, clearance of silt (see example Annex F, Pictures 1 and 5), removal of cross dams and net-patta,

painting of gates, fixing wooden gates, excavation field channels, removal of illegal occupancy around sluice gates and canals, as well as the routine operation and maintenance of sluice gates (see example in Annex F, Picture 6).

2.3 Value Chain Activities

During the reporting period, the COVID-19 pandemic has impacted on Value Chain (VC) activities to varying degrees. Field staff took account of the health, safety and security of all concerned, and restricted their activities to those where the safety of all participants could be insured.

Blue Gold implemented 30 farmer field schools (FFSs) for poultry under Cycle 14 within the reporting period. Moreover, 75 FFS-trained vegetable farmers were motivated in Patuakhali to grow winter vegetables. Many WMOs established linkages with government and private agencies – some obtained 12 types of winter vegetable seeds for 1,313 WMG members (farmers) from DAE, which helped to increase homestead income in the polder areas. A report from external consultant for impact assessment of poultry FFS was completed and submitted to the Director General of the Department of Livestock Services (DLS). Maps showing FFS interventions for each polder have been prepared.

Despite challenges, field staff were able to achieve the targeted activities relevant to market development whilst avoiding risks related to the pandemic. A few planned activities such as those requiring residential training were deferred, but most implementation activities continued. Two training batches in post-harvest management of vegetables were conducted in Khulna and Satkhira. 50 participants (12M, 38F) participated in the training program where DAE officials, *arotdars* and experts took sessions covering product quality, harvesting, packaging, transporting and selling techniques. Resource Farmers (30), engaged in FFS implementation, visited different input and output markets to learn about market dynamics, linkage building with market actors and enhanced market literacy. Capacity building training programs were organized for those resource farmers as well. Workshops on ‘collaborative farming’ and ‘farmer promoter approach’ organized with necessary caution to strengthen value chains. Lal Teer seed company Ltd, United Seeds and A R Mallick Seed Company established 34 demonstrations with quality seeds, including tomato, cauliflower, knolkhol and bottle gourd. As part of market development activities, 375 farmers linked with 11 poultry input suppliers through poultry FFS sessions. Through ‘input provider’ session, farmers made aware about feed, medicine and vaccines (for example Annex F, Picture 8). On the other hand, ten egg collectors established effective linkages with 375 participants from 15 WMGs. Now farmers can confidently sell their surplus eggs to local egg collectors. Moreover, 36 WMGs collectively purchased 3 MT of boro hybrid rice seed and 4.7 MT of high yielding rice seed in Khulna alone. In addition, work on the basok value chain (VC) has provided collectors in Polder 2 who supply Square Pharmaceuticals with a reasonable profit – after recovering from the transportation problems which affected collections in March/April 2020.

Farmers have been affected by market obstructions and other restrictions. Buyers and intermediaries have had difficulties in travelling to villages to purchase produce. Farmers were encouraged to stay at home rather than attend market and were therefore not able to purchase inputs from agro-input retailers. Due to the COVID-19 pandemic, the demand-supply situation was inconsistent. As a result, price fluctuation reduced farmer’s profit. It is understood that if

development activities can be planned as per farmers' needs, designing implementing strategy along with them, implementation during crisis is not impossible.

2.4 Innovation Fund

2.4.1 Activities

During this period, the Blue Gold Innovation Fund (BGIF) project ended. The period saw the closure of the remaining two projects- the CIMMYT Mung and KU Water Hyacinth projects. The preparation of a BGIF booklet is at a final stage.

CIMMYT Mung: During this period, CIMMYT prepared and shared the booklet as part of their final delivery. They had organized closing and sharing webinar due to complexities related with pandemic. They have also submitted final report and final payment made.

Khulna University Water Hyacinth: Khulna University had adapted well during the COVID pandemic, and organized an 'art competition' to promote 'water hyacinth art paper' among painters. In November 2020, there was a project closing webinar and prize awarding program.

2.4.2 ICCCAD evaluation

After prolonged discussions with the International Centre for Climate Change and Development (ICCCAD) about an impact assessment of the Blue Gold Innovation Fund (BGIF), a decision against proceeding because of limitations of time and resources was made in December 2020.

3 Achievements against Framework

3.1 Achievements to date

Blue Gold aims to secure livelihoods for 185,000 households in 22 coastal polders. To achieve this, it has been working with the polder communities to establish and strengthen water management organisations to be effective drivers for change and for economic growth. BGP has worked for developing both the infrastructure and mobilizing the coastal communities and institutional development on different levels (e.g. catchment, polder) in the working areas. The partnerships established are between the community, relevant departments of the Government of Bangladesh and other relevant stakeholders. At present, some 80% of WMGs rated themselves as effective, while 90% of the WMGs are active in managing water resources and contributing to minor maintenance tasks.

Blue Gold aims to reduce poverty and improve food security through equitable water management, agricultural development and economic growth. To protect the land from tidal and storm surges, improve draining and irrigation, investments have been made in water management infrastructure rehabilitation and improvement. As of June 2020, 77% of targeted infrastructure rehabilitation works have helped to reduce waterlogging, salinity and flooding in 80% of the areas and increased availability of water for irrigation in 90% of areas to thus reduce crop losses and increase agricultural production.

Through over 2,300 farmer field schools (FFSs) - 1,145 arranged by DAE for field crops and 1,163 arranged by the TA for homestead-based production - Blue Gold has developed farmers' skills and knowledge in improved technologies to thereby increase productivity in farm sector (crops, fisheries, poultry and livestock) and to introduce better nutritional practices. As a result, cropping intensity has increased by 41% as compared with the pre-project situation, and yields of different crops have increased considerably. On the other hand, homestead-based production has provided income for women from poorer households –through increased production of vegetables, fish and poultry, and livestock. BGP also has been working for collective action for marketing and input procurement, value chain development. These interventions ensured better linkages with buyers of products and suppliers of inputs, in turn, resulted in improved income for the farmers. Now a considerable number of farmers are linked with collective actions and the private sectors. Gender equity has also seen as a crucial goal for the program. This has achieved by ensuring gender is taken into account throughout the different results and activities defined. For the detail achievements of BGP against log-frame indicators (refer Annex B, Table 1).

3.2 Endline Survey 2020

An impact assessment or endline survey aims to measure changes in the lives and livelihoods of the coastal communities of BGP polders. The Impact assessment study entails collecting primary data from BGP polders locations and analysing them relative to the baseline surveys Phases 1 and 2 carried out in 2014 and 2017, and to thus measure the outcomes of BGP and its impacts on the livelihood of coastal communities of Bangladesh. Out of the seventeen polders surveyed During Baseline Phases 1 and 2, nine polders will be covered in the endline survey. The impact survey is using a panel sample, interviewing the same households as those in the baseline survey. The impact survey covers 92 villages and mouzas from nine polders, with a target number of 4,111

sample households and a required minimum of 3,719 sample households. Along with this, 20 qualitative interviews for an in-depth understanding of the quantitative findings. Although data collection was planned for April to June 2020, data collection was postponed because of COVID-19 to September to October 2020. The survey data was received in early-December 2020 and is currently being analysed. It is planned that the report of the endline survey will be available by end-March 2020.

3.3 WMG survey 2021

In response to the recommendation the Annual Review Mission 2017 to document ‘economic changes and income increases’, an outcome study was conducted in 2018 in 14 polders to see the outcomes of BGP interventions. The findings were reported in “Technical Report 25: Improving the Productivity of Land in Coastal Bangladesh: Outcomes of Blue Gold Interventions 2013-2018”. In 2019, the survey was repeated with all WMGs of 22 polders. The findings were reported in “Technical Report 26: Improving the Productivity of Land in Coastal Bangladesh: Outcomes of Blue Gold Interventions 2013-2019”. Both of these reports have helped to better understand the outcomes of Blue Gold investments.

A further WMG survey is planned to be conducted in 2021 for a number of reasons. The last WMG survey (in 2019) was conducted when 53% of the construction works were completed. Data collection for the endline survey was conducted in September/October 2020 when 77% of the construction works were completed. However, two significant events in 2020 – Cyclone Amphan in May 2020 and the ongoing COVID-19 pandemic – have meant that the production data for aman and aus seasons in 2020 was not collected. This means that the impact assessment survey will not cover the full outcomes and impact scenarios of Blue Gold interventions. Since around 95% of construction works are to be completed by June 2021, a 2021 WMG Survey could provide the outcomes and impact scenarios for Blue Gold interventions.

4 Project Management

4.1 Implementing agencies

Bangladesh Water Development Board (BWDB)

Headquarters Relocation: During the reporting period, BWDB relocated its headquarters from WAPDA Bhaban in Motijheel to Pani Bhaban in Panthapath (Green Road) and, in November 2020, PCD and his DP3 office moved to Pani Bhaban from their Hasan Court office in Motijheel.

Management Changes: As a result of a number of BWDB's senior management team reaching retirement age, a new management team – including a new Director General – are to be assigned in early January 2021. As part of this process, the promotion of PCD Amirul Hossain to the position of Chief Engineer is expected in January 2021, after which a new PCD for Blue Gold (of the rank of Superintending Engineer) will be appointed.

Amendment to BWDB Act 2000: A decision, taken in February 2019, to transform BWDB to a directorate (resulting in its renaming as a “Department”) is intended to revitalise the country's premier agency for implementing water resources projects. This will require an amendment to the BWDB Act 2000 (through which BWDB was made a statutory body), the changes to which are expected to be summarised in the Bangladesh Water Resources Directorate Act. Expected changes resulting from the amendment will include an increase in size of the organisation, and that all professional staff will have BCS ranking.

Revised Development Project Proforma (RDPP): The revised cost adjustment RDPP was approved by MoWR on 1 September 2020 after a round of discussions which were initiated by the recommendation of the 5th IMSC meeting on 3rd December 2019 to an inter-item cost adjustment and a budget neutral one-year time extension so that all infrastructure works could be completed and made functional. BWDB prepared a proposal which was submitted on 26th February 2020 for consideration by the MoWR Departmental Project Examination (and Verification) Committee (DPEC) who suggested that the proposed inter-item cost adjustment should be revised and resubmitted without reducing any quantity. The revised proposal was resubmitted by BWDB in March 2020 and approved on 1 September 2020.

FY 2020/21 Construction Season: BWDB are targeting the completion of all planned items of physical work by end-June 2021. Despite the understandable optimism that the objective is achievable, it is likely (in the view of the TA team) that some works will remain incomplete at end-June 2021, specifically: a number of water control structures (particularly the installation of gates), the repair of some sluices, and the construction of lengths of retired embankment and the re-excavation of some lengths of Khals. The PCD and TA team are discussing a difference of interpretation of the cost adjustment RDPP (approved in September 2020). At the end of the reporting period, this remains unresolved.

Department of Agricultural Extension (DAE)

In accordance with their DPP, DAE concluded their project activities at end-December 2020. During the reporting period, a consolidation of DAE activities included four joint review workshops in Patuakhali and Khulna in October 2020. PD BGP (DAE part) is playing a role as Focal Point in developing a new project covering the all the coastal polders following the concept of BGP

“Farming is a Business” using GoB fund with instruction of MoA. A meeting between DG DAE and EKN was held on 29th November 2020 to discuss future investments in the coastal zone.

4.2 Technical Assistance (TA)

Focus of Activities: During the reporting period, the main activities of the TA team have been to: (i) Complete water management infrastructure contracts and ensure their functionality; (ii) Develop in-polder water management activities based on the WMO’s catchment level O&M plans; and (iii) empower WMOs by emphasising collective actions and partnership development.

Staff Reductions: Planned reductions in TA staffing were made in June (21 no) and December 2020 (12 no).

Polder-level Staff: The numbers of CDFs have reduced from a peak of 107 (June 2019) to 45 (July 2020) and 35 (as of January 2021). The presence of only 35 staff at polder-level will have inevitable restrictions on field activities across the 22 Blue Gold polders – where their main activity is to consolidate and develop the capacity of WMOs to grow by strengthening their interactions with UPs and UZPs, and to foster WMO initiatives for in-polder water management and “farming as a business”.

Engineering (WRM) Staff: The TA engineering (WRM) team has been rationalised, reorganised and reminded of the importance of their role in ensuring accuracy of measurements and quality control.

Adopting COVID-safe procedures: As a result of the COVID-19 lockdown in late-March 2020, meetings and visits have been minimized and replaced by virtual communications. These virtual meetings have used a variety of platforms, including Skype and ZOOM – and increasingly MS Teams (for which a licence is held by Mott MacDonald). During the reporting period, Blue Gold zonal and field staff have also slowly increased the number of meetings attended with WMOs and LGIs. DAE gradually restarted training and capacity building sessions for agricultural activities (inputs distribution and the introduction of new crops/varieties) in the aftermath of Cyclone Amphan whilst using COVID 19 mitigation measures such as social distancing and PPE.

5 Lesson Learnt

Preparing good practices in Lessons Learnt Report: A wiki lessons learnt report (LLR) is in preparation with the intention of complementing the BWDB and DAE project completion reports (PCRs), and recording lessons learnt for use in the design and implementation of future interventions in the coastal zone. The aim of the report will be to review and analyse approaches and methodologies used in the delivery of Blue Gold, how and why they evolved over the lifetime of Blue Gold with reasons for the adaptations and adjustments that were introduced and an explanation for the timing of the intervention.

Whilst Blue Gold will end in December 2021, much of the lessons learnt report is being written in 2020 and early 2021 while the principal contributors in the TA team remain in place. But the completion of some sections of the report will only be possible when, for example, final payments have been made for water infrastructure contracts at end-June 2021, and findings are available from impact surveys conducted in 2021. DAE's involvement as a stakeholder partner is to finish at end-December 2020, whilst BWDB's involvement will continue to end-December 2021.

Meanwhile, in order to pass on the knowledge and experience gained from the implementation of Blue Gold to planners and policy makers working towards the realisation of the Delta Plan, and to those responsible for the design and implementation of future projects in the coastal zone, the report is published in early 2021 in a partially-complete form. Those sections of the report which are either incomplete or missing will be marked accordingly in the draft report, and then finalized before end-December 2021.

In particular, this wiki provides digital versions of documents prepared by the project team, by other organisations through the Innovation Fund and the many valuable references (policy documents, legislation etc) that have provided direction to Blue Gold. The documents have been organised in categories to aid searches. Although the wiki report is in English, many documents were prepared in Bangla for use in training of Blue Gold communities and are also available.

Films: To document and disseminate lessons learnt by Blue Gold, many audio-visual documentaries have been prepared – mostly for use within polder communities (and therefore in Bangla). A separate set of five videos for audiences of planners, policy makers and practitioners is planned to cover: 1 water management, 2 PWM: an integrated approach, 3 water management organizations, 4 farming-as-a-business, and 5 women's empowerment. Of these, videos 1 and 2 are completed and available, and videos 3, 4 and 5 are in production with the aim of finalising them by end-February 2021 when they will be uploaded on to Blue Gold's Facebook page, to YouTube etc and more widely for familiarising audiences with Blue Gold's activities.

Future WMA self-management using WMO self-assessment of performance: Self-monitoring of WMOs using the web-based App has been successfully achieved with enthusiastic response from the WMOs. Most WMOs -35 out of 36 WMAs and 507 out of 511 WMGs - participated in the self-monitoring exercise. Two challenges were faced by WMOs in using the App: (a) some of the mobile sets of WMOs did not have compatible configuration to install the App; and (b) mobile network was not always strong enough to operate the App. For these and similar post-project technical problems, we should investigate the capacity of BWDB's Office of Chief Water Management to assist with their resolution.

6 Sustainability

DAE decision to mainstream in-polder water management across the coastal zone: The 8th DAE Project Steering Committee meeting on 10th September 2020 recommended the continuation of BGP activities in a future project. On 17th November 2020, DAE Director General appointed PD DAE Humayoun Kabir as Focal Point to organise a feasibility study for the new project, prepare the DPP in coordination with DAE's Planning, Project Implementation and ICT Wing, and to assist in obtaining DPP approval. A mandate for preparing the Development Project Proforma for a new project with GOB funding was issued on 2nd December 2020. A committee headed by ADG (Project Preparation) had been appointed for the feasibility study.

Climate change – recognition of value of SSWMI in combating flooding due to heavy rainfall: During early-Aman in 2020, heavy rainfall resulted in water congestion in many areas. SSWMI schemes allowed excess water to be quickly drained without harm to the T Aman. The value of proactive initiatives to deal with waterlogging is spreading within the Blue Gold area.

7 Cross-Cutting Activities

7.1 Gender

The Blue Gold Program aimed to reduce gender inequalities and enhance women's empowerment by integrating attention to gender into its regular interventions and by implementing selected gender specific activities. Attention to women's empowerment also contributes to better achieving BGP's overall objectives, such as poverty reduction. During the reporting period the implementation of field-based activities remained affected by Covid-19 limitations, although the situation gradually improved. Main gender-specific activities in the reporting period were:

- The Gender and Leadership Development (GLD) training (new approach, with 5 informal sessions per group) restarted with 187 sessions held in new polders, with 2322 women and 382 men as participants.
- In the old polders the one-off gender courtyard sessions (CYS) were held again to create more gender awareness, reaching 3376 women and 885 men.
- A new activity was the discussion of gender issues during regular WMG meetings (in 479 sessions with 2919 male and 1156 female participants), focusing on problems women encountered due to Covid-19, such as increased violence and reduced family income.
- In 56 homestead FFS sessions, with 407 women and 5 men, gender issues were discussed.
- One training on Market Linkage Development and Women's Empowerment (ML&WE) was held in December 2020 in polder 55/2A with 22 women and 3 men.
- Collective vegetable cultivation started for 11 groups of marginal women (207 in total), using *khas*, BWDB land or leased land, and providing seeds and technical support.
- Support was provided to Big Blue for the shooting of the film on women's empowerment.
- Two case studies were collected about one male and one female WMG member.
- The 2-pager on women and LCS work was finalized; and contributions made to relevant sections of the Lessons Learned Report.

During the reporting period, considerable changes were observed regarding women involvement of women in marketing and in collective action for IGAs. The positive impact of the Market Linkage Development and Women's Empowerment training was confirmed by a former participant who reported that this training had been essential to improve her life. It was a turning point, making her realize that women too can be active in maintaining market linkages. The training had built her capacity to sell her products and buy inputs by her own. BGP's work on women's economic empowerment included the support to 11 women's groups for collective vegetable cultivation. End 2020 they begun harvesting their vegetables, both for own consumption and to earn some money from selling any surplus.

The impact of the two disasters that struck the coastal polders, i.e. the Covid-19 pandemic and the Cyclone Amphan reversed several Blue Gold achievements, in particular food security and poverty increased again, at least temporarily, whereas also women's situation deteriorated. However, despite this, also signals of increased resilience of the polder population were observed, to which BGP evidently had contributed.

7.2 Covid-19 Survey

A survey among 15 women on how they were affected by Covid-19 was implemented. The findings from the survey demonstrated that polder inhabitants were negatively affected by COVID-19, as farming was affected and income from farming reduced, including by lower farm gate prices. There was less work and less income for wage labourers, also because many migrants had returned home, increasing the supply of labour. In many households, less food was available; women often reduced their food intake more than men did. Because men were more at home, the amount of domestic work increased for women as well as domestic violence. But also, positive observations could be made: WMGs played a role in awareness raising on COVID-19; women (and men) benefited from increased social networks, government contacts and being more capable in decision-making; and the increased homestead production meant more resilience.

7.3 Communications and Horizontal Learning

- During the reporting period, warning notices were erected near to sluice gates (refer Annex F Picture 3) in 77 locations in Khulna and 68 locations in Patuakhali.
- For the WMO health dashboard, an instructional video and banners (festoons) were developed to advise WMOs
- Developed festoons, videos for awareness-raising on COVID 19 and shared those on BGP Facebook.
- With Big Blue and AVcom, developed videos for Blue Gold
- Prepared a case study on Gajendrapur gated culvert (in Bangla)
- Developed videos advertising project activities (crop cutting festivals) and uploaded on BGP Facebook and YouTube
- With Mott Macdonald, developed a video on the outcome of Blue Gold.
- Assisted in finalising Water Management Manuals and Small-scale Water Management Infrastructure Construction Manual.
- Facilitated two television news broadcasts on crop cutting festivals in Patuakhali

Table 4: Horizontal learning events in Patuakhali and Khulna

Polder	Content	No. of event	Participants			Total
			WMG/WMA Male	Female	FromUP/BWDB/DAE	
47/4	Crop cutting festivals	1	30	14	4	48
43/2D	Capacity Building of WMA	1	19	4	2	25
43/2D	WMA Capacity Building through HL	1	30	7	2	39
29	HL on Gojendrapur culvert	1	72	11	3	86
27/2	HL on Experience sharing of WMOs	1	28	9	1	38
25	Community led fisheries water management	1	20	16	0	36
Total		6	199	61	12	272

Due to the coronavirus pandemic, it was difficult to organize events at the polder level. Horizontal learning and video screening is such a program where people's gathering is a must. For avoiding gathering, many planned activities were cancelled.

8 Integrity

A number of documents set down the expectations of all TA staff concerning ethics and behaviour, including:

- a) Ethics – training provided to TA staff
- b) Project Management manual – covering conduct and discipline
- c) Procurement Guidelines – with instructions about sustainability and ethics
- d) Anti-Harassment Policy – which sets out expected behaviour, provides examples of what constitutes harassment, disciplinary measures and information on confidential reporting of infringements
- e) Health, Security and Safety Guidelines– with a central committee and sub-committees in Patuakhali and Khulna to develop, implement, and maintain a workplace injury and illness prevention policy for all offices

9 Use of Resources

Table 5: Financial report of Blue Gold Program (July to December 2020)

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)	Revised Budget Jan19	Revised Budget 5th contract amendment	Total claimed 30/06/2020)*	Claimed Q3 2020)**	Claimed Q4 2020	Total cumulative	% Spent	Balance Remaining
TA contract											
TA team	14,808,453	17,286,204	17,301,465	17,638,451	20,020,788	18,140,839	399,545	348,343	18,888,727	94%	1,132,060
Durable goods (D)	1,169,053	997,713	996,176	836,176	726,368	754,118	(11,196)		742,922	102%	-16,554
Training (T)	2,456,500	1,892,890	1,892,890	1,892,890	2,003,198	1,652,857	13,405	24,950	1,691,212	84%	311,986
Operational cost (O)	1,272,600	2,864,929	3,467,607	3,627,607	3,684,191	3,355,920	62,278	56,609	3,474,807	94%	209,384
Contracted Services	7,542,000	6,826,845	6,225,704	5,905,703	4,729,619	4,368,288	96,858	47,213	4,512,359	95%	217,260
Water Management Innovation Fund	2,400,000	1,400,000	1,400,000	1,400,000	1,403,210	1,353,210	18,323	8,859	1,380,392	98%	22,818
Productive Sectors Innovation Fund	1,900,000	1,050,000	1,050,000	1,050,000	960,477	910,476	51,749	1,421	963,646	100%	-3,169
Annex B	0	877,058	861,796	844,810	-	-	-	-	-		0
SUBTOTAL TA contract	31,548,606	33,195,639	33,195,639	33,195,637	33,527,851	30,535,708	630,962	487,395	31,654,066	94%	1,873,785
GoN Contribution to BWDB	15,750,000	27,320,000	27,320,000	27,320,000	27,320,000	19,567,950		2,782,000	22,349,950	82%	4,970,050
GoN Contribution to DAE	995,000	1,495,000	1,495,000	1,495,000	1,495,000	1,479,755	14,945		1,494,700	100%	300
Total GoN contribution	48,293,606	62,010,639	62,010,639	62,010,637	62,342,851	51,583,413	645,907	3,269,395	55,498,716	89%	6,844,135
NOTES:											
)* TA Team claim includes "Annex B" cost increases											
)** In Q3 2021, no funds were provided to BWDB											

10 Risk Review

Impact of Amphan and COVID-19 on sustainability of WMOs: WMOs are gradually becoming aware of their potential role in civic society through their partnerships with local government, government line departments (BWDB, DAE, BADC, LGED etc) and the private sector, and through the collective actions which obtain leverage over prices of inputs and sale of products. However, the impact of Cyclone Amphan in May 2020 and COVID-19 could set back the process by which the WMOs exercise their rights and obtain the benefits of doing so.

Final infrastructure contracts and ME works: For sluices and regulators to be functional, the gates must act to prevent saline river water from entering the polder (the purpose of the flap gates on the river side), to allow excess water to be drained (by opening the vertical gates on the country side), or to allow freshwater in the rivers - during the monsoon months - to be stored in khals for subsequent use for irrigation (ie operating as a “flushing sluice” when flap gates are raised using a pulley system mounted on the goal posts). If the gates are not properly fitted, then they quickly become inoperable, and thus the major investment in the total structure becomes un-useable. Much care needs to be given to ensuring the proper installation of gates.

Annex A

Annex A: Progress against activity matrix proposed in Annual Activity Plan

Table 1: Water resource management progress against activity matrix proposed in annual activity plan 20/21

Description of the Unified Work Process and Steps	Quantity	Target	Progress
A. Pre-Construction Works			
Estimate preparation	As per requirement	Remaining works	Almost completed
Estimate Vetting	As per requirement	Remaining works	Almost completed
APP Approval	As per requirement	Remaining works	On-going
Preparation of Work Packages	As per requirement	Remaining works	On-going
Tendering and Work awarded	As per requirement	Remaining works	On-going
LCS Training (WMG)	As per requirement	No program	
Construction Monitoring Committee Training (WMC)	As per requirement	No program	
B. Construction Work		Will start from January, 2021 onwards	Insignificant progress
Embankment Re-sectioning	2.32 km (C.O)		Insignificant progress
Embankment Retirement	2.09 km (C.O)		Insignificant progress
Canal Re-Excavation	43.00 km new & 78.17 km (C.O)		Insignificant progress
Repair of Sluices	20 nos. new & 12 nos. C.O		Insignificant progress
Repair of Outlet/ Inlet	2 nos. new & 1 no. C.O		Insignificant progress
Construction of Sluice	1 no. new & 15 nos. C.O		2 nos. completed
Construction of Outlet	12 nos. C.O		3 nos. completed
Construction of Inlet	1 no. new		No progress
Construction of Culvert	2 nos. C.O		Insignificant progress
Pump Shed & Stilling Basin	1 no. C.O		1 no. completed
Low Cost Bank Protection	0.09 km C.O		Insignificant progress
Rehabilitation of Interior Dike	13.45 km C.O		Insignificant progress
Closure/Cross-bundh	LS		
Supply of Drain Pipes	3,518 m new & 1,314 m C.O		Insignificant progress
Flood Damage Repair & Breach closing	10.73 km C.O		Insignificant progress
O&M Fund	LS		
C. Reimbursements			
Reimbursement Claim	Amount in million BDT	As per requirement	(Bill claimed –BDT 750.39 m); RPA- BDT 570.29 m)
Reimbursement Processing & Recommendation	Amount in million BDT	As per requirement	Claim processed & recommended (BDT 567.90 m)

Table 2: Community Led Agriculture Water Management (CAWM) progress against activity matrix proposed in annual activity plan 20/21

S.N	Task Name	Target	Achievement (%) Jul-Dec. 2020
A	Community Led Agriculture Water Management (CAWM)		
1	Consultation meeting with WMG/Community farmers for selection CAWM	40 WMGs	100%
2	Area/field selection finalization	25 WMGs	100%
3	Facilitate & Assist CAWM activities	25 WMGs	100%
4	Assist to Sub catchment Water Management activities led by community	25 sub/catchment	100%
5	FFD/Crop cutting events and reporting	17 WMGs	100%
6	Crop cutting events festival (large scale horizontal learning)	3	66%
7	Farmer Field School (FFSs)	Aman+ Rabi (17)	100%
8	Coordination meeting with SAAOs, DAE/BWDB	18	67%
9	Coordination with UPs WMOs, BWDB and DAE	21 WMGs	14 WMGs
B.	Communication and Horizontal Learning		
1	Experience sharing visit	42	29%
2	Fact sheet preparation of identified good practices on IPWM/production	15	67%
3	Assist to Polder Team to organize HL events	15 events	2 events
4	Video/Drama	15	13%
5	Orientation on women empowerments and market linkage	10	10%
6	Assist to WMGs organize informal HL events	40	60%
7	Learning/sharing workshop	3	67%
8	Provide write-up/case study for BGP report etc.	15	0%

Table 3: Equitable Water Management (EWM) progress against activity matrix proposed in annual activity plan 20/21

Sl no	Task Name	Target	Achievement (%) (Jul-Dec 2020)
1	Conduct staff's performance appraisal	45 nos.	100
2	Assist WMA to review WAP and implement	35 nos.	70 (on-going)
3	Participate in Annual General Meetings of WMOs	509 WMGs 35 WMAs	100
4	Assist WMAs to review Catchment O&M plans and assist its' implementation	190 nos.	65 (on-going)
5	Facilitate WMAs to identify inside/ outside resources for O&M and others	35 nos.	30 (on-going)
6	Assist WMA to develop linkage with different GO/NGO and Private agencies	35 nos.	70 (on-going)
7	Prepare polder wise half yearly report	22 nos.	100
8	Assist WMOs to generate O&M fund	509 WMGs 35 WMAs	41% WMGs
9	Polder level staffing re-arrangement	Need based	100
10	Monitoring WM Infrastructural activities	On-going activities	100 (on-going)
11	Communicate with the OCWM and DAE	Need based	Need based
12	Identify good practices and arrange HL	Need based	30

Table 4: Strengthened Value Chain (SVC) progress against activity matrix proposed in annual activity plan 20/21

Sl	Task Name	Target Jul-Dec,20	Achievement Jul-Dec,20	% Progress
1	Linkage building workshop with WMO, public, private sector actors	1	0	0%
2	RF /FT/ WMA capacity building programs on entrepreneurship/SME development	1	0	0%
3	VC development workshops on post-harvest management and value addition	2	2	100%
4	Demonstration of quality product/ HV product/CI etc. (including FDD, HL)	12	12	100%
5	Workshops on 'Collaborative farming' with VC actors	5	1	60%
6	TA FFS implementation (FFD/HL)	30	30	100%
7	Piloting collaborative farming demonstration with farmers	6	6	100%
8	Forward market linkage/VC workshops	3	1	33%

Table 5: Training progress against activity matrix proposed in annual activity plan 20/21

SI #.	Task Name	Target	Achievement (%) (Jul-Dec 2020)
1	Support zonal teams to design & facilitate WMA – UP Partnership Development Workshops (UP & WMA level)	50	0%
2	Support polder teams to organize/facilitate review Workshops on WMA Capacity Building & Implementation Catchment Plan (WMA level).	36	25%
3	Follow up & support to polder teams to strengthen Facilitation Skills on WMA capacity building & implementation Catchment plans.	Need based	50%
4	Support to organize Workshop on Partnership Development for Implementation of WM Plan	6	0%
5	Support polder teams to guide & strengthen partnership /linkages development process of UP & WMAs.	Need based	45%
6	Design & support zonal teams to organize & facilitate Coordination workshop on Polder Water Management	3	
7	Support polder teams to Organize & facilitate Gate Keepers Training on Sluice Gate O & M	182	22%
8	WMO Health Dashboard: Use of Mobile Phone for self-monitoring of WMOs		
9	a. Support MRL team to organize ToT for Facilitator	2	100%
10	b. Support MRL Team to organize Training for WMA	4	100%
11	c. Support MRL team to organize training for WMG	51	100%

Table 6: Communication and HL progress against activity matrix proposed in Annual Work Plan 2020/21

S.N	Task Name	Target	Achievement % (Jul-Dec 2020)
1	Assist to polder team for Identification of good practices	100 nos.	40%
2	Assist to Polder Team to organize horizontal learning, experience sharing events/visits	50 nos.	16
3	Learning/sharing workshop (Zone level)	2 nos.	0
4	Video screening at polder level	100 nos.	0
5	Develop O&M awareness notice and installation at sluice site	130	100
6	Developing and uploading videos (hire drone)	100	52
7	Work with printing and electronic media	20	80

Table 7: Gender progress against activity matrix proposed in annual activity plan 20/21

S.N	Task Name	Target Jul 20 - Jun 21	Achievement (%) July-Dec 2020
1	Promote that 45% of the general members of the new WMGs are women at new polders by CYS	8 polders	85%
2	Promote that 10% of the important positions in EC are occupied by women in WMA & WMG through discussion and small meeting	8 polders	90%
3	Implementation of Gender and Leadership Development training by CDFs through CYS with WMG Members	9 polders	85%
4	Implementation of Gender and Leadership Development training by CDFs through CYS with WMA EC Members	35 WMA &	0
5	Increase women's involvement in decision making and leadership (especially in WMA) through CYS and general discussion with women and men)	Patuakhali -21 Khulna -11 & Satkhira-3	95%
6	Women empowerment through Horizontal Learning Program exchange events	Khulna 5 , Pat: 3; Sat: 2	0%
7	Training on Market Linkages and Women's Empowerment I 2-days training)	Patuakhali -3 Khulna -1	25%
8	Increase women's involvement in CAWM (through discussions and meetings)	70 groups	50%
9	Support to polder teams for gender mainstreaming (based on needs)	All polders	100%
10	Survey on women contribution and situation during Covid-19	1	100%
11	Develop LCS hand out	1	100%
12	Collecting more women empowerment related success story, Video clip to contributed to better achieving BGP's overall objectives	3	70%
13	Collecting more gender related information,	2	100%
14	Develop separate reports, e.g. one about feminization of agriculture and a 4-page briefing note on gender in BGP	1	0% (not finalized yet)

Table 8: Monitoring, Reflection Learning (MRL) progress against activity matrix proposed in annual activity plan 20/21

Sl no	Task Name	Target	Achievement (%) (Jul-Dec 2020)
1	WMO Health Dashboard	1	100%
2	Endline Survey	1	100%
3	Half yearly progress report	1	100%

Table 9: Innovation fund progress against activity matrix proposed in annual activity plan 20/21

Sl.no.	Task Name	Jul-Dec,20	
		Target	Achievement
1	Leveraging decision making science to sustain climate- and market-smart mungbean advisories in Patuakhali's polder communities (CIMMYT-Mung)		Completed
2	Development of value- added products from water hyacinth to support alternative livelihoods and ecological resilience in coastal villages of southwest Bangladesh (KU-WH)		Completed

Annex B

Annex B: Progress against log-frame indicators

Table 1: Achievements of BGP against log-frame indicators

Narrative summary	Indicator	ACHIEVEMENTS			TARGET
		Cumulative beginning of BGP to June 2020	Jul-Dec 2020 (Non-cumulative)	Cumulative (beginning of BGP to Dec 2020)	Jan-Jun 2021 (non-cumulative)
Goal Reduced poverty and hunger for poor people living in polders in the coastal zone of Bangladesh.	- Change in % of HH by poverty index (PPI) /below poverty line - Self-assessed wealth rank (before & after BG) - Change in % hh with food shortage - Improved quality of diet²	Will be updated after the endline survey 2020 and WMG survey 2021			
Purpose Improved and more secure rural livelihoods for 160,000 households in coastal polders.	- Increase in agricultural production/sales/income - Increase in no. of people earning income - Move to more secure sources of income - Increase in total HH income	Will be updated after the endline survey 2020 and WMG survey 2021			
Outcomes/outputs					
1. Community mobilisation and institutional strengthening Outcome: Rural communities organised to be effective drivers for change and economic growth.	- % WMG rated effective/ sustainable	91%	8%	99%	1%
	- % of WMG are active in managing water resources	81%	81% (no new WMG added here)	81%	5%
	- % of WMG controlling sluice gate operation	50% (June 2019, WMG survey 2019)	Will be updated after WMG survey 2021		100%
	- No. of WMG doing minor maintenance tasks	80%	Updated after WMG survey 2021		100%
	- WMG contributions to infrastructure O&M (BDT)	9,652,091	1,298,428	10,950,519	1,000,000

Narrative summary	Indicator	ACHIEVEMENTS			TARGET
		Cumulative beginning of BGP to June 2020	Jul-Dec 2020 (Non-cumulative)	Cumulative (beginning of BGP to Dec 2020)	Jan-Jun 2021 (non-cumulative)
Outputs: Establishment and strengthening of water management organisations	- No. of new WMG established and registered	Organised -511 WMGs Registered-509 WMGs	0	Organised -511 WMGs Registered-509 WMGs	
	- No. of WMG in IPSWAM polders strengthened	239	0	239	0
	- No. of WMG members and numbers of farm HH within WMG commend areas	Members-136,926 HHs-118,987	Members-1 HHs- 0	Members-136,926 HHs-118,987	Members-50 HHs-30
2. Water resource management Outcome: Water resources managed effectively to protect land from tidal and storm surges, improve drainage and irrigation.	- Reduced waterlogging, salinity and flooding,	77,637 ha 80% WMG areas (June 2019, WMG survey 2019)	Will be updated after the endlinesurvey 2020 and WMG survey 2021		100%
	- increased availability of water for irrigation	77,637 90% WMG areas (June 2019, WMG survey 2019)	Will be updated after the endline survey 2020 and WMG survey 2021		100%
	- Reduced crop losses				
	- Innovative concepts for water resources management designed and introduced	17	1	18	100%
	- Additional agric production from CAWM etc.	Aman-43,110 ton Rabi-32225 ton Total-75335 ton	Aman-7,196 ton Rabi- 0	Aman-50,306 ton Rabi-32225 ton Total-82531 ton	Rabi-`855 ton Total-855 ton

Narrative summary	Indicator	ACHIEVEMENTS			TARGET
		Cumulative beginning of BGP to June 2020	Jul-Dec 2020 (Non-cumulative)	Cumulative (beginning of BGP to Dec 2020)	Jan-Jun 2021 (non-cumulative)
			Total-7196 ton		
Output: water management infrastructure rehabilitation and improvement	- Area of polders water infrastructure fine-tuned for optimal use	26,830 ha	0	26,830 ha	0
	- Area supported via SSIWM/CAWM	36,326 ha	4,035 ha	40,361 ha	3541 ha
	- Groups supported via SSIWM/CAWM	363 WMGs	45	408 WMGs	87 WMGs
	- Planning of work with participation from WMG/A	97 catchment plans were prepared in 11 polders where 76924 ha land covered with the participation of the WMGs(208) and WMA (12)	191 catchment plan (all) was prepared in 22 polders where 119124ha land covered with the participation of all WMGs(511) and WMA (36)	This is a year wise plan (not cumulative). So, every year catchment committees with respective WMGs and WMAs will practice this	
	- Person-days (M/F) of employment from LCS	70491 person days for male & 20774 person days for female (June 2019)	No more LCS during this time		
3. Food security and agricultural development	- Increase in crop areas / cropping intensity ²	Cropping intensity Pre project - 187,	Will be updated after the WMG survey 2021		

Narrative summary	Indicator	ACHIEVEMENTS			TARGET
		Cumulative beginning of BGP to June 2020	Jul-Dec 2020 (Non-cumulative)	Cumulative (beginning of BGP to Dec 2020)	Jan-Jun 2021 (non-cumulative)
Outcome: Increased productivity in farm sector (crops, fishery and livestock) and better household nutrition practices		Now (June 2019)-228 (41% increase)			
	- Increase in crop yields ²	Boro HYV -13% Boro hybrid-11% Aman local-15% Aman HYV-23% Aus local-25% Aus HYV-22% Sunflower-130% Chilli-42% Watermelon-8% Groundnut-6% Mungbean-(-21%)	Will be updated after the WMG survey 2021		
	- Increased poultry and livestock production	No. Chickens: Before FFS: 7.1 After FFS: 18.8 Egg production increase /hen/year : Before FFS: 41.22 After FFS: 77.39 Beef Fattening No. of Cattle: Before FFS: 3.3 After FFS: 3.5	No. Chickens: Before FFS: 4.1 After FFS: 9.58 Egg production increase /hen/year in number : Before FFS: 40.05	Will be updated after the endline survey 2020	

Narrative summary	Indicator	ACHIEVEMENTS			TARGET
		Cumulative beginning of BGP to June 2020	Jul-Dec 2020 (Non-cumulative)	Cumulative (beginning of BGP to Dec 2020)	Jan-Jun 2021 (non-cumulative)
		Meat Production : 35.72% (increase in meat production per cow)	After FFS: 94.12		
	- Increase aquaculture yield and production	Fish production increase 2.53 times more per decimal (for pond fisheries) For Gher fisheries, fish production increase around 40% (June 2019, WMG survey 2019)		Will be updated after the endline survey 2020 and the WMG survey 2021	
	- increased homestead production of fruit and vegetables	Vegetable grown: Before FFS: 3.3 types / homestead After FFS: 7.2 types / homestead Fruit tree in number: Before FFS: 27 After FFS: 41	-	Will be updated after the endline survey 2020	
	- Adoption of improved farm practices and household nutrition	73761	1362	73761	550
Output: Increasing skills and knowledge of farmers and introduction of improved technologies	- No. of DAE FFS for crops (including marketing)	1141	4	1145	0
	- No. of TA FFS for homestead activities	1133	30	1163	15

Narrative summary	Indicator	ACHIEVEMENTS			TARGET
		Cumulative beginning of BGP to June 2020	Jul-Dec 2020 (Non-cumulative)	Cumulative (beginning of BGP to Dec 2020)	Jan-Jun 2021 (non-cumulative)
	- No. of TA MFS for commercialisation	272	-	-	-
	- No. of community service providers trained	100			
	- No. of people trained in nutrition practices	94375	1475	95.850	1425
	- No. of demonstrations of new technologies	1571	187	1068	30
	- Provision of improved seeds	71 CAWM 568 farmers	17 CAWM 136 farmers	88 CAWM 704 farmers	17 CAWM 130 farmers
4. Business Development Outcome: Farmers improve earnings through better linkages with buyers of products and suppliers of inputs	- No. of groups and farmers involved in collective actions.	429 WMGs 64448 farmers	80 WMGs 5156 farmers	509 WMGs 69604 farmers	100 WMGs 5000 farmers
	- Improvement in input/output prices as result of collective actions.	429	80	509	100
	- No. of farmers linked to private sector via value chain linkages	26120	900	27020	750
	- Market linkage	26120	900	27020	750
Outputs: Collective action for marketing and input procurement, value chain development	- No. of collective actions supported	1750	306	2056	250
	- No. of products covered by value chain analysis	8 (non-cumulative)	8 (non-cumulative)	8 (non-cumulative)	8 (non-cumulative)
	- No. of value chains developed	8	8	8	8
5. Gender equality and women empowerment	- More gender equity in food consumption ²	Will be updated after result analysis of the impact/endline survey			
	- No. of women earning an income ²				

Narrative summary	Indicator	ACHIEVEMENTS			TARGET
		Cumulative beginning of BGP to June 2020	Jul-Dec 2020 (Non-cumulative)	Cumulative (beginning of BGP to Dec 2020)	Jan-Jun 2021 (non-cumulative)
Outcome: women empowered and increase their agency at household and community levels	- Increase in women's role in decision making² - Mobility of women² - Women's role in household finance²				
Outputs: mainstreaming gender in all project activities with special initiatives to improve the position of women	- Gender-based training materials - Gender action plans - Gender advocacy and outreach	- No of training materials – 02 - No of training module- 01 - No of training - 466 - No of participant - 11675 - No of court yard session -1893 - No of participant - 7044 - No. of Yearly gender action plan - 06 - Five years gender action plan for BWDB - 2018	-No of training -40 - No of participant-1000 -No of court Yard Session-367 - No of participant -4380 - No. of yearly gender action plan – 01 - No of gender advocacy outreach - 479-	- No of training materials – 02 - No of training module- 01 - -No of training -506 - No of Participant - 12675 - No. of Court Yard Session-2260 - No of participant - 27120 - No. of yearly Plan –06 - -Five years gender action plan for BWDB 2018	- NO of training -84 - -No of participant -1645 - -No of court yard session - 260 - No of Participant - 3120 - No of gender advocacy & outreach-400 - No of Participant - 4800 -

Narrative summary	Indicator	ACHIEVEMENTS			TARGET
		Cumulative beginning of BGP to June 2020	Jul-Dec 2020 (Non-cumulative)	Cumulative (beginning of BGP to Dec 2020)	Jan-Jun 2021 (non-cumulative)
		- -No. of gender advocacy and outreach-- 485 - No of Participant - 5820	- No of Participant -5748	- -No. of gender advocacy & outreach- 485 - No of participant - 5820 - not cumulative	
5. Knowledge management Outcome: lessons for Integrated Coastal Zone Management (ICZM).	- Innovative solutions for water resources infrastructure designed and tested	17	01	18	0
	- Innovative technologies introduced for the productive sector;	21	01	22	0
Outputs: knowledge products and events	- Technical reports, working papers, videos, workshop papers, presentations	38	02	40	0

Annex C

Blue Gold Program

Annex C: Achievements of BGP in water management and agriculture from July-December 2020 (Non-cumulative)

WATER

Ref		Jul-Dec 2020 (Non-cumulative)	
	Result		
I.R1	Number of people benefitting from improved water security and water safety in the project area	17857	
	Outcome		
I.OC1	Number of people supported in flood protection activities	980	
I.OC2	Number of people supported on improving drainage and water availability/irrigation	1220	
I.OC3	Number of people supported for improved water shed/polder protection	980	
I.OC4	Number of WMA and of WMO supported	WMG	WMA
	Note: No new WMG or WMA has been registered during reporting period (all WMGs and WMAs have got the registration).	0	0
I.OC5	Number of professionals trained in water management	314	
I.OC6	Number of people benefitting from operational plans for IWRM		
I.OC7	Number of ha with operational plans for IWRM	19124	

II. AGRICULTURE

A. Productivity and Income

Ref		Jul-Dec 2020 (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)	8505	
	Total(direct)	2835	
	Total (Indirect)	5670	
	Total (direct + indirect) HHs	8505	

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IIA.OC2	Number of family farms with improved access to input and/or output markets (by male/female headed and age %<35)	7425
IIA.OC3	Number of family farms whose farming enterprise became more resilient to shocks (by male/female headed and age %<35)	2368
	Output	
IIA.OP1	Number of family farms directly reached by the project (by male/female headed and age %<35) <i>Note: No new WMG has been registered during reporting period(all WMGs have got the registration).</i>	0
IIA.OP2	Number of family farms indirectly reached by the project (by male/female headed and age %<35)	0

B. Sustainable farming and land use

Ref		Jul-Dec 2020 (Non-cumulative)
	Result	
IIB.R1	Number of hectares converted to sustainable farming and land use (including pastures & fishing grounds)	421
	Outcome	
IIB.OC1	Number of hectares of farmland used eco-friendlier (including pastures & fishing grounds)	421
IIB.OC2	Number of hectares of farmland that became part of improved watershed/polder management (including pastures & fishing grounds)	3714
IIB.OC3	Number of hectares of farmland that agro-ecologically become more resilient to shocks (including pastures & fishing grounds)	3714
	Output	
IIB.OP1	Numbers of hectares of farmland directly reached (including pastures & fishing grounds)	421
IIB.OP2	Number of hectares of farmland indirectly reached (including pastures & fishing grounds)	3714

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C. Knowledge technology and innovation

Ref		Jul-Dec 2020 (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)	2468

D. Food- and agribusiness

Ref		Jul-Dec 2020 (Non-cumulative)
	Outcome	
IID.OC1	Number of jobs supported in agricultural value chains (by male/female headed and age %<35)	397
IID.OC2	Number of value chains performing better	5 (Rice, Vegetables, Aquaculture, Poultry, Basok)
IID.OC3	Number of businesses co-investing in food & nutrition agribusiness activities (by Dutch/non-Dutch)	NA

E. Gender

Ref		Jul-Dec20 (Non-cumulative)
	Outcome	
IIE.OC1	Number of women empowered on food security /agriculture/ nutrition	6983
	Output	
IIE.OP1	Number of women that benefitted from FNS interventions	6983

Annex D

Annex D: Water management infrastructure tables

Table 1: Rehabilitation progress during 2020-21(Jul to Dec 2020)

Polder	Work	Progress (as of Jun 2020)	Progress (as of Dec 2020)	Remarks (if any)
55/2A	Construction of Dharandi Sluice	70%	89%	work is ongoing
55/2A	Construction of Char Boleykhathi Outlet	90%	91%	work is ongoing
55/2C	Construction of Jangledanga Sluice	75%	89%	work is ongoing
55/2C	R/S of Embankment (1.60 km)	95%	99%	work completed
55/2C	R/E of Sutabariakhal (2.50 km)	70%	74%	work completed
47/4	Construction of Dhakkin Monoshatali Sluice	90%	91%	work is ongoing
47/4	Repair of Amtali Sluice	50%	70%	work is ongoing
47/4	Construction of Madhukhali Box Outlet	18%	21%	work is ongoing
43/2B	Mechanical Gates Installation for Mashurikati Regulator	75%	90%	gates installation completed
43/2D	Mechanical Gates Installation for Keshobpur Regulator	50%	90%	gates installation completed
43/2F	Construction of Ghosherkhal Box Outlet	98%	99%	work completed
43/2F	Construction of Karamjabunia Box Outlet	88%	90%	work is ongoing
25	Re-excavation of Ashifutkhal (2.50 km)	16%	20%	work is ongoing
27/1	Re-excavation of Shairghathi-Madabkatikhal (2.292 km)	5%	7%	work is ongoing
28/1	Re-excavation of Pachkhali Branch khal (1.2km)	0%	2%	work stopped
29	Construction of Agunkhali Regulator	0%	6%	work is ongoing
22	Construction of retired embankment (0.34 km)	0%	25%	work is ongoing
30	Construction of Khejurtala Regulator	85%	90%	work is ongoing
30	Mechanical gates installation for Khejurtala Regulator	0%	90%	gates installation completed
34/2	Emergency construction of ring bundh (0.05 km)	0%	65%	work is ongoing
34/2	Emergency closing of existing Old Halia Sluice Khal & Repair of Embankment (0.15 km)	0%	30%	work is ongoing
34/2	Re-sectioning of embankment (4.125 km)	0%	60%	work is ongoing
2	Construction of Sagla Pump Shed	70%	80%	work is ongoing

Table 2: Total Infrastructures Planned as per RDPP (Quantity and Budget wise) and Current Status of Total Estimate Vetted

Work Items	Unit	RDPP Provision		Total Vetted (up to Dec 2020)		Remarks (if any)
		Qty	Amount (Lakh BDT)	Qty	Amount (Lakh BDT)	
Embankment Re-sectioning	km	330.00	4232.67	330.00	5148.30	Completed
Embankment Retirement	km	20.58	1252.01	18.98	1234.61	Some vetting may come
Canal Re-Excavation	km	545.00	8675.96	509.38	8828.84	Some vetting may come
Repair of Sluices	nos.	186	5025.24	175	5052.61	Some vetting may come
Repair of Outlet/ Inlet	nos.	235	276.03	219	332.90	Completed
Construction of Sluice	nos.	31	7220.47	29	7068.68	Completed
Construction of Outlet	nos.	17	1480.00	17	1496.66	Completed
Construction of Inlet	nos.	08	192.00	03	96.01	Completed
Construction of Culvert	nos.	32	302.00	08	200.59	Completed

Work Items	Unit	RDPP Provision		Total Vetted (up to Dec 2020)		Remarks (if any)
		Qty	Amount (Lakh BDT)	Qty	Amount (Lakh BDT)	
Pump Shed Construction	nos.	06	48.43	04	38.40	Completed
Low Cost Bank Protection	km	8.00	620.00	1.63	324.29	Some vetting may come
Closure	km	LS	20.00	0.14	19.64	Completed
Flood Damage Repair	km	LS	800.00	25.02	840.56	Some vetting may come
Interior Dyke	km	21.00	419.36	20.98	421.62	Completed
Drain Pipe	m	9,000	256.00	8975	235.84	Completed
O&M Fund	-	LS	600.00	LS	559.57	Some vetting may come
Total			31,420.17		31,899.11	

Table 3: Expenditure by RDPP Budget Head (BDT lakh)

Sl. No	Work Items	FY 2013/14	FY 2014/15	FY 2015/16	FY 2016/17	FY 2017/18	FY 2018/19	FY 2019/20	Cum Total	TOTAL cost adj RDPP (as revised September 2020)	
		Total Cost	Total Cost	Total Cost	Total Cost	Total Cost	Total Cost	Total Cost		Cost	%age
1	Re-sectioning of Embankment (km)	220.88	788.93	940.55	799.42	764.79	581.90	83.01	4,179.49	4,233	99%
2	Retired Embankment (km)	0.99	190.97	123.92	24.57	168.95	70.32	305.09	884.81	1,252	71%
3	Re-excavation of khals (km)	47.27	365.30	267.82	749.30	952.76	2,716.32	1,239.54	6,338.31	8,676	73%
4	Repair of regulator/sluice with gate(nos.)	-	27.98	665.17	610.02	610.69	624.87	1,333.93	3,872.67	5,025	77%
5	Repair of Inlets/Outlets (nos.)	-	20.42	205.50	31.81	4.91	-	-	262.64	276	95%
6	Construction of Drainage Regulator/ Sluice (nos.)	-	-	88.29	463.53	486.03	1,476.65	3,220.42	5,734.92	7,220	79%
7	Construction Irrigation inlet (nos.)	-	-	-	54.59	-	-	-	54.59	192	28%
8	Construction of Drainage Outlet (nos.)	-	-	-	-	-	286.08	782.24	1,068.32	1,480	72%
9	Construction of culvert (nos.)	-	-	-	-	-	126.14	12.86	139.00	302	46%
10	Pump shed (nos.)	-	-	-	-	-	8.49	26.24	34.73	48	72%
11	Low cost Bank Protection work (km)	-	-	-	-	19.21	119.81	159.48	298.50	620	48%
12	Rehabilitation of Interior Dike (km)	-	-	-	-	-	32.03	213.74	245.77	419	59%
13	Closure/ Cross-bundh (km)	-	-	-	-	-	21.11	-	21.11	20	106%
14	Supply of Drain pipe (m)	-	-	-	-	-	-	139.63	139.63	256	55%
15	Flood damage repair / Breach Closing	-	-	-	-	-	104.35	482.65	587.00	800	73%
16	GoB O&M	-	-	-	-	173.28	265.60	28.98	467.86	600	78%
	Total	269.14	1,393.61	2,291.25	2,733.25	3,180.62	6,433.67	8,027.81	24,329.34	31,420	77%
		1%	6%	9%	11%	13%	26%	33%			

Annex E

Annex E: Case Studies

Case study-1

Akkas Ali Mollah: A successful Farmer-Entrepreneur

Akkas Ali Mollah, a member of Ukra WMG from Polder 27/1, Dumuria, Khulna has become an example of successful entrepreneur in his locality adopting market orientation and demand driven approach. Vegetable farmers of Khulna region were facing problems for purchasing quality inputs, selling their products due to Covid-19 situation. But Akkas could manage the problems far better than others.

Farmers are used to adapt with changing circumstance, whether it is infestation of pests or climate related problems. The pandemic this year has brought a range of new challenges for farmers. Based on his experience of last few years, he started communicating with input dealer well ahead of time, for supply of Cauliflower seed on time. He was also cautious about seasonality, timing and early cultivation challenges. As he and fellow WMG members were intimate with input provider, trained under Blue Gold Program, he started cultivating 'Snow Box' hi breed Cauliflower. This variety is extra early adaptable, seedling vigor is unusual, possess good tolerance to moderate fall frost (25-32°F/-4- 0°C). Its crown is snow white that has comparatively higher market demand with higher market price.

Due to Covid-19 losses in last winter season, he started a fresh this time with only 50 decimal areas. For this, he purchased seeds & fertilizers from dealers. He had grown seedlings and planted them with a spacing of 18 inch x 18 inch in line sowing method. He received a bumper production of 25.4 quintals of cauliflower during November 20 to December 14, 2020. The average market price was BDT 21 per kg while he received maximum price of BDT 60 per kg early in the season.

Akkas could use his experience and relationship during this challenging time. He could sell his harvest and reap the benefit while many others struggle. He earned a net profit of BDT 26,040. He also received technical guidance from BGP engage in commercial production of Cauliflower saplings for selling to farmers, due to huge demand for this specific variety in regional and national market. Now many farmers belong to WMOs are approaching him for - production & sales planning and production techniques - that paved path for his successful entrepreneurship.

Case study-2

Success of CAWM in polder 43/2B

Ramdula WMG is one of the functional WMG of Polder 43 /2B. Last Aman-2019, CAWM activities have been implemented in Ramdula WMG. Fifty farmers cultivated BRRI dhan52 in 50 acres of land. Blue Gold program provided seed and fertilizer support to farmers and DAE, Galachipa has provided training through FFS. The main problems in the field were waterlogging during the Aman season and lack of water during the Rabi season. As a result, farmers had to cultivate local varieties of rice during the Aman season and most of the lands were kept fallow during the Rabi season.

By the initiative of WMG to solve the problem of water management in the sub-catchment, a branch khal of Garibullah (1.5 km) was re-excavated and two PVC pipe culverts were constructed in collaboration with Blue Gold program where the WMG contribution was about tk. 140,000. As a result, about 350 acres of land under Nomor's Kola and Jaban Ali's Kola (sub-catchment) got a permanent solution for water management and farmers got the option of growing HYV crops.

Through the training of CAWM, the farmers got an idea about the method of seed preservation. The farmers of CAWM preserved the seeds of BRRI dhan52. During the next Aman season (2020) there was no problem of water management, 210 farmers jointly cultivated BRRI dhan52 in about 310 acres of land. At the beginning of Aman-2020 due to heavy rains rice in other fields partially have damaged but there was no damage of paddy in these fields. Because excess rainwater was drained quickly through newly excavated khal.

Due to the cultivation of HYV rice, they were able to harvest paddy in the first week of December and the average yield per acre was about 53 mound, which was almost double compared to earlier year. Due to early harvesting of Aman rice, high value crops including watermelon, BARI Mung-6, Chili, Groundnut and various vegetables have been cultivated in about 310 acres of land during the current Rabi season.

Case study-3

Removal of Siltation from Chohera Sluice: Success of Hori-Bhadra WMA, Polder 25

The Chohera sluice is only the source of agriculture water for 1200 ha land in Polder 25, under Khulna district. The sluice reconstructed in 2017-18 along with re-excavation of 1.5 km canal under Blue Gold Program.

After few months of the re-construction, the farmers could not operate the sluice gate due to heavy siltation from the Hori River. This huge amount of Alluvium came through Hori River and fielded up both side of the sluice gate. As a result, water management was hampered severely in about 800 ha land for agriculture production.

Chohera Catchment Committee, Hori-Bhadra WMA and concerned seven WMGs under that catchment arranged several meetings with Khornia & Rudaghara UP to find immediate support & solution of the problem. To remove that siltation, 430 farmers worked day-night as volunteers for removing the siltation. WMOs with the support of UP has resolved that problem as a priority basis. They have collected a big amount of funds for payment of labor cost (to paid labor) and painting/repairing of sluice gate. The details of the contribution stated in table:

SL #	Who Contributed	Amount of Tk.
01	Cash contribution from seven WMG from their O&M Funds	14, 000/=
02	Contribution of Hori-Bhadra WMA	10, 000/=
03	Contribution from Khornia & Rudaghara UP	20, 000/=
04	Contribution from owner of Gher, Local elites, Political people etc.	30, 000/=
Total		74000/=

About 800 ha lands of Singairbeel is now getting direct benefit of water management support from this Chohera Sluice gate for agriculture production. Transplanted Aman, Boro, vegetables, and Fish is the main crops in the Singairbeel. The farmers of those areas are now getting the benefit of their contribution and well aware and highly concerned about the benefit of in-polder water management.

Annex F

Blue Gold Program

Annex F: Photographs of BGP



Picture 1: Chohera Catchment O&M Sub-Committee in polder 25 removed silt several times from sluice khal involving 403 self-contributory laborers to cultivate 800 ha of land under Aman and rabi crops which was supported by WMA, UP, and Upazila Parishad



Picture 2: 2 vent gated culvert constructed at Gajendrapur CAWM area in polder 29, Khulna. 500 ha land will get benefits from this gated culvert.

Blue Gold Program



Picture 3: Catchment Committees installed warning notice by the side of the sluice gates mentioning do's and don'ts to keep water management infrastructures functional.25 , Khulna



Picture 4: Crop cutting festival at CAWM area under DarikhaKhal WMG in polder 47/4, Khulna. Average yield per ha 5.5 mt. in this field

Blue Gold Program



Picture 5: Two WMGs in polder 43/2D jointly removed silt from both sides of the sluice, cleaned the water hyacinth, and painted the sluice. The cost BDT 15,000 was shared by the two WMGs. As a result, the sluice operation becomes easily and lifespan has increased.



Picture 6: BWDB handed over 23 Manual Wheels for 23 sluices were handed over to the catchment committee in polder 47/4, Patuakhali. WMA arranged to hand over the meeting at Baliatali UP. Four respective UP chairmen, sub-assistant engineer of BWDB, BGP polder team, WMA and O&M sub-committee representatives were present there.

Blue Gold Program



Picture 7: The Upazila Fisheries Office Patuakhali conducted a mobile court for illegal fishing in the khals with Jhai/nets in unions in polder 43/2D and 43/2E, Patuakhali. 32 nets were seized and burnt in front of the communities. They fined 32 peoples for these. WMG's members of the area expressed satisfaction and helped the mobile court



Picture 8: BhadrabariaKhal WMG in polder 55/2C, Patuakhali took an initiative of poultry vaccination event. It helped to reduce the death rate of poultry in these areas.

Blue Gold Program



Picture 9: The embankment of the southern part of the polder-25, Khulna was low. After the embankment resectioning works, the area is now protected from the flood.



Picture 10: Re-construction of the Khekuani 2-vent regulator has been completed in polder 43/2F, Patuakhali. After the completion of this work, the water management and cropping intensity of this area has improved.