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Bangladesh Water Development Board (BWDB)  
Department of Agricultural Extension (DAE)



Working Paper 5

Theory of Change

Version 2  
May, 2016



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## Theory of Change

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Blue Gold Program

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# Issue and revision record

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# Content

<b>Chapter Title</b>	<b>Page</b>
List of Abbreviations	iii
1. Introduction	1
2. Results Chain	3
2.1 Summary Results Chain _____	3
2.2 Results Chain & Narrative _____	4
2.3 Relation to the Sustainable Development Goals _____	6
3. Logical Pathways to Change	8
3.1 Pathway 1: From Water Management Support to Environmental Sustainability _____	8
3.2 Pathway 2: From Water Management Support to Agricultural & Economic Development _____	13
3.3 Pathway 3: From Agriculture & Marketing Support to Environmental Sustainability _____	17
3.4 Pathway 4: From Agriculture & Marketing Support to Agricultural & Economic Development _____	21
3.5 Pathway 5: From Environmental Sustainability and Agricultural & Economic Development to Improved Livelihoods _____	24

## Annexes

Annex 1. Workshop Schedules	27
Annex 2. List of Participants in Workshops and Key Informant Interviews	28
Annex 3. Visual Summary of the Workshop	34

## Figures

Figure 1 Summary Results Chain	3
Figure 2 Detailed Results Chain	4
Figure 1: Pathway 1 - From Water Management Support to Environmental Sustainability	8
Figure 2: Pathway 2 - From Water Management Support to Agricultural & Economic Development	13
Figure 3: Pathway 3 - From Agriculture & Marketing Support to Environmental Sustainability	17
Figure 4: Pathway 4 - From Agriculture & Marketing Support to Agricultural & Economic Development	21
Figure 5: Pathway 5 - From Environmental Sustainability and Agricultural & Economic Development to Improved Livelihoods	24

# List of Abbreviations

BWDB	Bangladesh Water Development Board
DAE	Department of Agricultural Extension
DLS	Department of Livestock Services
DPPs	Development Program Proposals
DoF	Department of Fisheries
EKN	Embassy of the Kingdom of the Netherlands in Bangladesh
KII	Key Informant Interview
MRLP	Monitoring, Reflection and Learning Plan
Prep	Preparatory Workshop
TA	Technical Assistance Team
ToC	Theory of Change
WS	Workshop 'Theory of Change for Monitoring & Evaluation'

# 1. Introduction

The Blue Gold Program has been running for 3 years. The Mid Term Review Mission (MTR) recommended updating the program's Theory of Change to show "the evidence on the inclusive growth impacts of the different integrated activities undertaken, the efficacy of community mobilisation, the value of in-polder water management in terms of land productivity and others". Through a series of workshops, Focus Group Discussions (FGDs) and Key Informant Interviews (KIIs), the Blue Gold Team and its stakeholders discussed, reviewed and revised its Theory of Change.

As part of this process four workshops were organised; two in Dhaka, one in Patuakhali and one in Khulna. In Dhaka, a preparatory workshop was organised with the TA Team of the program, followed by the 'Theory of Change for Monitoring & Evaluation' workshop with key partners in the program; Bangladesh Water Development Board (BWDB), Department of Agricultural Extension (DAE), Department of Fisheries (DoF), Department of Livestock (DoL) and Embassy of the Kingdom of the Netherlands in Bangladesh (EKN). They worked closely together on revising the Theory of Change based on existing program documents like the Inception Report, Logical Frameworks and DPPs.

The workshop participants identified the following aims for the Theory of Change process:

1. Increased collaboration between program partners;
2. Harmonisation and integration of targets and envisioned results in the different existing DPPs;
3. Results-based planning, implementation, reflection and learning.

Through a combination of cross-disciplinary group work and plenary discussions the following outputs were developed:

1. A joint and integrated Results Chain for Blue Gold, which shows the connections between results defined in earlier program documentation;
2. Draft Logical Pathways to Change explaining the causal relationships between the different results, as well as their underlying assumptions;

Based on the output of the 'Theory of Change for Monitoring & Evaluation' workshop in Dhaka, two workshops were organised in Khulna and Pathuakali with participants of the same key partners. These workshops allowed the Theory of Change and the Pathways to Change to be refined and assumptions could be matched with practical experience in program implementation. Focus Group Discussions were organised with program participants and with representatives of the key partners in the program.

In line with other recommendations of the MTR, the following principles were adhered to while updating the Theory of Change:

- *Integration*: ensure activities in different components of the program build on each other to contribute effectively to reaching the targeted results of the Blue Gold Program.
- *Inclusiveness*: make sure that all partners are actively engaged in revising the Theory of Change.
- *Exchange knowledge*: use the process of revising the ToC to exchange knowledge and views among different partners and stakeholders of the program.

This working paper describes the results of the full process by outlining the Theory of Change (chapter 2), different Pathways of Change, their narratives and underlying assumptions (Chapter 3). For each assumption the strength is indicated to provide a balanced view. Some assumptions are proven and for some doubts exist on whether they can be upheld. Those assumptions will require additional research and clarification during the remainder of the Blue Gold Program.

The relationships between the different results presented in this document are complex. This document and the presented results chain should be perceived as a simplified version of that reality. The document is focused on the crucial relationships that help the Blue Gold Program achieve the expected outcome and scale. It is explicitly not intended to identify all relationships that could exist.

It would not have been possible to develop this document without the different viewpoints and extensive experience of all people involved (see Annex I for a full list). All input, formal and informal, has been incredibly helpful in defining the ToC and assumptions. The consultants wish to express their gratitude for the positive participation of everyone involved and the support received.



## 2. Results Chain

### 2.1 Summary Results Chain

Two versions of the results chain have been developed: a summary and a detailed version. The summary contains the core messages of Blue Gold and is easy communicable. It emphasises the water management, agriculture and market development nexus. The detailed Results Chain can be best described as a roadmap towards the ultimate targets of Blue Gold and includes the linkages between program approaches and envisioned results. It is meant to serve as the basis for program planning, monitoring and reflection.

As can be seen in the figure below, the summary (and detailed results chain) have three levels. The blue level is a summary of the activities that Blue Gold implements. These have been summarised around support for water management and agricultural & marketing support. The activities need to lead to sustainable and systemic changes, represented by the orange level of the result chain. Without sustainable changes in the way water management or value chains are organised, impact of the program will only be temporary. The activities should facilitate these changes on the orange level. If these sustainable changes are accomplished, the program will have an impact on polder and household level, the green level of the result chain. The impact on polder and household level is the final goal of the program and accomplished because the changes in water management and agricultural practices result in more environmental sustainability and agricultural & economic development.

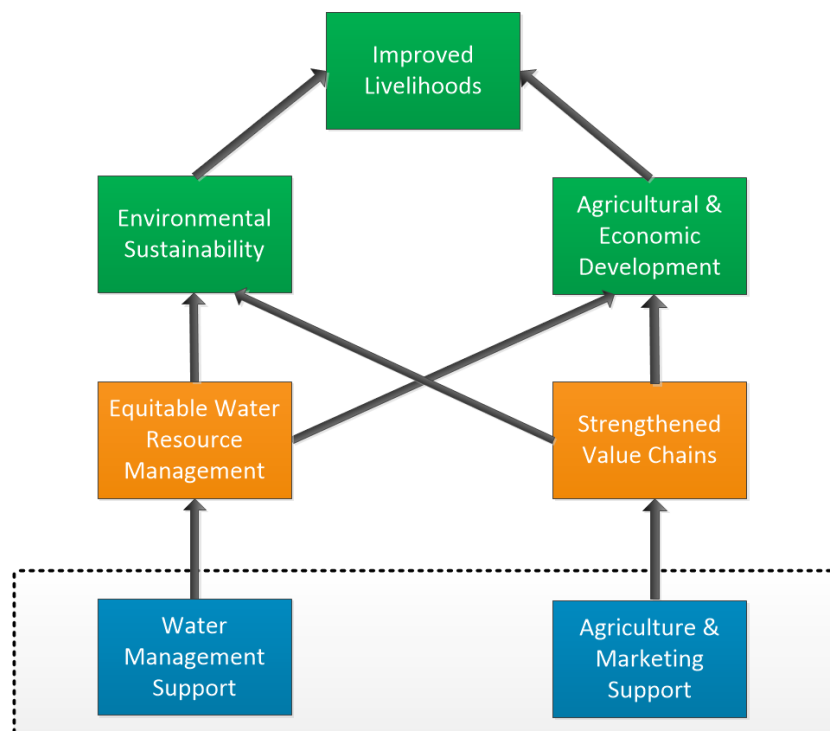
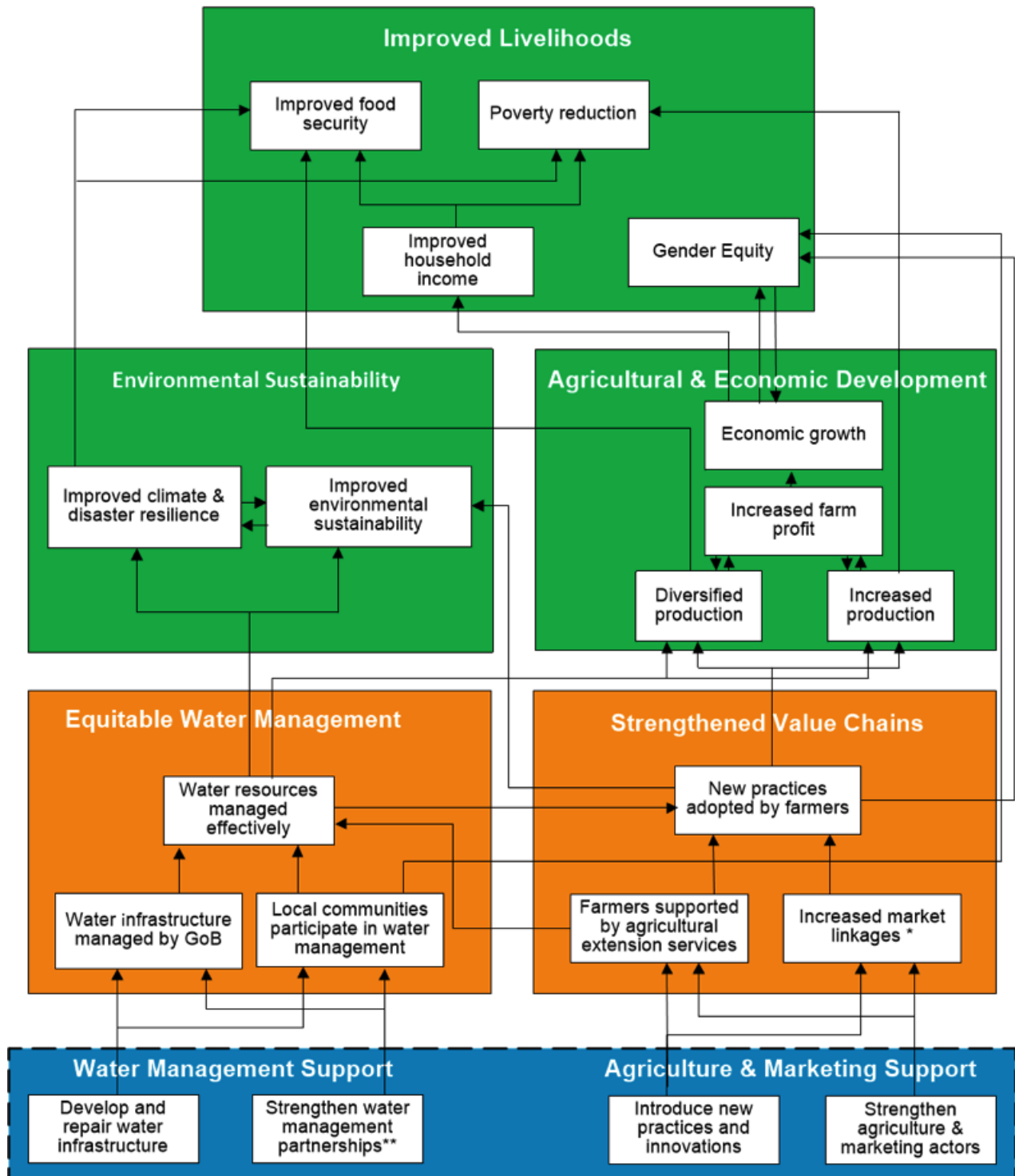


Figure 1: Summary Results Chain

## 2.2 Results Chain & Narrative

### Reduce Poverty and Improve Food Security through Equitable Water Management, Agricultural Development and Economic Growth in Coastal Polders



**Notes:**

\* Refers to market linkages for inputs (e.g. high quality seeds), outputs (sales) and services (e.g. the van driver that bring agricultural products to the market)

\*\* Refers to local institutions (e.g. WMGs), decentral governments (e.g. Union and Upazila Parishads) and central government bodies (e.g. BWDB & DAE)

Figure 2: Detailed Results Chain

### *The expected results*

The detailed results chain for Blue Gold is shown in figure two. The detailed results are matched into the boxes of the summary results chain to show the alignment of different results. The final objective for the program is to contribute to reducing poverty and improving food security through equitable water management, agricultural development and economic growth in coastal polders. Increasing household income is an important condition for this to happen. To ensure households change their diet to fulfil nutrition requirements, diversification of production plays an important role as well. Trainings around vegetable cultivation, poultry and livestock are combined with sessions on nutrition to encourage changing diets. Gender equity is also seen as an important goal for the program. This is to be achieved by ensuring gender is taken into account throughout the different results and activities defined. In the different pathways to change, described in full in chapter 3, different assumptions are included to ensure results around gender equity are achieved.

These changes will occur because of increased environmental sustainability and agricultural & economic development. Environmental sustainability means e.g. that communities are better prepared for disasters and climate change and that farmers apply pesticides and fertilisers efficiently. This includes the use of saline tolerant varieties and a reduction of crop losses because of better shock resilience and water management. Agricultural development will function as a catalyst for wider economic development by increasing the use of day labourers and farmers being able to invest additional income in the wider economy (e.g. restaurants, services, etc.). For this to happen, increased and diversified production is extremely important.

### *The systemic changes created*

Increased and diversified production in the Blue Gold working areas depend on better water management and adoption of new technologies and practices. Sustainable change is needed in the value chains and the way water management is done in the polders for the program to have impact beyond its duration. To ensure equitable water management it is important that both the different stakeholders in the community (e.g. farmers, fishermen, landowners, landless, etc.) and the government work together. Planning, operation and maintenance all have to be coordinated across different interest groups and well-functioning coordination mechanisms on catchment and polder level are crucial to make this happen. That's why activities focus on building the partnership needed for this to happen and building infrastructure that allows planning based on agricultural requirements.

For the changes in the value chains an active private sector and well-organised farmers, supported by relevant line departments, are needed. This combination will allow farmers to learn the benefits of new technology and ensure their neighbours can copy practices if they want to. To ensure this happens the program focuses on building durable partnerships in agriculture as well. The introduction and scale-up of new technology and practices can be accelerated through this partnership.

All key partners in Blue Gold recognise that limited resource availability in the relevant government bodies (e.g. BWDB and DAE) forms a serious constraint for sustainable changes to happen. The program aims at contributing to long-term solutions for the resource limitations e.g. through initiating a national dialogue about the future of participatory water management and through facilitation of coordination between communities, government bodies and local governments at polder level. The program's Exit strategy 'Sustainability right now' focuses on partnerships and strategies towards sustainable change in more detail.

### *Gender impact*

Gender equity is addressed as an integral part of each step in the results chain. This is described in more detail in the Pathways to Change. A few key steps in the detailed results chain are particularly important and are therefore highlighted in this overall narrative. The first one is the presence and active participation of women in the water management organisations. They need to be in leadership positions to be role models for others in the area. The program aims at economic empowerment e.g. through providing women with equal access to (new) technologies and practices and through promotion of joint decision making about income.

## **2.3 Relation to the Sustainable Development Goals**

Blue Gold contributes to a number of Sustainable Development Goals and targets. A full overview is included in the table below.

**Table 1: Contribution of Blue Gold Program to Sustainable Development Goals**

<b>Goal</b>	<b>Rationale</b>
<b>1) End poverty in all its forms everywhere</b>	Poverty reduction by increasing income is one of the ultimate goals of Blue Gold. The program also introduces new technologies and practices through Farmer Field Schools and access to services (target 1.4). Increased resilience (target 1.5) is an important condition for sustainable results in the polders.
<b>2) End hunger, achieve food security and improved nutrition and promote sustainable agriculture</b>	Blue Gold encourages the intake of a nutritious diet, with the objective of ending hunger (target 2.1) through sessions in the Farmer Field Schools and addresses access at the same time by promoting homestead gardens and poultry. Increasing agricultural production (target 2.3) is also an important objective of the program.
<b>4) Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all</b>	Blue Gold provides vocational education and training to increase job and business opportunities in the polders.
<b>5) Achieve gender equality and empower all women and girls</b>	Women are placed in leadership positions in Water Management Organisations and have a mandatory presence in the Executive Board and in decision-making positions of these bodies. The program also creates opportunities to earn income and start income generating activities (target 5.5) to encourage economic empowerment, e.g. through providing access to new technologies and practices.
<b>6) Ensure availability and sustainable management of water and sanitation for all</b>	Addressing water resource management (target 6.5) on different levels (e.g. field, catchment and polder) is necessary to unlock the potential of the water infrastructure the program is building and to ensure the community understands the benefits and takes ownership. The program also looks at opportunities to reduce water use through new technology and better agricultural planning (target 6.4). Capacity building of the local communities is done to ensure their participation (target 6.b). The program works closely together with NGOs that implement water, sanitation and hygiene programs in the Blue Gold working area.

Goal	Rationale
<b>8) Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all</b>	As mentioned in the narrative above, the agricultural development of the polder is to act as a catalyst for change in other economic sectors in the polders offering relevant services. This, combined with the need for additional labour in agriculture, will allow diversification and encourage entrepreneurship (target 8.2 & 8.5).
<b>13) Take urgent action to combat climate change and its impacts</b>	The water management organisations and the new infrastructure will be more resilient against climate-related hazards and natural disasters (target 13.1). The introduction of new saline-tolerant varieties of crops is also contributing to this target. The connection to local organizations working on climate change and related disaster risk reduction planning is important to ensure the water management organisations are connected into existing systems around mitigation, impact reduction and early warning systems (target 13.2).
<b>16) Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels</b>	The program aims to establish participatory water management at different levels. The capacity and effectiveness of the BWDB are crucial for the success of these ideas. Capacity building and the set-up of coordination structures at different levels (e.g. polder, district) should contribute to this, as well as inclusive and participatory decision making together with the water management organisations (target 16.6 & 16.7).
<b>17) Strengthen the means of implementation and revitalize the global partnership for sustainable development</b>	The Blue Gold Innovation fund promotes the testing and introduction of new technologies and practices in the working areas of the program, with a likely spillover effect to other areas (target 17.6 & 17.7). The focus for the innovation fund is on partnerships with companies and knowledge institutions, showcasing the possibilities of public private partnerships (target 17.17). Capacity building of the BWDB to monitor and map the situation in the polders, for example through the use of GIS, is done to support evidence-based decision-making (target 17.18).

### 3. Logical Pathways to Change

This section of the report zooms in at specific parts of the Results Chain to make the logical pathways and their underlying assumptions explicit. Five pathways to change have been defined.

#### Pathway 1: From Water Management Support to Environmental Sustainability

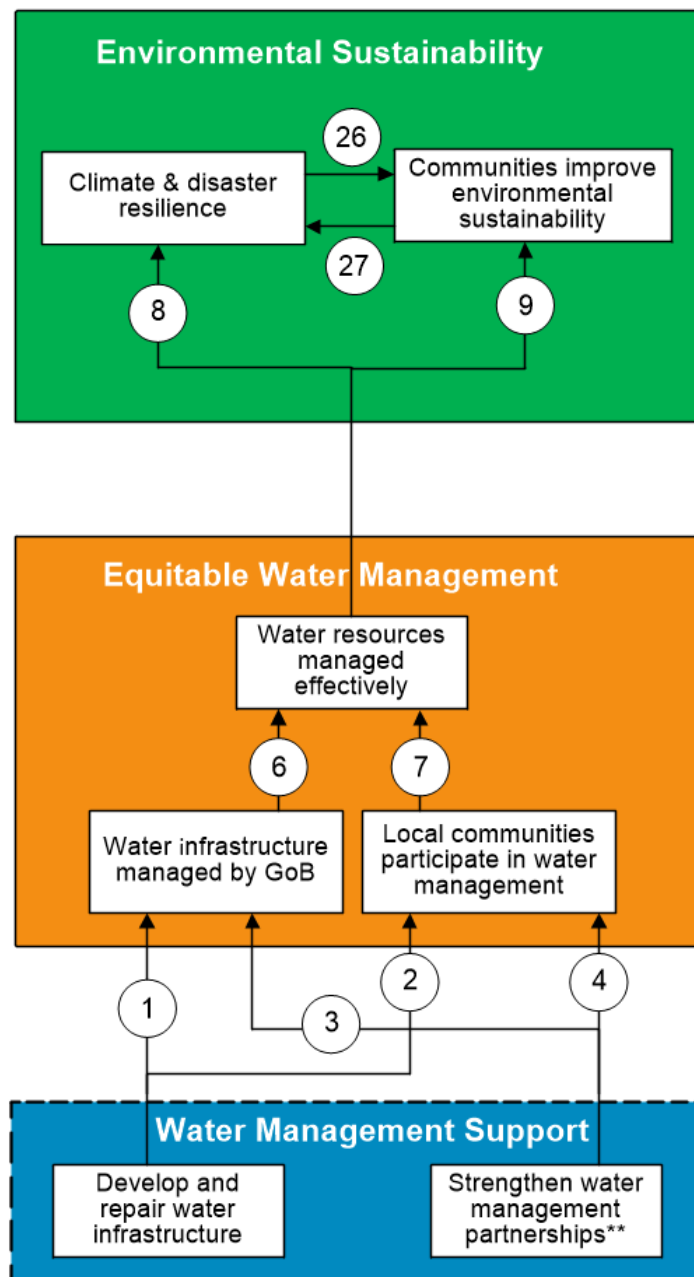


Figure 3: Pathway 1 - From Water Management Support to Environmental Sustainability

### 3.1.1 Narrative

The first Pathway of Change starts with support to develop both the infrastructure and partnerships around water management on different levels (e.g. catchment, polder) in the working areas. The partnerships established are between the community, relevant departments of the Government of Bangladesh and other relevant stakeholders. Together with the physical infrastructure built by the program this should result in increased capacity of the Government and community to fulfil operation & maintenance requirements, resulting in more effective management of water resources in the polder. This will improve the environmental sustainability and climate & disaster resilience of the communities. Better managed infrastructure provides shelter from flood, allows quicker drainage and supports economic development (see pathway 2).

Limited resource availability in the relevant Government bodies is a serious constraint for sustainable changes to happen. Blue Gold aims at initiating a national dialogue to develop a long-term agenda for participatory water management. This and other strategies for sustainable change are described in more detail in the program's Exit Strategy 'Sustainability Right Now'.

### 3.1.2 Assumptions

Arrow	Causal relationship	Assumption	Remarks	Strength
1	If water infrastructure is repaired and developed, then water infrastructure will be managed by GoB	1.1 BWDB has the means and capacity to maintain infrastructure now and beyond the program.	Previous experiences, e.g. after IPSWAM, show that it's challenging for BWDB to continue sufficient maintenance beyond the program duration.	
2	If water infrastructure is repaired and developed, then local communities participate in water management	2.1 Enough infrastructure is built to allow for effective catchment-level water management by Water Management Organisations	Current requirements can not always be met (not in DPP, not enough budget).	
		2.2 Infrastructure is designed for both drainage and flushing	Current requirements can not always be met (not in DPP, not enough budget).	
Assumption 4.1 to 4.6 are relevant here as well				
3	If water management partnerships are strengthened, then water infrastructure will be managed by GoB	3.1 Capacity development is needed to equip national government bodies (e.g. BWDB) better to develop and maintain infrastructure	Did we make a joint needs assessment together with the relevant government bodies? Do we know what their needs are and how we can support them effectively through capacity building?	
		3.2 Capacity building initiatives are successful	The program can positively influence this by working with experienced trainers and well-qualified technical experts.	

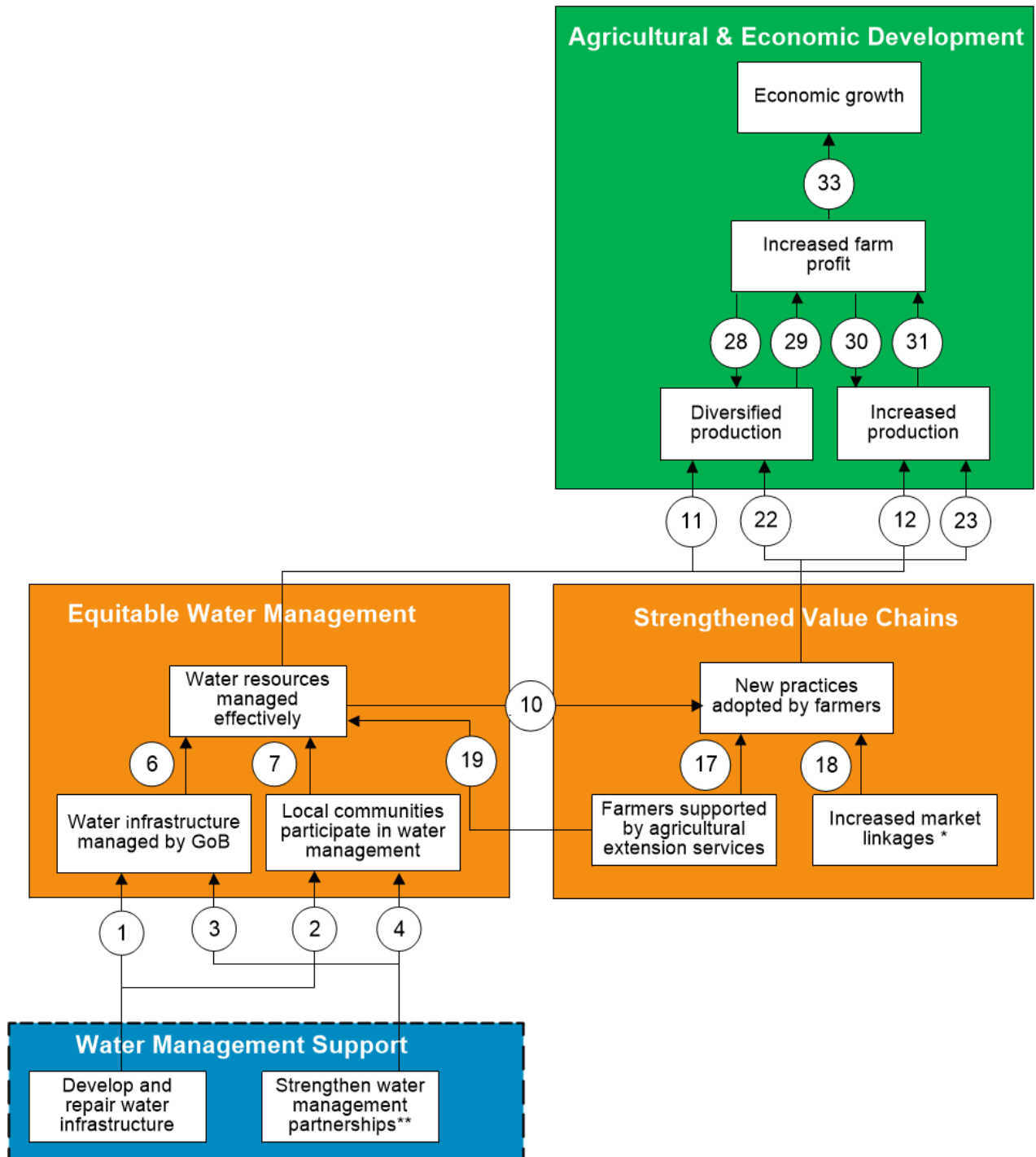
Arrow	Causal relationship	Assumption	Remarks	Strength
		3.2 Coordination within water management partnership will run independent from program	Coordination structure needs to be embedded in policy.	
		3.3 Human resource challenges within BWDB can be overcome	BWDB colleagues themselves mentioned this challenge during the ToC workshops. To overcome this challenge, active lobby and advocacy with GoB is required.	
		3.4 GoB will be able to allocate sufficient financial resources for hardware maintenance	This is currently a challenge and the program and its partners could take this up through lobby and advocacy.	
4	If water management partnerships are strengthened, then local communities participate in water management	4.1 Communities are interested to participate in water management	<p>The program can show the benefits to people.</p> <p>A limiting factor is that WMOs are community-based rather than land based. That means that the people that benefit most from improved water management (land owners) are often underrepresented in the WMOs.</p>	
		4.2 Communities understand and act on water-related risks	Communities are very aware of the risks and willing to act. Conflicting interests (e.g. shrimp farmer uses saline water which damages rice fields) can be overcome.	
		4.3 Community members have sufficient time to participate in water management	Current issues around participation might be time-related. Community members have a lot of tasks and responsibilities, including work, family and participation in activities of other programs and school committees.	
		4.4 GoB offers flexibility in its procedures for participatory planning & maintenance	Current government procedures offer too little flexibility to adjust interventions to community needs.	
		4.5 Conflicts can be resolved within the WMOs	Successful cases have shown that the UP and the Shalish (village court) can play an important role here.	



Arrow	Causal relationship	Assumption	Remarks	Strength
		4.6 GoB advocates effectively for collective action	Not clearly included in GoB mandate.	
		4.7 Government bodies (e.g. BWDB, DAE, DoF and DLS) work together to show the benefits of improved water management to communities	Government agencies need to collaborate on this.	
		4.8 When involved in water management, local governments could make resources available	The Union Parishads have so called block grants. They can decide themselves what to spend it on. The Union Parishads need to have a clear mandate to work on water management.	
6	If water infrastructure is managed by GoB, then water resources will be managed effectively	6.1 Climate & Disaster resilience is taken into account	WMAs develop community-based climate and disaster resilience plans.	
		6.2 GoB engages actively with communities for participatory water management	Absence of BWDB field staff was mentioned as a challenge during the workshops and KIIs.	
		6.4 Different GoB bodies work together to achieve synergies	Intense cooperation is outside the usual mandate	
7	If local communities participate in water management then water resources will be managed effectively	7.1 Participatory water management is more effective than centrally led water management	The community Water Management approach proves this.	
		7.2 Infrastructure will be operated & maintained according to the O & M agreement with BWDB	A limiting factor is that WMOs are community-based rather than land based. That means that the people that benefit most from improved water management (land owners) are often underrepresented in the WMOs.	
		7.3 Capacity of community is good enough for meaningful participation	More disadvantaged groups can be empowered to speak up for their interests.	
		7.4 Technical capacity for O&M is sufficient to perform routine O&M	The program can influence this by using experienced trainers and well-qualified technical experts.	

Arrow	Causal relationship	Assumption	Remarks	Strength
		7.5 Cropping plans are synchronised to allow for joint action	Initial experience from CWM proves it is possible. Current interventions take place in relatively homogeneous areas.	
8	If water resources are managed effectively then climate & disaster resilience will increase	8.1 Infrastructural standards are sufficient to offer a basic level of protection to the polder	The program does not have sufficient resources to solve all infrastructural issues. Government procedures, such as DPP revisions, are often lengthy and cause complications for quick problem solving in the case of unexpected problems. The program aims at resilience building rather than on full protection.	
		8.2 Improved O & M results in more effective coping strategies	IPSWAM experiences show that WMOs made provisional repairs on embankments after the cyclones Cidr and Aila.	
9	If water resources are managed effectively then communities will improve environmental sustainability	9.1 Improved water management motivates people to put more effort improving environmental conditions for agriculture	Little evidence is available. This assumption requires further research.	
26	If climate & disaster resilience increases, then communities improve environmental sustainability	26.1 If water infrastructure protects polders against flooding, communities will take actively part in operation and maintenance	Based on planning of infrastructure.	
		26.2 Community-based resilience plans will stimulate collective action for environmental sustainability	The Community Water Management programs are expected to offer better insights on how this could be done effectively.	
27	If communities improve environmental sustainability, then climate & disaster resilience increases	27.1 Improved environmental sustainability results in more effective coping strategies	For example, joint strategies for emergency repairs in infrastructure. IPSWAM experiences show that WMOs made provisional repairs on embankments after the cyclones Cidr and Aila.	

**3.2 Pathway 2: From Water Management Support to Agricultural & Economic Development**



**Figure 4: Pathway 2 - From Water Management Support to Agricultural & Economic Development**

### 3.2.1 Narrative

The second pathway leads from water management support to agricultural & economic development. Improved use of water resources is supposed to catalyse agricultural and economic development in the polders. Blue Gold aims at developing a replicable model for harvesting the potential of this water management and agricultural & economic development nexus. As can be seen in the figure above, the main impact of this improved use has three impacts: 1) farmers can diversify their production, 2) farmers can increase production, and 3), farmers can adopt new technologies and practices. Diversification is possible because the program makes additional land available for agriculture, creating the possibility to grow different crops. Increased production and the adoption of new technologies and practices are closely connected. Changing cropping patterns can also help increase production by creating the possibility for an additional crop or less damage during the start of the monsoon. But they also reduce the risk that farmers lose their harvest because of the monsoon and as a result the willingness to invest in inputs and services, is expected to increase. As a result production is expected to increase too. The diversified and increased production will have a positive effect on farm profits encouraging more investment in agriculture, but also in other services (e.g. shops, restaurants, etc.). Besides additional investments in the economy by farmers are expected to occur. Day labourers will have additional work because of extra crops and this too is expected to result in extra expenditures on products and services in the local economy.

### 3.2.2 Assumptions

Arrow	Causal relationship	Assumption	Remarks	Strength
1	If water infrastructure is repaired and developed, then water infrastructure will be managed by GoB	See pathway 1		
2	If water infrastructure is repaired and developed, then local communities participate in water management	See pathway 1		
3	If water management partnerships are strengthened, then water infrastructure will be managed by GoB	See pathway 1		
4	If water management partnerships are strengthened, then local communities participate in water management	See pathway 1		
6	If water infrastructure is managed by GoB, then water resources will be managed effectively	See pathway 1		
7	If local communities participate in water management then water resources will be managed effectively	See pathway 1		
10	If water resources are managed effectively, then new practices are adopted by farmers	10.1 Improved water management will enable farmers to grow crops in the Rabi season which they did not grow before the program	Based on experiences in IPSWAM and agricultural experts.	

Arrow	Causal relationship	Assumption	Remarks	Strength
		10.2 Effective drainage will allow farmers to start early cultivation of different products	Based on experiences in IPSWAM and agricultural experts.	
		10.3 If farmers can sow earlier there is less risk of losing a harvest to the monsoon and more investment will be made in fertilizer and other inputs to increase production	Requires a behavioural change	
11	If water resources are managed effectively, then farmers diversify production	Assumption 10.1 is relevant here as well		
		11.1 Farmers will choose to grow different crops than their current selection	New seed varieties and other necessary inputs need to be available.	
		11.2 Additional land is available for cultivation	Planning of infrastructure needs to be focused on making additional land available for cultivation. Local politics can prevent this.	
12	If water resources are managed effectively, then farmers increase production	12.1 Crops can be planted earlier and damage from the monsoon can be prevented	Planning of infrastructure needs to be focused on making additional land available for cultivation. Local politics can prevent this.	
19	If farmers are supported by agricultural extension services, then water resources are managed more effectively	See pathway 3		
28	If production is diversified, then farm profits will increase	28.1 Farmers will diversify in profitable crops	Based on crop selection and promotion.	
		28.2 Diversified production results in decreased impact of diseases / pests.	In monocultures the whole seasonal income can disappear due to one disease. Diversified agricultural systems are more robust.	
29	If farm profits increase, then production will diversify	29.1 Additional profit will be invested in new crops	Additional diversification needs to be promoted	
30	If production increases, then farm profits will increase	30.1 Additional production is sold and not used for consumption	The focus is on cash crops and connection to market.	
		30.2 Crops need to be profitable	Clear financial analysis needs to be in place for each crop, should be updated regularly to ensure changes in market conditions are taken into account.	

Arrow	Causal relationship	Assumption	Remarks	Strength
		30.3 Crops need to be in demand.	Based on unpredictable market, continuous analysis is needed.	
		30.4 Farmers have access to markets	Program is facilitating the connections.	
<b>31</b>	If farm profits increase, then production will increase	31.1 Additional profit will be invested in further intensification	Further research is required to analyse whether this assumption upholds or not.	
<b>33</b>	If farm profit increases, then economic growth will occur	33.1 Additional income is spent on products & services that create economic growth	This needs to be actively monitored as we currently do not have a real understanding of where additional income will be spent on and/or what priorities of households are.	
		33.2 The agricultural sector is an important engine of the polder economy	Further research is required into this assumption.	
		33.3 Farmers spend their additional profit in the polder economy	Further research is required to find out to which extent farm profits are being spent in the polder economy. In regard to purchase of agricultural inputs, the program facilitates collective purchase of improved inputs. These are often bought from service providers outside the polder.	

### 3.3 Pathway 3: From Agriculture & Marketing Support to Environmental Sustainability

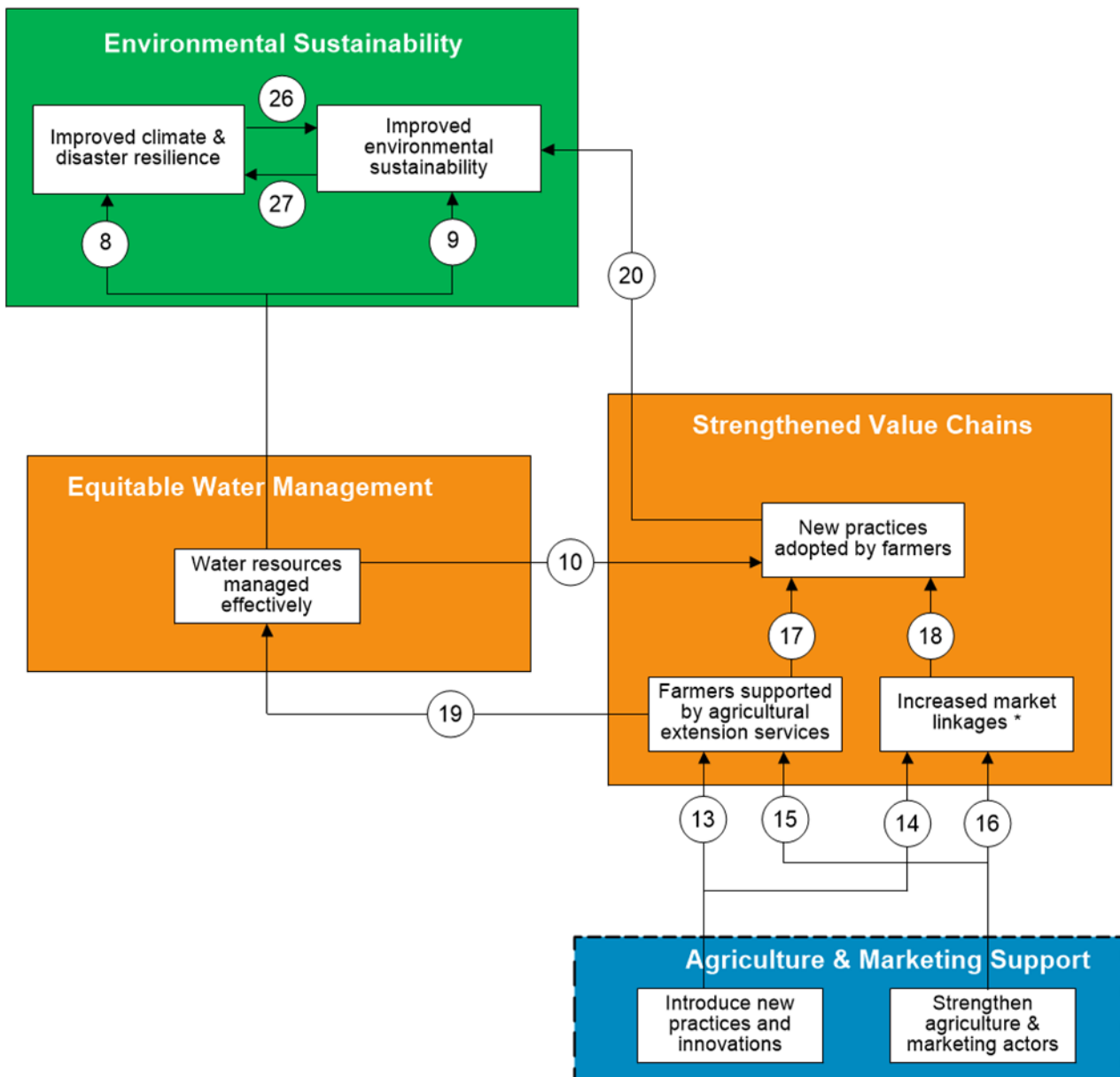


Figure 5: Pathway 3 - From Agriculture & Marketing Support to Environmental Sustainability

#### 3.3.1 Narrative

The pathway from agriculture & marketing support to environmental sustainability goes through both equitable water management and strengthened value chains. Support to sustainably introduced new practices and innovations combined with capacity building of actors in the agricultural sector (both from the Government and the private sector) will lead to farmers adopting new practices and innovations. These

innovations shall have a clear path to scale, either within the program period or in the foreseeable future (five years) afterwards. Innovations need to be embedded in existing extension services or being adopted by the private sector to ensure this happens. For the private sector this means that innovations need to add a substantial amount to their profit, for the government this means it needs to align with their mandate. Besides additional linkages on the input side, linkages between farmers and buyers also need to be established on the sales side. This will also happen by the introduction of new practices (e.g. collective action). With additional opportunities unlocked in agriculture, it will become clearer what the added value of water management is and farmers will become more involved in using water resources effectively. Innovations introduced also need to contribute to an improved environmental sustainability (e.g. responsible use of pesticides) and increased climate & disaster resilience (e.g. saline tolerant varieties).

### 3.3.2 Assumptions

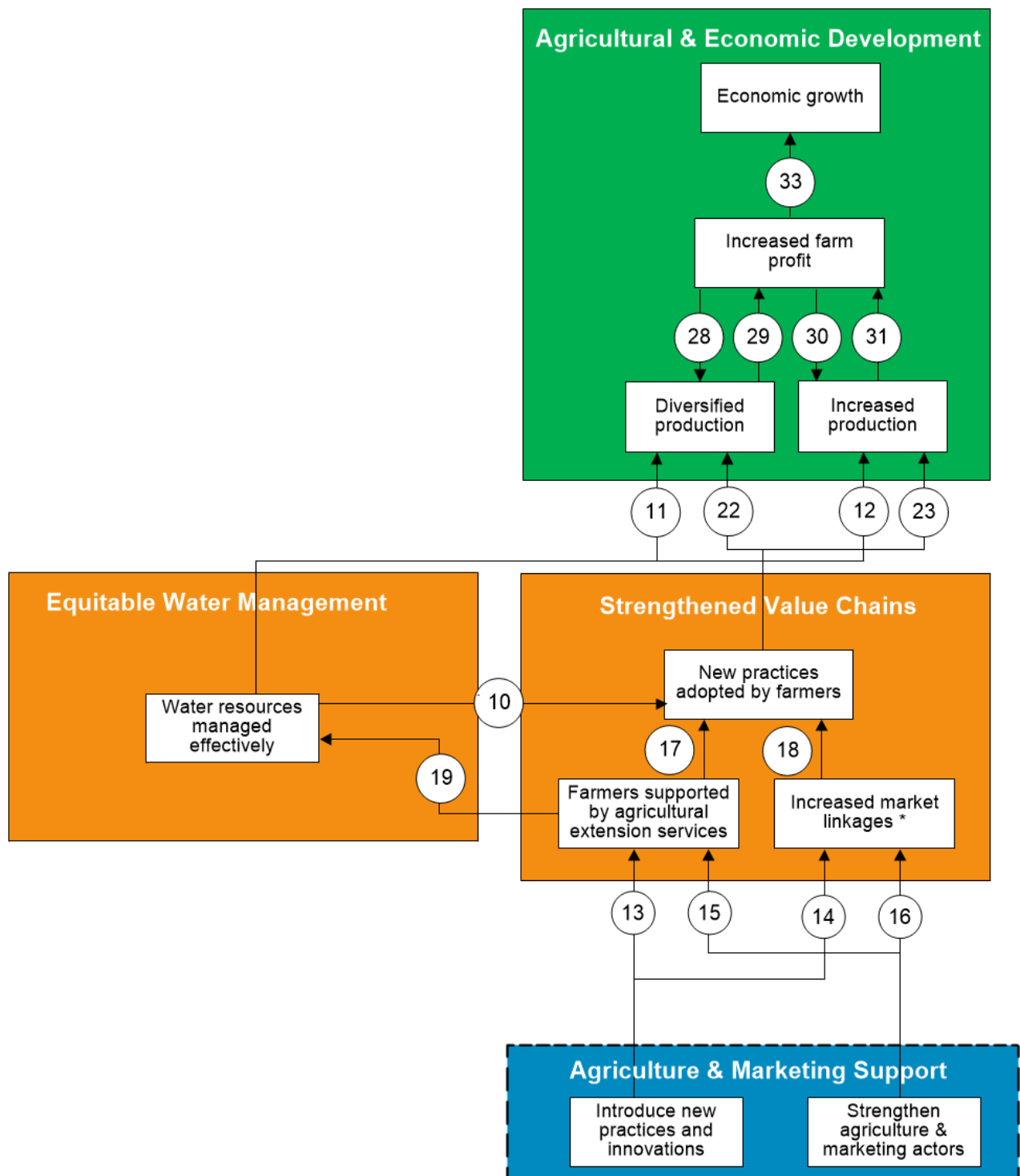
Arrow	Causal relationship	Assumption	Remarks	Strength
8	If water resources are managed effectively, then climate & disaster resilience will increase	See pathway 1		
9	If water resources are managed effectively, then communities will improve environmental sustainability	See pathway 1		
10	If water resources are managed effectively, then new practices are adopted by farmers	See pathway 2		
13	If new practices and innovations are introduced, then they will feed into existing extension services	13.1 Farmers are connected to respective agencies for extension services	Connections are strong during programs but usually weaken afterwards.	
		13.2 Innovations focus on new technologies and practices that can be scaled up with locally available inputs.	To be included in selection criteria.	
		13.3 Innovations focus on proven concepts that are socially acceptable.	To be included in selection criteria.	
		13.4 Extension service staff are well trained to support scale up of innovations	Curriculum development is within control of the program.	
14	If new practices and innovations are introduced, then they will be linked with existing market actors	Relevant assumptions from other arrows: 13.2 & 13.3		



Arrow	Causal relationship	Assumption	Remarks	Strength
		14.1 Private sector actors can make a profit of innovations	Innovations make a significant contribution to the profit of the private sector involved – to be included in selection criteria.	
15	If agriculture & marketing actors are strengthened, then farmers are supported by agricultural extension services	15.1 Farmers have time to attend in extension service activities (e.g. training)	Training is time-consuming. Blue Gold is not the only organisation asking time from the polder inhabitants.	
		15.2 Extension agencies have sufficient staff in the polders	Currently, not all respective agencies have staff available in the polders. The program aims at changing this through coordination and communication with the respective agencies.	
		15.3 The extension agencies meet the needs of farmers	The program aims at facilitating linkage building between WMOs and respective government agencies.	
16	If agriculture & marketing actors are strengthened, then market linkages increase	16.1 Farmers work together to get access to improved inputs & output markets	Benefits are clear and collective action has shown to increase results. Initial experience from MFS is also positive.	
		16.2 Farmers have the resources to invest in improved inputs	Micro-credit and alternative sources of finance are available.	
17	If farmers are supported by agricultural extension services, then farmers adopt new practices	17.1 Agricultural Extension services will teach farmers about new practices and innovation	Primary objective of agricultural extension services. Program training extension staff.	
		17.2 Farmers feel the need to adopt new practices	Smaller farmers might take more time to adopt. Farmers often want to see demonstrated impact before adopting new practices.	
		17.3 Farmers need timely access to input	Dependent on strong linkages to input suppliers.	
		17.4 Farmers replicate each other's practices	Very little information on replication available. This needs further research.	
		17.5 Extension staff is trained to support scale-up of innovations / new practices	This needs to be included in the training curricula as the program is training extension staff.	
18	If market linkages increase, then farmers adopt new practices	18.1 Private actors have sufficient skills to promote innovations	Strategies should be in place in order to take care of this.	

Arrow	Causal relationship	Assumption	Remarks	Strength
		18.2 Farmers trust the market actors	This is not always the case, but program is creating hands-on linkages to build trust.	
		18.3 Farmers willing to invest in new technology	Clear demonstration of technology in FFS and through engagement with PS and GoB	
		18.4 Farmers feel the need to adopt new practices	Smaller farmers might take more time to adopt.	
<b>19</b>	If farmers are supported by agricultural extension services, then water resources are managed effectively	19.1 Extension services include information on water resource management	Outside the traditional scope of extension services. However, DAE shows a genuine interest in taking this up.	
		19.2 Farmers perceive the need for water resource management	The preliminary results of the Community Water Management Approach seem to confirm this.	
		19.3 Extension services around water resource management need to be simple enough for farmers to understand.	Good water resource management requires many aspects to come together	
		19.3 Extension services demonstrate the benefits of improved water management	Beyond the scope of traditional extension services. However, DAE shows a genuine interest in taking this up.	
		19.4 Extension services promote collective action	Beyond the scope of traditional extension services. However, DAE shows a genuine interest in taking this up.	
<b>20</b>	If farmers adopt new practices, then communities improve their environmental sustainability	20.1 New practices and innovations are more environmentally sustainable and climate and disaster resilient than previous practices	Can be addressed in selection of technology / practice.	
<b>26</b>	If climate & disaster resilience increases, then communities improve environmental sustainability	See pathway 1		
<b>27</b>	If communities improve environmental sustainability, then climate & disaster resilience increases	See pathway 1		

**3.4 Pathway 4: From Agriculture & Marketing Support to Agricultural & Economic Development**



**Figure 6: Pathway 4 - From Agriculture & Marketing Support to Agricultural & Economic Development**

### 3.4.1 Narrative

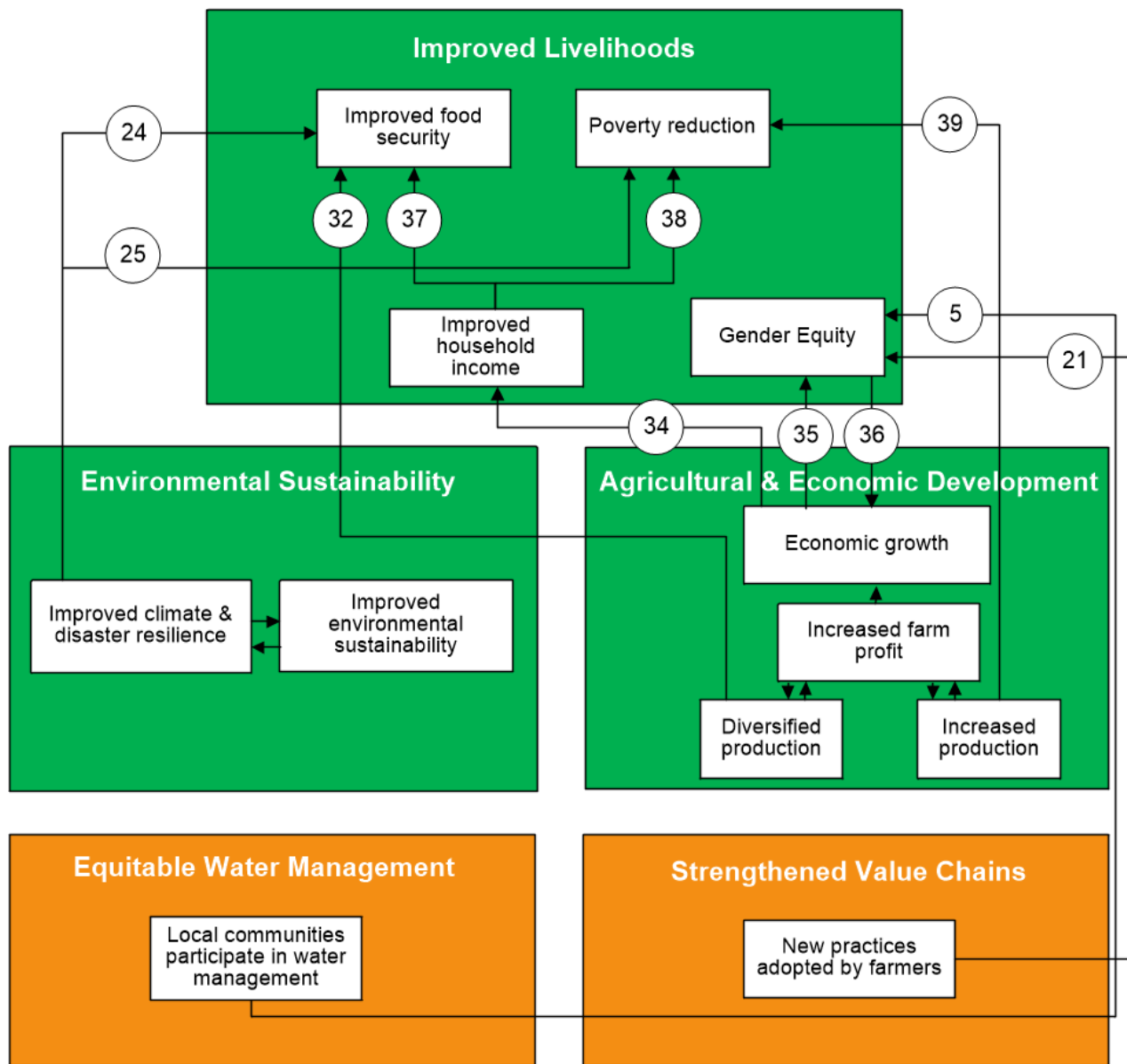
The beginning of this pathway is the same as pathway 3. Support around adopting new practices and innovations will lead to either increased or diversified production. Increased production can be accomplished by introduction and scale-up of high-yielding varieties (e.g. rice or different ducklings) and by diversified production. The latter can be achieved by stimulating farmers to grow new crops on land that was previously not cultivated. Diversification can also take place on a homestead level to ensure a more diverse diet (e.g. vegetables, poultry). The connections after diversified and increased production are included in the narrative of pathway 2.

### 3.4.2 Assumptions

Arrow	Causal relationship	Assumption	Remarks	Strength
10	If water resources are managed effectively, then new practices are adopted by farmers	See pathway 2		
11	If water resources are managed effectively, then farmers diversify production	See pathway 2		
12	If water resources are managed effectively, then farmers increase production	See pathway 2		
13	If new practices and innovations are introduced, then they will feed into existing extension services	See pathway 3		
14	If new practices and innovations are introduced, then they will be linked with existing market actors	See pathway 3		
15	If agriculture & marketing actors are strengthened, then farmers are supported by agricultural extension services	See pathway 3		
16	If agriculture & marketing actors are strengthened, then market linkages increase	See pathway 3		
17	If farmers are supported by agricultural extension services, then farmers adopt new practices	See pathway 3		
18	If market linkages increase, then farmers adopt new practices	See pathway 3		
19	If farmers are supported by agricultural extension services, then water resources are managed effectively	See pathway 3		
22	If new practices are adopted by farmers, then production will diversify	22.1 New crops can grow in environmental conditions (salinity, waterlogging, etc.)	Can be addressed in selection of practices.	
		22.2 Farmers see the benefit of growing new crops	Good demonstration plots need to be set up.	

Arrow	Causal relationship	Assumption	Remarks	Strength
		22.3 Farmers have the means to grow new crops	Finance is available to most farmers.	
		22.4 Farmers want to take the risk of growing new crops	Crops need to have a reliable return on investment.	
<b>23</b>	If new practices are adopted by farmers, then production will increase	23.1 New practices have to be applied correctly	Good follow-up of training is needed. Private sector actors and extension services will need to provide continuous support.	
<b>28</b>	If production is diversified, then farm profits will increase	See pathway 2		
<b>29</b>	If farm profits increase, then production will diversify	See pathway 2		
<b>30</b>	If production increases, then farm profits will increase	See pathway 2		
<b>31</b>	If farm profits increase, then production will increase	See pathway 2		
<b>33</b>	If farm profit increases, then economic growth will occur	See pathway 2		

### 3.5 Pathway 5: From Environmental Sustainability and Agricultural & Economic Development to Improved Livelihoods



**Figure 7: Pathway 5 - From Environmental Sustainability and Agricultural & Economic Development to Improved Livelihoods**

#### 3.5.1 Narrative

The final pathway leads to improved livelihoods, the final objective of the Blue Gold Program. Improved livelihoods for Blue Gold means contributing to reducing poverty and improving food security through equitable water management, agricultural development and economic growth in coastal polders. . These two final outcomes are expected to be achieved through increased household income, diversified & increased production and improved climate & disaster resilience. Climate & Disaster resilience should result in fewer losses of crops, because of better water management and improved disaster preparedness of the

households in the polder. Changing production has an important role in ensuring different products are available for consumption in the households to improve dietary diversity. It also plays an important role in kick-starting economic development in the polder. Increased production means increased farm profits and an increased demand for labour. This additional income is expected to be spent in the local economy on other services and products, such as restaurants and shops.

Gender equity is also an important goal for the Blue Gold Program. Gender is addressed as integral target throughout the different pathways. Blue Gold aims at increased participation and leadership of women in the local water management organisations, joint decision making in households and economic empowerment of women. The latter is expected to be achieved by providing women with access to new practices and technologies.

### 3.5.2 Assumptions

Arrow	Causal relationship	Assumption	Remarks	Strength
5	If local communities participate in water management, then women empowerment will increase	5.1 Women need to be represented in WMOs	Clear requirements during formation.	Green
		5.2 Women need to be in decision making positions in WMOs	Clear requirements during formation. Women Empowerment shall be part of all relevant training curricula.	
		5.3 Meaningful participation of women in water management processes	Gender & Leadership training is being organised. The impact will be evaluated. Women Empowerment shall be part of all relevant training curricula.	Orange
21	If new practices are adopted by farmers, then women empowerment will increase	21.1 New practices need to provide women with more decision making power over income	Can be addressed in selection of technology. Women Empowerment shall be part of all relevant training curricula.	Green
		21.2 Women need to be able to hold-on and spend income	Depends on men in the households allowing this.	Orange
24	If climate & disaster resilience increases, then food security will improve	24.1 Water infrastructure protects polders effectively against flooding	The program does not have sufficient resources to tackle all infra-related problems. DPPs do not offer sufficient flexibility to start emergency repairs timely.	Orange
		24.2 Local communities and institutions develop resilience (plans)	Further research is required to analyse the effectiveness of those plans.	Orange
25	If climate & disaster resilience increases, then poverty is reduced	25.1 Disasters cause less loss of assets	Through better protection from and resilience against floods.	Orange
		25.2 Less crops are lost because of reduced risk	Through better protection from and resilience against floods.	

Arrow	Causal relationship	Assumption	Remarks	Strength
		27.2 Crops grown have a stable return	Clear financial analysis needs to be in place for each crop.	
<b>32</b>	If production is diversified, then food security improves	32.1 A focus on homestead production is required	New crops need to be consumed.	
		32.2 Diversified production needs to address lack of specific food groups	Analysis on food diversity in polders is required.	
<b>34</b>	If economic growth happens, then household income will improve	34.1 Poor & landless benefit from increased labour requirements	Additional labour requirements for crops promoted / increased production shall be calculated.	
		34.2 Demand for additional services increases incomes of people involved in other sectors	Further research is required on the volumes of this assumed increase in demand and the economic implications of it.	
		34.3 Farmers increase their household income	Farms become more profitable in the program.	
<b>35</b>	If economic growth happens, then women empowerment will increase	35.1 Women should earn income	Focus on value added services provided by women.	
		35.2 Women should have decision making power	Change in relationship between men and women is required. Awareness on attitudes and role patterns shall be included in the relevant training curricula.	
<b>36</b>	If women empowerment increases, then economic growth will happen	36.1 Women will invest in additional IGA	Opportunities need to be made available. This shall be included in the relevant training curricula.	
<b>37</b>	If household income improves, then food security improves	37.1 Additional income will be invested in improved diets	Research indicates this link is not there. Further research is needed to analyse whether the linkage is there within the Blue Gold approach.	
		37.2 All food for a better diet is available and affordable	Analysis on food diversity in polders is required.	
<b>38</b>	If household income improves, then poverty is reduced	38.1 Savings & assets will increase	Further research is required to analyse this.	
<b>39</b>	If production is increased, then poverty will be reduced	39.1 Income otherwise spent on food, will be spend on other things	Further research is required to analyse this.	



# Annex 1. Workshop Schedules

## Workshop Dhaka

### ***Theory of Change for Monitoring & Evaluation***

**Date:** 3 & 4 February  
**Time:** 9 AM to 4 PM  
**Location:** Lake Castle Hotel, Gulshan-2, Dhaka

#### **Objectives:**

- Discussion on the Theory of Change (ToC), based on the existing Logical Frameworks, taking into account lessons learned in the last 3 years.
- Identify synergies between the different objectives and interventions of the Blue Gold Program.
- Discuss and review existing indicators and identify gaps.

#### **Day 1**

<b>Time</b>	<b>Activity</b>	<b>Objective</b>
09.00	Opening & objectives workshop	Explain overall objectives and rationale for developing a Theory of Change and refocusing the M&E system
09.30	Session 1: Introduction ToC & questions	Introduce ToC as a concept
10.45	Session 2: What is in it for you?	Ensure expectations of the participants from the M&E system are clear
11.15	Tea break	
11.30	Session 3: Defining vision & mission	Confirm high-level impact of Blue Gold
13.00	Lunch	
14.00	Session 4: Backward mapping	Defining results needed to reach impact
15.00	Tea break	
15.15	Session 5: Backward mapping part 2	Defining results needed to reach impact
16.00	Closure	

#### **Day 2**

<b>Time</b>	<b>Activity</b>	<b>Objective</b>
08.30	Review day 1	Recap of Day 1
09.30	Session 6: Strengthening assumptions	Ensure assumptions are clear and realistic
11.00	Tea break	
11.15	Session 7: Mapping indicators	Map existing indicators from different frameworks (e.g. Logical Frameworks BWDB and DAE and Results Fiche EKN) on the ToC boxes and identify common indicators
13.00	Lunch	
14.00	Session 8: Identifying gaps	Define missing indicators that need to be added
15.00	Tea break	
15.15	Session 9: Current questions	Identify current questions to identify the information needs
16.00	Closure	

## Workshop Khulna

### ***Theory of Change for Monitoring & Evaluation***

**Date:** 17 & 18 February  
**Time:** 9 AM to 5 PM  
**Location:** CSS AVA Center, Khulna

#### **Objectives**

- Orientation and discussion on the Theory of Change (ToC), based on the existing Logical Frameworks and Results Chain, taking into account lessons learned in the last 3 years.
- Identify synergies between the different objectives and interventions of the Blue Gold Program.
- Strengthen the logical pathways and assumptions in the Results Chain.
- Discuss and review existing indicators and identify gaps.

#### **Day 1**

<b>Time</b>	<b>Activity</b>	<b>Objective</b>
09.00	Opening & objectives workshop	Explain overall objectives and rationale for developing a Theory of Change and refocusing the Monitoring, Reflection and Learning System
09.30	Session 1: Introduction ToC & questions	Introduce ToC as a concept
10.30	Session 2: Results Chain	Build a Results Chain together
11.15	Tea break	
11.30	Session 3: Present and discuss the Blue Gold Results Chain	Present and discuss the progress so far
13.00	Lunch	
14.00	Session 4: Looking into the existing logical pathways	Review and challenge the pathways and assumptions that have been developed
15.15	Tea break	
15.30	Session 5: Developing new logical pathways	Fill the gaps by developing additional logical pathways
17.00	Recap	

#### **Day 2**

<b>Time</b>	<b>Activity</b>	<b>Objective</b>
09.00	Review day 1	Recap of Day 1
09.30	Session 6: Mapping indicators	Discuss and review the existing Monitoring indicators
11.00	Tea break	
11.15	Session 7: From Theory to Practice	Discuss and review the existing Monitoring methods
13.00	Session 8: Next Steps	Recap the outcomes of the workshop and discuss the next steps
13.30	Closure	

## Workshop Patuakhali

### ***Theory of Change for Monitoring & Evaluation***

**Date:** 8 and 9 March  
**Time:** 9 AM to 5 PM  
**Location:** Codec, Patuakhali

#### **Objectives**

- Orientation and discussion on the Theory of Change (ToC), based on the existing Logical Frameworks and Results Chain, taking into account lessons learned in the last 3 years.
- Identify synergies between the different objectives and interventions of the Blue Gold Program.
- Strengthen the logical pathways and assumptions in the Results Chain.
- Discuss and review existing indicators and identify gaps.

#### **Day 1**

<b>Time</b>	<b>Activity</b>	<b>Objective</b>
09.00	Opening & objectives workshop	Explain overall objectives and rationale for developing a Theory of Change and refocusing the Monitoring, Reflection and Learning System
09.30	Session 1: Introduction ToC & questions	Introduce ToC as a concept
10.30	Session 2: Results Chain	Build a Results Chain together
11.15	Tea break	
11.30	Session 3: Present and discuss the Blue Gold Results Chain	Present and discuss the Results Chain
13.00	Lunch	
14.00	Session 4: Looking into the existing logical pathways	Review and challenge the pathways and assumptions that have been developed
15.15	Tea break	
15.30	Session 5: Build new Logical Pathways	Fill the gaps by developing additional logical pathways
17.00	Recap	

#### **Day 2**

<b>Time</b>	<b>Activity</b>	<b>Objective</b>
09.00	Review day 1	Recap of Day 1
09.30	Session 6: Mapping indicators	Discuss and review the existing Monitoring indicators
11.00	Tea break	
11.15	Session 7: Identify gaps	Discuss whether there are indicators missing
13.00	Lunch	
14.00	Session 8: Information needs	Discuss how the required information could be collected
15.15	Tea Break	
15.30	Session 9: Next Steps	Discuss which steps need to be taken to finalise the Monitoring, Reflection and Learning Plan
17.00	Closure	

# Annex 4 List of Participants in Workshops and Key Informant Interviews

## Abbreviations:

KII – Key Informant Interview

Prep – Preparatory Workshop for Dhaka TA

WS D – Workshop in Dhaka

WS K – Workshop in Khulna

WS P – Workshop in Patuakhali

Sl.	Name	Designation	KII	Prep	WS D	WS K	WS P
1.	Mahfuzur Rahman	Chief Planning, BWDB	x		x		
2.	Sujoy Chakma	PCD, BWDB	x		x		
3.	Mahfuz Ahamed	Chief Water Management, BWDB			x		
4.	Masood Karim	Principal Extension Officer, BWDB			x		
5.	Feroza Khatun	Joint Chief, Office of the Chief Planning, BWDB			x		
6.	Ranjeet Kumer Paul	Executive Engineer, DP III, BWDB			x		
7.	Md. Rahmat Ali	Deputy Chief (Fisheries) BGP, BWDB			x		
8.	Golam Faruque Ahmed	Deputy Chief (Economics), Office of the Chief Planning, BWDB			x		
9.	Nasreen Akter Khan	Sub divisional Engineer, DP-III, BWDB			x		
10.	Shafiqul Islam	Assistant Chief (Sociology), BGP, BWDB			x		
11.	Shahanaz Akter	Assistant Chief (Economics), BGP, BWDB			x		
12.	Dr. Md. Sainar Alom	Senior Assistant Director, DoF			x		
13.	Dr Abu Wali Raghیب Hassan	Additional Director, Planning, Program and Implementation Wing, DAE	x		x		
14.	Shafiqul Islam	Ministry of Planning			x		
15.	Khairun Nahar	Assistant Chief Planning 1, MoWR			x		
16.	Lasmi Chakma	Assistant Director, IMED, Planning Commission			x		
17.	Dr. Md. Lutfar Rahman	Focal Person, DLS			x		
18.	Tahmina Begum	Program Director, DAE	x		x		
19.	Humayan Kabir	M&E Officer, DAE	x		x		
20.	Eng. Md Aminul Islam	Chief Engineer, BWDB				x	
21.	Md. Bazlur Rashid	Superintendent Engineer, BWDB				x	
22.	Bishwajit Baidya	Sub-Divisional Engineer, BWDB				x	
23.	Md. Isahaque Ali	Assistant Engineer, BWDB				x	
24.	Md. Abdul Latif	Deputy Director, DAE				x	
25.	Deboprotim Howlader	Sub-Divisional Engineer, BWDB				x	
26.	KM Anwar Hossain	Addl. Chief Engineer, BWDB				x	
27.	SM Nurun Nabi	Assistant Engineer, BWDB				x	
28.	Harendranath Sarker	District Fisheries Officer, DFO				x	
29.	GM A. Gafur	District Training Officer, DAE				x	
30.	Dr. Sashanka Kumar Mondal	District Livestock Officer, DLO				x	
31.	Dr. Syed Md. Anwarul Islam	District Livestock Officer, DLO				x	
32.	Faruk Ahmed	Sub-Divisional Engineer, BWDB				x	

Sl.	Name	Designation	KII	Prep	WS D	WS K	WS P
33.	SM Ahsan Habib	Sub-Divisional Engineer, BWDB				x	
34.	Amal Kanti Roy	Senior Assistant Director, DFO				x	
35.	Md. Abdul Wadud	District Fisheries Officer, DFO				x	
36.	Sajidur Rahman Sarder	Chief Engineer, BWDB					x
37.	Mohammad Ashraf Jamal	Superintending Engineer, BWDB					x
38.	S.M. Shahidul Islam	Executive Engineer, BWDB					x
39.	Md. Shafiqul Islam	Executive Engineer, BWDB					x
40.	Md. Monirul Alam Sarker	Deputy Chief Extension Officer, BWDB					x
41.	Md. Nazrul Islam Matubber	Deputy Director, DAE					x
42.	Shainur Azam Khan	Deputy Director, DAE					x
43.	Dr. A.K.M. Abdur Rahman	District Livestock Officer, DLS					x
44.	Dr. Md. Abul Hasanat	District Fishery Officer, DOF					x
45.	A.K.M. Abul Bashar	SDE, BWDB					x
46.	Md. Shahanaoaz Talukdar	SDE, BWDB					x
47.	Mr. Abu Bakr	Sub-Assistant Engineer, BWDB					x
48.	Gazi Nur Mohammad Ripon	Sub-Assistant Engineer, BWDB					x
49.	Md. Nuruzzaman	Quality Control Technician					x
50.	Md. Mamun-ur-Rashid	Extension Overseer, BWDB					x
51.	Md. Sharif Mizanur Rahman	Extension Overseer, BWDB					x
52.	Carel de Groot	First Secretary Water, EKN	x		x		
53.	ATM Khaleduzzaman	Water advisor, EKN	x		x		
54.	Laurent Umans	First Secretary Food Security, EKN	x		x		
55.	Arman Khan	Advisor Food Security, EKN	x				
56.	Björn Bolhuis	Intern, EKN	x		x		
57.	Vicki Pineda	CL 1, TA	x	x	x		
58.	Mofazzal Ahmed	DCL 2, TA	x	x	x		
59.	Hein Bijlmakers	CL 3, TA	x	x	x		
60.	Muhammad Ashraful Islam	DCL 3, TA		x	x		
61.	Karel T'Jonck	CL 4, TA	x	x	x		
62.	Tanvir Islam	DCL 2, TA		x	x		
63.	Kitty Bentvelsen	Gender Expert, TA	x	x	x		
64.	Shital Krishna Das	M&E Expert, TA	x	x	x		
65.	Abul Kashem	Training Expert, TA	x	x	x		
66.	Aowlad Hossain	Institutions Expert, TA		x	x		
67.	Alamgir Chowdhury	DTL, TA	x	x	x		
68.	Guy Jones	TL / CL 2, TA	x	x	x		
69.	Hero Heering	Program Coordinator, TA	x	x	x		
70.	Proteeti Masud	Program Manager, TA	x	x	x	x	x
71.	Boudewijn Sterk	Innovation Fund Manager, TA			x		
72.	John Marandy	DCL 1, TA		x			
73.	Shorab Hossain	TA		x			
74.	Mahamudur Rahman Aveek	TA		x			
75.	Shahidul Islam	TA		x			
76.	Anis Pervez	TA		x			
77.	Matiur Rahman	TA		x			
78.	Delower Hossain	TA		x			x
79.	Azizur Rahman	TA		x		x	

Sl.	Name	Designation	KII	Prep	WS D	WS K	WS P
80.	Joyaln Abedin	TA		x		x	x
81.	Tahmina Akter	TA		x		x	
82.	Zakir Hossain Lakhi	TA		x			x
83.	Nurul Rahaman	TA		x		x	
84.	Judith de Bruijne	TA	x	x			
85.	AFM Hedayet-ul Al Arif	TA		x	x		
86.	Andrew Jenkins	M & E Expert, Former TL IPSWAM	x	x	x		
87.	Geert Rhebergen	TA	x				
88.	Kees Blok	TA	x				
89.	Niels van den Berge	Outcome Monitoring Specialist, TA			x	x	x
90.	Gijs Herpers	Economic Monitoring Specialist, TA			x	x	x
91.	Sabina	FFS Organizer, TA				x	
92.	Monalisa Akter Shelly	FFS Organizer, TA				x	
93.	Md. Jakir Hossain	FFS Organizer, TA				x	
94.	Md. Shahidul Islam	FFS Organizer, TA				x	
95.	Md. Humoyun Kabir	Community Organizer, TA				x	
96.	Mariam Khan	Community Organizer, TA				x	
97.	Md. Abu Jafor	Community Organizer, TA				x	
98.	Farzana Khan	Community Organizer, TA				x	
99.	Md. Uzzal Hossain	Community Organizer, TA				x	
100.	Md. Abdul Based	Producer Group Facilitator, TA				x	
101.	Md. Mozoffor Hossain	Producer Group Facilitator, TA				x	
102.	Md. Sofiqul Islam	Producer Group Facilitator, TA				x	
103.	Md. Abdul Hannan	Producer Group Facilitator, TA				x	
104.	Md. Rezaul Islam	Producer Group Facilitator, TA				x	
105.	Md. Maksudur Rahman	Socio-Economist, TA				x	
106.	Md. Abdul Khaleque	Field Coordinator, TA				x	
107.	Md. Abdullah Sani	TC/MT (OFWM Specialist), TA				x	
108.	Md. Alam Hossain	Master Trainer (Rice-Fish), TA				x	
109.	Supriya Sarkar	Sub-Asst. Engineer, TA				x	
110.	Mohammad Naimul Hasan	Sub-Asst. Engineer, TA				x	
111.	Md. Aman Ullah	Quality Control Engineer, TA				x	
112.	Fatema Tuz Johora	Training Coordinator, TA				x	
113.	Ashik Billah	Socio-Economist, TA				x	
114.	Md. Shamim Alom	Business Dev. Coordinator, TA				x	
115.	Md. Zahangir Alam	Agriculturist, TA				x	
116.	Bithika Hazra	Socio-Economist, TA					x
117.	Nihar Ranjon Mondal	Sr. Quality Control Engineer, TA					x
118.	Md. Nur Islam	Sub-Assistant Engineer, TA					x
119.	Dr. Shamsul Huda	Fishery Expert, TA					x
120.	Md. Shamim Ahamed Yousuf	Master Trainer, TA					x
121.	Md. Shaifullah	Business Development Coordinator, TA					x
122.	Md. Rabiul Amin	Business Development Coordinator, TA					x
123.	Md. Atikur Rahman	Training Coordinator, TA					x
124.	Md. Nazrul Islam Jewel	Community Organizer, TA					x
125.	Anisur Rahman	Community Organizer, TA					x
126.	Md. Anwar Hossain Suzan	Community Organizer, TA					x

Sl.	Name	Designation	KII	Prep	WS D	WS K	WS P
127	Champa Akter	Community Organizer, TA					x
128	Lipy Akter	Community Organizer, TA					x
129	Md. Yousuf Ali	Farmers Field School Organizer, TA					x
130	Md. Abdul Jabbar	Farmers Field School Organizer, TA					x
131	S. Nahar	Farmers Field School Organizer, TA					x
132	Nargis Akter	Farmers Field School Organizer, TA					x
133	Md. Nasir Uddin	Producer Group Facilitator, TA					x
134	Dinobandhu Sarker	Producer Group Facilitator, TA					x
135	Md. Kamal Hossain	Producer Group Facilitator, TA					x
136	Mukul Roy	Producer Group Facilitator, TA					x
137	Md. Afikul Islam	Producer Group Facilitator, TA					x

# Annex 5. Visual Summary of the Dhaka Workshop





# Annex 6. Visual Summary of the Workshop and Water Management Group Visit in Khulna



# Annex 7. Visual Summary of the Patuakhali Workshop

