Summary and Introduction of Section B: Development Outcomes

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Bangladesh has experienced significant economic growth in recent decades and classifies as a lower

middle-income economy. The incidence of poverty has declined but is still 24.3% overall and 26.4% in rural areas (BBS 2016). Before the start of the Blue Gold Program, the incidence of poverty was 31.5% overall and 35.5% in rural areas (BBS, 2010). One-fifth of the country's GDP comes from agriculture and two-thirds of the workforce is directly or indirectly engaged in agricultural activities. Hence the country's economy is highly vulnerable to the degradation of natural resources and to variability and trends in climate. To eliminate poverty, Bangladesh has a long way to go. The incidence and severity of poverty is even more pressing in the predominantly rural coastal region of Bangladesh (see chapter 3). Alleviating this, requires high and inclusive growth of the rural agricultural economy in a sustainable manner.

To address this situation, the Blue Gold Program (BGP) became operational in March 2013 and extended over an 8+-year period (until end 2021) to improve agricultural water management in 22 polders of four districts: Khulna, Satkhira, Patuakhali, and Barguna (see chapter 1). This project aimed to reduce poverty and improve food security through participatory water management and agricultural development resulting in improved livelihoods for communities. This section presents the outcomes and impacts of the BGP interventions based on independently collected survey data. In other words, this section assesses the effectiveness of BGP's interventions and judges the significance of changes in the livelihoods of BGP beneficiaries. Here, outcomes and impacts are seen as the contribution of the BGP interventions to the overall goal of the program.

Below, we summarise the surveys which have been used in reporting on the impact of the Blue Gold Program; in particular in preparing this section B.

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Baseline and Endline Surveys[edit | edit source]

The impact of Blue Gold interventions was intended to be measured by a comparison of baseline and endline surveys. Because Blue Gold implemented the interventions in 22 polders in two rounds two baseline surveys were conducted using sample surveys:

- Phase I: 2015 TR14 Baseline Survey (fieldwork Apr/May 2014: 1,401 households in 9 polders)
- Phase II: 2018 TR23 Baseline Survey (fieldwork Apr-Jun 2017: 3,651 households in 7 polders selected as representative of the 13 Phase II polders)

- Endline survey 2020 TR27 – Impact of the Blue Gold Program, April 2021 (field work in last part of 2020; 3,969 households in 9 polders) as a follow-up of the baseline surveys of 2014 and 2017.

The majority of the first round of polders aimed to have relatively a low level of investment (termed 'fine-tuning' in the BWDB DPP) – so nine IPSWAM polders were included. The second round covered a wider spread of polders, the selection for which was finalised in 2015/16.

The endline survey was conducted in 2020. Fieldwork was delayed by COVID-19 and eventually conducted in September 2020, comprising 3,969 households in 9 polders. The results were published in April 2020, in Technical Report 27 (TR27) Impact of the Blue Gold Program. There was a wealth of evidence that BGP has achieved its expected outputs in terms of improved water management leading to better conditions for crop production, and farmers gaining knowledge and skill through training and extension activities. However, the impact in terms of increased farm production and income was less apparent for a number of reasons. Firstly, the period between the collection of Phase II baseline data in 2017 and endline data in 2020 was relatively short, and secondly, 2019 and 2020 were both unfavourable years for farming. In 2019 low crop prices would have discouraged planting and then excessive rain and severe pest attacks virtually destroyed much of the paddy crop. In 2020, cyclone Amphan caused much damage, and COVID-19 disrupted input supplies and markets. Survey data shows that between 2017 and 2019, the area grown has declined significantly for aman, mung bean and a number of other crops, and there was a small decline in the area of boro. From follow-on surveys, we established that 2019 was a poor year for crop production, and did not provide a good basis for assessing gains attributable to BGP over the two year period since 2017 (when the Phase II baseline survey was carried out). For this reason, crop data on aman 2020 and rabi/boro 2021 was collected during the 2021 WMG Survey, fieldwork for which was carried out from June to August 2021.

WMG Surveys[edit | edit source]

In September 2017, the Annual Review Mission recommended that greater attention should be paid to the collection and analysis of data to provide: evidence of economic changes for use by Annual Review Missions; increased knowledge and understanding of beneficiaries' responses to project interventions and adaptations; and quality-assured data for the Dutch Policy and Operations Evaluation Department (IOB) with material to carry out a post-project review of Blue Gold. A series of studies was initiated to document the outcomes and impact of the Blue Gold Program, especially the economic changes and significant income increases within the area of the Blue Gold Program, including the changes in profitability over earlier agricultural choices, and the increase in incomes to the various categories of households (landless, small landowner, large landowner, crop producer, fish producer etc). These studies were:

- 2018 WMG Survey (TR25): fieldwork May 2018 (pilot in 2 polders) and Sep 2018: 266 WMGs in 12 polders
- 2019 WMG Survey (TR26): fieldwork in Jun/Jul 2019: 510 WMGs in 22 polders plus FGDs with 25 WMGs
- 2021 WMG Survey (TR29): fieldwork in Jul/Aug 2021: 506 WMGs in 22 polders plus interviews with 1,012 households.

Final Report Section B[Notes 1][edit | edit source]

Data on the outcomes and impact of the Blue Gold Program used here in Section B are mostly derived from the following surveys:

- The **endline survey 2020**
- The **WMG survey 2021**, and also using data for comparison from the **WMG survey 2019,** and
- The **household survey 2021.** This household survey was undertaken as complementary to the WMG survey 2021.

The COVID-19 pandemic affected all Blue Gold communities as well as creating difficulties for those who conducted the field survey work. Chapter 27 includes a section (Impact of disasters and resilience to face them) further elaborating the impact of COVID-19 on the Blue Gold beneficiaries and their livelihoods. The impact of COVID-19 on the endline and WMG surveys is summarised below:

- The COVID-19 pandemic, with measures including lockdowns and transport restrictions, contributed to an unfavourable level of agricultural production and incomes in 2020.[Notes 2]
- In 2020, it was not possible to conduct a WMG survey due to COVID-19, because of travel restrictions.
- The data collection for the endline survey of 2020 had to be postponed by several months (from May to September), which in turn affected the recall by respondents of events in aman 2019 and rabi 2020.
- Outcomes of the endline survey in 2020 - and to a lesser degree the WMG survey in 2021 - are likely to be affected to some extent by the impact of COVID-19, for example, because COVID-19 restrictions led to reduced off-farm prices.

Outcomes and Impact from Participatory Water Management (see Chapter 5)[edit | edit source]

Improved water management has reduced losses from poor drainage, salinity and lack of irrigation. WMGs continued to report a reduction in water-related constraints to crop production, with 69% of the WMGs saying the situation is now good or very good, compared with only 13% in the pre-project situation and 56% in the 2019 WMG survey. Overall, 79% of WMGs say there has been an improvement in water management conditions, compared with 68% in 2019. However, there are still some problems, and flooding has become a major problem for 20% of WMGs in the kharif-2 season, especially in Patuakhali. Informal interviews found that in many cases BGP had not met all of their expectations regarding water management. Some khals need still to be excavated and sluice gates fixed.

Coastal communities are now more organized and have taken responsibilities for the sustainability of the improvements in water management. The most widely reported improvement in infrastructure was re-excavation, de-silting of khals, cleaning of khal, sluice repairs, new/repaired culverts, better sluice operation and repaired embankments. Most of these works were undertaken by BWDB-BGP with WMG support, with WMG themselves mainly being responsible for khal cleaning and better sluice operation. Local Government Institutions had an important role in culvert improvements together with WMGs. WMGs reported that sluice gates are now under the control of WMGs or catchment committees (made up of WMGs); but it is apparent from FGDs that, in some locations, control is, at best, partial, and sluices may not always be operated in the best interests of farmers. In addition, drainage khals may be leased to, or otherwise occupied, by influential individuals who can obstruct their use for drainage. There are also worries that WMG control of infrastructure will not continue after the end of BGP.

BGP had a strong focus on institutional development of coastal communities. In two-thirds (67%) of households someone is member of at least one type of community organization. In 54% of the sample households someone is member of a WMG, compared to 21% in 2017. BGP delivered its field

activities via WMGs, inspiring community / WMG members to attend different types trainings and to adopt new technologies. Most (63%) of sample households reported that members of their households have attended BGP Farmer Field Schools (FFS) organised by DAE and by the Technical Assistance (TA) Team. A similar proportion reported attending Blue Gold Farmer Field Days, while over one third (38%) have attended other BGP training. In between 77% and 93% of the households from which someone attended training at least something from what they learned had been adopted.

Outcomes and Impact from Agricultural Development (see Chapter 6)[edit | edit source]

Since the start of BGP there have been significant changes in land use and cropping. Fish ghers now make up 60% of the cultivable land in Khulna and 70% in Satkhira. In Satkhira the area under ghers has more than doubled since the start of BGP. There are three main categories of land use in the BGP area – paddy, non-rice crops and fish produced in ghers. Farmers' preferences for these land uses have changed over the BGP period.

The 2018 WMG survey found that small farmers preferred to grow rice rather than fish, as they got food for their families and straw to feed animals. At that time paddy prices were high and there was little difference in the profitability of paddy versus fish/shrimp. In 2019 the situation had changed, with paddy prices falling and fish becoming more profitable than paddy. The areas of fish ghers in Khulna and, especially, in Satkhira, had increased substantially, with a smaller increase in the area under crops. The 2021 WMG survey found further increases in the areas under fish ghers and non-rice crops, with the area under paddy stabilising. However, discussions with farmers suggest that the economic pendulum has swung back in favour of paddy and non-rice crops – especially high value crops such as watermelon and vegetables. Crop budgets suggest these two crops now contribute more to net farm income than fish ghers.

Of the total area of all crops, paddy accounts for 45%, fish ghers 29% and non-rice crops 26%. Overall, the area of paddy has increased by 10%, with the area under both fish ghers and non-rice crops increasing by around 50%. There has been a switch from local to more productive high yielding varieties of paddy. At the start of BGP over half of paddy was local varieties, now HYVs and hybrids account for 79% of the area under paddy.

The area under fish ghers has more than doubled in Satkhira, while non-rice crops have increased by 62% in Patuakhali, largely driven by growth in mung bean which has replaced keshari (a local pulse crop) as the main non-rice crop. There has been a modest (25%) expansion of non-rice crops in Khulna, with high value vegetables and watermelon replacing sesame and other non-irrigated crops, which have become vulnerable to increasingly unreliable weather conditions.

Overall cropping intensity has increased by 55 percentage points, from 186% to 241%, with a larger increase in Satkhira of 99 percentage points - largely due to expansion of fish ghers. Increases in cropping intensity was reported for all polders apart from polder 28/2 (being absorbed into Khulna city) and for 89% of the WMGs. There has been an increase of 13 percentage points since the 2019 WMG survey, when overall cropping intensity was 228%, with increases in Khulna and Satkhira, but little change for Patuakhali. On average WMGs with lower Water Management Problem Scores have a higher cropping intensity.

The WMGs reported that yields have increased for almost all crops compared with the pre-BGP situation – typically by around 30% but doubling for paddy where HYVs have replaced local varieties. Yields are also higher for most crops compared with those reported in 2019 – especially for mung bean which had depressed yields in 2019. Calculations based on crop budgets and cropping patterns show that total labour used in agriculture has increased by almost 50%, with the number of women

hired more than doubling.

The incomes from crops and fish ghers have been calculated using crop budgets and WMG data on crop areas. These incomes have more than doubled over the BGP period. Calculated total income in the WMG survey 2021 is 19% less than that reported in household interviews 2021 for crops, field vegetables and fish ghers, suggesting that the calculation is not an overestimate.

An economic analysis of the investment in BGP has been carried out in order to calculate the economic internal rate of return. As in preceding calculation of the payback period, this analysis is limited to the impact of BGP interventions in water management and agricultural extension on crop production and aquaculture in ghers. The analysis has adjusted input and output prices to reflect their real value to the economy. The analysis uses the same data that was collected for the 2021 WMG survey. The analysis covers project costs and benefits over a 30 year period, with investment expenditure on BGP taking place over the first eight of these years (2013-14 to 2020-21]).[Notes 3]

EIRR calculations assume that only a proportion of the improvement in cropping patters and crop yields reported in the WMG survey can be attributed to BGP. Interviews for 2021 WMG survey mostly attributed between 40% and 60% of the increase in farm income to BGP interventions. The base case for EIRR calculations assumed that 25% of the increase in net farm income can be attributed to BG interventions. This results in an EIRR of 42%.

The EIRR has also been calculated with smaller proportions of the increase in farm income attributed to BGP. This shows that EIRR remains at an acceptable 15% even if only 10% of the increase in farm income is attributed to BGP. The effect of BGP benefits not being sustained has also been examined. If net benefits were to cease in 2023-24, two years after completion, then the EIRR would be reduced from 42% to 38% in the base case but would still be an acceptable 15% if only 15% of the increase in farm income were attributed to BGP.

Inclusive Development Approach: Outcomes and Impacts from Homestead Based Production (see Chapter 7)[edit | edit source]

For around 30% of the polder households that do not have the necessary access to land or family labour to get benefit from the interventions for crop agriculture, a more inclusive Farmer Field School (FFS) program on homestead production was implemented to improve their food security, nutrition, and their overall living standard. From 2013 to 2021 thirteen cycles of 1,178 FFS were implemented for 25 farmers each. In total 1,758 modules were facilitated covering homestead gardening (vegetable and fruit), poultry rearing, pond aquaculture and beef fattening. Overall, 87.6% participant were women.

Most (around 80% or more) of the surveyed households grow homestead vegetables, have fruit trees and keep poultry. Around two-thirds have cattle and one-third goats. These provide food for the household and produce for sale – with around two-thirds of all households selling eggs and poultry; one third selling cattle, one quarter fruit, vegetables and also milk, and 16% selling goats. Overall, there has been a slight increase in the number of households involved in vegetables, fruit and poultry, and a somewhat larger increase in numbers with goats and cattle. Households now especially keep larger numbers of poultry. Overall, 44% of all households have fishponds. The proportion of pond owners has remained more or less stable and about 40% of pond fish is retained for home consumption. This increase in homestead production has been encouraged by training and support from BGP. Although most households report generating income from homestead-based production, the relatively small amounts they earn mean that these are not very important income sources. However, homestead production is an important source to fulfil the nutritional needs of the households, increasing household resilience.

The main problems in the production of crops, poultry, livestock and fish reported by the sampled households relate to pests and diseases. This applies to crops, vegetables, poultry, fish and livestock. Water and weather-related problems are also significant for paddy and other crops. In discussing problems, the FGDs in the 2019 WMG survey were dominated by economic issues, such as the falling prices of farm products (especially paddy) and the increasing cost of labour and farm inputs. This had changed in 2021, although some of the 2021 FGDs reported that they were not getting fair prices for their crops and that markets could be manipulated by middlemen. Input supply sometimes also was an issue. But farmers in 2021 were much more positive about paddy production, and less enthusiastic about expanding fish ghers.

The Outcomes and Impact on the Livelihood of Women (see Chapter 8)[edit | edit source]

BGP ensured that women fully participated in development activities, and women are now undertaking an increased amount of income generating work around the homestead and on their farms. Women are also working more often now outside their home – particularly in wage labour and in other income generating activities. However, most women still see themselves primarily as housewives, and domestic tasks still occupy most of their time, even though their time spent on productive work increased considerably.

Earning an income helps women to take a larger role in household decision-making, women are now more mobile outside of their homes, and they participate more in community events and community organizations. Their social status has improved. But at the same time the workload of women has increased as they are taking on more productive work in addition to their domestic tasks.

The Overall Outcomes and Impact on the Livelihood of the Coastal Communities (see Chapter 9)[edit | edit source]

The livelihoods of the coastal communities of BGP areas has improved significantly. Almost all households own homestead land; very few households in the landless category own any other type of land, while only two-thirds of marginal farm households own cultivated land and 41% have ponds. The proportion of these households owning land has increased very slightly since the start of BGP. The average area owned for all households 133 decimals (0.54 ha). Although land ownership is highly skewed, more households than before, particularly those owning little land, now lease in land, and this means that many landless and marginal households are able to cultivate crops and fish. Increases in leasing of land means that agriculture provides opportunities for poor households. Agriculture remains an appropriate strategy for poverty reduction.

Data shows that 60% of the average total household income comes from agriculture-related sources and 40% from non-agricultural sources. For all land-owning categories, the largest single source of agricultural income is crops, including field vegetables, which contributes 26%. For landless households the combined earnings from farm and non-farm labour are the major sources of income. These households also generate significant income from crops, but wage labour generates considerably more income. Wage labour is also important for marginal land owning households. Income from agriculture in the WMG survey 2021 is double than the income measured by the 2020 endline survey, as farming had recovered from the natural disasters and economic problems in 2019 and 2020, and as further BGP water infrastructure works have been completed. Not only does agriculture generate a large share of income for all land-owning categories, developing agriculture generates opportunities for all income groups – either as producers or through the provision of labour and other services.

Ownership of household assets like agricultural equipment, radio/TV and bicycles/motorbikes is correlated with land ownership, with the number of owners increasing as land ownership rises. Virtually all households own mobile phones, but relatively few own motor vehicles or non-motorised vehicles (such as rickshaws). Ownership of both these types of vehicles is inversely correlated to land ownership, with a higher proportion of households with less land owning these assets. This may be because households who have little land have transport businesses that use these vehicles. Compared to the 2017 baseline survey, there has been a considerable increase in the numbers of households owning agricultural equipment (up from 13% to 70%).

Housing is a useful indicator of well-being. Households that own more land have larger, more valuable houses, constructed with better quality materials. Compared with the 2017 baseline survey, the average number of rooms per house has increased from 2.2 to 2.6 and the average value of a house has more than doubled – from Tk74,694 to Tk155,916. More houses now have brick/concrete walls and roofs, and fewer use grass, bamboo etc. The number of households obtaining domestic water from tubewells has increased from 88% to 94%, and in total 99% of households now get water from sources which should be safe. Almost all (96%) of the households have sanitary toilet facilities. Most households (88%) report washing their hands with soap before meals and after using toilet, compared with only 36% in the 2017 baseline survey; the hygiene campaigns during the COVID-19 pandemic is likely to have contributed to this.

In the 2020 endline survey, a small proportion of households (8.2%) reported food shortages in terms of not being able to have at least two meals per day at some point in the last 12 months. The shortages were highly correlated to land ownership, with over 20% of the landless households reporting shortages. The proportion of households reporting food shortages in the 2017 baseline survey was slightly lower (7.2%). This slightly higher percentage in 2020 may be linked to the poor rice crop in 2019 and, to a lesser extent, in 2020.

Cropping intensity increased significantly over the years of BGP and crop production, in terms of yields per hectare, was very good again in the year 2021. Income from agriculture in 2021 was double the income achieved in 2020; hence it is likely that the extent of food insecurity, reported by some of the households in 2019 and 2020, was reduced in 2021.

Overall, the increased agricultural and fish production as well as homestead-based production have enhanced food security and fulfilled nutritional needs. The high value and other rabi crops, along with fish provide cash incomes for households. Increased crop and homestead-based production also increased employment opportunities, especially for women. Improved agriculture not only increased agricultural production and employment, but also improved the well-being of the entire family. Rural households are investing towards improved quality of life, like better housing and other amenities, and better futures such as investing in new agricultural and non-agricultural endeavours and in their children's education.

Notes[edit | edit source]

1. ↑ **Advisory Note:** Section B presents the latest available data, mostly collected end 2020 and in 2021. However, other sections of this Final Report (especially Sections D, E and F) were prepared during 2020 and early-2021 using data available at that time. This means that occasionally there may be some discrepancies in values between Sections B and Sections D, E and F.
2. ↑ A main reason for conducting a 2021 WMG survey in the last half of 2020 and the first half of 2021 was to obtain a more representative assessment of agricultural production for the 'endline'. In addition, the restrictions to travel imposed during 2020 made the field survey

more difficult and contributed to a decision to conduct the WMG survey in 2021.

3. ↑ The small amount of BG investment in 2021-22 has been excluded as data on benefits refers to the project prior to this expenditure. No further benefits are assumed beyond those quantified in the 2021 WMG survey.

See more[edit | edit source]

See more[edit | edit source]

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Section B: Development Outcomes

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Increase in the capacity of a country or an economic region to produce goods and services. It also refers to the increase in market value of the goods and services produced by an economy. It is usually calculated using inflation adjusted figures, in order to discount the effect of inflation on the price of the goods and services produced

Bangladesh Bureau of Statistics

gross domestic product

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.

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.

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

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

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).

Integrated Planning for Sustainable Water Management

a rice crop usually planted in March/April under dryland conditions, but in areas liable to deep flooding. Also known as deepwater rice. Harvested from October to December. All varieties are highly sensitive to daylength.

A rice crop planted under irrigation during the dry season from December to March and harvested

between April and June. Local boro varieties are more tolerant of cool temperatures and are usually planted in areas which are subject to early flooding. Improved varieties, less tolerant of cool conditions, are usually transplanted from February onwards. All varieties are insensitive to daylength.

The dry season (typically mid-October to mid-March) with low or minimal rainfall, high evapotranspiration rates, low temperatures and clear skies with bright sunshine. Crops grown are boro, pulses, sunflower, sesame and mungbean.

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.

The Policy and Operations Evaluation Department (IOB) is the independent evaluation service of the Ministry of Foreign Affairs of the Netherlands which researches and prepares reports on the outcomes of Dutch foreign policy for reasons of accountability and so that the findings can be used in adjusting future policymaking

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

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Focus Group Discussions - in which a group of participants from similar backgrounds or experiences gather to discuss a specific topic of interest, guided by a group facilitator who introduces the topics for discussion and helps the group to participate in a lively and natural discussion amongst themselves

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.

The second part of the kharif season (mid-June to mid-October) characterised by heavy rain and floods. T Aman is the major crop grown in this season. Jute is harvested.

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.

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

drainage channel or canal

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

A culvert is a structure that allows water to flow beneath a road, railroad, trail, or similar obstruction from one side to the other.

Farmer Field School - A group-based learning process through which farmers carry out experiential learning activities that help them to understand the ecology of their fields, based on simple experiments, regular field observations and group analysis. The knowledge gained from these activities enables participants to make their own locally specific decisions about crop management practices. This approach represents a radical departure from earlier agricultural extension programmes, in which farmers were expected to adopt generalized recommendations that are formulated by specialists from outside the community.

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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.

Technical Assistance

Farmer Field Day - Exchange events organized at the end of each Farmer Field School to share the FFS learnings with other community members

An area enclosed by low embankments to store either freshwater or brackish water for the production of fish, shrimps or prawns.

Varieties developed by farmers, sometimes referred to as local improved varieties (LIVs)

Local pulse crop

Cropping intensity - The number of crop harvest per unit land per year. The average cropping intensity (CI) is calculated as the total area of all crops per year divided by the area of cultivable

land. In its CI calculations BGP treats fish ghers as another crop; the DAE method excludes fish ghers in its CI calculations. Hence the CI calculated by BGP is higher than as calculated by DAE.

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.

Farmer Field School - A group-based learning process through which farmers carry out experiential learning activities that help them to understand the ecology of their fields, based on simple experiments, regular field observations and group analysis. The knowledge gained from these activities enables participants to make their own locally specific decisions about crop management practices. This approach represents a radical departure from earlier agricultural extension programmes, in which farmers were expected to adopt generalized recommendations that are formulated by specialists from outside the community.

Labour that results in goods or services that have monetary value in the capitalist system and are thus compensated by the producers in the form of a paid wage, or otherwise results into (monetary) income. Productive work includes subsistence agriculture and homestead production.

hectare

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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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