



BLUE GOLD TRENDS WATCHER

COMMUNITY LED AGRICULTURAL WATER MANAGEMENT INCREASES REVENUE

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Polder-43/2F, Barguna:

Preamble: Uttar Khekuani WMG of polder 43/2F is located about 25 km south-west from Patuakhali BGP Office in Gulishakhali union under Amtoli Upazila of Barguna district. WMG members come from 208 HHs out of 350 HHs in the WMG area. Approximately 600-650 acres of cropland belongs to the said WMG and located in five separate fields. CAWM activities had taken place in one of the crop fields which is approximately 100 acres. The reporting field was under Khekuani sluice catchment and about 4 km far from the sluice. Due to long distance from sluice and obstacles (like fence and net for fishing, water hyacinth etc.) in the khal, there was slow drainage. The water of previous tide could not drain out water before the next high tide came in. Thus during monsoon there was high stagnant water in the field resulting damage of Amon rice seedbed and seedlings, and farmers had to go for local varieties of rice whose yield is low. At the same time, due to long distance from sluice and poor conditions of khal there was also scarcity of irrigation water in dry season for Rabi crops. Thus farmers could not cultivate diversified high value Rabi crops. As a result of poor drainage systems, about 75% (75acres) area of this field was considered as affected land in terms of non-suitability for cultivation of modern variety (HYV) of Amon rice and damage of Rabi

crops. Since the field is basin shaped, sometimes it was not possible to grow crop/rice at the middle of the basin due to high depth of water, nearly 50 acres of land remained fallow. On the other hand, due to poor drainage system there was very little diversification in Rabi crops and farmers were forced to cultivate late Rabi crop like Mungbean, but again it was under threat of loss, if there was even medium rainfall during February to April.

Way-out Activities/Process: In the above stated situation, Blue Gold Program, Patuakhali conducted Community led Agricultural Water Management (CAWM) in a most problematic area of the field (lower portion of the field) in consultation with the concerned WMG and respective SAAO. As part of CAWM crop related technical and water management problems were identified in participatory manner with farmers/WMGs. There are two parts in CAWM- one is DAE conducted FFS which deals with technical issues on crop production and the other is community-based water management that includes drainage systems improvement and construction of small-scale infrastructures. Through the DAE FFS farmers are made aware about the crop synchronization and scope and benefits of modern variety of Amon rice along with cultivation procedures. After identifying the problems, ...

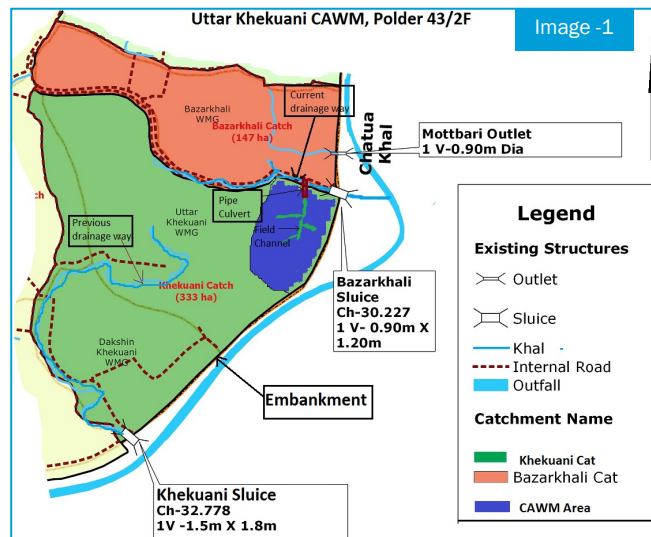
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Blue Gold Program is Implemented by-

Bangladesh Water Development Board (BWDB)



Department of Agricultural Extension (DAE)



Uttar Khekuani CAWM is situated at the GPS location of 22.189198°N, 90.268815°E. Prior to the commencement of the CAWM program, the area was particularly vulnerable to water-logging. Because Khekuani Sluice is located 4km away from the CAWM field which is in void. Farmers were forced to cut road to connect neighboring Bazarkhali Sluice Khal to drain out excess water. Under the CAWM scheme, concerned WMG took a joint financing initiative to construct a gated pipe culvert (at the GPS location of 22.19251°N, 90.269127°E) along with 600ft field channel as the long-term solution of the problem.

PARTICIPATORY MONITORING RESULTS REVEAL PROGRESS OF WMGs; WHEN WMAs PRACTICED THE SAME FOR THE FIRST TIME*

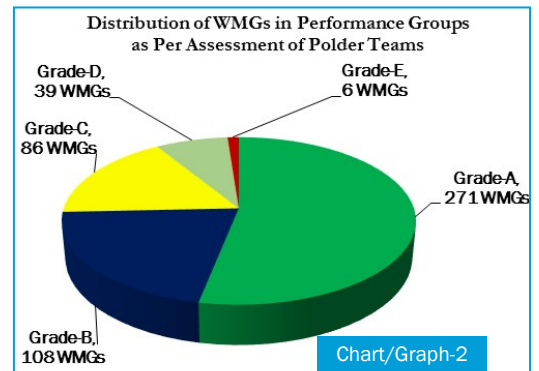
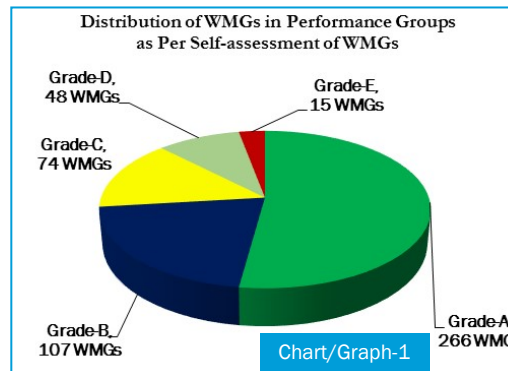
“As per self-assessment of WMGs, the progress of WMGs has been quite remarkable in 13 polders, where 80% or more WMGs of the respective polders fall under the top 2 performance groups; the polders are 22, 30, 43/2D, 43/2F, 29, 43/1A, 43/2B, 43/2E, 26, 31 part, 2& 2 Ext., 55/2A and 55/2C.”

Participatory Monitoring in WMGs: The sixth round of participatory monitoring (PM) was conducted by WMGs in April 2019. A total of 510 WMGs of 22 BGP polders participated in the PM exercise. Based on the progress they reported, WMGs have been ranked in 5 performance grades (A – E). The results of PM show that performance levels of about 73% of the total number of WMGs are of 2 top grades (‘A’ & ‘B’) with about 52% of the total number of WMGs ranking in grade ‘A’, overall achievement being 80% or more, while only about 3% WMGs rank in ‘E’ grade, overall achievement being less than 50%. In polder teams’ assessment, the performance of

WMGs is even better – about 74% WMGs are ranked in the top 2 performance grades, with 53% WMGs in grade ‘A’ while only about 1% WMGs are ranked in the lowest (E) grade.

As per self-assessment of WMGs, the progress of WMGs has been quite remarkable in 13 polders, where 80% or more WMGs of the respective polders fall under the top 2 performance groups; the polders are 22, 30, 43/2D, 43/2F, 29, 43/1A, 43/2B, 43/2E, 26, 31 part, 2& 2 Ext., 55/2A and 55/2C.

Distribution of WMGs into performance groups as per WMGs’ self-assessment and polder teams’ assessment is reflected in the following charts:



It may also be noted that a positive trend can be observed in the progress of WMGs of most polders if the PM results of April 2019 are compared with those of previous rounds of PM.

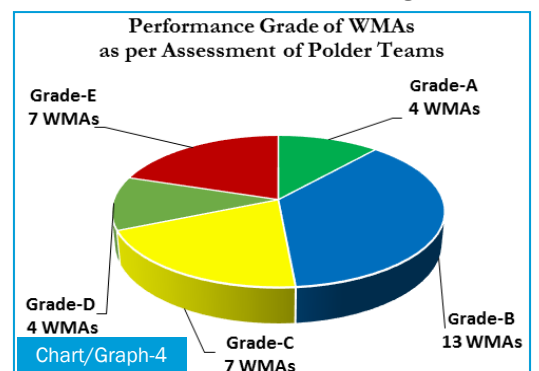
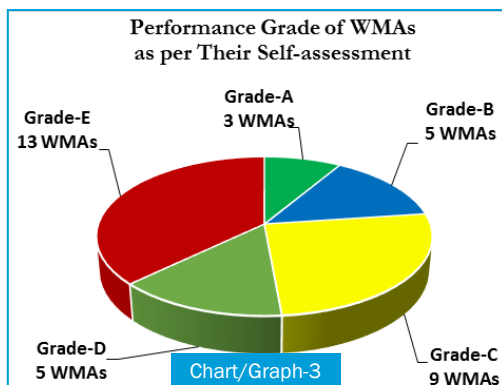
“A total of 35 WMAs, out of 36 WMAs formed in 22 BGP polders, participated in the PM exercise. Based on the progress they reported, WMAs have been ranked in 5 performance grades (A–E). The results of PM show that performance grade of about 8% of the total number of WMAs is ‘A’, overall achievement being 80% or more, while 37% WMAs belong to ‘E’ grade with overall achievement of less than 50%.”

Participatory Monitoring at WMA Levels: The first round of participatory monitoring was conducted by WMAs of Blue Gold polders in May 2019. The WMAs assessed their progress against 10 outcome challenges under 3 themes and indicated the progress they achieved vis-à-vis the outcome challenges by using scores. It may be noted that the outcome challenges taken into account in PM at WMA level underscore the functionality indicators identified by Blue Gold professionals.

A total of 35 WMAs, out of 36 WMAs formed in 22 BGP polders, participated in the PM exercise. Based on the progress they reported, WMAs have

been ranked in 5 performance grades (A–E). The results of PM show that performance grade of about 8% of the total number of WMAs is ‘A’, overall achievement being 80% or more, while 37% WMAs belong to ‘E’ grade with overall achievement of less than 50%. Three WMAs, namely Dihibura Khal WMA of Polder 22, Batiaghata Khal WMA of Polder 30 and Nondonkhali Sluice WMA of Polder 31 part, are among the best performing WMAs – in their own assessment as well as in polder teams’ assessment.

Distribution of WMAs into performance groups as per WMAs’ self-assessment and polder teams’ assessment is reflected in the following charts:



* WMGs: Water Management Groups; * WMAs: Water Management Associations.

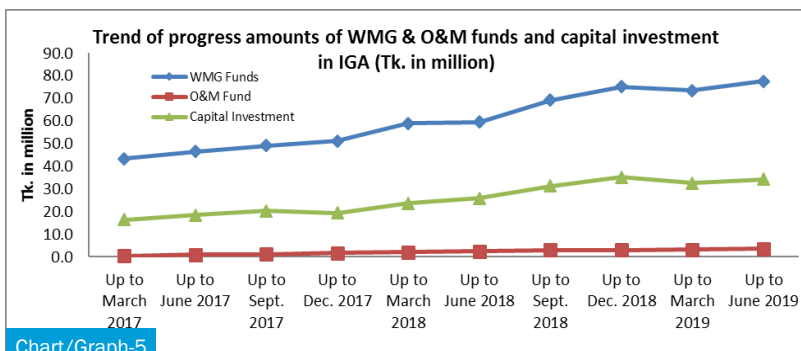
LATEST REPORT OF WMG TRACKER SHOWS INCREASING TRENDS

WMG Funds and Investment in Business:

In 22 BGP polders 511 WMGs have been formed with members from 118,595 households out of the total 186,339 households living in those polders, i.e. 64% of the total households are represented in WMGs, which is higher than the project target (i.e. at least 55%). As reported 136,919 members are enrolled in 511 WMGs (i.e. on an average 268 members in each WMG)

where 77,748 are male members and 59,171 (43.3%) are female members (as against project target of 'at least 40%' female).

Positive trends can be observed as regards collection of WMG funds, O&M funds (cash) and investment in business; however, a reason of fund increase from March 2017 to June 2019 is the increase of number of WMG members in new polders. The investment in IGAs/business is slowly increasing because (i) a number of WMG members are not interested to get involved in IGA and (ii) difficult to maintain account books and other documents regularly.

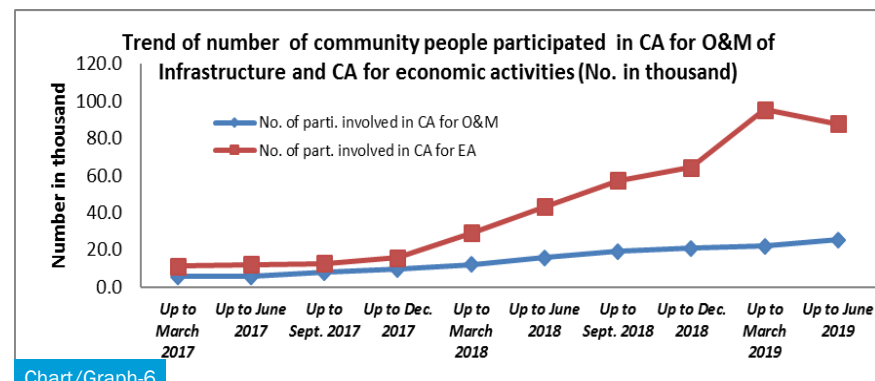


Chart/Graph-5

Collective Action (CA):

The trend of participation of WMG members/community farmers in collective action (CA) for

economic activities and CA for O&M of Infrastructure shows a positive increase from March 2017

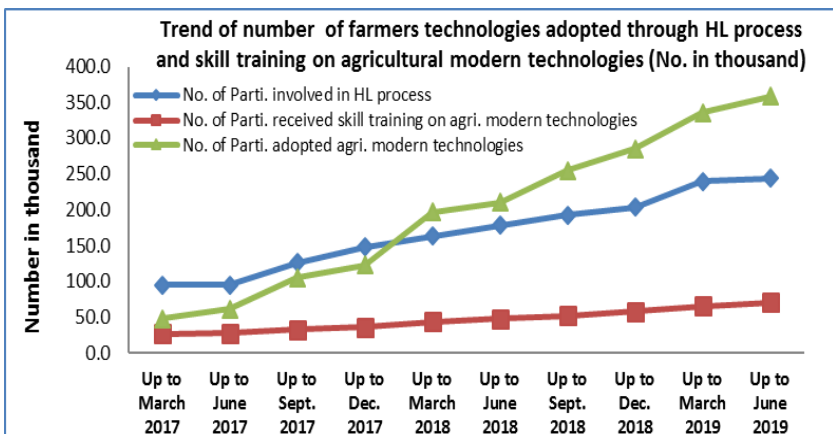


Chart/Graph-6

Agricultural Modern Technology adopted

A significant achievement has been made as regards adoption of modern agricultural technol-

ogies by WMG members/farmers. An increasing trend can be observed in the number of WMG members/farmers' adopt-



Chart/Graph-7

ing modern agricultural technologies in every quarter from March 2017 to June 2019; a good number of WMG members/farmers received skill trainings on different modern agricultural technologies, and some also learnt through horizontal learning process and demonstration/trial plots on crops.

“The trend of participation of WMG members/ community farmers in collective action (CA) for economic activities and CA for O&M of Infrastructure shows a positive increase from March 2017 to June 2019 in every quarter. This increase in participation in CA for economic activities and CA for O&M has been due to motivation works by Blue Gold among the WMG members & community farmers. This increase in participation in CA for economic activities and CA for O&M has been due to motivation works by Blue Gold among the WMG members & community farmers.”

CROPPING INTENSITY INITIATIVE IS NOW A PROVEN REALITY IN GENERATING POSITIVE CHANGE IN AGRICULTURE

In considering CII initiatives in Blue Gold working zones, we observed that the CII production system provides a range of total income of Tk. 57,600 to 59,500, deducting expenses of Tk. 35,455 to 35,500, ensures profit of Tk. 22,145 to 24000 whereas a traditional cropping system provides profit of Tk. 9,835 to 10,000 from one acre of land. The profit comes from the market value of 0.8 MT additional rice and 0.3 MT of produced Mustard.

Agriculture productivity in South-West coastal area (where Blue Gold is working) is low and significantly lower than other parts of Bangladesh. The underline causes for lower productivity are- a. poor drainage system, b. salinity intrusion, c. geographical location and d. traditional production practices. Under this circumstance, Cropping Intensity Initiative (CII) can be an effective way-out to increase farm production and profitability. As a result of Blue Gold Program (BGP) interventions, the polders already achieved substantially improved water management situation in consequence of construction/repairing of sluice gates, building/repairing of inlets and outlets, re-excavation of khals etc. This resulted in opportunities for improved agriculture production systems with the introduction of well adaptive, high value and high yielding crops. By utilizing the improvements in water management, BGP successfully introduced CII as a profitable cropping system. CII consists of a moderately short duration variety of HYV rice during Amon season instead of prevailing local variety, followed by zero tillage Mustard within existing cropping system before the winter crop where possible. BGP also customized traditional T-Aman seedling preparation time as well as following transplanting time in the 2nd & 3rd week of July instead of mid-August. In traditional cropping system is rice (T-Amon), followed by mostly fallow, then Mungbean/Boro-rice/Vegetables/Sesame in many suitable areas. Mungbean, Boro-rice, vegetable, Sesame, are generally considered as cash crop.

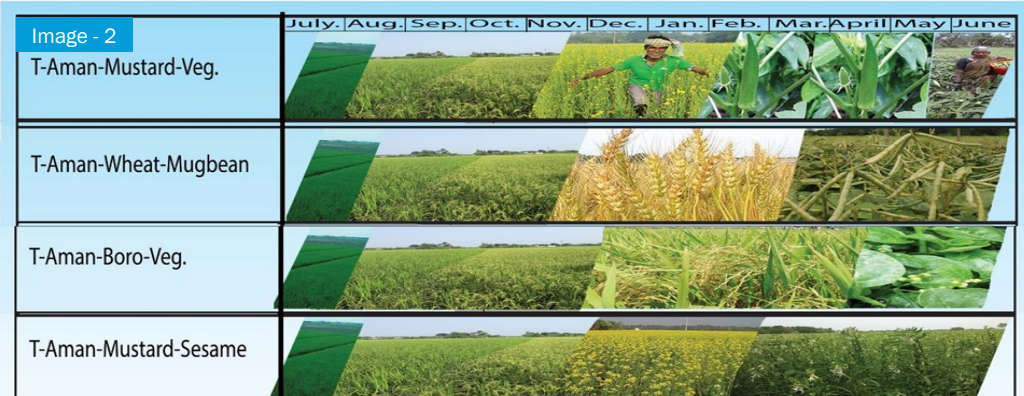
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tillage service, agricultural inputs thrive, that lead to flourish of related business during lean period in coastal polder area. CII initiative thus could inject economic ripple in overall cropping calendar. The CII production system can be shown below.

From BGP experiences, some critical issues and lessons learnt for implementing cropping intensity initiative for increasing farm productivity and profitability can be listed as-

- ◆ Selection of suitable land with drainage option that can allow short duration HYV rice cultivation;
- ◆ Proper farmer selection, involving local WMO and resource farmers, since there is need for more investment and effort in customizing production practices;
- ◆ Ensure rice seedbed during the 2nd or 3rd week of July, otherwise gap period between T-Amon and other crops will not be enough for additional field crop;
- ◆ Crop variety selection is also very important, selection of feasible and short duration variety (e.g. BRRI dhan49/52 for Amon rice, BARI Sharisa14 as 2nd crop and BARI Mung6/BRRI dhan58/Vegetable as 3rd crop) is crucial;
- ◆ Strong market linkage is needed with input suppliers and service providers as this system calls for cultivating non-traditional crop;
- ◆ Cultivation of an additional/chance crop like Mustard can create labor employment opportunity at lean period of agriculture production calendar;
- ◆ CII can positively impact business opportunities as demand for related product and services increases at polder areas.

Considering the farm productivity and profitability, CII already contributed significantly in BGP polders. If food security is considered, CII production system can play important role as farmers can get more grains from adopting the cropping system. Thus, it can contribute in reduction of poverty.



SMALL SCALE WATER MANAGEMENT INFRASTRUCTURE SCHEME EXTENDED FUNCTIONALITY OF LARGER SETUPS

Background:

Blue Gold Program (BGP) has reached its concluding stage. In view of this, the technical assistance team of BGP is considering utmost importance to the overall sustainability of the program. Considering of this importance, BGP along with local Water Management Organizations (WMOs), took initiatives to build small scale water management infrastructures in joint financing to ensure fair and effective water management in polder areas. Prior to implementation of this scheme, the issue was discussed with utmost importance in a workshop of Blue Gold's decision-making level. The workshop decided on the basis of different views on how to carry this important thought forward. As a result, there is a definite set of decisions as to what will be the roles and responsibilities of Blue Gold's zonal team, polder team, other technical team and above all the field staffs in implementing this plan. The workshop also determined what clauses will be inserted in the agreement between WMGs and BGP. It was also decided that this year phase-1 and phase-2 polders would be considered for the scheme and given the top priority, but if any timely application would come from phase-3 polders it might be considered.

Procedure of Work:

At first the procedures of implementation in the field (that was defined in the workshop at BGP management level) was discussed with key role players including field staffs, polder and zonal team members and, also incorporated their opinions. Then finalized instructions for BGP staffs and partners, application format and responsibilities of different level and technical staffs of BGP. At field level, each WMG and WMA was informed about the process of application as well as implementation

and funding process. At field level, concerned CDFs supplied application form and facilitated WMGs to fill up and submit the form. But it was mandatory for WMGs to submit the application to concerned polder coordinators at zonal office. When WMG leaders went to the field to gather information in favor of their respective proposals, they clearly learned about the type of crop fields. They learned where the land is relatively higher or lower, where waterlogging occurs, where the culvert needs to be built for ensuring better water management and so on. Finally, they made a priority list of Small Scale Water Management Infrastructure for increasing agricultural production. They analyzed their existing cropping pattern for defining cropping intensity. CDFs were always on their side as a supporting force, so that they could get a clear impression from here. Through this endeavor, WMGs learned how to make sure better and justified water management at field with the aim of increasing cropping intensity very intimately. Upon receiving proposals (that contained justifications and related information) from WMGs, BGP Polder and Zonal Team inserted all data in a prescribed format, then a primary scrutiny was done. After that, a committee comprising an engineer, agriculturist and socio-economist has been formed at each BGP zone to review the proposals. The proposal review committee visited each proposed location to verify rationalities of WMG's SSWMI proposals and thus the final list of proposals was prepared. The table below shows the scenario of Small-Scale Infrastructures at all three zones:

Table -1

Zone	No. of polders implemented	No. of WMGs Implementing SSWMI in the field	No. of Small-Scale Infrastructures				
			Nala/shisa/khal (no. & length)	Pipe Culvert (no.)	Box Culvert (no.)	Fallboard for Existing Culvert (no.)	Others (no. & Item)
Patuakhali	10	98	53 (24.35km)	115	21	15	-
Khulna	7	37	33 (16.27km)	1	4	1	2 Steel flap gates
Satkhira	1	33	28 (13.82km)	-	10	-	1 Drain (30m)

Cost Involvement:

Table - 2

Zone	Total Estimated Cost (BDT)	BGP Contribution (BDT)	WMG Contribution (BDT)	2% Grant for WMA of Total Cost (BDT)	Total BGP Contribution (BDT)
Patuakhali	1,44,17,551	1,15,42,545	28,75,006	2,28,916	1,17,71,462
Khulna	65,34,532	46,58,556	18,75,976	93,171	47,51,728
Satkhira	44,65,025	33,51,991	11,13,034	67,039	34,19,030
Grant Total (BDT)					1,99,42,222

PLEASE SEE PAGE-6

“the technical assistance team of BGP is considering utmost importance to the overall sustainability of the program. Considering of this importance, BGP along with local Water Management Organizations, took initiatives to build small scale water management infrastructures in joint financing to ensure fair and effective water management in polder area.”

SMALL SCALE WATER MANAGEMENT INFRASTRUCTURE...

FROM PAGE-5

Experiences:

Around 90% of the work has already been done, few of them are still in progress, and rest of works management groups. In addition, this year monsoon started lately, in this reality the farmers from the



Image-3

WMGs (Par Batiaghata of Polder-30 and Balabunia Gopalnagar of Polder-26) have been able to retain water due to re-excavation of canals under SSWMI schemes. As a result, the seedbeds have been prepared in advance for Amon cultivation.

Challenges:

Some challenges were also faced in implementing SSWMI; for example, climatic factors hampered the work progress in some particular cases. Apart from this, according

“Construction of small scale water management infrastructure activity has become popular with farmers as well as with WMG members, as WMG itself has implemented the scheme according to their own choice and desires. It brings comparatively higher benefits, considering the cost involvement (see the extreme bottom table in page-5). On the other hand, construction of such small infrastructure is not usually addressed by the government institutions like BWDB, LGED or BADC etc. Therefore, the responses of the beneficiaries are also curiously positive and they hope it will continue furthermore.”

to the terms of the agreement between WMOs and BGP, WMGs were required to spend a certain percentage of money from their own funds, but few of them could not do so on time, which led to the prolonged delay in execution of works. There were other challenges as well, such as waterlogging, shortage of labor, lack of coordination among the WMG members, lack of proper placement of the infrastructure etc.

having been postponed for this season due to entering of water in work sites. With these accomplished structures, there will be positive changes in around 3000ha of land and 15000 of farmers will be directly benefitted. This will make it possible to drain out water from the land and hence, the prolonged waterlogging problem will be removed by draining out excess water from land and at the same time, it will be possible to hold fresh water for irrigation during rabi season. The people of the community have taken this hands-off program very sincerely and they feel honored to do so and consequently, they have implemented it with greater interest and sincerity.

Conclusion:

Construction of small scale water management infrastructure has become popular with farmers as well as with WMG members, as WMG itself has implemented the scheme according to their own choice and desires. It brings comparatively higher benefits, considering the cost involvement (see the extreme bottom table in page-5). On the other hand, construction of such small infrastructure is not usually addressed by the government institutions like BWDB, LGED or BADC etc. Therefore, the responses of the beneficiaries are also curiously positive and they hope it will continue furthermore.

It is remarkable that the SSWMI initiative has greatly increased the interest of the farmers. For example, one of the WMGs (Budhata Poschimpara) re-excavated a field channel/khal with the support of BGP, and the farmers of another WMG (Darikkha Khal) was inspired by observing them and contacted their Union Parishad on their own initiative and jointly re-excavated field channel/khal. This is very encouraging for other water



Before SSWMI

Image - 4

After SSWMI

AN EASY WATER MANAGEMENT MANUAL IS BEING DEVELOPED TO GUIDE WMOs

Background: Operation & maintenance manuals have been produced in previous projects addressing drainage or irrigation in Bangladesh. These manuals are often technical in nature and difficult to understand for beneficiaries. So, they rarely read or use them. This is why the Blue Gold Program takes a different approach and is developing a different manual that will be easy to understand and interesting to read.

Objective: The main objective of the water management manual is to give Water Management Organizations (WMOs) contents to discuss and implement best water management practices. Most of the WMG members are interested in higher productivity and profitability. Therefore, the manual has a broader perspective than just operations and maintenance, focusing on the relationship of water management with crop production. Operation and maintenance follow naturally as an integral part of the manual.

Steps: In order to make the manual, the contents of the IPSWAM manual for O&M has been updated. Some restructuring has taken place, to emphasize the importance of the relationship between water management, operations and maintenance and crop productivity. Subsequently, together with an artist, pictures have been developed. Accompanied by short explanatory texts, the pictures address subjects such as cropping pattern, responsi-

bilities of WMOs, O&M agreement, catchment planning, resource mobilization and proper operation and maintenance of infrastructure.

The manual is still under process. WMOs have already been asked for feedback. This was extremely helpful to understand the interest and the

Image - 5

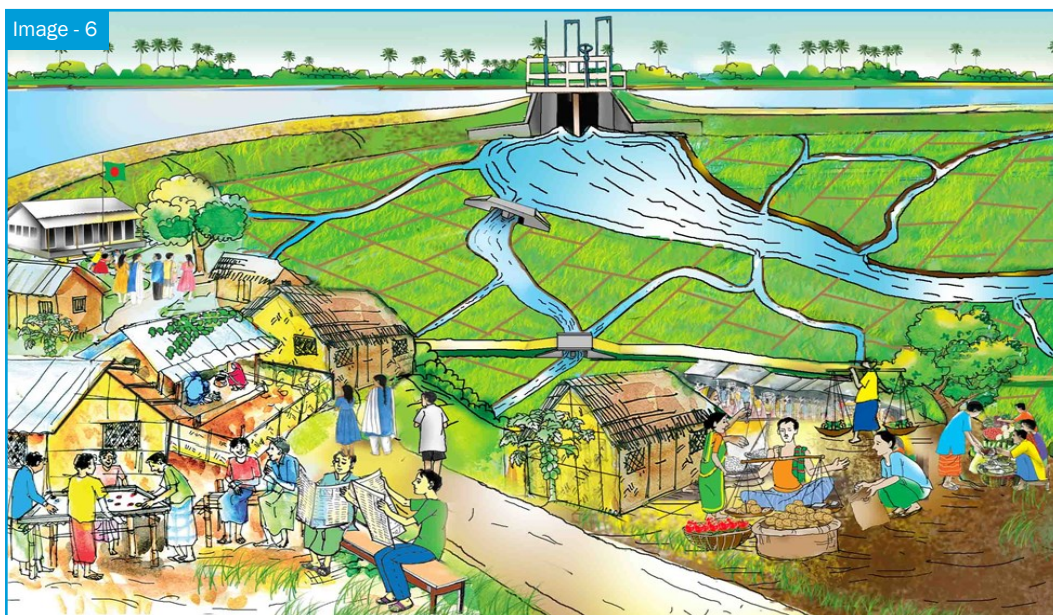


Water Management Association (WMA) representatives are giving feedback on Water Management Manual in progress.

need for the manual by the WMOs. In the near future, BWDB and DAE will be asked to give feedback. It is expected that this will give sufficient information to complete the manual. The manual will then be distributed among WMOs.

Conclusion: The upcoming manual is expected to help WMOs in implementing the best water management practices for improving cropping patterns. Operations and maintenance are an integral part of the water management to improve cropping patterns. Because the manual uses drawings and photos and focusses on crop productivity. Hence, It is expected that this manual will be very delightedly accepted by the WMOs and practiced. By combining feedback of WMOs, BWDB and DAE the water management manual will be highly useful.

Image - 6



A glimpse of an ideal catchment where all the water management infrastructures are in good condition which eventually has a positive impact on the lifestyle of the people living in the area.

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WHEN SMALL SCALE FCDI INITIATIVE IS AN ENTERPRISING PARADIGM*

Background:

The lives and livelihoods of people living in the village Mativanga (43/2A polder) are increasingly affected by water as it shows opposite faces by its presence and absence. Both the absence and presence of water, during summer and rainy season seriously affects agriculture due to lack of proper flood control drainage and irrigation systems. Around 1,700 people live in the village and most of them are farmers. While agriculture is one of the major sources of income, which remains poorly managed with conventional irrigation systems without adopting modern technologies.



We are always thinking that the works are the liability of external actors and we are habituated to get support from them. In fact, we couldn't properly utilize the local resources in our community. We didn't know about the strength of togetherness and of resource mobilization techniques. After receiving support from SWIFT team, we have collected money, materials, labor from our communities; whoever wants to provide based on their capacity. We have also collected resource from our Union Parishad by submitting a formal application. Now, we are confident enough to carry forward such initiatives by ourselves"

Peara Begum,

Joint Secretary of Dokkhinbighai Water Management Group

Under the Innovation Fund of the Blue Gold Program, the Sustainable Water Management through Indigenous Finance and Technology-SWIFT project successfully completed the feasibility study between January-May 2018. The project is implemented by United Purpose and Sheba Manab Kallyan Kendra (SMKK) to enhance the capacity of Water Management Groups (WMGs) to initiate small-scale water management work through community resource mobilization.

Since our observations revealed that the large-scale water management infrastructures in many cases could not play an effective role without the help of small infrastructures. We highlighted the need for small infrastructure construction among the farmers in coordination with concerned farmers/WMG members and with the government and local government bodies, and continued to inspire for the initiatives for construction of small-scale water management infrastructures (SSWMI).

Implementation:

At the beginning of the project, United Purpose played the facilitation role, so that the WMG members can take lead of the process. More particularly to enable WMG members in analyzing their own circumstances and to take relevant measures that lead to improving their safe-

ty and living conditions through community-led and community financed water management works.

SWIFT contributed in enhancing the capacity of WMGs to initiate small-scale water management work through mobilizing their own resources and/or generating funds from the community, local government and other NGOs. In response of contribution of SWIFT, WMGs are taking leadership now in utilizing their own resources, reducing dependency from external sources/donors, which will support them to ensure sustainability of their activities.

WMG members are used to conduct monthly meeting, collecting saving, assisting large-scale water management works including canal re-excavation, sluice gate construction etc. initiated by BGP. But as we observed that there was a gap of inland small-scale water management initiatives (e.g. excavation/re-excavation of drainage channel, construction of small ring/pipe culvert and micro dam) to connect with large-scale infrastructures. Due to lack of small-scale Flood Control and Drainage Infrastructure (FCDI) in their agricultural land, they are not getting the desired benefits from the

large-scale water management infrastructures that BGP constructed.

After frequent meetings with WMG members, affected farmers, BWDB, DAE, BGP and Chairman of Chotobighai Union Parishad,

SWIFT team realized the possibility of hopes. Because, people from all sides assured to provide supports in terms of initiating FCDI at Paschim Mativanga. The meeting with LGIs positively contributed to enhance confidence level of WMG members. The positive discussion of the meeting motivates the members and achieved the spirit of leadership in initiating FCDI works by mobilizing resources. The WMG formally proposed for support (cash or in-kind) to SWIFT and at the same time to UP Chairman by submitting formal letter.

FCDI Initiative



Image - 8

"Under the Innovation Fund of Blue Gold Program, the Sustainable Water Management through Indigenous Finance and Technology-SWIFT project successfully completed the feasibility study between January-May 2018. The project is implemented by United Purpose and Sheba Manab Kallyan Kendra (SMKK) to enhance the capacity of Water Management Groups (WMGs) to initiate small-scale water management work through community resource mobilization."

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* FCDI: Flood Control and Drainage Infrastructure.

WHEN SMALL SCALE FCDI INITIATIVE...

FROM PAGE-8

Therefore, representatives of United Purpose, BGP, SMKK, WMG and UP chairman jointly visited the spot of proposed FCDI. Afterwards, Chairman of Chotobighai Union Parishad agreed to provide support, and therefore the WMG members showed their willingness to take leadership of implementing small-scale water management infrastructure. The process of implementing those FCDI included-

- * WMG Meeting;
- * Resolution Book Preparation;
- * Applying for Support through Formal Letter;
- * Design Preparation;
- * Sharing and Acknowledged by BGP & BWDB;
- * Preparing Estimation of Per Scheme, Segregating Contribution of WMG, Union Parishad & SWIFT;
- * Community Sensitization Meeting;
- * Resource Collection.

Outputs:

1. 26 FCDI schemes have been implemented successfully through the project. Total value of scheme is BDT 12, 51,812 where SWIFT contributed only BDT 5, 94,948 which is less than 50% of total scheme. WMG contributed BDT 6, 01,514 and Union Parishad contributed BDT 55,350;

2. Around 2400 acres of inland agricultural fields are now under smooth water management framework operated by WMGs through 26 small scale FCDIs;
3. Enhanced capacity of WMGs in implementing FCDI schemes and taking complete leadership;
4. Farmers, WMG members and Union Parishad jointly paid for 26 FCDI implementations;
5. 60% of 36 WMGs committed to implement small-scale FCDI;
6. Enhanced networking capacity of 60% WMGs among 36 in regards of mobilizing resource for initiating FCDI works in future.

Conclusion:

Communities are leading the process of finding and securing funds from their own and local sources. They are implementing their own community-led projects based on needs rather than receiving short term cash grants.

As WMGs and UPs their enthusiasm, It is expected that they would contribute 20-30% funds for small-scale flood control and drainage infrastructure (FCDI) schemes. Through creating sensitization and community mobilization, more than 50% contribution already mobilized and therefore 07 FCDI schemes are completed so far. Together with this improved water management in the project area,

WMGs and local farmers are able to extend productivity of around 685 acres of agricultural land. Linked to government extension officers, farmers are accessing agricultural training, services, inputs and technology for diversified and improved livelihoods. By building community capacity to access and mobilize funds, the project is supporting communities to reduce their aid dependency and empower them to implement their own plans for water management.

“Communities are leading the process of finding and securing funds from their own and local sources. They are implementing their own community-led projects based on needs rather than receiving short term cash grants.”

FCDI Initiative



Image - 9

Table- 3

Flood Control Drainage Infrastructures in Paschim Mativanga WMG at a Glance

SL	Name of FCDI Scheme	Number of Schemes	Scheme Value (BDT)	Resources Provider		
				WMG	SWIFT Project	Union Parishad
1.	Construction of Small pipe/ring culvert with wooden gate	04	1,61,120	60,710	74,560	25,850
2.	Micro dam construction	02	1,65,956	79,956	76,000	10,000
3.	Excavation/ re-excavation of drainage channel	01	17,266	10,266	7,000	0
Total		07	3,44,344	1,50,933	1,57,560	35,850
Contribution Percentage			100%	44%	45%	11%

THE FARMERS CREATED EXAMPLES TO MULTIPLY SUCCESSES

“As a result of CAWM intervention (see for inventions front page), water drainage system is improved, therefore, the situation of waterlogging is no longer at this particular area. Now he doesn't have any experience of waterlogging or damage of crops because of unexpected rainfall. At the moment he can raise rice seedling at due time. He cultivated modern/HYV variety of Amon rice (BRRI dhan 52) and got 80 mounds (3.2 mt) of rice. The worth of produced rice is Tk. 52,000 and the production cost was Tk. 33,580.”

Md. Eidrish Hawlader, is a WMG's member and CAWM participant of Uttar Khekuani. He has 2 acres of land in the CAWM area. Before CAWM he

Image -10



Md. Eidrish Hawlader and his Sunflower Field

was Tk. 33,580. This rabi season he has cultivated Sunflower in his whole land and he has gotten 1.28mt sunflower seeds, which is worth Tk. 70,400, where production cost is Tk. 28,610. In addition of that this year he is going to cultivate modern HYV Aus rice (BRRI dhan 48) in 1 acre of his land and he expects he will get 1.6 mt of rice which is worth Tk. 26,000 and the estimated cost is about Tk. 16,790. His yearly net income will be Tk. 69,420. His yearly income has increased with Tk 42,580.

70,400, where production cost is Tk. 28,610. In addition of that this year he is going to cultivate modern HYV Aus rice (BRRI dhan 48) in 1 acre of his land and he expects he will get 1.6 mt of rice which is worth Tk. 26,000 and the estimated cost is about Tk. 16,790. His yearly net income will be Tk. 69,420. His yearly income has increased with Tk 42,580.

(the contact number of the farmer Md. Eidrish Hawlader is +880 1789-530506)

Md. Shahanur Alom, is also WMG member and CAWM participant of Uttar Khekuani. He has 1 acre of land in the CAWM area. He faces similar problems as farmer Eidrish. Like Eidrish, he now cultivates the HYV T.Aman BR52 and sunflower. Due to physical problems he will not cultivate Aus, however his net income has increased from Tk 13,420 to Tk. 30,105. It is important to the CAWM members that they grow the same varieties so that water management is easier and threats from rats and other pests are less severe.

(the contact number of the farmer Md. Shahanur Alom is +880 1753-834124)

As a result of CAWM intervention (see for inventions front page), water drainage system is improved, therefore, the situation of waterlogging is no longer at this particular area. Now he doesn't

have any experience of waterlogging or damage of crops because of unexpected rainfall. At the moment he can raise rice seedling at due time. He cultivated modern/HYV variety of Amon rice (BRRI dhan 52) and got 80 mounds (3.2 mt) of rice. The worth of produced rice is Tk. 52,000 and the production cost

Image -11



Md. Shahanur Alom Multiplies Confidence.

CAWM INCREASES REVENUE

FROM PAGE-1

...a joint meeting was organized among WMG (farmers), DAE (SAAO) and BGP staffs and the meeting selected interventions to solve the problems and prepared an action plan in line with those problems. In accordance with the action plan, CAWM participants blocked an opening of culvert (by which the field was connected with Khekuani sluice) at west side of the CAWM field and at the north side installed a 30ft long and 20 inches diameter gated pipe culvert; which connected the field with Bazarkhali sluice through Bazarkhali khal. In that pipe culvert, there are attached gates at both sides of culvert for well regulating the water flow as required. They also excavated 600ft field channel across their land to connect with main channel for draining out water. These infrastructure works were done through contributing approach by WMG/CAWM beneficiaries and Blue Gold Program. Moreover, the farmers/WMG have dressed the field channel before and after rain throughout the year as part of regular O&M of water resource infrastructures.

Outcomes/Impacts: By implementing the CAWM interventions including FFS sessions WMG members have become well equipped on internal polder water management (IPWM) and, as a consequence, they are performing well in water management. The reporting field is connected with nearest sluice named Bazarkhali sluice. As a result of CAWM/IPWM about 75acre of land is free from severe crop damage and 25acre land is saved from moderate crop damage risk. Now the farmers can raise rice seedling without any risk of damage and transplant seedlings timely with HYV Amon rice variety (BRRI dhan 52, BR 23, BR 22, BRRI dhan 76 & BRRI dhan 49 etc.) that leads the higher production of rice, its consequence is that who had food (rice) deficiency, he has got enough food for family consumption and even gets surplus in maximum extent. As a result of well drainage systems and availability of irrigation water, the situation mentioned below has happened in cropping systems as well as production.

Before CAWM interventions, in the reporting field cropping systems in 25% (25acre) of total land was **HYV Amon (mainly BR11 & BR 23) – Mungbean/others – Fallow**. In the remaining 75% (75acre) of land cropping systems was **Local Amon rice (Sada – mota, Dudkalom etc.) – Mungbean – Fallow**. Therefore, before the CAWM interventions, the productivity of that field in Amon season was 40MT HYV rice from 25acre of land and 75MT local rice from 75acre of land; which is worth (considered current year market

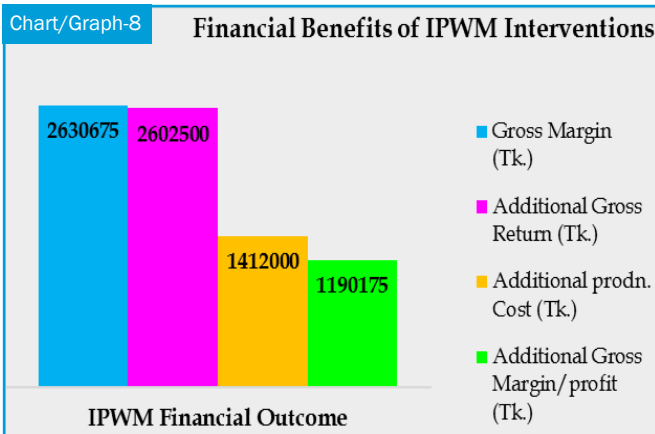
price) Tk. 1,962,500 (@HYV rice Tk. 16,250/MT and Tk. 17,500/MT) by spending Tk. 1,337,000 as production cost. Mung production was 30MT. which is worth Tk. 1,620,000 where production cost was Tk. 805,000. So, the total revenue earned from the whole field was **Tk. 3,582,500** by speeding total of **Tk. 2,142,000** as production cost, thus gross margin was **Tk. 1,440,500** and **ROI is 67.25%**.

After CAWM interventions, in the reporting field, cropping systems are **HYV Amon rice (100%, major varieties are BRRI dhan 52, BRRI dhan 76, BRRI dhan 49, BR22 & BR 23 etc.) – Mungbean (65acre)/Sunflower (35 acre) – Aus rice (50acre)**. Therefore, after taking CAWM interventions, the productivity of that field in Amon season is 160MT HYV rice from 100acre of land which is worth Tk. 2,600,000 by spending Tk. 1,679,000 as production cost. Mung production is 19.5MT, which is worth Tk. 1,053,000 where production cost is Tk. 512,575. Sunflower production is 22.4MT from 35 acre of land which is worth Tk. 1,232,000, where production cost is Tk. 523,250 and Aus rice production is 80MT which is worth Tk. 1,300,000 and production cost is Tk. 839,500.

So, after conduction of CAWM interventions the total revenue earned from the whole crop field is **Tk. 6,185,000** by speeding total of **Tk. 3,554,000** as production cost, thus gross margin was **Tk. 2,630,675** and **ROI is 74.01%**.

The evidence of IPWM result this year (2019) - late February to early March there occurred unexpected amount of rainfall (**106mm**) in Patuakhali and Barguna districts. As a consequence of that rainfall most of the Rabi crops like watermelon, groundnut, chili, and Mungbean were badly affected. Since, Mungbean is cultivated as the late Rabi crop thus it is cultivated at comparatively lower part of the land thus about more than 70% of Mungbam was damaged in the polder areas, but in the reporting field there was no crop damage incident including Mungbean. That is, now the field is free from risk of any water logged condition even when there is excessive rainfall and by improving the availability of irrigation water farmers can grow high value Rabi crops like Sunflower.

“Therefore, after taking CAWM interventions, the productivity of that field in Amon season is 160MT HYV rice from 100acre of land which is worth Tk. 2,600,000 by spending Tk. 1,679,000 as production cost. Mung production is 19.5MT, which is worth Tk. 1,053,000 where production cost is Tk. 512,575. Sunflower production is 22.4MT from 35 acre of land which is worth Tk. 1,232,000, where production cost is Tk. 523,250 and Aus rice production is 80MT which is worth Tk. 1,300,000 and production cost is Tk. 839,500.”



Editorial Note

Blue Gold Program is about to come to its completion soon. Therefore, the Issue-6 of Blue Gold Trends Watcher is the final issue. Being the final issue, its volume has been increased slightly; treating it as a 'special issue' of Trends Watcher; instead of usual 8 pages, this issue is of 12 pages. For obvious reasons, some writings on important subjects have been included in this issue. We have been more concerned with the sustainability of the results of the program after its departure; therefore, examples of some successes have been narrated here in this issue, which stimulate enthusiasm among our beneficiaries; such as CAWM initiatives, small-scale water management infrastructure scheme (which will mainly help to improve the functionality of large-scale infrastructures), easy and simple water management manual, potential cropping patterns and water management in the time of emergency.

Finally, in view of these successes and the spontaneous efforts of farmers, we strongly believe that we have been able to lit lights in the darkness to improve the livelihoods of people in the selected coastal areas.

Thank you very much for being with us-

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Editor

AFM Nurur Rahman

EMERGENCY WATER MANAGEMENT CAN BE AN EXCEPTIONAL LEARNING FOR OTHER WMOs*

Polder-2, Satkhira:**Preface:**

In mid-August heavy rainfall occurred in the Khulna and Satkhira districts. As a result, field crops were under threat. In response to that circumstance, WMOs and local concerned authorities took very important steps, which can be significant learning for us. Particularly from this initiative we can get a clear idea of the values and capacities of these organizations.

Situation Overview:

According to the information regarding crop fields, 29 beels out of 34 beels under catchments of Amodkhali, Moheswarkati, Surjokhali, Superighata, Budhata, Dohakhola, Beradangi, Shally and Sagma sluices were submerged. It happened due to week-long monsoon rain (11-17 August 2019). The flood situation further intensified after the heavy rainfalls of 17 August 2019. The rainfall records in last three months are furnished at the table below-

Table- 4

Year	2019			
June Total	July Total	August 01-20	August 11-17	On Aug 17
236.7 mm	146.2 mm	433.5 mm	299.9 mm	113.2 mm

Source: Bangladesh Meteorological Department, Satkhira

Negative Consequences:

A. T-Aman rice cultivation- 29 beels with an estimated area of 11, 283 acres are submerged from 17-22 August 2019. Farmers cannot transplant Aman rice due to excessive water. Initially, during seedbed preparation (mid-July) they suffered with low rainfall which delayed them, again during transplantation they are getting late due to inundation of the land. In total they might be late for around 30 days in this year, even the situation is managed shortly and successfully.

B. Summer tomato cultivation- 21 farmers from 14 WMOs cultivated summer tomato in 22 plots by themselves at early and mid-July. Of them 6 plots are fully damaged and 7 are partially damaged.

C. Summer bean cultivation- this year summer bean cultivation is introduced by 26 farmers from 14 WMOs where BGP provided only motivational and technical support and linked them to BARI at Gazipur for collectively bringing the quality seeds. They cultivated it at the same time with summer tomato but it got damaged fully in 1 plot and partially in 5 plots.

D. Other economic development activities- as reported by the WMOs, 27 villages are low to moderately inundated which is causing sufferings to the local people, first of all affecting their homestead vegetables and livestock.

Situation Management:

The situation has given us opportunity of understanding how the WMOs and UPs will act for water management by their own effort and can play emergency role when BGP will leave. We realized that they are capable to implement their role, but they might be a bit late to response.

We found that the WMO members are keen to drain out water through removal of congested slushy earth from the river side of Amodkhali sluice. They reported that if they can drain out water properly then they can transplant Aman rice in around 20 beels under/adjacent to Amodkhali catchment.

A. Role of WMOs: The Purbo Amodkhali WMG members have had meeting with UP chairman of Dhulihor and Fingri at the evening of 19 August, 2019. On 20 August 2019, 50 members from Purbo Amodkhali WMG worked voluntarily to remove the slushy earth. On 21 August 2019 joined another 105 members from Purbo Amodkhali and Amodkhali WMG and total 155 members from 2 WMGs worked together. Beside the physical labour they also used 2 local dredger machines to expedite the works. These two WMGs already utilized their O&M fund for hiring machines and purchasing fuel for the machines and formed a committee consisting of 5 members who will be providing field level support as necessary. The president of Amodkhali and Moheswarkati WMA along with 4 executive members are coordinating and providing necessary support.

B. Role of UPs: The chairman from Dhulihor and Fingri visited spots and made commitment to provide fuel for dredger machine as required in the next. The chairman of Fingri UP went to DC office of Satkhira to attend a meeting where he raised this issue and seek their assistance.

C. Role of BWDB and DAE: Not yet found.

D. Role of BGP TA: Providing mobilization support and technical support and inspiring the WMOs and WMAs who are involved with.

Challenges:

- UP chairman and members are providing support not only from their humanitarian ground but also demonstrating as qualified candidate for the next UP election.
- The fish farmers are benefitted from this situation, so they might create obstacles in the speed of WMOs movement.
- Further heavy rainfall and weather condition.

* WMOs: Water Management Organizations.

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