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Policy and regulatory framework for Participatory Water Management[\[edit | edit source\]](#)

BGP combines a substantial investment in water infrastructure with a strong focus on the establishment of Participatory Water Management (PWM). Given this distinguishing feature of the program – a feature which it shares with several other donor-funded water sector projects – this section provides an overview of the policy, legal and regulatory provisions, which establish the bandwidth within which PWM can be implemented.

While communities in Bangladesh, as elsewhere, have always taken initiatives towards managing water resources for their own benefit, Participatory Water Management – i.e. an explicit approach by Government whereby water management actions by water users organised on a scheme or catchment basis, or on the basis of sub-units thereof – complements or replaces centrally organised water management actions – is relatively new. Farmer groups for water management were notably formed for irrigation management purposes in the 1960s and 1970s; both for pump irrigation and in major irrigation schemes. Participatory Water Management, however, only became a Government policy applicable for all water management in flood control, drainage and irrigation schemes by the end of the 20th century. The 1999 National Water Policy sounded the starter's gun for promulgating legal provisions for PWM: several guidelines, regulations and acts that – taken together – provide the regulatory framework for Participatory Water Management.

The table provides an overview of the prevailing policy, legislation and regulation for PWM. Short discussions of each element are available through hyperlinks and/or attachments. After the overview, this concludes with a section that zooms-out again to reflect on today's context for Participatory Water Management.

Table 1: Overview of policy and regulatory framework

Title	Formal publication / approval	Status
National Water Policy	January 30, 1999	Policy

Guidelines for Participatory Water Management	November 28, 2000	Guidelines
Bangladesh Water Development Board Act	July 11, 2000	Act
National Water Management Plan	March 31, 2004	Plan
BWDB Participatory Water Management Rules	February 11, 2014	Rules under the BWDB Act 2000
Bangladesh Water Act	May 2, 2014	Act
Water Rules and related Guidelines	August 15, 2018, guidelines published in 2019	Rules under the Bangladesh Water Act 2014
Bangladesh Delta Plan	September 2018	Plan

In addition to the above documents that shape present-day Participatory Water Management, several other policies influence water management practices. We mention here the [Bangladesh Climate Change Strategy and Action Plan 2009 - 2018](#), [the Women in Development Policy](#) and [the BWDB Gender Equity Strategy 2006](#)

Previous history[\[edit\]](#) | [edit source](#)

Water resources management in Bangladesh faces immense challenges in order to resolve diverse problems and issues. The most critical of these are floods in the wet season and the scarcity of water in the dry season; the expanding water needs of a growing economy and population; the supply of safe drinking water and sanitation; arsenic problem; water pollution and massive river sedimentation and riverbank erosion. Furthermore, there is a growing need for maintaining the eco-systems, particularly the fish resources and wetlands and there is the issue of competitive demand of various water uses. The water management is increasingly facing challenges of exogenous developments of a global nature, such as climate change and sea level rise, as well as of upstream river basin developments in neighbouring countries. Climate changes will influence both food security and water availability in the following ways: extreme weather events will lead to more cyclones and floods with consequent drainage congestion and water logging; salinity and salt water intrusion; higher glacial melt leading to higher river discharge, river and soil erosion; more droughts leading to increased irrigation demands.

Based on the above, the goals and objectives for the development and utilization of water resources in Bangladesh may, in short, be stated as follows:

Goals[\[edit\]](#) | [edit source](#)

- Make efficient use of water resources to optimise the growth of agriculture, including fisheries, forestry and livestock.
- Provide navigational facilities for the growth of commerce, industry and transportation.
- Prevent land, water and environmental degradation.
- Accommodate land reclamation and accretion.
- Minimize the adverse effect of flood and drought on rural and urban communities.
- Adaptation to climate change

Objectives[\[edit\]](#) | [edit source](#)

- Irrigation objectives, including major surface water irrigation and minor irrigation to meet

agricultural demand.

- Flood management objectives, including climate change resilience and adaptation through the protection of critical urban and rural areas and control of land erosion from river actions
- Energy and power generation objectives, specifying the use of dams and other control structures.
- Navigation objectives, specifying the use of water for inland navigation.
- Land reclamation and accretion objectives, specifying the use of reclaimed land.
- Poverty alleviation objectives.

The erstwhile East Pakistan Water and Power Development Authority (EPWAPDA), an autonomous organisation, was created in 1959 to fulfil some of these goals and objectives, as a consequence of the United Nations' funded Krug Mission under the East Pakistan Water and Power Development Authority Ordinance of 1959 (EP order No.1 of 1959). The mission concluded that water resources development would be essential to the increase of agricultural production. It therefore recommended the creation of coastal polders to protect the rice crops from tidal floods and salinity. Consequently, the Coastal Embankment Project constructed 37 polders in the period 1960-1972, with a view to cultivating High Yielding Varieties (HYV) of rice. Simultaneous the EPWAPDA Master plan focussing on flood control and drainage was prepared in 1964. Activities created under the Master plan yielded immediate results. However, after a few years, an evaluation showed that the increase in agricultural production was not up to the required level. The present Bangladesh Water Development Board was established in 1972 under presidential order no. 59 of 1972, when the former EPWAPDA was split into two organisations: BWDB dealing with water and PDB dealing with power. BWDB is a body corporate under the administrative control of the Ministry of Water Resources.

A mission funded by the International Bank for Reconstruction and Development (IBRD) in 1972 recommended a strategy for the implementation of small, low cost quick generation Flood Control and Drainage (FCD) and Flood Control, Drainage and Irrigation (FCDI) projects.

In 1974, another devastating flood occurred. This generated a renewed interest in the area of flood control and prevention. A policy was adopted for the quick implementation of flood control and drainage improvement projects. The Early Implementation Project was the first project implemented in line with this new established policy. Thereafter many other projects followed as can be seen below in Section 5.2.2 Table 1, with brief descriptions.

Review of Water Resources Projects in the Coastal Zone[\[edit\]](#) | [edit source](#)

This sub-section lists of the 21 projects which have contributed to water resources development in the coastal zone over the last 45 years. Summaries of these projects can be found by following the hyperlinks. Of note is the considerable influence of the Government of the Netherlands (GoN) - which has been the main or co-funder of 14 of the 21 projects.

Table 2: **Overview of water resources management projects**

No.	Name of the Project	Implementation period	Donor
1	Early Implementation Project (EIP)	1975-1997	GoN
2	Delta Development Project (DDP)	1976-1988	GoN
3	Land Reclamation Project (LRP)	1977-1991	GoN
4	Second Small Scale Flood Control Drainage and Irrigation Project (SSSFCDI)	1988-1994	WB & CIDA
5	Systems Rehabilitation Project (SRP)	1990-1997	WB

6	Flood Action Plan (FAP)	1990-1995	multiple incl GoN
7	Compartmentalization Pilot Project (CPP)-FAP-20	1991-2000	GoN & KfW
8	Khulna Jessore Drainage Rehabilitation Project (KJDRP)	1993-2002	ADB
9	Char Development and Settlement Project (CDSP)		
9a	Char Development and Settlement Project (CDSP I)	1994-1999	GoN
9b	Char Development and Settlement Project (CDSP II)	2000-2005	GoN
9c	Char Development and Settlement Project (CDSP III)	2005-2011	GoN
9d	Char Development and Settlement Project (CDSP IV)	2011-2018	GoN & IFAD
9e	Char Development and Settlement Project Bridging (CDSP- B)	2019-2022	GoN & IFAD
10	Small Scale Water Resources Development Sector projects		
10a	Small Scale Water Resources Development Sector Project	1996-2002	ADB & GoN
10b	Second Small Scale Water Resources Development Sector Project (SSWRDSP)	2002-2009	ADB & GoN
10c	Participatory Small-Scale Water Resources Sector Project	2010-2019	ADB & GoN
11	Integrated Coastal Zone Management (ICZM) - Assistance to the Program Development Office of the Integrated Coastal Zone Management Program (PDO- ICZM)	2002-2006	GoN
12	Integrated Planning for Sustainable Water Management (IPSWAM)	2003-2011	GoN
13	South-west Area Integrated Water Resources Planning and Management Project		
13a	Southwest Area Integrated Water Resources Planning and Management Project (SAIWRPMP)	2006- 2015	ADB & GoN
13b	Southwest Area Integrated Water Resources Planning and Management Project - Additional Financing (SAIWRPMP -AF)	2015-2022	ADB & GoN
14	Estuary Development Program (EDP)	2007-2011	GoN
15	Small Scale Water Resources Development Project (SSWRDP)	2007-2014	JBIC
16	Water Management Improvement Project (WMIP)	2008-2015	WB
17	Coastal Embankment Improvement Project Phase 1 (CEIP)	2013-2020	WB
18	Blue Gold Program	2013-2020	GoN
19	Bangladesh Delta Plan		
19a	Preparation Bangladesh Delta Plan 2100 (BDP 2100)	2014-2017	GoN
19b	Support to the Implementation of the Bangladesh Delta Plan 2100 (SIBDP 2100)	2018-2022	GoN
20	Irrigation Management Improvement project (IMIP)	2015-2020	ADB
21	Smallholder Agricultural Competitiveness Project (SACP)	2019-2025	IFAD

Project definition[\[edit\]](#) | [edit source](#)

The Blue Gold Program has been defined on the basis of accumulated insights on how best to pursue Participatory Water Management. In the course of its implementation, it has itself become an arena for refining the approach for Participatory Water Management.

The project definition is reflected in various project documents and in the updates and interpretations thereof.

- The ‘mother-document’ is the **program document**^[1], which was prepared under assignment by EKN. The design builds on lessons learnt from the IPSWAM project, and took the prospect of improving agriculture along with water management interventions into consideration. Development of market linkages and the promotion of innovation were added to the project design as well. During project implementation, changes of the project design were made by the development partners, generally on the basis of proposals made by the Annual Review Missions;
- **Development Project Proformae** (DPP) are the official formats for project planning and budget allocation used in GoB. When approved, allocations against the Project can be made into the departmental annual work plans and budgets (Annual Development Programs). For a department to receive allocations it must have its own DPP. Therefore, both DAE and BWDB have a DPP for the Blue Gold Program. Both DPPs were revised once during project implementation, in keeping with Government procedures;
- **Memoranda of Agreement** have been signed between BWDB on the one hand and DLS and DoF on the other. Their relatively minor BGP-related activities did not warrant the formulation of separate DPPs and expenditures were assumed and disbursed directly through the budget of the technical assistance hired by EKN, within the framework of the Memoranda of Agreement;
- A **TA Contract**, with supporting documents, provides the initial activity definition for the technical assistance team commissioned by EKN to support implementation of BGP. A TA team was engaged to provide the bulk of the implementation capacity for the polder-level activities, as well as for coordination thereof. The technical assistance team’s terms have subsequently been specified, elaborated upon and revised. Changes were formalised through the TA annual workplan and budgets; with major revisions being supported by separate documents, such as the Inception Report, the Exit Strategy and the Theory of Change Report.

This chapter describes how the Blue Gold Program has been defined in the various documents pertaining to the different partners involved in implementation. It subsequently traces how the underlying concept of Participatory Water Management developed throughout the project implementation.

Project design[\[edit\]](#) | [edit source](#)



This portion is under development.

BWDB development project proforma[\[edit\]](#) | [edit source](#)



This portion is under development.

DAE development project proforma[\[edit\]](#) | [edit source](#)



This portion is under development.

DLS and DoF Memoranda of Agreement[\[edit\]](#) | [edit source](#)



This portion is under development.

Technical Assistance work plans[\[edit\]](#) | [edit source](#)



This portion is under development.

The TA team's role and responsibility is defined in the contract signed between the lead partner of the consortium selected to provide TA services ('the consultant') on the one hand and the Embassy of the Kingdom of The Netherlands ('the client') on the other. The contract makes reference to the tender documents (including the programme design document) and the technical proposal submitted by the TA consortium for responsibilities, outcomes, outputs and activities.

Eight months into the implementation period of the Project, a final Inception Report was submitted, elaborating the work plan and budget for the TA team. The acceptance of this confirmed the proposals of the Consultant with respect to team organisation, the tasks to be implemented and their overall timeline. The Inception Report forms the basis for the subsequent annual work plans and budgets of the TA.

In the course of 2015, it gradually became clear that BGP would be hard-pressed to achieve its ambitions. The acceptance by the development partners of the Annual Review Mission proposal to enhance funding by € xx million and to extend the Project's timeframe by xx months provided relief, but did not alleviate concerns over (i) optimal and effective water use for productive sectors by fine-tuning water infrastructure inside the polders through the WMG and WMA^[Notes 1]; (ii) close coordination of WMG, WMA and project activities with local administrations at Union, Upazila and District levels^[2]; and (iii) the synergy between the components comprising BGP^[Notes 2]. It became clear that the project definition had to be re-thought and over the course of 2015 into 2016 the TA team undertook exercises to achieve just that:

- Production of a sourcebook on engaging Local Government Institutions in water management, which *inter alia* reiterated the need to interact with LGIs from the start of engagement in a polder and further proposes to forge a 'water management partnership' of which the cooperation between WMOs and Union Parishads forms the core^[3];
- Prompted by the 2015 Annual Review Mission, preparation of an Exit Strategy for the project support from the polder areas, which *inter alia* pursues explicit, time-bound and staggered action planning per polder; formulation of a unified approach (single work process) integrating the BGP components; greater coherence between agricultural activities, business development and internal polder water management; greater focus on promotion of collective actions; a renewed focus on contributing to the national enabling environment for participatory water management; and, finally reorganisation of the TA team^[4]. The ARM argued for using the capacity of WMGs for self-evolvment, which inspired the TA's thinking about functional WMGs;
- In a parallel exercise engaging all project partners, the Theory of Change underpinning the

Program definition was examined and re-framed. This provided a greater understanding of why and how water management and agricultural & marketing support must interlink for greater productivity and profitability, and thereby for improving livelihoods in the polder. It also helped restructure the TA team for decentralised implementation and integration of activities^[5].

The changes and specifications proposed by the above exercises were formalised through the annual work plans and budgets for the TA.

Evolution of the BGP concept[\[edit\]](#) | [edit source](#)



This portion is under development.

The project definition, as discussed in the above sections, is the description of the programme in the planning and budget documents that formally apply to each of the project parties. Underneath those formal expressions of the programme, there is a more philosophical notion of what the programme is to achieve and how it is to achieve this. This is known as the 'project concept'. This concept is captured by the BGP tagline 'Water Management for Development' and has, while retaining the spirit of the tagline, developed over time. Table 3 shows a timeline of this process.

Table 3: Timeline of the evolution of the project concept of BGP

Phase	Main thrust	Documents
Formulation 2011 - 2012	WMO to be developed as cooperatives acting as main driver for economic development	Programme Document
'IPSWAM plus' 2013 - 2015	Start of the implementation period, in which infrastructural works and the formal establishment of WMOs (and their re-establishment under 2014 rules) were undertaken along the lines of the precursor IPSWAM-project; in parallel to implementation of novel project components for agricultural development and business development.	<ul style="list-style-type: none"> • Inception Report • Rules for Participatory Water Management 2014
Transformation 2015 - 2017	A reconsideration of the approach, enhancing the synergy between water management organisation, agricultural development and business development: <ul style="list-style-type: none"> · From developing organisations to developing institutional networks · From parallel components to an integrated approach · From central control to decentral initiative · From multi-purpose cooperatives to functional water management organisations supporting multiple initiatives for economic development 	<ul style="list-style-type: none"> • LGI Sourcebook • Theory of Change • Exit Strategy • Unified Approach • ARM reports

Maturity 2017 - 2019	Rapid emergence and consolidation of new approaches for in polder water management, for agricultural development, for extension and dissemination, for targeting, and for capacity building.	<ul style="list-style-type: none"> • Internal strategy documents on Catchment planning (subsequent versions) • Technical reports 19 and 24 on Community Agricultural Water Management • Internal concept notes on horizontal learning, extension methodologies and targeting; • BGP's 'Lessons Learnt' repository
Handing-over 2019 - 2020	Establishment and activation of WMAs and support to their functionality. WMAs in the driver seat for activities aimed at individual WMGs. Lessons learnt formulated with the aim to inspire improvement of national water governance environment and to support formulation of future programmes and projects.	<ul style="list-style-type: none"> • Catchment Plans • WMA work plans • O&M agreement • National Conference

While in the process of operationalisation of the policy into guidelines and rules, the concept of PWM was narrowed-down^[Notes 3]; an opposite tendency can be observed in the trajectory from planning to completion of BGP. The experience in BGP shows how, beginning with the project formulation, the PWM concept took on a wider meaning. This is elaborated in section chapter 18 in four developments:

- Gearing water management towards enabling development of commercial agriculture;
- Making water management the core function of the WMOs;
- Supporting WMOs to place their core function in the context of a mandate for local economic development
- Forming water management organisations along hydrological boundaries (rather than along community boundaries)

The above developments in the application of the Participatory Water Management Rules have culminated in more comprehensive visions on how water resources infrastructure investment,

organisation and cooperation, and opportunities for commercial agriculture can act together for attaining local economic development objectives. An important milestone in capturing this growing understanding of the development pathways of BGP was the preparation and subsequent publication of a BGP on its 'theory of change' in 2016^[5].

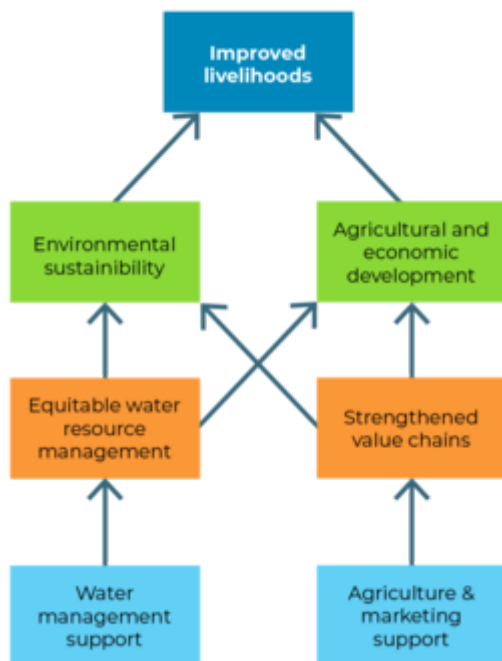


Figure 1: BGP Theory of Change – summary results chain (2016 version)

The 2016 Theory of Change (ToC) describes five main development pathways that comprise the BGP intervention. Within these five pathways, a total of 39 causal relationships are described, which link the actions of the Project, through a chain of effects and impacts to its intended development outcomes. Figure 1 presents a summary visualisation of the development pathways. The BGP activities are represented by the two boxes (water management support and agriculture & marketing support) within the dotted line. The five development pathways are:

- Pathway 1: From Water Management Support to Environmental Sustainability
- Pathway 2: From Water Management Support to Agricultural & Economic Development
- Pathway 3: From Agriculture & Marketing Support to Environmental Sustainability
- Pathway 4: From Agriculture & Marketing Support to Agricultural & Economic Development
- Pathway 5: From Environmental Sustainability and Agricultural & Economic Development to Improved Livelihoods

The 2016 Theory of Change is used as a point of reference in the BGP framework for monitoring and evaluation of results and outcomes (see section B).

Towards the close of BGP, the Theory of Change was amended, in order to better reflect the importance of in-polder water management for generating development outcomes through participatory water management. This ToC was postulated in order to inform and inspire future programmes and policies with respect to Participatory Water Management. It is presented in the following section.

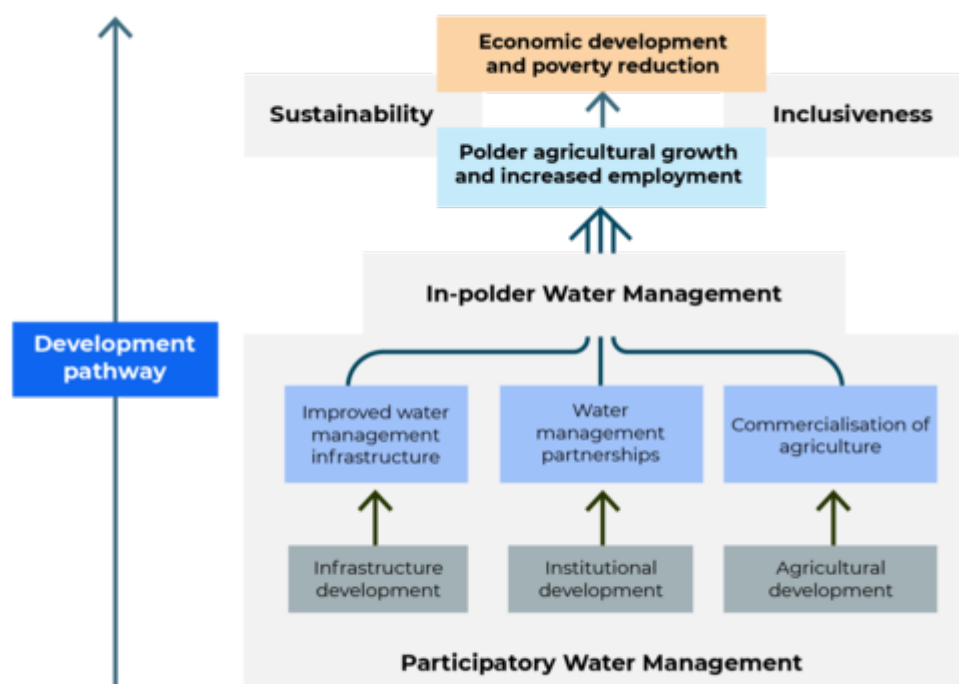
The PWM Theory of Change postulated by BGP[\[edit\]](#) | [edit source](#)



This portion is under development.

Without suggesting that this is the final word on Participatory Water Management but strictly as consideration for the development of future project interventions and regulatory modifications, the

following figure, along with the supporting text, describes BGP's conceptual understanding of PWM.



Participatory Water Management - The BGP Theory of Change (2019 version)

The figure reads from bottom to top and shows the conceptual steps BGP takes to achieve its objectives: agriculture-based growth in the polders – made tangible by enhanced incomes and employment – and contributions to overall economic development and poverty reduction.

The grey shape at the bottom of the figure shows that BGP works on Participatory Water Management. Bangladesh' Guidelines for Participatory Water Management – a government document issued in 2000 – makes a distinction between 'participation as consultation in decision-making' and 'participation as self-management of specific activities'. While inhabitants of the 22 polders in which BGP intervenes have at the end of the BGP intervention indeed a greater say in decisions on water resources, their consultation in decisions on investments made in major water resources infrastructure has been limited for the simple reason that the project plan and budget were defined before engagement with stakeholders in the polder started.

The second aspect of Participatory Water Management – water management by local stakeholders – is the real thrust of BGP. The project focuses on 'in-polder water management' – bringing benefits of water management to most corners of the polders. Increased agricultural returns provide a reason for stakeholders to assume operation and maintenance responsibilities and contribute to its cost.

To promote in-polder water management, BGP intervenes in three realms: development of infrastructure, institutional development and agricultural development.

- Infrastructure development initially focussed on rehabilitation works on

embankments, sluices and main drainage channels. With time, BGP promoted the utilisation and improvement of water management infrastructure to provide better conditions for agricultural production and sometimes fisheries: Khals were cleaned, illegal obstructions removed and communities were helped to invest in new small-scale infrastructure to further optimise conditions for profitable agriculture;

- Institutional development kicked-off with the establishment of many Water Management Groups throughout the polder, which in turn established one (and sometimes more) Water Management Associations per polder. The initial focus on establishing water management organisations was replaced by real development of institutional networks. This means that attention was given to the relations of WMOs with departments, local governments, other community-based organisations and the private sector. By promoting partnerships for water management, WMOs and WMAs achieve much more than they would in isolation;
- BGP invested in agricultural development by dissemination of knowledge on field crop production, by support to diversified homestead production and by supporting market linkages. Extension was used to firstly explain how improved water management could support a more desirable cropping pattern, and subsequently - once infrastructure and better water management were in place - to realise higher productivity and profitability. Actions included farmers' field schools, a cropping intensification initiative (CII), and a large number of horizontal learning activities for field crop and homestead production. Collective activities for e.g. input supply and joint sale of products demonstrated in a very immediate way the benefits of working together.

Some of BGPs activities belong in one of the three 'specialised' boxes, but increasingly infrastructure, institutions and agriculture worked in unison. This is for instance the case for community-led agricultural water management, in which DAE demonstrates the potential of readjusting the year-round cropping cycle in favour of high value crop cultivation in winter; in which water management groups search their members' commitment to crop synchronisation and early drainage during the monsoon season; and in which drainage networks are improved upon.

While this is a quite local activity, WMAs and WMOs increasingly take in-polder water management in hand for each of the large sluice catchments that comprise a polder. They decide on the operation of the sluice, search to optimise water levels for all farmers dependent on the main khal and invest in works to improve performance. Often, they cooperate with the area's Local Government Institutions to achieve their ambitions, with especially Union Parishads contributing financially to small-scale infrastructure such as culverts.

The in-polder water management activities have a direct bearing on agriculture-based growth in the polder. The changes in cropping pattern have resulted in higher paddy production due to newer varieties; and to an expansion of the area under high value crops such as watermelon and sunflower. Better in-polder water management comprising and combining elements of improved water management infrastructure; development of water management partnerships; and an outlook towards commercial opportunities, does lead to higher incomes (for those who benefit directly from the land they operate) and better employment opportunities (for those relying on the provision of labour to make an income). Increased farmers' incomes also enhance non-farm economic development in the polders.

Local economic development, which is based in collaborative actions by community-based water management organisations, technical departments, local governments and local businesses tends to be responsible development. When communities, leaders and experts work together there is a tendency – or maybe better-put: an opportunity – to take into account how actions affect long-term sustainability and how outcomes contribute to livelihood of different classes of people. The majority of beneficiaries from BGP are smallholder farmers or landless farmers – making it a poverty-targeted project at its core. BGP targeted both poor men and women with support to homestead production and by their engagement as local labour in construction works. Women were supported to take part in the decision-making in WMGs and were supported by specific activities to enhance their empowerment. ‘In-polder water management’ contributes to inclusiveness; for instance, by reversing the trend of smallholders leasing-out their land to large fish producers due to waterlogging or by removal of illegal obstructions (benefiting few well-off persons) from drainage channels that serve a large number of smallholder producers.

Through the approach presented above, BGP makes its modest contribution to national goals of economic development and poverty reduction, and it does so with a focus on areas in the coastal zone that are hardly touched by other developments.

References[[edit](#) | [edit source](#)]

1. [↑ *Program for Integrated Sustainable Economic Development by improving the Water and Productive Sectors in selected Polders, Program Document* \(PDF\).](#) GoB, GoN, BLUE GOLD. August 2012.
2. [↑ *Ibid.* p. 36.](#)
3. [↑ *Engaging Local Government Institutions in Water Management – DRAFT Sourcebook* \(PDF\).](#) Euroconsult Mott MacDonald & Associates. February 2015.
4. [↑ *Sustainability from The Start - Exit Strategy \(draft final\), Working Paper 2A* \(PDF\).](#) Euroconsult Mott MacDonald & Associates. February 2016.
5. [↑ ^{5.0} ^{5.1} *Theory of Change \(version 2\), Working Paper 5* \(PDF\).](#) Euroconsult Mott MacDonald & Associates. May 2016.

Notes[[edit](#) | [edit source](#)]

1. [↑](#) Described in the Programme Document page 39.
2. [↑](#) The Programme Document describes three components, but at inception the TA-team organisation was further split-up into five components with little or no arrangements for their coordination
3. [↑](#) In the trajectory from the 2001 Guidelines for Participatory Water Management to the 2014 BWDB Participatory Water Management Rules the ambition vis-à-vis consultation has been toned down and a great deal of flexibility in the constitution of Water Management Organisations was removed.

See also[[edit](#) | [edit source](#)]

<u>Chapter 01: Overview, Purpose and Structure of Report</u>	<u>Chapter 02: Institutional Setting</u>	<u>Chapter 03: Social, Physical and Environmental Context</u>
1. Overview 2. Water management for development 3. Purpose of the Report 4. Structure of this report	1. Executive Authorities 2. Implementing Agencies 3. Other public sector organisations 4. Private Sector	1. Geography of the coastal zone 2. History of polders 3. Social context 4. Polder infrastructure
<u>Chapter 04: Policy framework, history of interventions and project definition</u>		
1. Policy and regulatory framework for Participatory Water Management 2. History of interventions 3. Project definition •		
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Executive summary: A Call for Action

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A process by which the local stakeholders are directly and actively involved in identification, planning, design, implementation, operation & maintenance and evaluation of a water management project.

Blue Gold Program

A process by which the local stakeholders are directly and actively involved in identification, planning, design, implementation, operation & maintenance and evaluation of a water management project.

Bangladesh Water Development Board, government agency which is responsible for surface water and groundwater management in Bangladesh, and lead implementing agency for the Blue Gold Program

Sedimentation is the process by which fine particles of silt and clay suspended in river water settle out, for example when there is a drop in velocity.

the removal of materials in the river bank by water flowing in the river channel; also termed bank scour. In coastal polders, riverbank erosion - if unchecked - can result in breaches to polder embankments - where they are aligned close to rivers - and consequent loss of human and animal life as well as damage to farmland, crops, housing, and other infrastructure.

the south-western coastal zone is characterised by broad tidal flats and fluvio-tidal plains, lying approximately 1 metre above sea level, with drainage provided by numerous tidal creeks and channels a some major rivers. Empolderisation now protects the intrusion of sea water to agricultural areas but restricts the deposition of sediments to within the channels, thus reducing the drainage capacity of the rivers and channels, causing drainage congestion.

East Pakistan Water and Power Development Authority

High Yielding Variety - Introduced varieties developed through formal breeding programs. HYVs have a higher yield potential than local varieties but require correspondingly high inputs of fertiliser and irrigation to achieve high yields.

International Bank for Reconstruction and Development

Flood Control and Drainage

Flood Control, Drainage and Irrigation

Government of the Netherlands; a donor to the Blue Gold Program

World Bank

Char Development and Settlement Project

Small Scale Water Resources Development Sector Project

Japanese Bank for International Cooperation

Bangladesh Delta Plan

Support to the Implementation of the Bangladesh Delta Plan 2100

Embassy of the Kingdom of the Netherlands, the contractual representative of the Minister of Foreign Trade and Development Cooperation of the Netherlands and signatory to the agreement for the Blue Gold Program with the External Resources Division of the Ministry of Finance as the signatory for the Government of Bangladesh

Integrated Planning for Sustainable Water Management

A defined set of temporary activities through which facilitators seek to effect change

Also known as 'business linkages'. Linkages refer to the trading relationships between and among producers, input providers and traders, and other enterprises in a supply chain or value chain. We refer to Backward linkages on the input side and Forward linkages on the output side of the producer.

Development Project Proforma: a formal document which sets out the intention of a GoB organisation to invest in a development project, seeking approval for the investment and, if successful, a budget allocation. The DPP follows a prescribed format, including the project's financial and physical scope, benefits, and proposals for monitoring and internal and external audits. The approval of a development project proposal follows a number of stages: formation with preliminary studies, formulation to develop greater detail and with additional information to make the economic case for the project, scrutiny by the executing agencies and concerned ministries, appraisal by the Planning Commission, recommendation for approval by Project Evaluation Committee (PEC), Minister/ECNEC approval, and inclusion of a budgetary allocation in the Annual Development Plan (ADP).

Government of Bangladesh; a donor to the Blue Gold Program

Department of Agricultural Extension, a department of the Ministry of Agriculture responsible for disseminating scientific research and new knowledge on agricultural practices through communication and learning activities for farmers in agriculture, agricultural marketing, nutrition and business studies.

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Department of Livestock Services, a government department under the Ministry of Fisheries and Livestock responsible for the livestock industry in Bangladesh

Department of Fisheries, a government department under the Ministry of Fisheries and Livestock responsible for regulating the fisheries industry in Bangladesh

Technical Assistance

An area of low-lying land surrounded by an earthen embankment to prevent flooding by river or seawater, with associated structures which are provided to either drain excess rainwater within the polder or to admit freshwater to be stored in a khal for subsequent use for irrigation.

Water Management Group - The basic organizational unit in Blue Gold representing local stakeholders from a hydrological or social unit (para/village). Through Blue Gold, 511 WMGs have been formed and registered. The average WMG covers an area of around 230 ha has 365 households or a population of just over 1,500.

Water Management Association - In Blue Gold, the polder-level representative of WMGs, and signatory to an O&M Agreement with BWDB

Lowest tier of local government

human intervention in the capture, conveyance, utilisation and drainage of surface and/or ground water in a certain area: a process of social interaction between stakeholders around the issue of water control.

Local Government Institutions - Union Parishad, Upazila Parishad etc

Water Management Organizations - The common name of organizations of the local stakeholders of a water resource project/sub-project/scheme. The concept WMO typically refers to WMGs and WMAs (and/or WMFs) together

The Blue Gold approach which integrated the earlier 'four components' (ie social empowerment, water management infrastructure, agricultural technologies and farming-as-a-business) into a single work process

Collective action - by a producer group is one way to partially overcome constraints such as in weak markets, where inputs and services essential to production innovations, are generally scarce, costly to access and/or to obtain. Collective action is working in group instead of individually in order to gain economic or social benefit. Through collective action, farmers can address constraints in their market linkages, organise their activities jointly and use their collective bargaining power to reduce input costs through bulk purchase, or to obtain services from buyers such as farm-level collection of produce

an environment of policies, regulations, norms, institutions, and overall economic governance which allows market systems to function and perform well

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Annual Review Mission, the broad objective of which was to secure and where possible further enhance the relevance, efficiency, effectiveness and sustainability of the project. ARM members were individuals who were appointed by, and reported directly to, EKN and BWDB/DAE

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A livelihood is a way of making a living. It comprises capabilities, skills, assets (including material and social resources), and activities that households put together to produce food, meet basic needs, earn income, or establish a means of living in any other way.

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agricultural production aimed at meeting market-demands. It is based on establishing a profitable farming unit and involves a multitude of business relations with other actors in the market system. Used in contrast to subsistence farming which focuses mostly on home consumption.

Theory of Change, planning tool

In-polder water management; term used in Blue Gold to describe water management interventions which aim to deliver excess water from the field through field drains to secondary khals and thence to primary khals for evacuation through the sluice/regulator

A process through which stakeholders influence and share control over development initiatives and the decisions and resources which affect them.

the adjustment of gates in water management infrastructure to control hydraulic conditions (water levels and discharges) in a water management system.

actions taken to prevent or repair the deterioration of water management infrastructure and to keep the physical components of a water management system in such a state that they can serve their intended function.

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Cropping Intensity Initiative: Year-long demonstrations with farmers on increasing cropping intensity related to improved water management, also involving market actors, and by organising demand driven sessions and workshops

A vertical gate to control the flow of water; also referred to as 'regulator'

drainage channel or canal

In BGP's context this refers to inclusive and sustainable development as transversal elements within BGP's approach, with inclusiveness meaning that also women and poor household benefit from BGP

assumed in this report to operate up to 0.5 acres (0.2 ha)

empowerment is a process, enabling people to make choices and convert these into desired actions and results. In doing so, people take control of their own lives, improve their own position, set their own agenda, gain skills, develop self-confidence, solve problems, and develop self-sufficiency. Empowerment leads to genuine participation of all actors as it is a process of gaining self-confidence for individual development as well as to contribute towards development of others.

The inclusion of the (interests of) different types of people and treating them fairly and equally, considering their different roles and interests in water management

Soil is regarded as waterlogged when it is nearly saturated with water much of the time such that its air phase is restricted and anaerobic conditions prevail. In agriculture, various crops need air (specifically, oxygen) to a greater or lesser depth in the soil. Waterlogging of the soil stops air getting in. How near the water table must be to the surface for the ground to be classed as waterlogged, varies with the purpose in view. A crop's demand for freedom from waterlogging may vary between seasons of the year.

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Variants

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Blue Gold Program Wiki

The wiki version of the Lessons Learnt Report of the Blue Gold program, documents the experiences of a technical assistance (TA) team working in a development project implemented by the Bangladesh Water Development Board (BWDB) and the Department of Agricultural Extension (DAE) over an eight+ year period from March 2013 to December 2021. The wiki lessons learnt report (LLR) is intended to complement the BWDB and DAE project completion reports (PCRs), with the aim of recording lessons learnt for use in the design and implementation of future interventions in the coastal zone.

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