GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
MINISTRY OF WATER RESOURCES

BANGLADESH WATER DEVELOPMENT BOARD
COASTAL EMBANKMENT IMPROVEMENT PROJECT PHASE-1 (CEIP-1)

Focus Group Discussion (FGD)

Date: 16-11-2021
Polder # 32 , Package-1

FGD location: Khamarkhula Union Parishad, Dakop
FGD Team Members: 19

Crop Cultivation - Intensity			
How many times do you cultivate your land in a year? 1, 2 or 3		2	
If the land is cultivated only 1 time (1 season), why?	1=waterlogged, 2=Salinity water, 3=Water lack/ Drought		
If the land is cultivated only 2 times (2 seasons), why?		Water lack/ Drought , Salinity water	

What proportion (percent) of your land did you plant in each of the following seasons?

[NOTE to Facilitator: The members of the focus group are not likely to be unanimous in their answers. Solicit the responses from a variety of the participants and record the range of values – for example, 20-30% in Rabi, or 90-100% in Kharif II, etc.]

Season	2021	2020	2019	2018
Rabi	50	20	10	-
Kharif I	-	-	-	-
Kharif II	100	100	100	100
Describe how much variation there is among members of the focus group in the answers	No variation	No variation	No variation	No variation

We note that there has been a change in cropping intensity (more or fewer decimals planted in multiple seasons) in the last three years. [Note: If no change in cropping intensity, skip to Question 4.]

1. What was the **most important cause** of this change? Describe in detail both what and how?
   Response: Crop land has been more cultivated by implementing the CEIP-1. Also they have been inspired by other farmers who have been newly involved in the cultivation of rabi season (specified the watermelon crop)

2. If CEIP-1 physical works were not the most important cause, did they **contribute** to this change? If so, describe in detail both what and how?
   Response: N/A

3. Did anything else **contribute** to this change? If so, describe in detail both what and how?
   [Note to Facilitator: this could be other project activities such as WMO strengthening, favorable or poor weather, availability of inputs, or other development projects, etc.]
   Response: Some khal have re-excavated by other Project/NGO in polder area

What physical works or other conditions are key to improving or further improving cropping intensity? Describe in detail.
Response: need sub-canal in the inside the polder (khas canal routes have in polder), some land unleveled by storm that wise problem of irrigation

WMG/WMO	Key	Response / Please explain
Functionality of WMG	1=Functional 2=Somewhat functional 3=Non-functional 4=Does not exist	2
If exists, when was the WMG formed?	Provide the month/year	2020
Did the members or officers of the WMG receive training by an NGO?	1=Yes 2=No	1
What year?		2020
What did the training cover?	Open-ended	IPM, O&M of sluicegate, Social forestry Note: **WMG members forgotten the training issues**
Functionality of WMA (polder-level institution)	1=Functional 2=Somewhat functional 3=Non-functional 4=Does not exist	2=Somewhat functional
How has the performance of WMG/WMA changed over the last two years?	1=Improved substantially 2=Somewhat improved 3=Little or no change 4=Somewhat worse 5=Worsened substantially	2=Somewhat improved
What is the main function of the WMG/WMA? (indicate all applicable)	1=Fairly distribute water among users 2=Fairly balance the need for fresh and blackish water 3=Control Irrigation and drainage network 4=Collecting water service fees 5=Increase yield 6=Environmental protection 7=O & M of Water Structure 8=Don't know 9=Other	O & M of Water Structure, Fairly distribute water among users
What is your opinion as to Whose Interests WMG/WMA Protects?	1=Interests of all water users 2=Farmers' interests only 3=Shrimpers' interests only 4=Government interests 5=Its own interests only 6=The WMG/WMA is not influential and not able to protect the interests of anyone	Farmers' interests only

Farmer numbers of season wise	Rabi:	Kharif1:	Kharif2:	
Water related	**Code**	**Rabi**	**Kharif-1**	**Kharif-2**
Sources of Irrigation	1=Canal, 2=Deep Tubewell, 3=Shallow tube-well 4=Low lift pump (LLP) 5=Rainwater, 6=Floodwater, 7=Others specify (Traditional like thone, shauti, hand tube-well, etc.)…….Pond……..	Pond, canal	N/A	Canal, Rainwater
Water conditions	1=sweet water 2=saline water intrusion 3= sweet + salinity water	sweet + salinity water	sweet water	sweet water
Available of irrigation during the cultivation	1= sufficient 2=insufficient	insufficient	insufficient	sufficient
Availability of drainage channel	1=Available 2=Not available	Available	Available	Available
Status of drainage channel, if available	1=Water available 2=Water not available	Water not available	Water not available	Water available
Constraints for irrigation	1=Lack of water resources, 2=Lack of quality water, 3=mismanagement regarding water distribution, 4=poor irrigation channel, 5=sudden sea level surge, 6=high saline water, 7=Other specify……..	poor irrigation channel, Lack of quality water, high saline water	poor irrigation channel, Lack of quality water, high saline water	
Ways to overcome the constraints (list all, rank top 3)	1= 2= 3=	Re-excavation of Khals, Functionality of sluices.	Re-excavation of Khals, Functionality of sluices.	N/A
Is it possible to use drainage channel water for irrigation?	1=Yes 2=No	No	No	Yes
If not, why not?	Because it secondary and tertiary channels are almost silted and water is not available in these 2 season.			
What improvements in drainage are needed and why?	Need properly re-excavation of the canal.			

Land			Rabi	Kharif-1	Kharif-2
Fallow land has become cultivable in area of FS/DS/DC developed under Project	1=Yes 2=No	Not Clear			
If yes, amount of cultivable lands? dec	N/A				
Crop land has been able to be cultivated two times in area of FS/DS/DC developed under Project	1=Yes 2=No		yes	N/A	
If yes, amount of increase (percent of cultivable land)			30	-	-
Crop land has been able to be cultivated three times in area of FS/DS/DC developed under Project	1=Yes 2=No		N/A	N/A	
If yes, amount of increase (percent of cultivable land)			-	-	-
Land	**Key**		**Rabi**	**Kharif-1**	**Kharif-2**
Land preparation	1=Manual, 2=animal draught, 3=mechanized (hand tractor, four-wheel tractor, power tiller), 4= No/zero tillage practice, 5=others specify ….		power tiller	N/A	power tiller
Condition of land levelling	1=unlevelled plot, 2=levelled land, 3='sorjon', 4=furrows, 5=Others specify……		levelled land	levelled land	levelled land
Family labour and average wage					
Family labour (Person-day)			3	-	3
Wage labour (BDT/Person/day)			600	-	600

(List most important crops of each season)

	Key	Rabi Crop 1: _____	Rabi Crop 2: _____	Rabi Crop 3: Watermelon	Kharif-1 Crop: _____	Kharif-2 Crop: _____
Seeds						
Type of seeds used for crop production	1=Local variety, 2=High yielding variety, 3=Hybrid variety			Hybrid variety, High yielding variety	-	High yielding variety, Local variety,
Source of crop seeds	1=BADC, 2=Seed dealer/traders, 3=Own produced seed, 4=Neighboring farmers, 5=NGOs like BRAC, etc. 6=Research organization 7=Other, (specify)……..			Seed dealer/traders	-	Seed dealer/traders, own
Seeding method in the field	1=Broadcasting, 2=use mechanized seeder, 3=seedling transplanting, 4=dibbling, 5=No tillage, 6=Others specify……..			dibbling	-	seedling transplanting
Constraints for seeding?	1= 2= 3=			N/A	N/A	N/A
Ways to overcome the constraints	1= 2= 3=			N/A	N/A	N/A

	Key	Rabi Crop 1: _____	Rabi Crop 2: _____	Rabi Crop 3: Watermelon	Kharif-1 Crop: _____	Kharif-2 Crop: _____
Fertilizer use						
Use of fertilizers in the crop field?	1=Yes, 2=No			Yes	N/A	Yes
Types of fertilizers used	1=Chemical, 2=organic, 3=both chemical and organic, 4=Others specify……			Chemical	N/A	Chemical
Method of fertilizer application	1=broadcasting, 2=spraying, 3=dibbling, 4=Fert-irrigation, 5= Other, specify……..			dibbling	N/A	broadcasting
Constraints for fertilizers	1=not available locally, 2= poor quality, 3 = expensive, 4 = lack of knowledge on dosage and application methods, 5 = other, specify……			N/A	N/A	N/A
Ways to overcome the constraints	1= 2= 3=			N/A	N/A	N/A

	Key	Rabi Crop 1: _____	Rabi Crop 2: _____	Rabi Crop 3: Watermelon	Kharif-1 Crop: _____	Kharif-2 Crop: _____
Pesticide use						
Use pesticide on the crop?	1=Yes, 2=No			Yes	N/A	Yes
Types of pesticides used	1=Chemical pesticides, 2=Bio-pesticides, 3=IPM methods, 4=Other, specify……			Chemical pesticides	N/A	Chemical pesticides
Method of pesticide application	1=Hand spray, 2=Using power sprayer, 3=Using Knapsack sprayer, 4=Other, specify……..			Hand spray	N/A	Hand spray
Benefit of pesticide use	1=control insect pests and diseases, 2=increase crop production, 3=Other, specify…….			control insect pests and diseases	N/A	control insect pests and diseases
Risk of pesticide use	1=Create health hazard, 2=Create environmental hazard, 3=Toxic effect on fish/birds/poultry 4=Other risk, specify…….			Create health hazard	N/A	Eyes problems
Crop harvest						
Method of harvesting	1=Manually, 2=mechanized (use reaper, combine harvester, etc), 3=Other, specify……..			Manually	N/A	Manually
Risks to crop harvesting	1=Flood, 2=Storm, 3=tidal surge, 4=Wind, 5=Other, specify…….			N/A	N/A	N/A

	Key	Rabi Crop 1: _____	Rabi Crop 2: _____	Rabi Crop 3: Watermelon	Kharif-1 Crop: _____	Kharif-2 Crop: _____
Post harvesting						
Method of threshing	1=manually, 2=using machineries (paddle thresher, motorized thresher), 3=animal draft, 4=others specify…….			N/A	N/A	motorized thresher
Constraints for threshing	1= 2= 3=			N/A	N/A	A bit crisis of quality threshing machine
Drying	1=sun drying on earthen ground, 2=sun drying on pacca floor, 3=sun drying on polythene sheet, 4=using drying machine, 5=others			N/A	N/A	sun drying on earthen ground
Storage facilities	1=use gunny bag, 2=use drum, 3=*motka*, 4=use *dhole,* 5=cold storage, 6=godown, 7=others specify……..			N/A	N/A	use gunny bag, gula
Constraints for storage of crop products	1= 2= 3=			N/A	N/A	N/A

	Key	Rabi Crop 1: _____	Rabi Crop 2: _____	Rabi Crop 3: Watermelon	Kharif-1 Crop: _____	Kharif-2 Crop: _____
Marketing of crop products						
Where usually marketed own produced agricultural products	1=local market, 2=upazila/district market, 3=wholesale market (*aratdar*), 4=small traders (*faria),* 5=Other, specify (home)			Field/farm gate	-	Sale from home
Constraints of product marketing	1=No access to market, 2=lack of information about product price, 3=bound to sell products to specific buyers due to loan, 4=price grading is not transparent, 5=Early selling due to lack of storage, 6=Early selling due to cash shortage, 7=Others, specify(transport communication need)			Need a good transport communication , lack of information about product price	Need a good transport communication	Poor transport communication , Lack of market place, Limited buyers

Typical crop yields season wise

Collect typical yield range (minimum and maximum) for the main crops, based on FGD consensus (for triangulation with DAE data / statistics)

Cropping season/ Crops name	Yield minimum (MT/Ha)	Yield maximum (MT/Ha)	Comments on yield made by FGD
Rabi			
Watermelon	500 pcs Tk. 60000	800 pcs Tk. 100000	33 decimal = 1 BIGA
Kharif-I			
Aus (HYV)	-	-	-
Kharif-II			
Aman (HYV)	3.59	5.99	33 decimal = 1 BIGA
Local variety	2.39	3.29	

Output 3 of the TOR

Table: Physical Infrastructure and Production Constraints at Each FGD Location

Reverse chronology (yearly)	Embankment conditions *(Functional, intermediate, non-functional, absent)*	Polder structures (sluice gates) conditions *(Functional, intermediate, non-functional, absent)*	Irrigation infrastructure condition *(Functional, intermediate, non-functional, absent)*	Irrigation water availability *(Good, medium, low)*	Drainage condition (*Good, medium, low)*	Storm surge *(High, medium, low, none)*	Salinity intrusion *(High, medium, low, none)*	Pest incidence *(High, medium, low, none)*
2021	*Functional*	*intermediate*	*intermediate*	*low*	*medium*	*medium*	*low*	*medium*
2020	*Functional*	*intermediate*	*intermediate*	*low*	*medium*	*medium*	*medium*	*High*
2019	*intermediate*	*intermediate*	*intermediate*	*low*	*low*	*High*	*medium*	*medium*
2018	*intermediate*	*intermediate*	*non-functional*	*low*	*low*	*low*	*medium*	*medium*

*Rubber-seal problem in sluice gate, passing/licking water through the gate

* River side river water is salinity (existed about 6 month)

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BANGLADESH WATER DEVELOPMENT BOARD
COASTAL EMBANKMENT IMPROVEMENT PROJECT PHASE-1 (CEIP-1)

Focus Group Discussion (FGD)

Date: 16-11-2021 FGD location: Shutorkhali Union
Polder # 32 , Package-1 FGD Team Members: 11

Crop Cultivation - Intensity			
How many times do you cultivate your land in a year? 1, 2 or 3		2	
If the land is cultivated only 1 time (1 season), why?	1=waterlogged, 2=Salinity water, 3=Water lack/ Drought		
If the land is cultivated only 2 times (2 seasons), why?		Water lack/ Drought in Rabi and waterlogging in Kharif II, led delayed plantation & delayed harvesting.	

What proportion (percent) of your land did you plant in each of the following seasons?

[NOTE to Facilitator: The members of the focus group are not likely to be unanimous in their answers. Solicit the responses from a variety of the participants and record the range of values – for example, 20-30% in Rabi, or 90-100% in Kharif II, etc.]

Season	2021	2020	2019	2018
Rabi	15	10	5	-
Kharif I	-	-	-	-
Kharif II	100	100	100	100
Describe how much variation there is among members of the focus group in the answers	30% of the participants said 10% to 12% coverage was in Rabi	30% of the participants said 7% to 8% coverage was in Rabi	No variation	No variation

We note that there has been a change in cropping intensity (more or fewer decimals planted in multiple seasons) in the last three years. [Note: If no change in cropping intensity, skip to Question 4.]

1. What was the **most important cause** of this change? Describe in detail both what and how?
   Response: Crop land has been increased by implementing the CEIP-1. Earlier, embankment height was a bit low and Rabi crops used to damage due to over flow of high tide and strom surge that refrained farmers cultivate in Rabi season. As height of embankment has been increased, farmers are cultivating more land and it is increasing gradually. Also they have been inspired by other farmers of neibouring Polder who are involved in the cultivation in Rabi season with watermelon crop.

2. If CEIP-1 physical works were not the most important cause, did they **contribute** to this change? If so, describe in detail both what and how?
   Response: N/A

3. Did anything else **contribute** to this change? If so, describe in detail both what and how?
   [Note to Facilitator: this could be other project activities such as WMO strengthening, favorable or poor weather, availability of inputs, or other development projects, etc.]

Response: N/A

Risk r

4. What physical works or other conditions are key to improving or further improving cropping intensity? Describe in detail.
   Response: Re-excavation the secondary and tertiary khals inside the polder,

WMG/WMO	Key	Response / Please explain
Functionality of WMG	1=Functional 2=Somewhat functional 3=Non-functional 4=Does not exist	2, they have only a community with occasionally had meeting.
If exists, when was the WMG formed?	Provide the month/year	2020
Did the members or officers of the WMG receive training by an NGO?	1=Yes 2=No	1
What year?		2020
What did the training cover?	Open-ended	IPM, O&M of gate, social forestation but : WMG members have forgotten the training agenda/issues
Functionality of WMA (polder-level institution)	1=Functional 2=Somewhat functional 3=Non-functional 4=Does not exist	Somewhat functional
How has the performance of WMG/WMA changed over the last two years?	1=Improved substantially 2=Somewhat improved 3=Little or no change 4=Somewhat worse 5=Worsened substantially	Somewhat functional
What is the main function of the WMG/WMA? (indicate all applicable)	1=Fairly distribute water among users 2=Fairly balance the need for fresh and blackish water 3=Control Irrigation and drainage network 4=Collecting water service fees 5=Increase yield 6=Environmental protection 7=O & M of Water Structure 8=Don't know 9=Other	O & M of Water Structure, Fairly distribute water among users
What is your opinion as to Whose Interests WMG/WMA Protects?	1=Interests of all water users 2=Farmers' interests only 3=Shrimpers' interests only 4=Government interests 5=Its own interests only 6=The WMG/WMA is not influential and not able to	Farmers' interests only

	protect the interests of anyone	

Farmer numbers of season wise	Rabi: Could not answer	Kharif1:	Kharif2: Could not say anything	
Water related	**Code**	**Rabi**	**Kharif-1**	**Kharif-2**
Sources of Irrigation	1=Canal, 2=Deep Tubewell, 3=Shallow tube-well 4=Low lift pump (LLP) 5=Rainwater, 6=Floodwater, 7=Others specify (Traditional like thone, shauti, hand tube-well, etc.)…….Pond……..	Pond, canal	N/A	Canal, Rainwater,
Water conditions	1=sweet water 2=saline water intrusion 3= sweet + salinity water	sweet + salinity water	sweet water	sweet water
Available of irrigation during the cultivation	1= sufficient 2=insufficient	insufficient	insufficient	sufficient
Availability of drainage channel	1=Available 2=Not available	Available	Available	Available
Status of drainage channel, if available	1=Water available 2=Water not available	Water not available	Water not available	Water available
Constraints for irrigation	1=Lack of water resources, 2=Lack of quality water, 3=mismanagement regarding water distribution, 4=poor irrigation channel, 5=sudden sea level surge, 6=high saline water, 7=Other specify……..	poor irrigation channel	poor irrigation channel	poor irrigation channel
Ways to overcome the constraints (list all, rank top 3)	1= 2= 3=	functional sluicegates Re-excavation of channels	functional sluicegates Re-excavation of channels	functional sluicegates Re-excavation of channels
Is it possible to use drainage channel water for irrigation?	1=Yes 2=No	No	No	Yes
If not, why not?	Because it is narrow and almost silted. Water can't reserve in the canal for long days.			
What improvements in drainage are needed and why?	Need the proper re-excavation of the canal. Need to remove of closer from completed new gates and gate of the sluices are needed to be water sealed.			

Land			Rabi	Kharif-1	Kharif-2
Fallow land has become cultivable in area of FS/DS/DC developed under Project	1=Yes 2=No	Don't know			
If yes, amount of cultivable lands? dec	N/A				
Crop land has been able to be cultivated two times in area of FS/DS/DC developed under Project	1=Yes 2=No		Yes	N/A	N/A
If yes, amount of increase (percent of cultivable land)			15	-	N/A
Crop land has been able to be cultivated three times in area of FS/DS/DC developed under Project	1=Yes 2=No		N/A	No	N/A
If yes, amount of increase (percent of cultivable land)			-	-	-
Land	**Key**		**Rabi**	**Kharif-1**	**Kharif-2**
Land preparation	1=Manual, 2=animal draught, 3=mechanized (hand tractor, four-wheel tractor, power tiller), 4= No/zero tillage practice, 5=others specify ….		mechanized (hand tractor, power tiller)	N/A	mechanized (hand tractor, power tiller)
Condition of land levelling	1=unlevelled plot, 2=levelled land, 3='sorjon', 4=furrows, 5=Others specify……		levelled land	levelled land	levelled land
Family labour and average wage					
Family labour (Person-day)			3	-	3
Wage labour (BDT/Person/day)			500	-	500

(List most important crops of each season)

	Key	Rabi Crop 1: _____	Rabi Crop 2: _____	Rabi Crop 3: __watermelon	Kharif-1 Crop: _____	Kharif-2 Crop: _____
Seeds						
Type of seeds used for crop production	1=Local variety, 2=High yielding variety, 3=Hybrid variety			Hybrid variety	-	High yielding variety, Local variety
Source of crop seeds	1=BADC, 2=Seed dealer/traders, 3=Own produced seed, 4=Neighboring farmers, 5=NGOs like BRAC, etc. 6=Research organization 7=Other, (specify)……..			Seed dealer/traders	-	Seed dealer/traders, own
Seeding method in the field	1=Broadcasting, 2=use mechanized seeder, 3=seedling transplanting, 4=dibbling, 5=No tillage, 6=Others specify……..			dibbling	-	seedling transplanting
Constraints for seeding?	1= 2= 3=			N/A	N/A	N/A
Ways to overcome the constraints	1= 2= 3=			N/A	N/A	N/A

	Key	Rabi Crop 1: _____	Rabi Crop 2: _____	Rabi Crop 3: __watermelon	Kharif-1 Crop: _____	Kharif-2 Crop: _____
Fertilizer use						
Use of fertilizers in the crop field?	1=Yes, 2=No			Yes	N/A	Yes
Types of fertilizers used	1=Chemical, 2=organic, 3=both chemical and organic, 4=Others specify……			Chemical	N/A	Chemical
Method of fertilizer application	1=broadcasting, 2=spraying, 3=dibbling, 4=Fert-irrigation, 5= Other, specify……..			dibbling	N/A	broadcasting
Constraints for fertilizers	1=not available locally, 2= poor quality, 3 = expensive, 4 = lack of knowledge on dosage and application methods, 5 = other, specify……			Expensive	N/A	Expensive and sometimes there is a bit crisis of fertilizers
Ways to overcome the constraints	1= 2= 3=			N/A	N/A	N/A

	Key	Rabi Crop 1: _____	Rabi Crop 2: _____	Rabi Crop 3: __watermelon	Kharif-1 Crop: _____	Kharif-2 Crop: _____
Pesticide use						
Use pesticide on the crop?	1=Yes, 2=No			Yes	N/A	Yes
Types of pesticides used	1=Chemical pesticides, 2=Bio-pesticides, 3=IPM methods, 4=Other, specify……			Chemical pesticides	N/A	Chemical pesticides
Method of pesticide application	1=Hand spray, 2=Using power sprayer, 3=Using Knapsack sprayer, 4=Other, specify…….			Hand spray	N/A	Hand spray
Benefit of pesticide use	1=control insect pests and diseases, 2=increase crop production, 3=Other, specify…….			control insect pests and diseases	N/A	control insect pests and diseases
Risk of pesticide use	1=Create health hazard, 2=Create environmental hazard, 3=Toxic effect on fish/birds/poultry 4=Other risk, specify…….			Create health hazard (breath problem)	N/A	Create health hazard
Crop harvest						
Method of harvesting	1=Manually, 2=mechanized (use reaper, combine harvester, etc), 3=Other, specify……..			Manually	N/A	Manually
Risks to crop harvesting	1=Flood, 2=Storm, 3=tidal surge,			Carrying problems	N/A	N/AHigh labour cost delayed harvesting

	Key	Rabi Crop 1: _____	Rabi Crop 2: _____	Rabi Crop 3: __watermelon	Kharif-1 Crop: _____	Kharif-2 Crop: _____
	4=Wind, 5=Other, specify (carrying)					and loss in production.
Post harvesting						
Method of threshing	1=manually, 2=using machineries (paddle thresher, motorized thresher), 3=animal draft, 4=others specify…….			N/A	-	paddle thresher, motorized thresher
Constraints for threshing	1= 2= 3=			N/A	N/A	N/A
Drying	1=sun drying on earthen ground, 2=sun drying on pacca floor, 3=sun drying on polythene sheet, 4=using drying machine, 5=others			N/A	N/A	sun drying on earthen ground
Storage facilities	1=use gunny bag, 2=use drum, 3=*motka*, 4=use *dhole,* 5=cold storage, 6=godown, 7=others specify…Gola			N/A	N/A	use gunny bag, Gola for a while. Farmers use to sale out all their paddy immediately after harvest

	Key	Rabi Crop 1: _____	Rabi Crop 2: _____	Rabi Crop 3: __watermelon	Kharif-1 Crop: _____	Kharif-2 Crop: _____
Constraints for storage of crop products	1= 2= 3=			N/A	N/A	N/A
Marketing of crop products						
Where usually marketed own produced agricultural products	1=local market, 2=upazila/district market, 3=wholesale market (*aratdar*), 4=small traders (*faria),* 5=Other, specify (home)			Field/Farm gate	-	Sale from home
Constraints of product marketing	1=No access to market, 2=lack of information about product price, 3=bound to sell products to specific buyers due to loan, 4=price grading is not transparent, 5=Early selling due to lack of storage, 6=Early selling due to cash shortage, 7=Others, specify(transport communication need)			Need a good transport communication, lack of market place and buyers	Need a good transport communicatio n	Poor transport & road communication Lack of market places and shortage of buyers

Typical crop yields season wise

Collect typical yield range (minimum and maximum) for the main crops, based on FGD consensus (for triangulation with DAE data / statistics)

Cropping season/ Crops name	Yield minimum (MT/Ha)	Yield maximum (MT/Ha)	Comments on yield made by FGD
Rabi			
Watermelon	300 pcs Tk. 50000	500 pcs Tk. 70000	33 decimal = 1 BIGA
Kharif-I			
Aus (HYV)	-	-	-
Kharif-II			
Amon (HYV)	3.59	4.99	33 decimal = 1 BIGA
Local variety	2.56	3.38	

Output 3 of the TOR

Table: Physical Infrastructure and Production Constraints at Each FGD Location

Reverse chronology (yearly)	Embankment conditions *(Functional, intermediate, non-functional, absent)*	Polder structures (sluice gates) conditions *(Functional, intermediate, non-functional, absent)*	Irrigation infrastructure condition *(Functional, intermediate, non-functional, absent)*	Irrigation water availability *(Good, medium, low)*	Drainage condition (*Good, medium, low)*	Storm surge *(High, medium, low, none)*	Salinity intrusion *(High, medium, low, none)*	Pest incidence *(High, medium, low, none)*
2021	*Functional*	*Not fully Functional*	*intermediate*	*medium*	*low*	*none*	*medium*	*low*
2020	*Functional, intermediate*	*Not fully Functional*	*intermediate*	*low*	*low*	*medium*	*medium*	*medium*
2019	*intermediate*	*intermediate*	*intermediate*	*low*	*low*	*High*	*medium*	*High*
2018	*intermediate*	*intermediate*	*intermediate*	*low*	*low*	*low*	*medium*	*none*

Outside Polder, river water is saline (existed about 6 month)

Note: Fear of storm surge has been reduced due to raised and completed embankment.

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
MINISTRY OF WATER RESOURCES

BANGLADESH WATER DEVELOPMENT BOARD
COASTAL EMBANKMENT IMPROVEMENT PROJECT PHASE-1 (CEIP-1)

Focus Group Discussion (FGD)

Date: 17-11-2021 FGD location: Bajua Union Parishad
Polder # 33 , Package-1 FGD Team Members: 11

Crop Cultivation - Intensity			
How many times do you cultivate your land in a year? 1, 2 or 3		2	
If the land is cultivated only 1 time (1 season), why?	1=waterlogged, 2=Salinity water, 3=Water lack/ Drought		
If the land is cultivated only 2 times (2 seasons), why?		Water lack/ Drought	

What proportion (percent) of your land did you plant in each of the following seasons?

[NOTE to Facilitator: The members of the focus group are not likely to be unanimous in their answers. Solicit the responses from a variety of the participants and record the range of values – for example, 20-30% in Rabi, or 90-100% in Kharif II, etc.]

Season	2021	2020	2019	2018
Rabi	95	85	70	70
Kharif I	-	-	-	-
Kharif II	100	100	100	100
Describe how much variation there is among members of the focus group in the answers	No variation	No variation	No variation	No variation

We note that there has been a change in cropping intensity (more or fewer decimals planted in multiple seasons) in the last three years. [Note: If no change in cropping intensity, skip to Question 4.]

1. What was the **most important cause** of this change? Describe in detail both what and how?
   Response: Farmers have been growing Rabi crop since 1980 but in small scale. Last 3 – 4 years, farmers have observed the high price of watermelon that has grown in the other Polders. They have been inspired by other farmers who have been newly involved in the cultivation of watermelon in Rabi season.

2. If CEIP-1 physical works were not the most important cause, did they **contribute** to this change? If so, describe in detail both what and how?
   Response: Reduced sudden entering of saline water due to storm surge and natural disaster, which results low saline intrusion in the soil as well as in the canal water.

3. Did anything else **contribute** to this change? If so, describe in detail both what and how?
   [Note to Facilitator: this could be other project activities such as WMO strengthening, favorable or poor weather, availability of inputs, or other development projects, etc.]
   Response: N/A
4. What physical works or other conditions are key to improving or further improving cropping intensity? Describe in detail.

Response: Existing sluicegate at Nalbunia-bajua village area is damaged, need to repair/reconstruct; that will make better situation in Rabi cropping. Yet not finished the embankment at some points of Bajua UP areas.

WMG/WMO	Key	Response / Please explain
Functionality of WMG	1=Functional 2=Somewhat functional 3=Non-functional 4=Does not exist	2, WMG has just a body with an executive committee. They are confined in just meeting & sitting. Nothing as to handed over to them by BWDB
If exists, when was the WMG formed?	Provide the month/year	2020
Did the members or officers of the WMG receive training by an NGO?	1=Yes 2=No	1
What year?		2020
What did the training cover?	Open-ended	IPM, O&M of gate etc. Note: WMG informed that they have received training of 8 – 10 types but WMG members have forgotten the training name and agenda/issues
Functionality of WMA (polder-level institution)	1=Functional 2=Somewhat functional 3=Non-functional 4=Does not exist	Somewhat functional
How has the performance of WMG/WMA changed over the last two years?	1=Improved substantially 2=Somewhat improved 3=Little or no change 4=Somewhat worse 5=Worsened substantially	Little or no change
What is the main function of the WMG/WMA? (indicate all applicable)	1=Fairly distribute water among users 2=Fairly balance the need for fresh and blackish water 3=Control Irrigation and drainage network 4=Collecting water service fees 5=Increase yield 6=Environmental protection 7=O & M of Water Structure 8=Don't know 9=Other	They just know their role of O & M of Water Structure, Fairly distribute water among users but have no scope to implement at this moment.
What is your opinion as to Whose Interests WMG/WMA Protects?	1=Interests of all water users 2=Farmers' interests only 3=Shrimpers' interests only	Farmers' interests only

	4=Government interests 5=Its own interests only 6=The WMG/WMA is not influential and not able to protect the interests of anyone	

Farmer numbers of season wise	Rabi: Could not say	Kharif1:		Kharif2: Could not countify
Water related	**Code**	**Rabi**	**Kharif-1**	**Kharif-2**
Sources of Irrigation	1=Canal, 2=Deep Tubewell, 3=Shallow tube-well 4=Low lift pump (LLP) 5=Rainwater, 6=Floodwater, 7=Others specify (Traditional like thone, shauti, hand tube-well, etc.)…….Pond……..	Pond, canal	N/A	Canal, Rainwater
Water conditions	1=sweet water 2=saline water intrusion 3= sweet + salinity water	sweet water	N/A	sweet water
Available of irrigation during the cultivation	1= sufficient 2=insufficient	insufficient	insufficient	sufficient
Availability of drainage channel	1=Available 2=Not available	Available	Available	Available
Status of drainage channel, if available	1=Water available 2=Water not available	Water not available during last half of Rabi season	Water not available at early Kharif I	Water available
Constraints for irrigation	1=Lack of water resources, 2=Lack of quality water, 3=mismanagement regarding water distribution, 4=poor irrigation channel, 5=sudden sea level surge, 6=high saline water, 7=Other specify……..	poor irrigation channel Lack of quality water	poor irrigation channel, Lack of quality water	N/A
Ways to overcome the constraints (list all, rank top 3)	1= 2= 3=	Khal re-excavation Gate of sluices need to work properly Need proper water Management	Khal re-excavation Gate of sluices need to work properly Need proper water Management	N/A

Is it possible to use drainage channel water for irrigation?	1=Yes 2=No	No	No	Yes
If not, why not?	Because it is narrowed and almost silted. Water can't reserve in the canal for long period.			
What improvements in drainage are needed and why?	Re-excavation of the canal. Because it is narrow also its depth is so less. Water can't reserve in the canal for long period.			

Land			Rabi	Kharif-1	Kharif-2
Fallow land has become cultivable in area of FS/DS/DC developed under Project	1=Yes 2=No	No			
If yes, amount of cultivable lands? dec	N/A				
Crop land has been able to be cultivated two times in area of FS/DS/DC developed under Project	1=Yes 2=No		yes	N/A	
If yes, amount of increase (percent of cultivable land)			10	-	-
Crop land has been able to be cultivated three times in area of FS/DS/DC developed under Project	1=Yes 2=No		No	No	
If yes, amount of increase (percent of cultivable land)			-	-	-
Land	**Key**		**Rabi**	**Kharif-1**	**Kharif-2**
Land preparation	1=Manual, 2=animal draught, 3=mechanized (hand tractor, four-wheel tractor, power tiller), 4= No/zero tillage practice, 5=others specify ….		mechanized (hand tractor, four-wheel tractor, power tiller),	N/A	mechanized (hand tractor, four-wheel tractor, power tiller),
Condition of land levelling	1=unlevelled plot, 2=levelled land, 3='sorjon', 4=furrows, 5=Others specify……		levelled land	levelled land	levelled land
Family labour and average wage					
Family labour (Person-day)			3	-	3
Wage labour (BDT/Person/day)			700	-	500-600

(List most important crops of each season)

	Key	Rabi Crop 1: _____	Rabi Crop 2: _____	Rabi Crop 3: _____	Kharif-1 Crop: _____	Kharif-2 Crop: _____
Seeds						
Type of seeds used for crop production	1=Local variety, 2=High yielding variety, 3=Hybrid variety			Hybrid variety	-	High yielding variety, local variety
Source of crop seeds	1=BADC, 2=Seed dealer/traders, 3=Own produced seed, 4=Neighboring farmers, 5=NGOs like BRAC, etc. 6=Research organization 7=Other, (specify)……..			Seed dealer/traders	-	Seed dealer/traders Own
Seeding method in the field	1=Broadcasting, 2=use mechanized seeder, 3=seedling transplanting, 4=dibbling, 5=No tillage, 6=Others specify……			dibbling	-	seedling transplanting
Constraints for seeding?	1= 2= 3=			N/A	N/A	N/A
Ways to overcome the constraints	1= 2= 3=			N/A	N/A	N/A

	Key	Rabi Crop 1: _____	Rabi Crop 2: _____	Rabi Crop 3: _____	Kharif-1 Crop: _____	Kharif-2 Crop: _____
Fertilizer use						
Use of fertilizers in the crop field?	1=Yes, 2=No			Yes	N/A	Yes
Types of fertilizers used	1=Chemical, 2=organic, 3=both chemical and organic, 4=Others specify……			Chemical	N/A	Chemical
Method of fertilizer application	1=broadcasting, 2=spraying, 3=dibbling, 4=Fert-irrigation, 5= Other, specify……..			Dibbling, Fert-irrigation	N/A	broadcasting
Constraints for fertilizers	1=not available locally, 2= poor quality, 3 = expensive, 4 = lack of knowledge on dosage and application methods, 5 = other, specify……			expensive	N/A	N/A
Ways to overcome the constraints	1= 2= 3=			N/A	N/A	N/A

	Key	Rabi Crop 1: _____	Rabi Crop 2: _____	Rabi Crop 3: _____	Kharif-1 Crop: _____	Kharif-2 Crop: _____
Pesticide use						
Use pesticide on the crop?	1=Yes, 2=No			Yes	N/A	Yes
Types of pesticides used	1=Chemical pesticides, 2=Bio-pesticides, 3=IPM methods, 4=Other, specify……			Chemical pesticides	N/A	Chemical pesticides
Method of pesticide application	1=Hand spray, 2=Using power sprayer, 3=Using Knapsack sprayer, 4=Other, specify……..			Hand spray	N/A	Hand spray
Benefit of pesticide use	1=control insect pests and diseases, 2=increase crop production, 3=Other, specify…….			control insect pests and diseases	N/A	control insect pests and diseases
Risk of pesticide use	1=Create health hazard, 2=Create environmental hazard, 3=Toxic effect on fish/birds/poultry 4=Other risk, specify…….			Not concern on risk factors	N/A	Not concern on risk factors
Crop harvest						
Method of harvesting	1=Manually, 2=mechanized (use reaper, combine harvester, etc), 3=Other, specify……..			Manually	N/A	Manually
Risks to crop harvesting	1=Flood, 2=Storm, 3=tidal surge, 4=Wind, 5=Other, specify…….			N/A	N/A	Labour shortage led over ripen which is a risk of yield loss

	Key	Rabi Crop 1: _____	Rabi Crop 2: _____	Rabi Crop 3: _____	Kharif-1 Crop: _____	Kharif-2 Crop: _____
Post harvesting						
Method of threshing	1=manually, 2=using machineries (paddle thresher, motorized thresher), 3=animal draft, 4=others specify…….			manually	-	paddle thresher, motorized thresher
Constraints for threshing	1= 2= 3=			N/A	N/A	N/A
Drying	1=sun drying on earthen ground, 2=sun drying on pacca floor, 3=sun drying on polythene sheet, 4=using drying machine, 5=others			N/A	N/A	sun drying on earthen ground
Storage facilities	1=use gunny bag, 2=use drum, 3=*motka*, 4=use *dhole,* 5=cold storage, 6=godown, 7=others specify……..			N/A	N/A	use gunny bag, gula. Maximum farmer sale out the paddy just after harvest. No need of storage.
Constraints for storage of crop products	1= 2= 3=			N/A	N/A	N/A

	Key	Rabi Crop 1: _____	Rabi Crop 2: _____	Rabi Crop 3: _____	Kharif-1 Crop: _____	Kharif-2 Crop: _____
Marketing of crop products						
Where usually marketed own produced agricultural products	1=local market, 2=upazila/district market, 3=wholesale market (*aratdar*), 4=small traders (*faria),* 5=Other, specify (home)			Field/Farm gate	-	Sale from home
Constraints of product marketing	1=No access to market, 2=lack of information about product price, 3=bound to sell products to specific buyers due to loan, 4=price grading is not transparent, 5=Early selling due to lack of storage, 6=Early selling due to cash shortage, 7=Others, specify(transport communication need)			Poor transport & road communication	Need a good transport communication	Poor transport & road communication No market places for Paddy sale out

Typical crop yields season wise

Collect typical yield range (minimum and maximum) for the main crops, based on FGD consensus (for triangulation with DAE data / statistics)

Cropping season/ Crops name	Yield minimum (MT/Ha)	Yield maximum (MT/Ha)	Comments on yield made by FGD
Rabi			
Watermelon	400 pcs Tk. 25000	700 pcs Tk. 100000	33 decimal = 1 BIGA
Kharif-I			
Aus (HYV)	-	-	-
Kharif-II			
Aman (HYV)	2.99	4.79	33 decimal = 1 BIGA
Local variety (Sada Mota Dhan)	2.45	2.93	

Output 3 of the TOR

Table: Physical Infrastructure and Production Constraints at Each FGD Location

Reverse chronology (yearly)	Embankment conditions *(Functional, intermediate, non-functional, absent)*	Polder structures (sluice gates) conditions *(Functional, intermediate, non-functional, absent)*	Irrigation infrastructure condition *(Functional, intermediate, non-functional, absent)*	Irrigation water availability *(Good, medium, low)*	Drainage condition (*Good, medium, low)*	Storm surge *(High, medium, low, none)*	Salinity intrusion *(High, medium, low, none)*	Pest incidence *(High, medium, low, none)*
2021	*intermediate (Incomplete)*	*Completed but some are not working properly.*	*intermediate*	*low*	*low*	*low*	*low*	*High*
2020	*intermediate*	*intermediate*	*intermediate*	*low*	*low*	*medium*	*low*	*High*
2019	*intermediate*	*intermediate*	*intermediate*	*medium*	*low*	*High*	*low*	*High*
2018	*intermediate*	*non-functional*	*intermediate*	*medium*	*low*	*low*	*low*	*High*

Yet not finished the embankment of some portion

*khal has been silting gradually

* Waterlogged/water can't pass quickly from crop fields during rainy season (Damages the crop)

* Fear from storm surge has reduced due to embankment repairing/resectioning work.

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
MINISTRY OF WATER RESOURCES

BANGLADESH WATER DEVELOPMENT BOARD
COASTAL EMBANKMENT IMPROVEMENT PROJECT PHASE-1 (CEIP-1)

Focus Group Discussion (FGD)

Date: 17-11-2021 FGD location: Loudob Union Parishad
Polder # 33 , Package-1 FGD Team Members: 15

Crop Cultivation - Intensity			
How many times do you cultivate your land in a year? 1, 2 or 3		2	
If the land is cultivated only 1 time (1 season), why?	1=waterlogged, 2=Salinity water, 3=Water lack/ Drought		
If the land is cultivated only 2 times (2 seasons), why?		Water lack/ Drought	Crowing crops in Kharif – I is not profitable and they kept land bare during Kharif-I grazing fields of their cattle.

What proportion (percent) of your land did you plant in each of the following seasons?

[NOTE to Facilitator: The members of the focus group are not likely to be unanimous in their answers. Solicit the responses from a variety of the participants and record the range of values – for example, 20-30% in Rabi, or 90-100% in Kharif II, etc.]

Season	2021	2020	2019	2018
Rabi	65	60	40	40
Kharif I	-	-	-	-
Kharif II	100	100	100	100
Describe how much variation there is among members of the focus group in the answers	Some leaders (about 26.6%) said it is 90% coverage in Rabi season since 2018	Some leaders (about 26.6%) said it is 90% coverage in Rabi season since 2018	Some leaders (about 26.6%) said it is 90% coverage in Rabi season since 2018	Some leaders (about 26.6%) said it is 90% coverage in Rabi season since 2018

We note that there has been a change in cropping intensity (more or fewer decimals planted in multiple seasons) in the last three years. [Note: If no change in cropping intensity, skip to Question 4.]

1. What was the **most important cause** of this change? Describe in detail both what and how?
   Response: Reduced saline intrusion in soil led increase of cropping area in Rabi and due to introduction of watermelon, crop area also increased in Rabi season.

2. If CEIP-1 physical works were not the most important cause, did they **contribute** to this change? If so, describe in detail both what and how?
   Response: Sluicegates and embankment have limited entrance of saline water in the Polder area and gradually soil salinity has reduced.

3. Did anything else **contribute** to this change? If so, describe in detail both what and how?
[Note to Facilitator: this could be other project activities such as WMO strengthening, favorable or poor weather, availability of inputs, or other development projects, etc.]

Response: Observing profitability of watermelon cultivation in the neibouring Polder, has created a craze among the farmers to cultivate watermelon in more land during Rabi season.

4. What physical works or other conditions are key to improving or further improving cropping intensity? Describe in detail.
   Response: Need properly re-excavation the canals, Need skilled & strong WMA team, already rubber gasket & seal of some sluicegates have damaged (due to poor quality), need repair and a new gate is needed to construct at badamtala (or repair the existing one),

WMG/WMO	Key	Response / Please explain
Functionality of WMG	1=Functional 2=Somewhat functional 3=Non-functional 4=Does not exist	2
If exists, when was the WMG formed?	Provide the month/year	2020
Did the members or officers of the WMG receive training by an NGO?	1=Yes 2=No	1
What year?		2020
What did the training cover?	Open-ended	IPM, O&M of gate Note: WMG has informed that they have received 8-10 types of training but WMG members have forgotten the training name and agenda/issues
Functionality of WMA (polder-level institution)	1=Functional 2=Somewhat functional 3=Non-functional 4=Does not exist	Somewhat functional
How has the performance of WMG/WMA changed over the last two years?	1=Improved substantially 2=Somewhat improved 3=Little or no change 4=Somewhat worse 5=Worsened substantially	Somewhat improved
What is the main function of the WMG/WMA? (indicate all applicable)	1=Fairly distribute water among users 2=Fairly balance the need for fresh and blackish water 3=Control Irrigation and drainage network 4=Collecting water service fees 5=Increase yield 6=Environmental protection 7=O & M of Water Structure 8=Don't know 9=Other	They know their role of O & M of Water Structure, Fairly distribute water among users but can not implement the role.

What is your opinion as to Whose Interests WMG/WMA Protects?	1=Interests of all water users 2=Farmers' interests only 3=Shrimpers' interests only 4=Government interests 5=Its own interests only 6=The WMG/WMA is not influential and not able to protect the interests of anyone	Farmers' interests only- replied by the participants.

Farmer numbers of season wise	Rabi:	Kharif1:	Kharif2:	
Water related	**Code**	**Rabi**	**Kharif-1**	**Kharif-2**
Sources of Irrigation	1=Canal, 2=Deep Tubewell, 3=Shallow tube-well 4=Low lift pump (LLP) 5=Rainwater, 6=Floodwater, 7=Others specify (Traditional like thone, shauti, hand tube-well, etc.)……Pond……..	canal, pond	N/A	Canal, Rainwater
Water conditions	1=sweet water 2=saline water intrusion 3= sweet + salinity water	sweet water	sweet water	sweet water
Available of irrigation during the cultivation	1= sufficient 2=insufficient	insufficient	insufficient	sufficient
Availability of drainage channel	1=Available 2=Not available	Available	Available	Available
Status of drainage channel, if available	1=Water available 2=Water not available	Water not available during last half of season	Water not available during early of the season	Water available
Constraints for irrigation	1=Lack of water resources, 2=Lack of quality water, 3=mismanagement regarding water distribution, 4=poor irrigation channel, 5=sudden sea level surge, 6=high saline water, 7=Other specify……..	poor irrigation channel	poor irrigation channel	poor irrigation channel
Ways to overcome the constraints (list all, rank top 3)	1= 2= 3=	N/A	N/A	N/A

Is it possible to use drainage channel water for irrigation?	1=Yes 2=No	No	No	Yes
If not, why not?	Siltation problems of canal and there is no reserve water for irrigation in Rabi season and early Aus season.			
What improvements in drainage are needed and why?	Re-excavation of the canal. Because it is narrow and almost silted. Water can't reserve in the canal for long time.			

Land			Rabi	Kharif-1	Kharif-2
Fallow land has become cultivable in area of FS/DS/DC developed under Project	1=Yes 2=No	Don't know			
If yes, amount of cultivable lands? dec	N/A				
Crop land has been able to be cultivated two times in area of FS/DS/DC developed under Project	1=Yes 2=No		Yes	N/A	
If yes, amount of increase (percent of cultivable land)			5	-	-
Crop land has been able to be cultivated three times in area of FS/DS/DC developed under Project	1=Yes 2=No		No	No	
If yes, amount of increase (percent of cultivable land)			-	-	-
Land	**Key**		**Rabi**	**Kharif-1**	**Kharif-2**
Land preparation	1=Manual, 2=animal draught, 3=mechanized (hand tractor, four-wheel tractor, power tiller), 4= No/zero tillage practice, 5=others specify ….		mechanized (hand tractor, four-wheel tractor, power tiller)	N/A	mechanized (hand tractor, four-wheel tractor, power tiller)
Condition of land levelling	1=unlevelled plot, 2=levelled land, 3='sorjon', 4=furrows, 5=Others specify……		levelled land	levelled land	levelled land
Family labour and average wage					
Family labour (Person-day)			3	-	3
Wage labour (BDT/Person/day)			500	-	500

(List most important crops of each season)

	Key	Rabi Crop 1: Watermelon_____	Rabi Crop 2: Vege. & Pulse_____	Rabi Crop 3: _____	Kharif-1 Crop: _____	Kharif-2 Crop: __Paddy_____
Seeds						
Type of seeds used for crop production	1=Local variety, 2=High yielding variety, 3=Hybrid variety	Hybrid variety	High yielding variety	,	-	High yielding variety, local variety
Source of crop seeds	1=BADC, 2=Seed dealer/traders, 3=Own produced seed, 4=Neighboring farmers, 5=NGOs like BRAC, etc. 6=Research organization 7=Other, (specify)……..	Seed dealer/traders	Seed dealer/traders, Own		-	Seed dealer/traders Own
Seeding method in the field	1=Broadcasting, 2=use mechanized seeder, 3=seedling transplanting, 4=dibbling, 5=No tillage, 6=Others specify…….	dibbling	Dibbling, transplantation Broadcasting		-	seedling transplanting
Constraints for seeding?	1= 2= 3=	N/A	N/A		N/A	N/A
Ways to overcome the constraints	1= 2= 3=	N/A	N/A		N/A	N/A

Fertilizer use						
Use of fertilizers in the crop field?	1=Yes, 2=No	Yes	Yes		N/A	Yes
Types of fertilizers used	1=Chemical, 2=organic, 3=both chemical and organic, 4=Others specify……	Chemical	Chemical		N/A	Chemical
Method of fertilizer application	1=broadcasting, 2=spraying, 3=dibbling, 4=Fert-irrigation, 5= Other, specify……..	dibbling , broadcasting	broadcasting		N/A	broadcasting
Constraints for fertilizers	1=not available locally, 2= poor quality, 3 = expensive, 4 = lack of knowledge on dosage and application methods, 5 = other, specify……	N/A	N/A		N/A	N/A
Ways to overcome the constraints	1= 2= 3=	N/A	N/A		N/A	N/A

Pesticide use						
Use pesticide on the crop?	1=Yes, 2=No	Yes	Yes		N/A	Yes
Types of pesticides used	1=Chemical pesticides, 2=Bio-pesticides, 3=IPM methods, 4=Other, specify……	Chemical pesticides	Chemical pesticides		N/A	Chemical pesticides
Method of pesticide application	1=Hand spray, 2=Using power sprayer, 3=Using Knapsack sprayer, 4=Other, specify……..	Hand spray	Hand spray		N/A	Hand spray
Benefit of pesticide use	1=control insect pests and diseases, 2=increase crop production, 3=Other, specify…….	control insect pests and diseases	control insect pests and diseases		N/A	control insect pests and diseases
Risk of pesticide use	1=Create health hazard, 2=Create environmental hazard, 3=Toxic effect on fish/birds/poultry 4=Other risk, specify…….	N/A	N/A		N/A	N/A
Crop harvest						
Method of harvesting	1=Manually, 2=mechanized (use reaper, combine harvester, etc), 3=Other, specify……..	Manually	Manually		N/A	Manually
Risks to crop harvesting	1=Flood, 2=Storm, 3=tidal surge, 4=Wind, 5=Other, specify…….	N/A	N/A		N/A	N/A
Post harvesting						

Method of threshing	1=manually, 2=using machineries (paddle thresher, motorized thresher), 3=animal draft, 4=others specify…….	N/A	Manualy		N/A	paddle thresher, motorized thresher
Constraints for threshing	1= 2= 3=	N/A	N/A		N/A	N/A
Drying	1=sun drying on earthen ground, 2=sun drying on pacca floor, 3=sun drying on polythene sheet, 4=using drying machine, 5=others	N/A	Sun drying		N/A	sun drying on earthen ground
Storage facilities	1=use gunny bag, 2=use drum, 3=*motka*, 4=use *dhole,* 5=cold storage, 6=godown, 7=others specify……..	N/A	N/A		N/A	use gunny bag, gula
Constraints for storage of crop products	1= 2= 3=	N/A	N/A		N/A	N/A
Marketing of crop products						
Where usually marketed own produced agricultural products	1=local market, 2=upazila/district market, 3=wholesale market (*aratdar*),	Field/farm gate	Local market		-	Sale from home/ local market

	4=small traders (*faria),* 5=Other, specify (home/field)					
Constraints of product marketing	1=No access to market, 2=lack of information about product price, 3=bound to sell products to specific buyers due to loan, 4=price grading is not transparent, 5=Early selling due to lack of storage, 6=Early selling due to cash shortage, 7=Others, specify(transport communication need)	Poor transport and road communication Lack of information about product price, No market place for watermelon	Poor transport and road communication		Poor transport and road communication	Poor transport and road communication Lack of paddy market place.

Typical crop yields season wise

Collect typical yield range (minimum and maximum) for the main crops, based on FGD consensus (for triangulation with DAE data / statistics)

Cropping season/ Crops name	Yield minimum (MT/Ha)	Yield maximum (MT/Ha)	Comments on yield made by FGD
Rabi			
Watermelon	700 pcs Tk. 40000	1200 pcs Tk. 100000	33 decimal = 1 BIGA
Kharif-I			
Aus (HYV)	-	-	-
Kharif-II			
Aman (HYV)	3.29	5.25	33 decimal = 1 BIGA
Local variety	2.82	3.12	

Output 3 of the TOR

Table: Physical Infrastructure and Production Constraints at Each FGD Location

Reverse chronology (yearly)	Embankment conditions *(Functional, intermediate, non-functional, absent)*	Polder structures (sluice gates) conditions *(Functional, intermediate, non-functional, absent)*	Irrigation infrastructure condition *(Functional, intermediate, non-functional, absent)*	Irrigation water availability *(Good, medium, low)*	Drainage condition (*Good, medium, low)*	Storm surge *(High, medium, low, none)*	Salinity intrusion *(High, medium, low, none)*	Pest incidence *(High, medium, low, none)*
2021	*intermediate*	*intermediate*	*intermediate*	*medium*	*low*	*medium*	*none*	*High*
2020	*intermediate*	*intermediate*	*intermediate*	*medium*	*low*	*medium*	*none*	*High*
2019	*intermediate*	*intermediate*	*intermediate*	*low*	*low*	*High*	*low*	*High*
2018	*intermediate*	*non-functional*	*non-functional*	*low*	*low*	*low*	*low*	*High*

- Risk of entrance of saline water in the Polder due to storm surge has been reducing for embankment & sluicegates.

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
MINISTRY OF WATER RESOURCES

BANGLADESH WATER DEVELOPMENT BOARD
COASTAL EMBANKMENT IMPROVEMENT PROJECT PHASE-1 (CEIP-1)

Focus Group Discussion (FGD)

Date: 18-11-2021 FGD location: Dacope Union
Polder # 33 , Package-1 FGD Team Members: 17

Crop Cultivation - Intensity			
How many times do you cultivate your land in a year? 1, 2 or 3		2	
If the land is cultivated only 1 time (1 season), why?	1=waterlogged, 2=Salinity water, 3=Water lack/ Drought		
If the land is cultivated only 2 times (2 seasons), why?		Water lack/ Drought, Salinity water	

What proportion (percent) of your land did you plant in each of the following seasons?

[NOTE to Facilitator: The members of the focus group are not likely to be unanimous in their answers. Solicit the responses from a variety of the participants and record the range of values – for example, 20-30% in Rabi, or 90-100% in Kharif II, etc.]

Season	2021	2020	2019	2018
Rabi	70	50	30	20
Kharif I	-	-	-	-
Kharif II	100	100	100	100
Describe how much variation there is among members of the focus group in the answers	Some were arguing for 80 but majority was 70	No variation	No variation	No variation

We note that there has been a change in cropping intensity (more or fewer decimals planted in multiple seasons) in the last three years. [Note: If no change in cropping intensity, skip to Question 4.]

1. What was the **most important cause** of this change? Describe in detail both what and how?
   Response: Can not entrance the saline water in the polder area now due to physical works
2. If CEIP-1 physical works were not the most important cause, did they **contribute** to this change? If so, describe in detail both what and how?
   Response: N/A

3. Did anything else **contribute** to this change? If so, describe in detail both what and how?
[Note to Facilitator: this could be other project activities such as WMO strengthening, favorable or poor weather, availability of inputs, or other development projects, etc.]
   Response: N/A

4. What physical works or other conditions are key to improving or further improving cropping intensity? Describe in detail.
   Response: Re-excavation the canal that inside the Polder, need proper farming training by agriculture office

WMG/WMO	Key	Response / Please explain
Functionality of WMG	1=Functional 2=Somewhat functional 3=Non-functional 4=Does not exist	2
If exists, when was the WMG formed?	Provide the month/year	2020
Did the members or officers of the WMG receive training by an NGO?	1=Yes 2=No	1
What year?		2020
What did the training cover?	Open-ended	Fish, IPM, O&M of gate but could not recall properly.
Functionality of WMA (polder-level institution)	1=Functional 2=Somewhat functional 3=Non-functional 4=Does not exist	Somewhat functional
How has the performance of WMG/WMA changed over the last two years?	1=Improved substantially 2=Somewhat improved 3=Little or no change 4=Somewhat worse 5=Worsened substantially	Little or no change
What is the main function of the WMG/WMA? (indicate all applicable)	1=Fairly distribute water among users 2=Fairly balance the need for fresh and blackish water 3=Control Irrigation and drainage network 4=Collecting water service fees 5=Increase yield 6=Environmental protection 7=O & M of Water Structure 8=Don't know 9=Other	O & M of Water Structure, Fairly distribute water among users
What is your opinion as to Whose Interests WMG/WMA Protects?	1=Interests of all water users 2=Farmers' interests only 3=Shrimpers' interests only 4=Government interests 5=Its own interests only 6=The WMG/WMA is not influential and not able to protect the interests of anyone	Farmers' interests only

Farmer numbers of season wise	Rabi: Could not guess the number	Kharif1:	Kharif2: Could not guess the number.	
Water related	**Code**	**Rabi**	**Kharif-1**	**Kharif-2**
Sources of Irrigation	1=Canal, 2=Deep Tubewell, 3=Shallow tube-well 4=Low lift pump (LLP) 5=Rainwater, 6=Floodwater, 7=Others specify (Traditional like thone, shauti, hand tube-well, etc.)……Pond……..	canal, pond	N/A	Canal, Rainwater
Water conditions	1=sweet water 2=saline water intrusion 3= sweet + salinity water	sweet water	N/A	sweet water
Available of irrigation during the cultivation	1= sufficient 2=insufficient	insufficient	insufficient	sufficient
Availability of drainage channel	1=Available 2=Not available	Available	Available	Available
Status of drainage channel, if available	1=Water available 2=Water not available	Water not available during last part of season	Water not available during early Aus season	Water available
Constraints for irrigation	1=Lack of water resources, 2=Lack of quality water, 3=mismanagement regarding water distribution, 4=poor irrigation channel, 5=sudden sea level surge, 6=high saline water, 7=Other specify……..	poor irrigation channel, Less water in channel	poor irrigation channel Water crisis in early season.	
Ways to overcome the constraints (list all, rank top 3)	1= 2= 3=	N/A	N/A	N/A
Is it possible to use drainage channel water for irrigation?	1=Yes 2=No	No	No	Yes
If not, why not?	Due to insufficient amount of water in the channel.			
What improvements in drainage are needed and why?	Re-excavation of the canal. Because it is narrow also its depth is so less. Water can't reserve in the canal for long period.			

Land			Rabi	Kharif-1	Kharif-2
Fallow land has become cultivable in area of FS/DS/DC developed under Project	1=Yes 2=No	Don't know			
If yes, amount of cultivable lands? dec	N/A				
Crop land has been able to be cultivated two times in area of FS/DS/DC developed under Project	1=Yes 2=No		Yes	N/A	
If yes, amount of increase (percent of cultivable land)			20%	-	-
Crop land has been able to be cultivated three times in area of FS/DS/DC developed under Project	1=Yes 2=No		-	No	
If yes, amount of increase (percent of cultivable land)			-	N/A	-
Land	**Key**		**Rabi**	**Kharif-1**	**Kharif-2**
Land preparation	1=Manual, 2=animal draught, 3=mechanized (hand tractor, four-wheel tractor, power tiller), 4= No/zero tillage practice, 5=others specify ….		Manual	N/A	Manual
Condition of land levelling	1=unlevelled plot, 2=levelled land, 3='sorjon', 4=furrows, 5=Others specify……		levelled land	levelled land	levelled land
Family labour and average wage					
Family labour (Person-day)			3	-	3
Wage labour (BDT/Person/day)			600	-	500-700

(List most important crops of each season)

	Key	Rabi Crop 1: _____	Rabi Crop 2: _____	Rabi Crop 3: _____	Kharif-1 Crop: _____	Kharif-2 Crop: _____
Seeds						
Type of seeds used for crop production	1=Local variety, 2=High yielding variety, 3=Hybrid variety			Hybrid variety	-	High yielding variety, Local variety
Source of crop seeds	1=BADC, 2=Seed dealer/traders, 3=Own produced seed, 4=Neighboring farmers, 5=NGOs like BRAC, etc. 6=Research organization 7=Other, (specify)……..			Seed dealer/traders	-	Seed dealer/traders Own
Seeding method in the field	1=Broadcasting, 2=use mechanized seeder, 3=seedling transplanting, 4=dibbling, 5=No tillage, 6=Others specify……..			Dibbling	-	seedling transplanting
Constraints for seeding?	1= 2= 3=			N/A	N/A	N/A
Ways to overcome the constraints	1= 2= 3=			N/A	N/A	N/A

	Key	Rabi Crop 1: _____	Rabi Crop 2: _____	Rabi Crop 3: _____	Kharif-1 Crop: _____	Kharif-2 Crop: _____
Fertilizer use						
Use of fertilizers in the crop field?	1=Yes, 2=No			Yes	N/A	Yes
Types of fertilizers used	1=Chemical, 2=organic, 3=both chemical and organic, 4=Others specify……			Chemical	N/A	Chemical
Method of fertilizer application	1=broadcasting, 2=spraying, 3=dibbling, 4=Fert-irrigation, 5= Other, specify……..			Broadcasting/ dibbling	N/A	broadcasting
Constraints for fertilizers	1=not available locally, 2= poor quality, 3 = expensive, 4 = lack of knowledge on dosage and application methods, 5 = other, specify……			N/A	N/A	N/A
Ways to overcome the constraints	1= 2= 3=			N/A	N/A	N/A

	Key	Rabi Crop 1: _____	Rabi Crop 2: _____	Rabi Crop 3: _____	Kharif-1 Crop: _____	Kharif-2 Crop: _____
Pesticide use						
Use pesticide on the crop?	1=Yes, 2=No			Yes	N/A	Yes
Types of pesticides used	1=Chemical pesticides, 2=Bio-pesticides, 3=IPM methods, 4=Other, specify……			Chemical pesticides	N/A	Chemical pesticides
Method of pesticide application	1=Hand spray, 2=Using power sprayer, 3=Using Knapsack sprayer, 4=Other, specify……..			Hand spray	N/A	Hand spray
Benefit of pesticide use	1=control insect pests and diseases, 2=increase crop production, 3=Other, specify…….			control insect pests and diseases	N/A	control insect pests and diseases
Risk of pesticide use	1=Create health hazard, 2=Create environmental hazard, 3=Toxic effect on fish/birds/poultry 4=Other risk, specify…….			Create health hazard	N/A	Create health hazard
Crop harvest						
Method of harvesting	1=Manually, 2=mechanized (use reaper, combine harvester, etc), 3=Other, specify……..			Manually	N/A	Manually
Risks to crop harvesting	1=Flood, 2=Storm, 3=tidal surge, 4=Wind, 5=Other, specify…….			N/A	N/A	N/A

	Key	Rabi Crop 1: _____	Rabi Crop 2: _____	Rabi Crop 3: _____	Kharif-1 Crop: _____	Kharif-2 Crop: _____
Post harvesting						
Method of threshing	1=manually, 2=using machineries (paddle thresher, motorized thresher), 3=animal draft, 4=others specify…….			N/A	-	paddle thresher, motorized thresher
Constraints for threshing	1= 2= 3=			N/A	N/A	N/A
Drying	1=sun drying on earthen ground, 2=sun drying on pacca floor, 3=sun drying on polythene sheet, 4=using drying machine, 5=others			N/A	N/A	sun drying on earthen ground
Storage facilities	1=use gunny bag, 2=use drum, 3=*motka*, 4=use *dhole,* 5=cold storage, 6=godown, 7=others specify…Gola			N/A	N/A	use gunny bag, Gola Nomally sale out all paddy just after harvest.
Constraints for storage of crop products	1= 2= 3=			N/A	N/A	N/A

	Key	Rabi Crop 1: _____	Rabi Crop 2: _____	Rabi Crop 3: _____	Kharif-1 Crop: _____	Kharif-2 Crop: _____
Marketing of crop products						
Where usually marketed own produced agricultural products	1=local market, 2=upazila/district market, 3=wholesale market (*aratdar*), 4=small traders (*faria),* 5=Other, specify (home)			Field/farm gate	-	Sale from home
Constraints of product marketing	1=No access to market, 2=lack of information about product price, 3=bound to sell products to specific buyers due to loan, 4=price grading is not transparent, 5=Early selling due to lack of storage, 6=Early selling due to cash shortage, 7=Others, specify(transport communication need)			Poor transport and road communication Limited buyers	Poor transport and road communication	Poor transport and road communication, Limited buyers

Typical crop yields season wise

Collect typical yield range (minimum and maximum) for the main crops, based on FGD consensus (for triangulation with DAE data / statistics)

Cropping season/ Crops name	Yield minimum (MT/Ha)	Yield maximum (MT/Ha)	Comments on yield made by FGD
Rabi			
Watermelon	700 pcs Tk. 25000	1200 pcs 100000	33 decimal = 1 BIGA
Kharif-I			
Aus (HYV)	-	-	-
Kharif-II			
Aman (HYV)	2.99	5.39	33 decimal = 1 BIGA
	2.22	2.88	

Watermelon cultivation Cost about - Tk. 25000

Output 3 of the TOR

Table: Physical Infrastructure and Production Constraints at Each FGD Location

Reverse chronology (yearly)	Embankment conditions *(Functional, intermediate, non-functional, absent)*	Polder structures (sluice gates) conditions *(Functional, intermediate, non-functional, absent)*	Irrigation infrastructure condition *(Functional, intermediate, non-functional, absent)*	Irrigation water availability *(Good, medium, low)*	Drainage condition (*Good, medium, low)*	Storm surge *(High, medium, low, none)*	Salinity intrusion *(High, medium, low, none)*	Pest incidence *(High, medium, low, none)*
2021	*Functional*	*Functional*	*intermediate*	*medium*	*low*	*low*	*low*	*High*
2020	*Functional*	*Functional*	*intermediate*	*medium*	*low*	*medium*	*low*	*High*
2019	*intermediate*	*intermediate*	*intermediate*	*medium*	*low*	*High*	*medium*	*High*
2018	*non-functional*	*non-functional*	*non-functional*	*low*	*low*	*medium*	*medium*	*High*

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
MINISTRY OF WATER RESOURCES

BANGLADESH WATER DEVELOPMENT BOARD
COASTAL EMBANKMENT IMPROVEMENT PROJECT PHASE-1 (CEIP-1)

Focus Group Discussion (FGD)

Date: 18-11-2021
Polder # 33 , Package-1

FGD location: Koilasganj Union Parishad
FGD Team Members: 14

Crop Cultivation - Intensity			
How many times do you cultivate your land in a year? 1, 2 or 3		2	
If the land is cultivated only 1 time (1 season), why?	1=waterlogged, 2=Salinity water, 3=Water lack/ Drought		
If the land is cultivated only 2 times (2 seasons), why?		Water lack/ Drought	

What proportion (percent) of your land did you plant in each of the following seasons?

[NOTE to Facilitator: The members of the focus group are not likely to be unanimous in their answers. Solicit the responses from a variety of the participants and record the range of values – for example, 20-30% in Rabi, or 90-100% in Kharif II, etc.]

Season	2021	2020	2019	2018
Rabi	80	60	50	50
Kharif I	-	-	-	-
Kharif II	100	100	100	100
Describe how much variation there is among members of the focus group in the answers	No variation	No variation	No variation	No variation

We note that there has been a change in cropping intensity (more or fewer decimals planted in multiple seasons) in the last three years. [Note: If no change in cropping intensity, skip to Question 4.]

1. What was the **most important cause** of this change? Describe in detail both what and how?
   Response: Price of watermelon is higher than previous year. Salinity in water has been decreased naturally due to physical works.

2. If CEIP-1 physical works were not the most important cause, did they **contribute** to this change? If so, describe in detail both what and how?
   Response: N/A

3. Did anything else **contribute** to this change? If so, describe in detail both what and how?
   [Note to Facilitator: this could be other project activities such as WMO strengthening, favorable or poor weather, availability of inputs, or other development projects, etc.]
   Response: Experience sharing with farmers of neighboring Polder on watermelon cultivation

4. What physical works or other conditions are key to improving or further improving cropping intensity? Describe in detail.
   Response: Need to re-excavate the silted Khals, Some Khals has been leased out by Deputy Commissioner which creates problem in water management, Some sluicegates are not in WMG's control, need to mitigate these problems to improve cropping intensity.

WMG/WMO	Key	Response / Please explain
Functionality of WMG	1=Functional 2=Somewhat functional 3=Non-functional 4=Does not exist	2
If exists, when was the WMG formed?	Provide the month/year	2020
Did the members or officers of the WMG receive training by an NGO?	1=Yes 2=No	1
What year?		2020
What did the training cover?	Open-ended	IPM, O&M of gate Note: They mentioned for 5 training but WMG members have forgotten the name and agenda of training
Functionality of WMA (polder-level institution)	1=Functional 2=Somewhat functional 3=Non-functional 4=Does not exist	Somewhat functional
How has the performance of WMG/WMA changed over the last two years?	1=Improved substantially 2=Somewhat improved 3=Little or no change 4=Somewhat worse 5=Worsened substantially	Somewhat improved
What is the main function of the WMG/WMA? (indicate all applicable)	1=Fairly distribute water among users 2=Fairly balance the need for fresh and blackish water 3=Control Irrigation and drainage network 4=Collecting water service fees 5=Increase yield 6=Environmental protection 7=O & M of Water Structure 8=Don't know 9=Other	O & M of Water Structure, Fairly distribute water among users
What is your opinion as to Whose Interests WMG/WMA Protects?	1=Interests of all water users 2=Farmers' interests only 3=Shrimpers' interests only 4=Government interests 5=Its own interests only 6=The WMG/WMA is not influential and not able to protect the interests of anyone	Farmers' interests only

Farmer numbers of season wise	Rabi:	Kharif1:	Kharif2:	
Water related	**Code**	**Rabi**	**Kharif-1**	**Kharif-2**
Sources of Irrigation	1=Canal, 2=Deep Tubewell, 3=Shallow tube-well 4=Low lift pump (LLP) 5=Rainwater, 6=Floodwater, 7=Others specify (Traditional like thone, shauti, hand tube-well, etc.)…….Pond……..	Pond, canal	N/A	Canal, Rainwater
Water conditions	1=sweet water 2=saline water intrusion 3= sweet + salinity water	sweet water	-	sweet water
Available of irrigation during the cultivation	1= sufficient 2=insufficient	insufficient	insufficient	sufficient
Availability of drainage channel	1=Available 2=Not available	Available	Available	Available
Status of drainage channel, if available	1=Water available 2=Water not available	Water not available in the last half of Rabi season	Water not available in the early Aus season	Water available
Constraints for irrigation	1=Lack of water resources, 2=Lack of quality water, 3=mismanagement regarding water distribution, 4=poor irrigation channel, 5=sudden sea level surge, 6=high saline water, 7=Other specify……..	poor irrigation channel	poor irrigation channel	
Ways to overcome the constraints (list all, rank top 3)	1= 2= 3=	re-excavation of Khals Improve water Management by the WMGs	re-excavation of Khals	N/A
Is it possible to use drainage channel water for irrigation?	1=Yes 2=No	No	No	Yes
If not, why not?	Because it is narrowed and almost silted. Water can't reserve in the canal for long period.			
What improvements in drainage are needed and why?	Re-excavation of the canal. Because it is narrow also its depth is so less. Water can't reserve in the canal for long period.			

Land			Rabi	Kharif-1	Kharif-2
Fallow land has become cultivable in area of FS/DS/DC developed under Project	1=Yes 2=No	No			
If yes, amount of cultivable lands? dec	N/A				
Crop land has been able to be cultivated two times in area of FS/DS/DC developed under Project	1=Yes 2=No		Yes	N/A	
If yes, amount of increase (percent of cultivable land)			20	-	-
Crop land has been able to be cultivated three times in area of FS/DS/DC developed under Project	1=Yes 2=No		-	No	
If yes, amount of increase (percent of cultivable land)			-	-	-
Land	**Key**		**Rabi**	**Kharif-1**	**Kharif-2**
Land preparation	1=Manual, 2=animal draught, 3=mechanized (hand tractor, four-wheel tractor, power tiller), 4= No/zero tillage practice, 5=others specify ….		mechanized (hand tractor, four-wheel tractor, power tiller)	N/A	mechanized (hand tractor, four-wheel tractor, power tiller)
Condition of land levelling	1=unlevelled plot, 2=levelled land, 3='sorjon', 4=furrows, 5=Others specify……		levelled land	levelled land	levelled land
Family labour and average wage					
Family labour (Person-day)			3	-	3
Wage labour (BDT/Person/day)			600	-	600 -700

(List most important crops of each season)

	Key	Rabi Crop 1: _____	Rabi Crop 2: _____	Rabi Crop 3: _____	Kharif-1 Crop: _____	Kharif-2 Crop: _____
Seeds						
Type of seeds used for crop production	1=Local variety, 2=High yielding variety, 3=Hybrid variety			Hybrid variety	-	High yielding variety Local varety
Source of crop seeds	1=BADC, 2=Seed dealer/traders, 3=Own produced seed, 4=Neighboring farmers, 5=NGOs like BRAC, etc. 6=Research organization 7=Other, (specify)……..			Seed dealer/traders	-	Seed dealer/traders Own
Seeding method in the field	1=Broadcasting, 2=use mechanized seeder, 3=seedling transplanting, 4=dibbling, 5=No tillage, 6=Others specify……..			dibbling	-	seedling transplanting
Constraints for seeding?	1= 2= 3=			N/A	N/A	N/A
Ways to overcome the constraints	1= 2= 3=			N/A	N/A	N/A

	Key	Rabi Crop 1: _____	Rabi Crop 2: _____	Rabi Crop 3: _____	Kharif-1 Crop: _____	Kharif-2 Crop: _____
Fertilizer use						
Use of fertilizers in the crop field?	1=Yes, 2=No			Yes	N/A	Yes
Types of fertilizers used	1=Chemical, 2=organic, 3=both chemical and organic, 4=Others specify……			Chemical	N/A	Chemical
Method of fertilizer application	1=broadcasting, 2=spraying, 3=dibbling, 4=Fert-irrigation, 5= Other, specify……..			dibbling	N/A	broadcasting
Constraints for fertilizers	1=not available locally, 2= poor quality, 3 = expensive, 4 = lack of knowledge on dosage and application methods, 5 = other, specify……			expensive	N/A	expensive
Ways to overcome the constraints	1= 2= 3=			N/A	N/A	N/A

	Key	Rabi Crop 1: _____	Rabi Crop 2: _____	Rabi Crop 3: _____	Kharif-1 Crop: _____	Kharif-2 Crop: _____
Pesticide use						
Use pesticide on the crop?	1=Yes, 2=No			Yes	N/A	Yes
Types of pesticides used	1=Chemical pesticides, 2=Bio-pesticides, 3=IPM methods, 4=Other, specify……			Chemical pesticides	N/A	Chemical pesticides
Method of pesticide application	1=Hand spray, 2=Using power sprayer, 3=Using Knapsack sprayer, 4=Other, specify……..			Hand spray	N/A	Hand spray
Benefit of pesticide use	1=control insect pests and diseases, 2=increase crop production, 3=Other, specify…….			control insect pests and diseases	N/A	control insect pests and diseases
Risk of pesticide use	1=Create health hazard, 2=Create environmental hazard, 3=Toxic effect on fish/birds/poultry 4=Other risk, specify…….			1 & 2	N/A	1 & 2
Crop harvest						
Method of harvesting	1=Manually, 2=mechanized (use reaper, combine harvester, etc), 3=Other, specify……..			Manually	N/A	Manually
Risks to crop harvesting	1=Flood, 2=Storm, 3=tidal surge, 4=Wind, 5=Other, specify…….			N/A	N/A	N/A

	Key	Rabi Crop 1: _____	Rabi Crop 2: _____	Rabi Crop 3: _____	Kharif-1 Crop: _____	Kharif-2 Crop: _____
Post harvesting						
Method of threshing	1=manually, 2=using machineries (paddle thresher, motorized thresher), 3=animal draft, 4=others specify…….			manually	-	paddle thresher, motorized thresher
Constraints for threshing	1= 2= 3=			N/A	N/A	N/A
Drying	1=sun drying on earthen ground, 2=sun drying on pacca floor, 3=sun drying on polythene sheet, 4=using drying machine, 5=others			N/A	N/A	sun drying on earthen ground
Storage facilities	1=use gunny bag, 2=use drum, 3=*motka*, 4=use *dhole,* 5=cold storage, 6=godown, 7=others specify…Gola			N/A	-	use gunny bag, Gola Normally, farmers do not store paddy, sale out all just after harvest
Constraints for storage of crop products	1= 2= 3=			N/A	N/A	N/A

	Key	Rabi Crop 1: _____	Rabi Crop 2: _____	Rabi Crop 3: _____	Kharif-1 Crop: _____	Kharif-2 Crop: _____
Marketing of crop products						
Where usually marketed own produced agricultural products	1=local market, 2=upazila/district market, 3=wholesale market (*aratdar*), 4=small traders (*faria),* 5=Other, specify (home/field)			Field /Farm gate	-	Sale from home local market
Constraints of product marketing	1=No access to market, 2=lack of information about product price, 3=bound to sell products to specific buyers due to loan, 4=price grading is not transparent, 5=Early selling due to lack of storage, 6=Early selling due to cash shortage, 7=Others, specify(transport communication need)			Poor transport & road communication Limited buyers	Need a good transport communication	Poor transport & road communication Limited market places for Paddy sale out

Typical crop yields season wise

Collect typical yield range (minimum and maximum) for the main crops, based on FGD consensus (for triangulation with DAE data / statistics)

Cropping season/ Crops name	Yield minimum (MT/ha)	Yield maximum (MT/ha)	Comments on yield made by FGD
Rabi			
Watermelon	900 pcs Tk. 30000	1100 pcs Tk. 100000	33 decimal = 1 BIGA
Kharif-I			
Aus (HYV)	-	-	-
Kharif-II			
Aman (HYV)	2.40	4.79	33 decimal = 1 BIGA
Local variety	2.20	2.94	

Output 3 of the TOR

Table: Physical Infrastructure and Production Constraints at Each FGD Location

Reverse chronology (yearly)	Embankment conditions *(Functional, intermediate, non-functional, absent)*	Polder structures (sluice gates) conditions *(Functional, intermediate, non-functional, absent)*	Irrigation infrastructure condition *(Functional, intermediate, non-functional, absent)*	Irrigation water availability *(Good, medium, low)*	Drainage condition (*Good, medium, low)*	Storm surge *(High, medium, low, none)*	Salinity intrusion *(High, medium, low, none)*	Pest incidence *(High, medium, low, none)*
2021	*Functional*	*Functional*	*intermediate*	*medium*	*low*	*low*	*none*	*High*
2020	*Functional*	*intermediate*	*intermediate*	*medium*	*low*	*medium*	*none*	*High*
2019	*intermediate*	*intermediate*	*intermediate*	*medium*	*low*	*High*	*none*	*High*
2018	*intermediate*	*non-functional*	*intermediate*	*medium*	*low*	*low*	*low*	*High*

- Fear/tension of entrance of saline water in the Polder by the storm surge has been reduced due to physical works.

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
MINISTRY OF WATER RESOURCES

BANGLADESH WATER DEVELOPMENT BOARD
COASTAL EMBANKMENT IMPROVEMENT PROJECT PHASE-1 (CEIP-1)

Focus Group Discussion (FGD)

Date: 19-11-2021
Polder # 33 , Package-1

FGD location: Laudob Bazar, Banisanta Union
FGD Team Members: 15

Crop Cultivation - Intensity			
How many times do you cultivate your land in a year? 1, 2 or 3		2	
If the land is cultivated only 1 time (1 season), why?	1=waterlogged, 2=Salinity water, 3=Water lack/ Drought		
If the land is cultivated only 2 times (2 seasons), why?		Water lack/ Drought	

What proportion (percent) of your land did you plant in each of the following seasons?

[NOTE to Facilitator: The members of the focus group are not likely to be unanimous in their answers. Solicit the responses from a variety of the participants and record the range of values – for example, 20-30% in Rabi, or 90-100% in Kharif II, etc.]

Season	2021	2020	2019	2018
Rabi	60	45	35	20
Kharif I	-	-	-	-
Kharif II	100	100	100	100
Describe how much variation there is among members of the focus group in the answers	20% participants opinioned for 70%	No variation	No variation	No variation

We note that there has been a change in cropping intensity (more or fewer decimals planted in multiple seasons) in the last three years. [Note: If no change in cropping intensity, skip to Question 4.]

1. What was the **most important cause** of this change? Describe in detail both what and how?
   Response: Shrimp Ghers were closed. Water management has improved and higher sale price and profitability of watermelon cultivation.

2. If CEIP-1 physical works were not the most important cause, did they **contribute** to this change? If so, describe in detail both what and how?
   Response: By preventing entrance of saline water in the Polder during dry season as it has sluices and embankment.
3. Did anything else **contribute** to this change? If so, describe in detail both what and how?
[Note to Facilitator: this could be other project activities such as WMO strengthening, favorable or poor weather, availability of inputs, or other development projects, etc.]
   Response: N/A)

4. What physical works or other conditions are key to improving or further improving cropping intensity? Describe in detail.
   Response: Need to remove of closer from some of the newly constructed sluicegates. At some places, after construction of new sluices, the old one is not blocked yet, need to close it immediately. Khal re-excavation was not done properly, need proper re-excavation along with re-excavation of secondary & tertiary Khals.in the Polder

WMG/WMO	Key	Response / Please explain
Functionality of WMG	1=Functional 2=Somewhat functional 3=Non-functional 4=Does not exist	2
If exists, when was the WMG formed?	Provide the month/year	2020
Did the members or officers of the WMG receive training by an NGO?	1=Yes 2=No	1
What year?		2020
What did the training cover?	Open-ended	IPM, O&M of gate, tree management Note: They could not recalled fully.
Functionality of WMA (polder-level institution)	1=Functional 2=Somewhat functional 3=Non-functional 4=Does not exist	Somewhat functional
How has the performance of WMG/WMA changed over the last two years?	1=Improved substantially 2=Somewhat improved 3=Little or no change 4=Somewhat worse 5=Worsened substantially	Somewhat improved
What is the main function of the WMG/WMA? (indicate all applicable)	1=Fairly distribute water among users 2=Fairly balance the need for fresh and blackish water 3=Control Irrigation and drainage network 4=Collecting water service fees 5=Increase yield 6=Environmental protection 7=O & M of Water Structure 8=Don't know 9=Other	O & M of Water Structure, Fairly distribute water among users
What is your opinion as to Whose Interests WMG/WMA Protects?	1=Interests of all water users 2=Farmers' interests only 3=Shrimpers' interests only 4=Government interests 5=Its own interests only 6=The WMG/WMA is not influential and not able to protect the interests of anyone	Farmers' interests only

Farmer numbers of season wise	Rabi:	Kharif1:	Kharif2:	
Water related	**Code**	**Rabi**	**Kharif-1**	**Kharif-2**
Sources of Irrigation	1=Canal, 2=Deep Tubewell, 3=Shallow tube-well 4=Low lift pump (LLP) 5=Rainwater, 6=Floodwater, 7=Others specify (Traditional like thone, shauti, hand tube-well, etc.)…….Pond……..	Canal, Pond	N/A	Canal, Rainwater
Water conditions	1=sweet water 2=saline water intrusion 3= sweet + salinity water	sweet water	sweet water	sweet water
Available of irrigation during the cultivation	1= sufficient 2=insufficient	insufficient	insufficient	sufficient
Availability of drainage channel	1=Available 2=Not available	Available	Available	Available
Status of drainage channel, if available	1=Water available 2=Water not available	Water not available during last half of the season	Water not available during early of the season	Water available
Constraints for irrigation	1=Lack of water resources, 2=Lack of quality water, 3=mismanagement regarding water distribution, 4=poor irrigation channel, 5=sudden sea level surge, 6=high saline water, 7=Other specify……..	poor irrigation channel Lack of quality water	poor irrigation channel	N/A
Ways to overcome the constraints (list all, rank top 3)	1= 2= 3=	Secondary & tertiary Khals re-excavation, Improve skill of WMGs	N/A	N/A
Is it possible to use drainage channel water for irrigation?	1=Yes 2=No	No	No	Yes
If not, why not?	Because existing drainage channel has become narrow and its depth is so less, water can't reserve in the canal for long period.			
What improvements in drainage are needed and why?	Re-excavation of the canals. Improve water management by well-functioned WMGs, need to improve sluicegates to fully control the water lickage.			

Land			Rabi	Kharif-1	Kharif-2
Fallow land has become cultivable in area of FS/DS/DC developed under Project	1=Yes 2=No	Don't know			
If yes, amount of cultivable lands? dec	N/A				
Crop land has been able to be cultivated two times in area of FS/DS/DC developed under Project	1=Yes 2=No		Yes	N/A	
If yes, amount of increase (percent of cultivable land)			15%	-	-
Crop land has been able to be cultivated three times in area of FS/DS/DC developed under Project	1=Yes 2=No		No	No	
If yes, amount of increase (percent of cultivable land)			-	-	-
Land	**Key**		**Rabi**	**Kharif-1**	**Kharif-2**
Land preparation	1=Manual, 2=animal draught, 3=mechanized (hand tractor, four-wheel tractor, power tiller), 4= No/zero tillage practice, 5=others specify ….		mechanized (hand tractor, four-wheel tractor, power tiller),	N/A	mechanized (hand tractor, four-wheel tractor, power tiller),
Condition of land levelling	1=unlevelled plot, 2=levelled land, 3='sorjon', 4=furrows, 5=Others specify……		levelled land	levelled land	levelled land
Family labour and average wage					
Family labour (Person-day)			3	-	3
Wage labour (BDT/Person/day)			600	-	700

(List most important crops of each season)

	Key	Rabi Crop 1: _____	Rabi Crop 2: _____	Rabi Crop 3: _____	Kharif-1 Crop: _____	Kharif-2 Crop: _____
Seeds						
Type of seeds used for crop production	1=Local variety, 2=High yielding variety, 3=Hybrid variety			Hybrid variety	-	High yielding variety, local variety
Source of crop seeds	1=BADC, 2=Seed dealer/traders, 3=Own produced seed, 4=Neighboring farmers, 5=NGOs like BRAC, etc. 6=Research organization 7=Other, (specify)……..			Seed dealer/traders	-	Seed dealer/traders Own
Seeding method in the field	1=Broadcasting, 2=use mechanized seeder, 3=seedling transplanting, 4=dibbling, 5=No tillage, 6=Others specify……..			dibbling	-	seedling transplanting
Constraints for seeding?	1= 2= 3=			N/A	N/A	N/A
Ways to overcome the constraints	1= 2= 3=			N/A	N/A	N/A

	Key	Rabi Crop 1: _____	Rabi Crop 2: _____	Rabi Crop 3: _____	Kharif-1 Crop: _____	Kharif-2 Crop: _____
Fertilizer use						
Use of fertilizers in the crop field?	1=Yes, 2=No			Yes	N/A	Yes
Types of fertilizers used	1=Chemical, 2=organic, 3=both chemical and organic, 4=Others specify……			Chemical	N/A	Chemical
Method of fertilizer application	1=broadcasting, 2=spraying, 3=dibbling, 4=Fert-irrigation, 5= Other, specify……..			Broadcasting and dibbling also	N/A	broadcasting
Constraints for fertilizers	1=not available locally, 2= poor quality, 3 = expensive, 4 = lack of knowledge on dosage and application methods, 5 = other, specify (lack of fertilizer)			Expensive Sometimes crisis in peak season	N/A	N/A
Ways to overcome the constraints	1= 2= 3=			N/A	N/A	N/A

	Key	Rabi Crop 1: _____	Rabi Crop 2: _____	Rabi Crop 3: _____	Kharif-1 Crop: _____	Kharif-2 Crop: _____
Pesticide use						
Use pesticide on the crop?	1=Yes, 2=No			Yes	N/A	Yes
Types of pesticides used	1=Chemical pesticides, 2=Bio-pesticides, 3=IPM methods, 4=Other, specify……			Chemical pesticides	N/A	Chemical pesticides
Method of pesticide application	1=Hand spray, 2=Using power sprayer, 3=Using Knapsack sprayer, 4=Other, specify…….			Hand spray	N/A	Hand spray
Benefit of pesticide use	1=control insect pests and diseases, 2=increase crop production, 3=Other, specify…….			control insect pests and diseases	N/A	control insect pests and diseases
Risk of pesticide use	1=Create health hazard, 2=Create environmental hazard, 3=Toxic effect on fish/birds/poultry 4=Other risk, specify Don't know			Don't know/aware on this issue	N/A	Don't know/aware on this issue
Crop harvest						
Method of harvesting	1=Manually, 2=mechanized (use reaper, combine harvester, etc), 3=Other, specify……..			Manually	N/A	Manually
Risks to crop harvesting	1=Flood, 2=Storm, 3=tidal surge, 4=Wind, 5=Other, specify…….			N/A	N/A	Labour shortage

	Key	Rabi Crop 1: _____	Rabi Crop 2: _____	Rabi Crop 3: _____	Kharif-1 Crop: _____	Kharif-2 Crop: _____
Post harvesting						
Method of threshing	1=manually, 2=using machineries (paddle thresher, motorized thresher), 3=animal draft, 4=others specify…….			N/A	-	using machineries (paddle thresher, motorized thresher)
Constraints for threshing	1= 2= 3=			N/A	N/A	N/A
Drying	1=sun drying on earthen ground, 2=sun drying on pacca floor, 3=sun drying on polythene sheet, 4=using drying machine, 5=others			N/A	N/A	sun drying on earthen ground
Storage facilities	1=use gunny bag, 2=use drum, 3=*motka*, 4=use *dhole,* 5=cold storage, 6=godown, 7=others specify gola			N/A	N/A	use gunny bag/Gola Farmers are not usually store paddy. They sale out it immediately after harvest.
Constraints for storage of crop products	1= 2= 3=			N/A	N/A	N/A

	Key	Rabi Crop 1: _____	Rabi Crop 2: _____	Rabi Crop 3: _____	Kharif-1 Crop: _____	Kharif-2 Crop: _____
Marketing of crop products						
Where usually marketed own produced agricultural products	1=local market, 2=upazila/district market, 3=wholesale market (*aratdar*), 4=small traders (*faria),* 5=Other, specify (home)			Field/Farm gate	-	Sale from home
Constraints of product marketing	1=No access to market, 2=lack of information about product price, 3=bound to sell products to specific buyers due to loan, 4=price grading is not transparent, 5=Early selling due to lack of storage, 6=Early selling due to cash shortage, 7=Others, specify(transport communication need)			Poor transport and road communication No special market place at local level Limited buyers	Poor transport and road communication	Poor transport and road communication Limited market places Limited buyers

Typical crop yields season wise

Collect typical yield range (minimum and maximum) for the main crops, based on FGD consensus (for triangulation with DAE data / statistics)

Cropping season/ Crops name	Yield minimum (MT/Ha)	Yield maximum (MT/Ha)	Comments on yield made by FGD
Rabi			
Watermelon	700 pics Sale value Tk. 40000	1200 pics Sale value Tk. 120000	33 decimal = 1 BIGA
Kharif-I			
Aus (HYV)	-	-	-
Kharif-II			
Aman (HYV)	2.99	5.15	33 decimal = 1 BIGA
Local variety	2.24	3.10	

Output 3 of the TOR

Table: Physical Infrastructure and Production Constraints at Each FGD Location

Reverse chronology (yearly)	Embankment conditions *(Functional, intermediate, non-functional, absent)*	Polder structures (sluice gates) conditions *(Functional, intermediate, non-functional, absent)*	Irrigation infrastructure condition *(Functional, intermediate, non-functional, absent)*	Irrigation water availability *(Good, medium, low)*	Drainage condition (*Good, medium, low)*	Storm surge *(High, medium, low, none)*	Salinity intrusion *(High, medium, low, none)*	Pest incidence *(High, medium, low, none)*
2021	*Functional*	*intermediate*	*intermediate*	*medium*	*low*	*low*	*none*	*High*
2020	*intermediate*	*intermediate*	*intermediate*	*low*	*low*	*High*	*low*	*High*
2019	*intermediate*	*intermediate*	*intermediate*	*low*	*low*	*medium*	*low*	*High*
2018	*non-functional*	*intermediate*	*non-functional*	*low*	*low*	*medium*	*low*	*High*

*In some cases, due to uneven of lift-gate, “Chain Coppa” has been damaged.

* Storm surge is natural disaster, one cannot control it but due to physical works, fear/risk from storm surge has been reduced.

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
MINISTRY OF WATER RESOURCES

BANGLADESH WATER DEVELOPMENT BOARD
COASTAL EMBANKMENT IMPROVEMENT PROJECT PHASE-1 (CEIP-1)

Focus Group Discussion (FGD)

Date: 20-11-2021
Polder # 35/1, Package-1
FGD location: Banddar hat, Dhansagar Union
FGD Team Members: 22

Crop Cultivation - Intensity			
How many times do you cultivate your land in a year? 1, 2 or 3		2	
If the land is cultivated only 1 time (1 season), why?	1=waterlogged, 2=Salinity water, 3=Water lack/ Drought		
If the land is cultivated only 2 times (2 seasons), why?		Water lack/ Drought, Aus crop is not profitable	

What proportion (percent) of your land did you plant in each of the following seasons?

[NOTE to Facilitator: The members of the focus group are not likely to be unanimous in their answers. Solicit the responses from a variety of the participants and record the range of values – for example, 20-30% in Rabi, or 90-100% in Kharif II, etc.]

Season	2021	2020	2019	2018
Rabi	50	40	20	20
Kharif I	-	-	-	-
Kharif II	100	100	100	100
Describe how much variation there is among members of the focus group in the answers	No variation	No variation	No variation	No variation

We note that there has been a change in cropping intensity (more or fewer decimals planted in multiple seasons) in the last three years. [Note: If no change in cropping intensity, skip to Question 4.]

1. What was the **most important cause** of this change? Describe in detail both what and how?
   Response: Improvement of water management.

2. If CEIP-1 physical works were not the most important cause, did they **contribute** to this change? If so, describe in detail both what and how?
   Response: N/A

3. Did anything else **contribute** to this change? If so, describe in detail both what and how?
   [Note to Facilitator: this could be other project activities such as WMO strengthening, favorable or poor weather, availability of inputs, or other development projects, etc.]
   Response: Comparatively organize function of WMOs and good relation with DAE.

4. What physical works or other conditions are key to improving or further improving cropping intensity? Describe in detail.

Response: Closer from maximum newly constructed sluices yet not removed fully. Hence, hindering in proper water management. Again out-fall river is silted which hindering smooth draining out of excess water from the Polder.

WMG/WMO	Key	Response / Please explain
Functionality of WMG	1=Functional 2=Somewhat functional 3=Non-functional 4=Does not exist	2
If exists, when was the WMG formed?	Provide the month/year	2020
Did the members or officers of the WMG receive training by an NGO?	1=Yes 2=No	1
What year?		2020
What did the training cover?	Open-ended	Fish, Agri, IPM, O&M of gate etc. Note: They said receive of 8-10 types of training but could not recall on those training.t
Functionality of WMA (polder-level institution)	1=Functional 2=Somewhat functional 3=Non-functional 4=Does not exist	Somewhat functional
How has the performance of WMG/WMA changed over the last two years?	1=Improved substantially 2=Somewhat improved 3=Little or no change 4=Somewhat worse 5=Worsened substantially	Somewhat Improved
What is the main function of the WMG/WMA? (indicate all applicable)	1=Fairly distribute water among users 2=Fairly balance the need for fresh and blackish water 3=Control Irrigation and drainage network 4=Collecting water service fees 5=Increase yield 6=Environmental protection 7=O & M of Water Structure 8=Don't know 9=Other	O & M of Water Structure, Fairly distribute water among users
What is your opinion as to Whose Interests WMG/WMA Protects?	1=Interests of all water users 2=Farmers' interests only 3=Shrimpers' interests only 4=Government interests 5=Its own interests only 6=The WMG/WMA is not influential and not able to	Farmers' interests only

	protect the interests of anyone	

Farmer numbers of season wise	Rabi:	Kharif1:	Kharif2:	
Water related	**Code**	**Rabi**	**Kharif-1**	**Kharif-2**
Sources of Irrigation	1=Canal, 2=Deep Tubewell, 3=Shallow tube-well 4=Low lift pump (LLP) 5=Rainwater, 6=Floodwater, 7=Others specify (Traditional like thone, shauti, hand tube-well, etc.).....Pond.....	Pond, Canal, Borrow pit	N/A	Canal, Rainwater
Water conditions	1=sweet water 2=saline water intrusion 3= sweet + salinity water	sweet water	N/A	sweet water
Available of irrigation during the cultivation	1= sufficient 2=insufficient	insufficient	insufficient	sufficient
Availability of drainage channel	1=Available 2=Not available	Available	Available	Available
Status of drainage channel, if available	1=Water available 2=Water not available	Water not available	Water not available	Water available
Constraints for irrigation	1=Lack of water resources, 2=Lack of quality water, 3=mismanagement regarding water distribution, 4=poor irrigation channel, 5=sudden sea level surge, 6=high saline water, 7=Other specify.....	poor irrigation channel	poor irrigation channel	poor irrigation channel
Ways to overcome the constraints (list all, rank top 3)	1= 2= 3=	Canal re-excavation Removal of closers Strengthening WMOs	N/A	N/A
Is it possible to use drainage channel water for irrigation?	1=Yes 2=No	No	No	Yes
If not, why not?	Because it is narrowed and almost silted. Water can't reserve in the canal for long period			
What improvements in drainage are needed and why?	Re-excavation of the canal.			

Land			Rabi	Kharif-1	Kharif-2
Fallow land has become cultivable in area of FS/DS/DC developed under Project	1=Yes 2=No	Don't know			
If yes, amount of cultivable lands? dec	N/A				
Crop land has been able to be cultivated two times in area of FS/DS/DC developed under Project	1=Yes 2=No		yes	N/A	
If yes, amount of increase (percent of cultivable land)			10%	-	-
Crop land has been able to be cultivated three times in area of FS/DS/DC developed under Project	1=Yes 2=No		No	No	
If yes, amount of increase (percent of cultivable land)			-	-	-
Land	**Key**		**Rabi**	**Kharif-1**	**Kharif-2**
Land preparation	1=Manual, 2=animal draught, 3=mechanized (hand tractor, four-wheel tractor, power tiller), 4= No/zero tillage practice, 5=others specify ….		No tillage cultivation of Cowpea	N/A	Mechanized (hand tractor, power tiller),
Condition of land levelling	1=unlevelled plot, 2=levelled land, 3='sorjon', 4=furrows, 5=Others specify……		levelled land	levelled land	levelled land
Family labour and average wage					
Family labour (Person-day)			3	-	3
Wage labour (BDT/Person/day)			500	-	600

(List most important crops of each season)

	Key	Rabi Crop 1: _____	Rabi Crop 2: _____	Rabi Crop 3: _____	Kharif-1 Crop: _____	Kharif-2 Crop: _____
Seeds						
Type of seeds used for crop production	1=Local variety, 2=High yielding variety, 3=Hybrid variety			Local variety	-	High yielding variety, Local variety
Source of crop seeds	1=BADC, 2=Seed dealer/traders, 3=Own produced seed, 4=Neighboring farmers, 5=NGOs like BRAC, etc. 6=Research organization 7=Other, (specify)……..			Mainly own then sometimes Seed dealer/traders	-	Seed dealer/traders Own
Seeding method in the field	1=Broadcasting, 2=use mechanized seeder, 3=seedling transplanting, 4=dibbling, 5=No tillage, 6=Others specify……			Broadcasting	-	seedling transplanting
Constraints for seeding?	1= 2= 3=			N/A	N/A	N/A
Ways to overcome the constraints	1= 2= 3=			N/A	N/A	N/A

	Key	Rabi Crop 1: _____	Rabi Crop 2: _____	Rabi Crop 3: _____	Kharif-1 Crop: _____	Kharif-2 Crop: _____
Fertilizer use						
Use of fertilizers in the crop field?	1=Yes, 2=No			Yes but rear/not regular	N/A	Yes
Types of fertilizers used	1=Chemical, 2=organic, 3=both chemical and organic, 4=Others specify……			Chemical	N/A	Chemical
Method of fertilizer application	1=broadcasting, 2=spraying, 3=dibbling, 4=Fert-irrigation, 5= Other, specify……..			Broadcasting,	N/A	broadcasting
Constraints for fertilizers	1=not available locally, 2= poor quality, 3 = expensive, 4 = lack of knowledge on dosage and application methods, 5 = other, specify……			N/A	N/A	N/A
Ways to overcome the constraints	1= 2= 3=			N/A	N/A	N/A

	Key	Rabi Crop 1: _____	Rabi Crop 2: _____	Rabi Crop 3: _____	Kharif-1 Crop: _____	Kharif-2 Crop: _____
Pesticide use						
Use pesticide on the crop?	1=Yes, 2=No			Yes but not always	N/A	Yes
Types of pesticides used	1=Chemical pesticides, 2=Bio-pesticides, 3=IPM methods, 4=Other, specify……			Chemical pesticides	N/A	Chemical pesticides
Method of pesticide application	1=Hand spray, 2=Using power sprayer, 3=Using Knapsack sprayer, 4=Other, specify……..			Hand spray	N/A	Hand spray
Benefit of pesticide use	1=control insect pests and diseases, 2=increase crop production, 3=Other, specify…….			control insect pests and diseases	N/A	control insect pests and diseases
Risk of pesticide use	1=Create health hazard, 2=Create environmental hazard, 3=Toxic effect on fish/birds/poultry 4=Other risk, specify…….			Create health hazard	N/A	Create health hazard
Crop harvest						
Method of harvesting	1=Manually, 2=mechanized (use reaper, combine harvester, etc), 3=Other, specify……..			Manually	N/A	Manually
Risks to crop harvesting	1=Flood, 2=Storm, 3=tidal surge, 4=Wind, 5=Other, specify…….			N/A	N/A	Excess rain water./waterlogging during harvesting period

	Key	Rabi Crop 1: _____	Rabi Crop 2: _____	Rabi Crop 3: _____	Kharif-1 Crop: _____	Kharif-2 Crop: _____
Post harvesting						
Method of threshing	1=manually, 2=using machineries (paddle thresher, motorized thresher), 3=animal draft, 4=others specify…….			motorized thresher	-	paddle thresher, motorized thresher
Constraints for threshing	1= 2= 3=			N/A	N/A	N/A
Drying	1=sun drying on earthen ground, 2=sun drying on pacca floor, 3=sun drying on polythene sheet, 4=using drying machine, 5=others			sun drying on earthen ground	N/A	sun drying on earthen ground
Storage facilities	1=use gunny bag, 2=use drum, 3=*motka*, 4=use *dhole,* 5=cold storage, 6=godown, 7=others specify… Gola			use gunny bag, drum	N/A	use gunny bag, Gola Note: Normally farmers sale out their paddy immediate after harvest.
Constraints for storage of crop products	1= 2= 3=			N/A	N/A	N/A

	Key	Rabi Crop 1: _____	Rabi Crop 2: _____	Rabi Crop 3: _____	Kharif-1 Crop: _____	Kharif-2 Crop: _____
Marketing of crop products						
Where usually marketed own produced agricultural products	1=local market, 2=upazila/district market, 3=wholesale market (*aratdar*), 4=small traders (*faria),* 5=Other, specify (home)			Sale from home	-	Sale from home
Constraints of product marketing	1=No access to market, 2=lack of information about product price, 3=bound to sell products to specific buyers due to loan, 4=price grading is not transparent, 5=Early selling due to lack of storage, 6=Early selling due to cash shortage, 7=Others, specify(transport communication need)			Limited buyers and market places.	Limited buyers and market places.	Limited buyers and market places.

Typical crop yields season wise

Collect typical yield range (minimum and maximum) for the main crops, based on FGD consensus (for triangulation with DAE data / statistics)

Cropping season/ Crops name	Yield minimum (MT/Ha)	Yield maximum (MT/Ha)	Comments on yield made by FGD
Rabi			
Pulse (khesari)	0.90	1.50	33 decimal = 1 BIGA
Kharif-I			
Aus (HYV)	-	-	-
Kharif-II			
Aman (HYV)	3.59	5.15	33 decimal = 1 BIGA
Aman (LV)	2.10	3.22	33 decimal = 1 BIGA

Output 3 of the TOR

Table: Physical Infrastructure and Production Constraints at Each FGD Location

Reverse chronology (yearly)	Embankment conditions *(Functional, intermediate, non-functional, absent)*	Polder structures (sluice gates) conditions *(Functional, intermediate, non-functional, absent)*	Irrigation infrastructure condition *(Functional, intermediate, non-functional, absent)*	Irrigation water availability *(Good, medium, low)*	Drainage condition (*Good, medium, low)*	Storm surge *(High, medium, low, none)*	Salinity intrusion *(High, medium, low, none)*	Pest incidence *(High, medium, low, none)*
2021	*Functional*	*Functional*	*intermediate*	*medium*	*low*	*medium*	*low*	*High*
2020	*Functional*	*intermediate*	*intermediate*	*medium*	*low*	*medium*	*low*	*High*
2019	*intermediate*	*intermediate*	*intermediate*	*low*	*low*	*High*	*medium*	*High*
2018	*intermediate*	*non-functional*	*non-functional*	*low*	*low*	*medium*	*medium*	*High*

- Fear/tension of entrance of saline water in the Polder by the storm surge has been reduced due to physical works

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
MINISTRY OF WATER RESOURCES

BANGLADESH WATER DEVELOPMENT BOARD
COASTAL EMBANKMENT IMPROVEMENT PROJECT PHASE-1 (CEIP-1)

Focus Group Discussion (FGD)

Date: 20-11-2021
Polder # 35/1, Package-1
FGD location: Tafalbari Bazar, Southkhali Uunion
FGD Team Members: 18

Crop Cultivation - Intensity			
How many times do you cultivate your land in a year? 1, 2 or 3		2	
If the land is cultivated only 1 time (1 season), why?	1=waterlogged, 2=Salinity water, 3=Water lack/ Drought		
If the land is cultivated only 2 times (2 seasons), why?		Water lack/ Drought Saline water Soil salinity	

What proportion (percent) of your land did you plant in each of the following seasons?

[NOTE to Facilitator: The members of the focus group are not likely to be unanimous in their answers. Solicit the responses from a variety of the participants and record the range of values – for example, 20-30% in Rabi, or 90-100% in Kharif II, etc.]

Season	2021	2020	2019	2018
Rabi	70	50	50	50
Kharif I	-	-	-	-
Kharif II	100	100	100	100
Describe how much variation there is among members of the focus group in the answers	No variation	No variation	No variation	No variation

We note that there has been a change in cropping intensity (more or fewer decimals planted in multiple seasons) in the last three years. [Note: If no change in cropping intensity, skip to Question 4.]

1. What was the **most important cause** of this change? Describe in detail both what and how?
   Response: Farmers do only cowpea/grass pea during Rabi and as COVID-19 incentive, DAE has distributed more vegetable seeds and expand its advisory support, hence, area of vegetable production has increased.

2. If CEIP-1 physical works were not the most important cause, did they **contribute** to this change? If so, describe in detail both what and how?
   Response: not yet.

3. Did anything else **contribute** to this change? If so, describe in detail both what and how?
   [Note to Facilitator: this could be other project activities such as WMO strengthening, favorable or poor weather, availability of inputs, or other development projects, etc.]
   Response: WMOs are more aware on increase cropland use and more production.

4. What physical works or other conditions are key to improving or further improving cropping intensity? Describe in detail.

Response: Re-excavation the canal, removal of closer in front of 2 sluicegates and shutting down the Gher in the Polder.

WMG/WMO	Key	Response / Please explain
Functionality of WMG	1=Functional 2=Somewhat functional 3=Non-functional 4=Does not exist	2
If exists, when was the WMG formed?	Provide the month/year	2020
Did the members or officers of the WMG receive training by an NGO?	1=Yes 2=No	1
What year?		2020
What did the training cover?	Open-ended	IPM, O&M of gate Note: WMG members have forgotten the training types and agenda
Functionality of WMA (polder-level institution)	1=Functional 2=Somewhat functional 3=Non-functional 4=Does not exist	Somewhat functional Note: Most of the farmers did not know about the WMG responsibility, need awareness, need strengthening of WMGs for proper function.
How has the performance of WMG/WMA changed over the last two years?	1=Improved substantially 2=Somewhat improved 3=Little or no change 4=Somewhat worse 5=Worsened substantially	Somewhat improved
What is the main function of the WMG/WMA? (indicate all applicable)	1=Fairly distribute water among users 2=Fairly balance the need for fresh and blackish water 3=Control Irrigation and drainage network 4=Collecting water service fees 5=Increase yield 6=Environmental protection 7=O & M of Water Structure 8=Don't know 9=Other	O & M of Water Structure, Fairly distribute water among users
What is your opinion as to Whose Interests WMG/WMA Protects?	1=Interests of all water users 2=Farmers' interests only 3=Shrimpers' interests only 4=Government interests 5=Its own interests only	Farmers' interests only

	6=The WMG/WMA is not influential and not able to protect the interests of anyone	

Farmer numbers of season wise	Rabi: It was difficult to answer	Kharif1:	Kharif2: It was difficult to answer	
Water related	**Code**	**Rabi**	**Kharif-1**	**Kharif-2**
Sources of Irrigation	1=Canal, 2=Deep Tubewell, 3=Shallow tube-well 4=Low lift pump (LLP) 5=Rainwater, 6=Floodwater, 7=Others specify (Traditional like thone, shauti, hand tube-well, etc.).....Pond……..	Pond, canal	N/A	Canal, Rainwater
Water conditions	1=sweet water 2=saline water intrusion 3= sweet + salinity water	sweet water	-	sweet water
Available of irrigation during the cultivation	1= sufficient 2=insufficient	insufficient	insufficient	sufficient
Availability of drainage channel	1=Available 2=Not available	Available	Available	Available
Status of drainage channel, if available	1=Water available 2=Water not available	Water not available during March-April	Water not available during March-April	Water available
Constraints for irrigation	1=Lack of water resources, 2=Lack of quality water, 3=mismanagement regarding water distribution, 4=poor irrigation channel, 5=sudden sea level surge, 6=high saline water, 7=Other specify……..	poor irrigation channel Lack of quality water	poor irrigation channel Lack of quality water	poor irrigation channel
Ways to overcome the constraints (list all, rank top 3)	1= 2= 3=	Khal re-excavation Functional Sluices Functional WMOs	Khal re-excavation Functional Sluices Functional WMOs	N/A
Is it possible to use drainage channel water for irrigation?	1=Yes 2=No	No	No	Yes
If not, why not?	Because it is narrowed and almost silted. Water can't reserve in the canal for long period.			
What improvements in drainage are needed and why?	Re-excavation of the canal. Removal of 2 closers and removal of Gher from Polder.			

Land			Rabi	Kharif-1	Kharif-2
Fallow land has become cultivable in area of FS/DS/DC developed under Project	1=Yes 2=No	Don't know			
If yes, amount of cultivable lands? dec	N/A				
Crop land has been able to be cultivated two times in area of FS/DS/DC developed under Project	1=Yes 2=No		Yes	N/A	
If yes, amount of increase (percent of cultivable land)			20%	-	-
Crop land has been able to be cultivated three times in area of FS/DS/DC developed under Project	1=Yes 2=No		-	No	
If yes, amount of increase (percent of cultivable land)			-	-	-
Land	**Key**		**Rabi**	**Kharif-1**	**Kharif-2**
Land preparation	1=Manual, 2=animal draught, 3=mechanized (hand tractor, four-wheel tractor, power tiller), 4= No/zero tillage practice, 5=others specify ….		mechanized (hand tractor, , power tiller) as well as manual – for Vegetables but For Cowpea no tillage	N/A	mechanized (hand tractor, , power tiller)
Condition of land levelling	1=unlevelled plot, 2=levelled land, 3='sorjon', 4=furrows, 5=Others specify……		levelled land	levelled land	levelled land
Family labour and average wage					
Family labour (Person-day)			3	-	3
Wage labour (BDT/Person/day)			600	-	500

(List most important crops of each season)

	Key	Rabi Crop 1: _____	Rabi Crop 2: _____	Rabi Crop 3: _____	Kharif-1 Crop: _____	Kharif-2 Crop: _____
Seeds						
Type of seeds used for crop production	1=Local variety, 2=High yielding variety, 3=Hybrid variety			Local variety of Cowpea Hybrid & HYV of vegetables	-	High yielding variety, Local variety
Source of crop seeds	1=BADC, 2=Seed dealer/traders, 3=Own produced seed, 4=Neighboring farmers, 5=NGOs like BRAC, etc. 6=Research organization 7=Other, (specify)……..			Own Seed dealer/traders/ DAE	-	Seed dealer/traders Own
Seeding method in the field	1=Broadcasting, 2=use mechanized seeder, 3=seedling transplanting, 4=dibbling, 5=No tillage, 6=Others specify…….			Broadcasting	-	seedling transplanting
Constraints for seeding?	1= 2= 3=			N/A	N/A	N/A
Ways to overcome the constraints	1= 2= 3=			N/A	N/A	N/A

	Key	Rabi Crop 1: _____	Rabi Crop 2: _____	Rabi Crop 3: _____	Kharif-1 Crop: _____	Kharif-2 Crop: _____
Fertilizer use						
Use of fertilizers in the crop field?	1=Yes, 2=No			Yes	N/A	Yes
Types of fertilizers used	1=Chemical, 2=organic, 3=both chemical and organic, 4=Others specify……			Chemical	N/A	Chemical
Method of fertilizer application	1=broadcasting, 2=spraying, 3=dibbling, 4=Fert-irrigation, 5= Other, specify……..			broadcasting	N/A	broadcasting
Constraints for fertilizers	1=not available locally, 2= poor quality, 3 = expensive, 4 = lack of knowledge on dosage and application methods, 5 = other, specify……			expensive	N/A	expensive
Ways to overcome the constraints	1= 2= 3=			N/A	N/A	N/A

	Key	Rabi Crop 1: _____	Rabi Crop 2: _____	Rabi Crop 3: _____	Kharif-1 Crop: _____	Kharif-2 Crop: _____
Pesticide use						
Use pesticide on the crop?	1=Yes, 2=No			Yes	N/A	Yes
Types of pesticides used	1=Chemical pesticides, 2=Bio-pesticides, 3=IPM methods, 4=Other, specify……			Chemical pesticides	N/A	Chemical pesticides
Method of pesticide application	1=Hand spray, 2=Using power sprayer, 3=Using Knapsack sprayer, 4=Other, specify…….			Hand spray	N/A	Hand spray
Benefit of pesticide use	1=control insect pests and diseases, 2=increase crop production, 3=Other, specify…….			control insect pests and diseases	N/A	control insect pests and diseases
Risk of pesticide use	1=Create health hazard, 2=Create environmental hazard, 3=Toxic effect on fish/birds/poultry 4=Other risk, specify…….			Create health hazard Toxic effect on fish/birds/poultry	N/A	Create health hazard
Crop harvest						
Method of harvesting	1=Manually, 2=mechanized (use reaper, combine harvester, etc), 3=Other, specify……..			Manually	N/A	Manually
Risks to crop harvesting	1=Flood, 2=Storm, 3=tidal surge, 4=Wind, 5=Other, specify…….			N/A	N/A	N/A

	Key	Rabi Crop 1: _____	Rabi Crop 2: _____	Rabi Crop 3: _____	Kharif-1 Crop: _____	Kharif-2 Crop: _____
Post harvesting						
Method of threshing	1=manually, 2=using machineries (paddle thresher, motorized thresher), 3=animal draft, 4=others specify…….			paddle thresher, motorized thresher for Cowpea	-	paddle thresher, motorized thresher
Constraints for threshing	1= 2= 3=			N/A	N/A	N/A
Drying	1=sun drying on earthen ground, 2=sun drying on pacca floor, 3=sun drying on polythene sheet, 4=using drying machine, 5=others			sun drying on earthen ground	N/A	sun drying on earthen ground
Storage facilities	1=use gunny bag, 2=use drum, 3=*motka*, 4=use *dhole,* 5=cold storage, 6=godown, 7=others specify……..			use gunny bag	use gunny bag	use gunny bag Note: Normally farmers are not storing paddy, sale out immediate after harvesting.
Constraints for storage of crop products	1= 2= 3=			N/A	N/A	N/A

	Key	Rabi Crop 1: _____	Rabi Crop 2: _____	Rabi Crop 3: _____	Kharif-1 Crop: _____	Kharif-2 Crop: _____
Marketing of crop products						
Where usually marketed own produced agricultural products	1=local market, 2=upazila/district market, 3=wholesale market (*aratdar*), 4=small traders (*faria),* 5=Other, specify (home)			Sale from home Vegetables at local market	-	Sale from home
Constraints of product marketing	1=No access to market, 2=lack of information about product price, 3=bound to sell products to specific buyers due to loan, 4=price grading is not transparent, 5=Early selling due to lack of storage, 6=Early selling due to cash shortage, 7=Others, specify(transport communication need)			Poor transport and road communication Limited market places and buyers	Poor transport and road communication Limited market places and buyers	Poor transport and road communication Limited market places and buyers

Typical crop yields season wise

Collect typical yield range (minimum and maximum) for the main crops, based on FGD consensus (for triangulation with DAE data / statistics)

Cropping season/ Crops name	Yield minimum (MT/Ha)	Yield maximum (MT/Ha)	Comments on yield made by FGD
Rabi			
Pulse (khesari)	0.60	1.50	33 decimal = 1 BIGA
Kharif-I			
Aus (HYV)	-	-	-
Kharif-II			
Aman (HYV)	2.40	4.79	33 decimal = 1 BIGA
Aman (LV)	2.24	2.98	

Output 3 of the TOR

Table: Physical Infrastructure and Production Constraints at Each FGD Location

Reverse chronology (yearly)	Embankment conditions *(Functional, intermediate, non-functional, absent)*	Polder structures (sluice gates) conditions *(Functional, intermediate, non-functional, absent)*	Irrigation infrastructure condition *(Functional, intermediate, non-functional, absent)*	Irrigation water availability *(Good, medium, low)*	Drainage condition (*Good, medium, low)*	Storm surge *(High, medium, low, none)*	Salinity intrusion *(High, medium, low, none)*	Pest incidence *(High, medium, low, none)*
2021	*Functional*	*Functional*	*intermediate*	*low*	*low*	*medium*	*low*	*High*
2020	*Functional*	*Functional*	*intermediate*	*low*	*low*	*medium*	*low*	*High*
2019	*intermediate*	*intermediate*	*intermediate*	*low*	*low*	*High*	*medium*	*High*
2018	*intermediate*	*intermediate*	*non-functional*	*low*	*low*	*low*	*medium*	*High*

*Saline intrusion is lowering gradually

* Risk/fear from storm surge has been reduced due to physical works.

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
MINISTRY OF WATER RESOURCES

BANGLADESH WATER DEVELOPMENT BOARD
COASTAL EMBANKMENT IMPROVEMENT PROJECT PHASE-1 (CEIP-1)

Focus Group Discussion (FGD)

Date: 21-11-2021 FGD location: Dema Union Parishad
Polder # 35/3, Package-1 FGD Team Members: 14

Crop Cultivation - Intensity			
How many times do you cultivate your land in a year? 1, 2 or 3		2	
If the land is cultivated only 1 time (1 season), why?	1=waterlogged, 2=Salinity water, 3=Water lack/ Drought		
If the land is cultivated only 2 times (2 seasons), why?		Salinity water, waterlogged Water lack/ Drought	

What proportion (percent) of your land did you plant in each of the following seasons?

[NOTE to Facilitator: The members of the focus group are not likely to be unanimous in their answers. Solicit the responses from a variety of the participants and record the range of values – for example, 20-30% in Rabi, or 90-100% in Kharif II, etc.]

Season	2021	2020	2019	2018
Rabi	30	15	8	8
Kharif I	-	-	-	-
Kharif II	100	100	100	100
Describe how much variation there is among members of the focus group in the answers	No variation	No variation	No variation	No variation

We note that there has been a change in cropping intensity (more or fewer decimals planted in multiple seasons) in the last three years. [Note: If no change in cropping intensity, skip to Question 4.]

1. What was the **most important cause** of this change? Describe in detail both what and how?
   Response: They have been inspired by other farmers and increased price of paddy to cultivate Boro rice in more land in Rabi season

2. If CEIP-1 physical works were not the most important cause, did they **contribute** to this change? If so, describe in detail both what and how?
   Response: N/A

3. Did anything else **contribute** to this change? If so, describe in detail both what and how?
   [Note to Facilitator: this could be other project activities such as WMO strengthening, favorable or poor weather, availability of inputs, or other development projects, etc.]
   Response: Farmers do fish culture in monsoon by digging canal around his/her land and cultivate Boro in that land by water from his canal.

4. What physical works or other conditions are key to improving or further improving cropping intensity? Describe in detail.
   Response: Land tenuring system of this Polder is a problem Outsiders are the owners of maximum cropland of the Polders and they do lease out of their land for Gher – 80% lands are

under Gher; which have to be closed for improvement of cropping intensity. If water can reserve in the canal from Mar-June, cropping intensity will be increased about 40%

WMG/WMO	Key	Response / Please explain
Functionality of WMG	1=Functional 2=Somewhat functional 3=Non-functional 4=Does not exist	2
If exists, when was the WMG formed?	Provide the month/year	2020
Did the members or officers of the WMG receive training by an NGO?	1=Yes 2=No	1
What year?		2020
What did the training cover?	Open-ended	IPM, O&M of gate 12 Training was organized but they attend about 2 training Note: WMG members have forgotten the training agenda
Functionality of WMA (polder-level institution)	1=Functional 2=Somewhat functional 3=Non-functional 4=Does not exist	Somewhat functional
How has the performance of WMG/WMA changed over the last two years?	1=Improved substantially 2=Somewhat improved 3=Little or no change 4=Somewhat worse 5=Worsened substantially	Somewhat improved *Note: Maybe have a contract between WMA and BWDB, but yet not done it. Hence, performance of WMO is slow/poor*
What is the main function of the WMG/WMA? (indicate all applicable)	1=Fairly distribute water among users 2=Fairly balance the need for fresh and blackish water 3=Control Irrigation and drainage network 4=Collecting water service fees 5=Increase yield 6=Environmental protection 7=O & M of Water Structure 8=Don't know 9=Other	O & M of Water Structure, Fairly distribute water among users
What is your opinion as to Whose Interests WMG/WMA Protects?	1=Interests of all water users 2=Farmers' interests only 3=Shrimpers' interests only 4=Government interests 5=Its own interests only 6=The WMG/WMA is not influential and not able to	Interests of all water users

	protect the interests of anyone	

Farmer numbers of season wise	Rabi:	Kharif1:	Kharif2:	
Water related	**Code**	**Rabi**	**Kharif-1**	**Kharif-2**
Sources of Irrigation	1=Canal, 2=Deep Tubewell, 3=Shallow tube-well 4=Low lift pump (LLP) 5=Rainwater, 6=Floodwater, 7=Others specify (Traditional like thone, shauti, hand tube-well, etc.)…….Pond……..	Pond, Pocket canal	N/A	Canal, Rainwater
Water conditions	1=sweet water 2=saline water intrusion 3= sweet + salinity water	sweet water	-	sweet water
Available of irrigation during the cultivation	1= sufficient 2=insufficient	insufficient	insufficient	sufficient
Availability of drainage channel	1=Available 2=Not available	Available	Available	Available
Status of drainage channel, if available	1=Water available 2=Water not available	Water not available in March -April	Water not available in March -April	Water available
Constraints for irrigation	1=Lack of water resources, 2=Lack of quality water, 3=mismanagement regarding water distribution, 4=poor irrigation channel, 5=sudden sea level surge, 6=high saline water, 7=Other specify……..	poor irrigation channel Lack of quality water	poor irrigation channel Lack of quality water	N/A
Ways to overcome the constraints (list all, rank top 3)	1= 2= 3=	Canal re-excavation Closing of Gher activities Strengthening WMOs function	N/A	N/A
Is it possible to use drainage channel water for irrigation?	1=Yes 2=No	No	No	Yes
If not, why not?	Salinity water, water logged, Gate/canal Under the leader /fish farmers, Some lands have been leased out for fish culture because landowners are from outside of this polder.			
What improvements in drainage are needed and why?	Re-excavation of the canal. Because it is narrow also its depth is so less. Water can't retain in the canal for long time. Again			

	for relatively highland, need mini dyke and Gated culvert to keep water in the canal of that area.

Land			Rabi	Kharif-1	Kharif-2
Fallow land has become cultivable in area of FS/DS/DC developed under Project	1=Yes 2=No	Don't know			
If yes, amount of cultivable lands? dec	N/A				
Crop land has been able to be cultivated two times in area of FS/DS/DC developed under Project	1=Yes 2=No		Yes	N/A	
If yes, amount of increase (percent of cultivable land)			15%	-	-
Crop land has been able to be cultivated three times in area of FS/DS/DC developed under Project	1=Yes 2=No		No	No	
If yes, amount of increase (percent of cultivable land)			-	-	-
Land	**Key**		**Rabi**	**Kharif-1**	**Kharif-2**
Land preparation	1=Manual, 2=animal draught, 3=mechanized (hand tractor, four-wheel tractor, power tiller), 4= No/zero tillage practice, 5=others specify ….		Mechanized (hand tractor, power tiller),	N/A	Mechanized (hand tractor, power tiller),
Condition of land levelling	1=unlevelled plot, 2=levelled land, 3='sorjon', 4=furrows, 5=Others specify……		levelled land	levelled land	levelled land
Family labour and average wage					
Family labour (Person-day)			3	-	3
Wage labour (BDT/Person/day)			600	-	600-700

(List most important crops of each season)

	Key	Rabi Crop 1: _____	Rabi Crop 2: _____	Rabi Crop 3: _____	Kharif-1 Crop: _____	Kharif-2 Crop: _____
Seeds						
Type of seeds used for crop production	1=Local variety, 2=High yielding variety, 3=Hybrid variety			Hybrid variety, High yielding variety	-	High yielding variety, Local variety (for 2% land)
Source of crop seeds	1=BADC, 2=Seed dealer/traders, 3=Own produced seed, 4=Neighboring farmers, 5=NGOs like BRAC, etc. 6=Research organization 7=Other, (specify)……..			Seed dealer/traders, Own	-	Seed dealer/traders, Own
Seeding method in the field	1=Broadcasting, 2=use mechanized seeder, 3=seedling transplanting, 4=dibbling, 5=No tillage, 6=Others specify……..			seedling transplanting	-	seedling transplanting
Constraints for seeding?	1= 2= 3=			N/A	N/A	N/A
Ways to overcome the constraints	1= 2= 3=			N/A	N/A	N/A

	Key	Rabi Crop 1: _____	Rabi Crop 2: _____	Rabi Crop 3: _____	Kharif-1 Crop: _____	Kharif-2 Crop: _____
Fertilizer use						
Use of fertilizers in the crop field?	1=Yes, 2=No			Yes	N/A	Yes
Types of fertilizers used	1=Chemical, 2=organic, 3=both chemical and organic, 4=Others specify……			Chemical	N/A	Chemical
Method of fertilizer application	1=broadcasting, 2=spraying, 3=dibbling, 4=Fert-irrigation, 5= Other, specify……..			broadcasting	N/A	broadcasting
Constraints for fertilizers	1=not available locally, 2= poor quality, 3 = expensive, 4 = lack of knowledge on dosage and application methods, 5 = other, specify……			Expensive, Sometimes crisis for Urea	N/A	Expensive
Ways to overcome the constraints	1= 2= 3=			N/A	N/A	N/A

	Key	Rabi Crop 1: _____	Rabi Crop 2: _____	Rabi Crop 3: _____	Kharif-1 Crop: _____	Kharif-2 Crop: _____
Pesticide use						
Use pesticide on the crop?	1=Yes, 2=No			Yes	N/A	Yes
Types of pesticides used	1=Chemical pesticides, 2=Bio-pesticides, 3=IPM methods, 4=Other, specify……			Chemical pesticides	N/A	Chemical pesticides
Method of pesticide application	1=Hand spray, 2=Using power sprayer, 3=Using Knapsack sprayer, 4=Other, specify……..			Hand spray	N/A	Hand spray
Benefit of pesticide use	1=control insect pests and diseases, 2=increase crop production, 3=Other, specify…….			control insect pests and diseases	N/A	control insect pests and diseases
Risk of pesticide use	1=Create health hazard, 2=Create environmental hazard, 3=Toxic effect on fish/birds/poultry 4=Other risk, specify…….			They know about Create health hazard and Toxic effect on fish/birds/poultry but applying frequently	N/A	They know about Create health hazard and Toxic effect on fish/birds/poultry but applying frequently
Crop harvest						
Method of harvesting	1=Manually, 2=mechanized (use reaper, combine harvester, etc), 3=Other, specify……..			Manually	N/A	Manually
Risks to crop harvesting	1=Flood, 2=Storm,			N/A	N/A	N/A

	Key	Rabi Crop 1: _____	Rabi Crop 2: _____	Rabi Crop 3: _____	Kharif-1 Crop: _____	Kharif-2 Crop: _____
	3=tidal surge, 4=Wind, 5=Other, specify…….					
Post harvesting						
Method of threshing	1=manually, 2=using machineries (paddle thresher, motorized thresher), 3=animal draft, 4=others specify…….			paddle thresher, motorized thresher	-	paddle thresher, motorized thresher
Constraints for threshing	1= 2= 3=			N/A	N/A	N/A
Drying	1=sun drying on earthen ground, 2=sun drying on pacca floor, 3=sun drying on polythene sheet, 4=using drying machine, 5=others			sun drying on earthen ground	N/A	sun drying on earthen ground
Storage facilities	1=use gunny bag, 2=use drum, 3=*motka*, 4=use *dhole,* 5=cold storage, 6=godown, 7=others specify……..			use gunny bag for a while. They do not store paddy rather sale out immediate after harvesting	N/A	use gunny bag for a while. They do not store paddy rather sale out immediate after harvesting
Constraints for storage of crop products	1= 2=			N/A	N/A	N/A

	Key	Rabi Crop 1: _____	Rabi Crop 2: _____	Rabi Crop 3: _____	Kharif-1 Crop: _____	Kharif-2 Crop: _____
	3=					
Marketing of crop products						
Where usually marketed own produced agricultural products	1=local market, 2=upazila/district market, 3=wholesale market (*aratdar*), 4=small traders (*faria),* 5=Other, specify (home)			Sale from home	-	Sale from home
Constraints of product marketing	1=No access to market, 2=lack of information about product price, 3=bound to sell products to specific buyers due to loan, 4=price grading is not transparent, 5=Early selling due to lack of storage, 6=Early selling due to cash shortage, 7=Others, specify(transport communication need)			Limited market places and few buyers with forming a syndicate	Need a good transport communication	Limited market places and few buyers with forming a syndicate

Typical crop yields season wise

Collect typical yield range (minimum and maximum) for the main crops, based on FGD consensus (for triangulation with DAE data / statistics)

Cropping season/ Crops name	Yield minimum (MT/Ha)	Yield maximum (MT/Ha)	Comments on yield made by FGD
Rabi			
Boro/Paddy (Hybrid)	5.0	7.00	52 decimal = 1 BIGA
Boro (HYV)	5.00	6.80	
Kharif-I			
Aus (HYV)	-	-	-
Kharif-II			
Aman (HYV)	3.28	4.80	52 decimal = 1 BIGA
Aman (LV)	2.25	3.10	

Output 3 of the TOR

Table: Physical Infrastructure and Production Constraints at Each FGD Location

Reverse chronology (yearly)	Embankment conditions *(Functional, intermediate, non-functional, absent)*	Polder structures (sluice gates) conditions *(Functional, intermediate, non-functional, absent)*	Irrigation infrastructure condition *(Functional, intermediate, non-functional, absent)*	Irrigation water availability *(Good, medium, low)*	Drainage condition (*Good, medium, low)*	Storm surge *(High, medium, low, none)*	Salinity intrusion *(High, medium, low, none)*	Pest incidence *(High, medium, low, none)*
2021	*Functional*	*Functional*	*intermediate*	*low*	*low*	*medium*	*High*	*High*
2020	*Functional*	*Functional*	*intermediate*	*low*	*low*	*medium*	*High*	*High*
2019	*intermediate*	*intermediate*	*intermediate*	*low*	*low*	*High*	*High*	*High*
2018	*intermediate*	*non-functional*	*non-functional*	*low*	*low*	*low*	*High*	*High*

*fish Gher higher than agri in this polder/union

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
MINISTRY OF WATER RESOURCES

BANGLADESH WATER DEVELOPMENT BOARD
COASTAL EMBANKMENT IMPROVEMENT PROJECT PHASE-1 (CEIP-1)

Focus Group Discussion (FGD)

Date: 21-11-2021
Polder # 35/3, Package-1

FGD location: Sannasir Bazar, Mollikerber Union
FGD Team Members: 20

Crop Cultivation - Intensity			
How many times do you cultivate your land in a year? 1, 2 or 3		1 *	
If the land is cultivated only 1 time (1 season), why?	1=waterlogged, 2=Salinity water, 3=Water lack/ Drought	Salinity water, waterlogged	
If the land is cultivated only 2 times (2 seasons), why?		Salinity water	

- Only few land is cultivated in Kharif-II

What proportion (percent) of your land did you plant in each of the following seasons?

[NOTE to Facilitator: The members of the focus group are not likely to be unanimous in their answers. Solicit the responses from a variety of the participants and record the range of values – for example, 20-30% in Rabi, or 90-100% in Kharif II, etc.]

Season	2021	2020	2019	2018
Rabi	5	4	2	2
Kharif I	-	-	-	-
Kharif II	100	100	100	100
Describe how much variation there is among members of the focus group in the answers	No variation	No variation	No variation	No variation

We note that there has been a change in cropping intensity (more or fewer decimals planted in multiple seasons) in the last three years. [Note: If no change in cropping intensity, skip to Question 4.]

1. What was the **most important cause** of this change? Describe in detail both what and how?
   Response: Salinity water has been changing Gradually, They have been inspired by other farmers and recent price of rice (last 2 years) to cultivate Boro rice in Rabi season

2. If CEIP-1 physical works were not the most important cause, did they **contribute** to this change? If so, describe in detail both what and how?
   Response: Reducing saline intrusion by limiting entrance of saline water inside the Polder

3. Did anything else **contribute** to this change? If so, describe in detail both what and how?
   [Note to Facilitator: this could be other project activities such as WMO strengthening, favorable or poor weather, availability of inputs, or other development projects, etc.]
   Response The reserve water in private canal surrounding the Gher has create a scope for irrigation of Boro rice in Rabi season.

4. What physical works or other conditions are key to improving or further improving cropping intensity? Describe in detail.
   Response: Protects the gate/salinity water from Local fish farmers (they are powerful). If water can reserve from Feb. -April, crop intensity will be increased about 40%

WMG/WMO	Key	Response / Please explain
Functionality of WMG	1=Functional 2=Somewhat functional 3=Non-functional 4=Does not exist	2
If exists, when was the WMG formed?	Provide the month/year	2020
Did the members or officers of the WMG receive training by an NGO?	1=Yes 2=No	1
What year?		2020
What did the training cover?	Open-ended	IPM, O&M of gate Note: 8 – 10 types of training they have received but WMG members have forgotten the training and its agenda/issues
Functionality of WMA (polder-level institution)	1=Functional 2=Somewhat functional 3=Non-functional 4=Does not exist	Somewhat functional
How has the performance of WMG/WMA changed over the last two years?	1=Improved substantially 2=Somewhat improved 3=Little or no change 4=Somewhat worse 5=Worsened substantially	Little or no change
What is the main function of the WMG/WMA? (indicate all applicable)	1=Fairly distribute water among users 2=Fairly balance the need for fresh and blackish water 3=Control Irrigation and drainage network 4=Collecting water service fees 5=Increase yield 6=Environmental protection 7=O & M of Water Structure 8=Don't know 9=Other	O & M of Water Structure, Fairly distribute water among users
What is your opinion as to Whose Interests WMG/WMA Protects?	1=Interests of all water users 2=Farmers' interests only 3=Shrimpers' interests only 4=Government interests 5=Its own interests only 6=The WMG/WMA is not influential and not able to protect the interests of anyone	Farmers' interests only

Farmer numbers of season wise	Rabi:	Kharif1:	Kharif2:	
Water related	**Code**	**Rabi**	**Kharif-1**	**Kharif-2**
Sources of Irrigation	1=Canal, 2=Deep Tubewell, 3=Shallow tube-well 4=Low lift pump (LLP) 5=Rainwater, 6=Floodwater, 7=Others specify (Traditional like thone, shauti, hand tube-well, etc.)……Pond……..	Pond, channel and private canal	N/A	Canal, Rainwater
Water conditions	1=sweet water 2=saline water intrusion 3= sweet + salinity water	saline water intrusion	saline water intrusion	sweet water
Available of irrigation during the cultivation	1= sufficient 2=insufficient	insufficient	insufficient	sufficient
Availability of drainage channel	1=Available 2=Not available	Available	Available	Available
Status of drainage channel, if available	1=Water available 2=Water not available	Water not available during Feb. to April	Water not available during Feb. to April	Water available
Constraints for irrigation	1=Lack of water resources, 2=Lack of quality water, 3=mismanagement regarding water distribution, 4=poor irrigation channel, 5=sudden sea level surge, 6=high saline water, 7=Other specify……..	poor irrigation channel Lack of quality water	poor irrigation channel Lack of quality water	N/A
Ways to overcome the constraints (list all, rank top 3)	1= 2= 3=	Channel re-excavation and stop shrimp cultivation in Gher WMOs are needed to functional	N/A	N/A
Is it possible to use drainage channel water for irrigation?	1=Yes 2=No	No	No	Yes
If not, why not?	Because general firmer have no control over the structures			
What improvements in drainage are needed and why?	Re-excavation of the canal. Because it is narrow and also its depth is so less. Water can't reserve in the canal for long period and Need good linkage of WMOs with BWDB to execute their role perfectly.			

Land			Rabi	Kharif-1	Kharif-2
Fallow land has become cultivable in area of FS/DS/DC developed under Project	1=Yes 2=No	Don't know			
If yes, amount of cultivable lands? dec	N/A				
Crop land has been able to be cultivated two times in area of FS/DS/DC developed under Project	1=Yes 2=No		Yes (negligible)	N/A	
If yes, amount of increase (percent of cultivable land)			01%	-	-
Crop land has been able to be cultivated three times in area of FS/DS/DC developed under Project	1=Yes 2=No		No	No	
If yes, amount of increase (percent of cultivable land)			-	-	-
Land	**Key**		**Rabi**	**Kharif-1**	**Kharif-2**
Land preparation	1=Manual, 2=animal draught, 3=mechanized (hand tractor, four-wheel tractor, power tiller), 4= No/zero tillage practice, 5=others specify ….		mechanized (hand tractor, power tiller),	N/A	mechanized (hand tractor, power tiller),
Condition of land levelling	1=unlevelled plot, 2=levelled land, 3='sorjon', 4=furrows, 5=Others specify……		levelled land	levelled land	levelled land
Family labour and average wage					
Family labour (Person-day)			3	-	3
Wage labour (BDT/Person/day)			500	-	500-600

(List most important crops of each season)

	Key	Rabi Crop 1: _____	Rabi Crop 2: _____	Rabi Crop 3: _____	Kharif-1 Crop: _____	Kharif-2 Crop: _____
Seeds						
Type of seeds used for crop production	1=Local variety, 2=High yielding variety, 3=Hybrid variety			Hybrid variety, HYV	-	High yielding variety Local variety
Source of crop seeds	1=BADC, 2=Seed dealer/traders, 3=Own produced seed, 4=Neighboring farmers, 5=NGOs like BRAC, etc. 6=Research organization 7=Other, (specify)……..			Seed dealer/traders	-	Seed dealer/traders
Seeding method in the field	1=Broadcasting, 2=use mechanized seeder, 3=seedling transplanting, 4=dibbling, 5=No tillage, 6=Others specify……..			seedling transplanting	-	seedling transplanting
Constraints for seeding?	1= 2= 3=			N/A	N/A	N/A
Ways to overcome the constraints	1= 2= 3=			N/A	N/A	N/A

	Key	Rabi Crop 1: _____	Rabi Crop 2: _____	Rabi Crop 3: _____	Kharif-1 Crop: _____	Kharif-2 Crop: _____
Fertilizer use						
Use of fertilizers in the crop field?	1=Yes, 2=No			Yes	N/A	Yes
Types of fertilizers used	1=Chemical, 2=organic, 3=both chemical and organic, 4=Others specify……			Chemical	N/A	Chemical
Method of fertilizer application	1=broadcasting, 2=spraying, 3=dibbling, 4=Fert-irrigation, 5= Other, specify……..			broadcasting	N/A	broadcasting
Constraints for fertilizers	1=not available locally, 2= poor quality, 3 = expensive, 4 = lack of knowledge on dosage and application methods, 5 = other, specify……			N/A	N/A	N/A
Ways to overcome the constraints	1= 2= 3=			N/A	N/A	N/A

	Key	Rabi Crop 1: _____	Rabi Crop 2: _____	Rabi Crop 3: _____	Kharif-1 Crop: _____	Kharif-2 Crop: _____
Pesticide use						
Use pesticide on the crop?	1=Yes, 2=No			Yes	N/A	Yes
Types of pesticides used	1=Chemical pesticides, 2=Bio-pesticides, 3=IPM methods, 4=Other, specify……			Chemical pesticides	N/A	Chemical pesticides
Method of pesticide application	1=Hand spray, 2=Using power sprayer, 3=Using Knapsack sprayer, 4=Other, specify……..			Hand spray	N/A	Hand spray
Benefit of pesticide use	1=control insect pests and diseases, 2=increase crop production, 3=Other, specify…….			control insect pests and diseases	N/A	control insect pests and diseases
Risk of pesticide use	1=Create health hazard, 2=Create environmental hazard, 3=Toxic effect on fish/birds/poultry 4=Other risk, specify…….			Do not concern on this issue	N/A	Do not concern on this issue
Crop harvest						
Method of harvesting	1=Manually, 2=mechanized (use reaper, combine harvester, etc), 3=Other, specify……..			Manually	N/A	Manually
Risks to crop harvesting	1=Flood, 2=Storm, 3=tidal surge, 4=Wind, 5=Other, specify…….			N/A	N/A	N/A

	Key	Rabi Crop 1: _____	Rabi Crop 2: _____	Rabi Crop 3: _____	Kharif-1 Crop: _____	Kharif-2 Crop: _____
Post harvesting						
Method of threshing	1=manually, 2=using machineries (paddle thresher, motorized thresher), 3=animal draft, 4=others specify…….			paddle thresher, motorized thresher	-	paddle thresher, motorized thresher
Constraints for threshing	1= 2= 3=			N/A	N/A	N/A
Drying	1=sun drying on earthen ground, 2=sun drying on pacca floor, 3=sun drying on polythene sheet, 4=using drying machine, 5=others			sun drying on earthen ground	N/A	sun drying on earthen ground
Storage facilities	1=use gunny bag, 2=use drum, 3=*motka*, 4=use *dhole,* 5=cold storage, 6=godown, 7=others specify……..			use gunny bag for a while. They normally do not do store of paddy, rather, sale out immediately after harvesting	N/A	use gunny bag for a while. They normally do not do store of paddy, rather, sale out immediately after harvesting
Constraints for storage of crop products	1= 2= 3=			N/A	N/A	N/A

	Key	Rabi Crop 1: _____	Rabi Crop 2: _____	Rabi Crop 3: _____	Kharif-1 Crop: _____	Kharif-2 Crop: _____
Marketing of crop products						
Where usually marketed own produced agricultural products	1=local market, 2=upazila/district market, 3=wholesale market (*aratdar*), 4=small traders (*faria),* 5=Other, specify (home)			Sale from home	-	Sale from home
Constraints of product marketing	1=No access to market, 2=lack of information about product price, 3=bound to sell products to specific buyers due to loan, 4=price grading is not transparent, 5=Early selling due to lack of storage, 6=Early selling due to cash shortage, 7=Others, specify(transport communication need)			Poor transport and road communication Limited market access Market place is limited Limited buyer (Syndicated buyer)	N/A	Poor transport and road communication Limited market access Market place is limited Limited buyer (Syndicated buyer)

Typical crop yields season wise

Collect typical yield range (minimum and maximum) for the main crops, based on FGD consensus (for triangulation with DAE data / statistics)

Cropping season/ Crops name	Yield minimum (MT/Ha)	Yield maximum (MT/Ha)	Comments on yield made by FGD
Rabi			
Boro/Paddy (Hybrid)	3.68	5.38	62 decimal = 1 BIGA
Boro (LV)	3.19	4.78	
Kharif-I			
Aus (HYV)	-	-	-
Kharif-II			
Aman (HYV)	3.98	4.78	62 decimal = 1 BIGA
Aman (LV)	2.52	2.90	

Output 3 of the TOR

Table: Physical Infrastructure and Production Constraints at Each FGD Location

Reverse chronology (yearly)	Embankment conditions *(Functional, intermediate, non-functional, absent)*	Polder structures (sluice gates) conditions *(Functional, intermediate, non-functional, absent)*	Irrigation infrastructure condition *(Functional, intermediate, non-functional, absent)*	Irrigation water availability *(Good, medium, low)*	Drainage condition (*Good, medium, low)*	Storm surge *(High, medium, low, none)*	Salinity intrusion *(High, medium, low, none)*	Pest incidence *(High, medium, low, none)*
2021	*Functional*	*Intermediate*	*intermediate*	*low*	*low*	*medium*	*High*	*High*
2020	*Functional*	*intermediate*	*intermediate*	*low*	*low*	*medium*	*High*	*High*
2019	*intermediate*	*intermediate*	*intermediate*	*low*	*low*	*High*	*High*	*High*
2018	*intermediate*	*non-functional*	*non-functional*	*low*	*low*	*low*	*High*	*High*

*some gate are problem

*fish Gher are covering more area than agricultural crop coverage in this Polder/Union