25 Poverty Focus: development of homestead production

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Introduction[edit | edit source]

Household categories in Blue Gold area[edit | edit source]

Briefing Materials



The following materials illustrate concepts, interventions, outcomes and lessons learnt, including through stories from community members.

Slide decks

• Food security: evolution of homestead Farmers' Field Schools

Thematic brochures

- Homestead Farmer Field Schools: pursuing food security through homestead production
- Outcomes of fisheries interventions to increase production, food security and incomes
- Outcomes of livestock interventions in improving livelihoods and access to markets

Case studies

- Women in collective action and market linkages: increasing benefits and empowerment
- HL empowering women sharing poultry successes
- Women's empowerment through homestead FFSs
- Feminisation of agriculture and the impact on women's workload

Videos

- Women's Empowerment (Bangla with English subtitles)

Flipcharts

- Gender Flipcharts: Gender equality (Bangla)
- Gender Flipcharts: Gender and agriculture (Bangla)

An overall objective of Blue Gold Program (BGP) is to improve agricultural production systems to increase the income and food security of polder dwellers through improved water management. When addressing the water resource management constraint on agricultural development, not all households equally benefit from project interventions beyond the safety offered by embankments. We identified that households have different assets, physical and other, determining the extent they can participate in agricultural production innovations and take advantage of water resource management improvements. On this basis we recognised three, not necessarily sharply defined, categories of households (HH).

A first category, probably slightly over half of the households in the BGP polders, have **access to land** either through ownership and/or leasing, and possess some other production related assets, such as household labour, skills, finance, etc. They are intent on farming as their livelihood strategy, but may complement it with other income, such as non-farm labour income or income from homestead production. Only few of them are really food secure, but generally they are poor or oscillate in and out of poverty as most of the polder inhabitants. This category stands to benefit of improved water resource management. It gives them the opportunity to make their farming more ‘commercial’, to become more market-oriented instead of subsistence focused.

A second category, estimated as some 25-35% of all households, but varying across polders, **lacks access to land in any form** and has few other means, assets or skills. They generally are the poorest in the polders and food insecure. Not involved in cropping agriculture as farmers, they do not really benefit from water resource management besides through the safety of the embankments, and indirectly from increased demand for wage labour, as for many of them such wage labour is a main income source. Roughly the upper half of this group (i.e. 15% of the total population) nevertheless have a homestead plot, possibly a few livestock assets or a small pond, and labour available in the household of sufficient health to benefit from homestead Farmer Field School interventions.

A third category of households, partly overlapping with the two other groups, **make use of their labour and skills, and have other means or assets** to be actively involved in other activities and sectors (e.g. government service holders or engaged in the private sector, either as (small) entrepreneurs, craftsmen or employees). They have opted out of agriculture, even if they own land, and see their future elsewhere basing their livelihood strategy on the labour and skills in the household.

While these categories cannot easily be defined unambiguously and households migrate in and out of a certain category, Blue Gold stood to gain efficiency and effectiveness in its interventions by taking notice of their differing requirements. In Section E the focus was on the first category of households and Blue Gold interventions facilitating the commercialisation of their farming. In this Chapter 25 the focus is on Blue Gold's activities to promote homestead production, including livestock and fisheries, and its contribution to food security and poverty reduction targeting those households of the second category that have a homestead plot.

Origins of Homestead Farmer Field Schools[edit | edit source]

Farmer Field Schools (FFS) is a group-based adult learning approach through which farmers learn how to experiment and solve problems independently. The activities take place in the field, essentially around a core set of trials and are, as such, sometimes called "schools without walls". In FFS, groups of twenty-five farmers meet regularly during one full production cycle with a facilitator, observe from the trials, discuss, ask questions, and learn together.

Farmer field schools as an approach was first developed about 30 years ago by FAO to promote integrated pest management (IPM) techniques in rice farming. Since then it has developed into a group-based experimental leaning process to increase knowledge and skills in (organic) agriculture, animal husbandry, and even non-farm income generating activities such as handicrafts[1].

For DAE the FFS methodology is central to its agricultural extension approach. Apart from in Blue Gold, DAE applied FFS in DANIDA supported programs, such as its Integrated Farm Management Component (IFMC) program. In IFMC farmers with access to crop land participate in FFS modules on rice production, complemented by sessions covering homestead production including vegetable gardening, poultry and livestock and nutrition. These latter sessions are aimed primarily at the women in the participating husband and wife teams. Farmers with only a very small land holding, usually also husband-wife teams, get a fully integrated homestead FFS program covering poultry, homestead gardening (focus on vegetable production; but also fruit tree management), beef fattening, dairy and goats, and nutrition.

It is the latter approach that Blue Gold took over for its homestead FFS. The DAE Blue Gold component focused on crop FFS as discussed in Section E, working with groups made up of husbands and wives, with the men participating in crop modules and the women in homestead and nutrition modules. This chapter 25, however, does not report on the women of DAE's husband en wife teams who participated in homestead modules, rather it focuses on the homestead FFS implemented by Blue Gold's technical assistance team. These 'TA' FFS entirely aimed at increasing homestead agricultural production, including poultry, livestock, fisheries, vegetables and fruits. These FFSs had no link with field crop production as they targeted participants who had no or limited access to crop land.

Homestead FFS in Blue Gold[edit | edit source]

The primary objective of implementing homestead FFS was to achieve food security and improve the nutrition uptake of otherwise resource starved households with a view to increase their living

standard. The approach focused on improving vegetable production, fruit tree management and poultry and livestock rearing, utilizing the limited homestead land available as well as the adjacent small ditches or ponds for fish production. In combination the household's nutrition status could be enhanced.

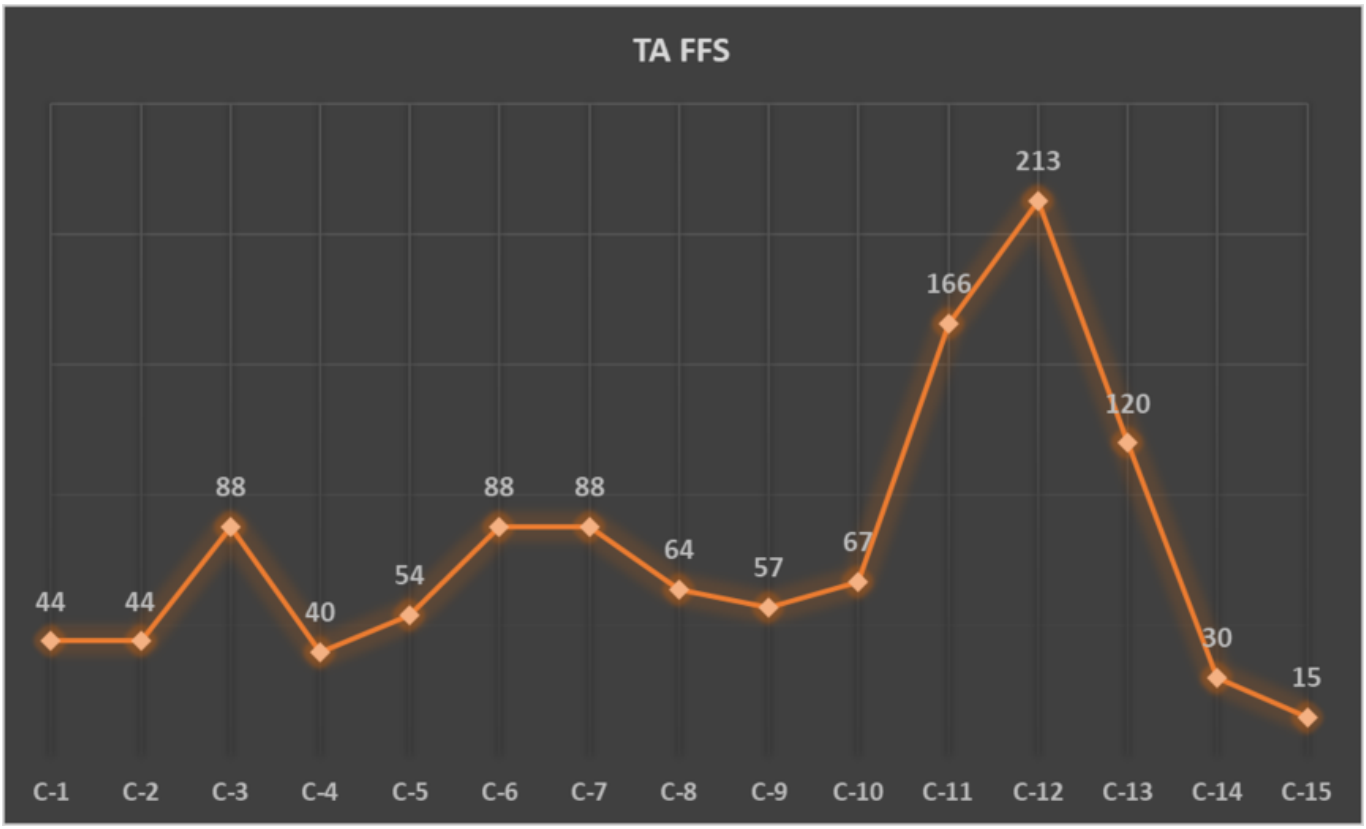

Figure 25.1 Number of Homestead FFS per cycle

Blue Gold's technical assistance team implemented a total of 1,178 homestead FFS, involving 29,450 participants across 22 polders in 15 cycles from mid-2013 till mid-2021; 88% were women. Each year 2 "cycles" were implemented with the content depending on the production opportunities of the concerned season. The number of FFS per season remained largely stable for the first ten cycles, see figure 25.1. Thereafter a different approach was followed in order to enhance the number of FFS (as in cycles 11 to 13). The sharp reduction of FFS per cycle in cycle 14 and 15 was due to the COVID-19 limitations. The two different approaches are described below.

Homestead FFS - Cycles one to ten[edit | edit source]

The first ten cycles, or a total of 634 FFS, were implemented from the end of 2013 till early 2018. The approach largely stuck to the DAE practices. The homestead FFS followed the fully integrated curriculum, or bundled module approach, as implemented by DAE for households with small land holdings as described above. In general, the FFS during one cycle would contain modules on homestead gardening (mainly vegetables), poultry rearing and nutrition while the FFS during the following cycle contained modules on beef fattening, fish culture and again nutrition. Up to early 2018 these two bundles of FFS modules were delivered annually.

The final composition was seasonally determined. Poultry could be implemented any time of the year but beef fattening was linked to Eid-ul-Azha, i.e. the festival during which Muslims sacrifice animals and demand for beef is high. Similarly, fish modules were mainly linked to the monsoon season while the homestead gardening/vegetable modules could be undertaken in both winter and summer seasons.

Participants for homestead FFS were selected with the support of the Water Management Groups (WMGs). While the bundles were not defined by local demand, participants could choose the specific bundle they opted for, earlier or later in the year. WMG executives shortlisted interested households accordingly for the relevant season and project staff selected a final 25 participants after further scrutiny. In order to a be a participant at FFS, a farmer needed to be a WMG member, a permanent resident of the polder, relatively resource-poor but already active in some homestead production, motivated to apply the learnings, within a certain age bracket, and possessing the required attitude.

Selected participants had to be from households who stood to benefit in terms of food security and nutrition as a result of attending FFS. In practice, households were aimed at owning less than 50 decimals of land. A group of FFS participants could be mixed, all females, or all males, depending on their interest, ensuring to include the household member who was likely to best apply the FFS learnings. The target was that at least 50% of all homestead FFS participants in Blue Gold would be women; in practice it was the large majority: 24,856 of the 29,450 participants of the 15 cycles, or 88%.

All FFS covered season-long production (seed to harvest, egg to egg, etc.) and were based on learning from experience (experiential learning) through a participatory learning process. The first FFS bundle was a combination of 20 sessions focused on transferring improved technology on homestead gardening-poultry-nutrition. The first two sessions were preparatory sessions, used for group formation and assessment of participants. Technical sessions started from session three. Next seven sessions were for vegetable production and fruit tree management including manure preparation, harvesting and result analysis. Poultry sessions commenced thereafter and continued for the next seven sessions covering poultry management, proper housing and biosecurity management. The four last sessions discussed nutritional aspects of food, infant care, safe food, food preparation and ways of preserving nutritional value. At last, a farmer field day (FFD) was organized to share the learnings of the FFS with a wider range of interested people. Technical Note 10 presents a report on a Farmer Field Day organised at the end of FFS cycle 6 in Patuakhali.

The second FFS bundle, covering the fisheries, beef fattening and nutrition modules, also consisted of 20 sessions. The first session, a preparatory session, was used for group formation and assessment of participants. Technical sessions on fish culture started from session two and continued till session nine. These eight sessions covered pre- and post-fingerling stocking management, disease management, harvesting and result sharing. The next five sessions were focused on the cattle fattening process, sharing experiences on cattle housing, deworming, feeding management, diseases prevention and biosecurity. There was one session on marketing the cattle, followed by four sessions on nutrition. Nutrition sessions address malnutrition, 1000 days (on healthy nutrition between a woman's pregnancy and a child's 2nd birthday), safe food, food security and preparing balanced food. The last session was again a farmer field day (FFD).

The number of FFS that could be implemented depended on the number of available FFS facilitators. These facilitators were, upon completing a cycle, moved to a different polder for the implementation of the next cycle. Recruited from the DAE pool, these facilitators had a few years of experience and were given additional training by Blue Gold in session facilitation and hands-on implementation activities. During the first cycle, two facilitators were engaged per FFS, but from the second cycle onwards, one facilitator was responsible for all the sessions in an FFS. Thereafter, facilitators were gradually given more and more responsibilities and the number of FFS facilitated per season increased to four per facilitator. Ultimately 22 FFS facilitators were conducting FFS sessions four days a week and utilizing the remaining days to follow up participants in support of the actual implementing of the demonstrated improved technologies. Thus the highest number of FFS implemented by facilitators in a cycle was 88.

The facilitators were responsible to implement FFS in different polders during different cycles. For this purpose, they had to relocate to polders where a specific cycle had to be implemented in accordance with their expertise. From time to time they were included in capacity enhancement trainings. Usually before initiating new cycles, refresher trainings were organized by experts. They were also given training on value chain development and market orientation issues. Moreover, they attended review meetings, initially weekly and later monthly, to discuss issues related with session facilitation, and conducted mock sessions to fine tune their skills.

An overview of the module bundles over the first ten cycles is presented in table 25.1. The key technologies promoted in each module are summarised in Table 25.2.

Table 25.1: Homestead FFS in Cycles 1-10

Sl. no	Cycle	Duration	Module	FFS	Male	Female	Total
1	**Cycle-1**	November 2013- April 2014	Homestead gardening-Poultry-Nutrition	44	83	1017	1100
2	**Cycle-2**	April 2014 - November 2014	Fish-Beef fattening-Nutrition	44	595	505	1100
3	**Cycle-3**	October 2014 - March 2015	Homestead gardening-Poultry-Nutrition	88	234	1966	2200
4	**Cycle-4**	March 2015 - September 2015	Homestead gardening-Poultry-Nutrition	40	123	877	1000
5	**Cycle-5**	May 2015 - November 2015	Fish (Tilapia)-Beef Fattening-Nutrition	48	204	996	1200
6	**Cycle-5**	June 2015 - December 2015	Rice Fish-Nutrition	6	125	25	150
7	**Cycle-6**	October 2015 - March 2016	Homestead gardening-Poultry-Nutrition	88	244	1956	2200
8	**Cycle-7**	April 2016 - November 2016	Fish-Beef Fattening/Dairy-Nutrition	88	388	1812	2200
9	**Cycle-8**	September 2016 - April 2017	Homestead gardening-Poultry-Nutrition	64	108	1492	1600
10	**Cycle-9**	April 2017 - September 2017	Fish-Beef Fattening-Nutrition	57	285	1140	1425

11 Cycle-10	October 2017 - March 2018	Homestead gardening-Poultry-Nutrition	67	129	1546	1675
		Total	634	2518	13332	15850

Table 25.2: Key Technology in the Different Modules of Cycle 1 to 10

Bundle of Modules	Module Type	Key Technologies Promoted
Homestead - poultry-nutrition	Vegetable production	Production planning and production technology: raised bed, pollination, pest management, farm yard manure production
	Fruit Tree management	Planning, plantation, pest management
	Poultry rearing	Poultry housing, laying & broody hen management, hajol, separation of chick, vaccination, bio security
	Nutrition	Balanced diet & malnutrition, care for infant & mother, safe food preparation, safe water & sanitary
Fish-Beef fattening (BF)-nutrition	Fish	Pre and post stocking of fingerling and management, disease management
	Cattle fattening	Housing, selection & deworming, feeding, fattening, disease management and bio security
	Nutrition	Balanced diet & malnutrition, care for infant & mother, safe food preparation, safe water & sanitation

Annual Review Mission call 'Do not lose the poverty focus'[edit | edit source]

The Annual Review Mission of 2017 called for BGP not to lose the poverty focus. Recommendation 5.4 of ARM 2017 called for the continuation and systematic implementation of homestead FFS in all polders, even in shortened versions, and where possible updated with new elements. As before, the ARM emphasized a targeting on the landless, both as direct participants and as Horizontal Learning beneficiaries.

This recommendation led in January 2018 to a review of Blue Gold's experience with FFS, also to better align with FAO's core FFS principles[2]. The aim was to refresh and realign the remaining homestead FFS cycles from April 2018 onwards. The key objectives of the refreshed FFS approach were:

- To target the poorest more adequately
- To make the content more demand driven/needs based
- To reach more households
- To ensure increase in production and sale of surplus is pursued, alongside food security and nutrition
- To integrate homestead FFS in BGP's wider interventions related to local networks
- And to also address homestead agriculture as a business as well as market linkages and

gender issues.

As part of this process the incidence of poverty in relation to landownership was reviewed. This served to refine the targeting criteria and to define a realistic outreach for homestead FFS. The outreach target number of households for the homestead FFS program was formulated as follows. With 50% landless in the total population of 185,000 Blue Gold households, there are about 92,500 households belonging to the landless category, of which again 50% are estimated to be poor, or 46,250 households. Some of these households, that are involved in leasing land under different practices, will benefit from increasing the productivity of their land and labour assets in Blue Gold's commercialisation program. Another relatively small percentage of the landless households lack the minimum assets required to gain from Homestead FFS participation or already use their labour elsewhere, including in non-agricultural sectors, to earn a decent income. On this basis a target of 30.000 households (16% of all households) for homestead FFS was considered a fair and realistic assessment.

In order to achieving a higher outreach, already in 2016 a process had started to expand the number of available facilitators for Homestead FFS. 150 Farmer Trainers (FT) had already been selected and trained by DAE to support field crop FFS, 50% men and 50% women. These FTs are energetic, enthusiastic, relatively young, and motivated individuals with at least a basic education, comparatively good farming knowledge and some FFS experience. This initiative sought to build local resource capacity; BGP TA followed this example in order to expand the capacity to conduct homestead FFS sessions and ensure the availability of resources persons in the polders, also after the end of the Blue Gold Program.

Thus 74 FTs were selected and trained by the TA team, 40% of whom were women. These additional homestead FTs were selected from the polders in which they would work to take advantage of their local knowledge and limit their travel requirements. Blue Gold trained these 74 FTs on FFS session facilitation, also including market orientation elements. As a result, these FTs could also promote collective actions for either input collection for FFS participants or output sales in groups for better prices and lower transaction costs. Later 21 FTs were added, who received a shorter training, bringing the total of TA trained FTs to 95.

Homestead FFS – Cycles eleven to fifteen[edit | edit source]

The 74 new FTs had been employed as apprentice under Community Development Facilitators (CDFs) during cycle 9 and 10. After completing their apprenticeship, they were given full responsibilities to implement FFS on their own from cycle 11 onwards, when the new FFS approach of single modules replaced the multi-module or bundled approach. The CDFs supported the FTs in preparing and implementing the FFS. Each FT implemented 1 to 4 FFS per season, bestowed upon them according their ability. On average they implemented 2 FFS sessions per week, the better FTs did more, others less. This increase in number of FFS facilitators from 22 TA field staff with 74 FTs, combined with applying the single module approach, enabled Blue Gold to increase the number of FFS per cycle from an average of 63 to 109 FFS, but with an average of 166 for cycle 11 to cycle 13; cycle 14 and 15 had a reduced number of FFS due to the COVID-19 situation. As a result the Homestead FFS program reached substantially more households in the last cycles, especially in cycles 11 to 13.

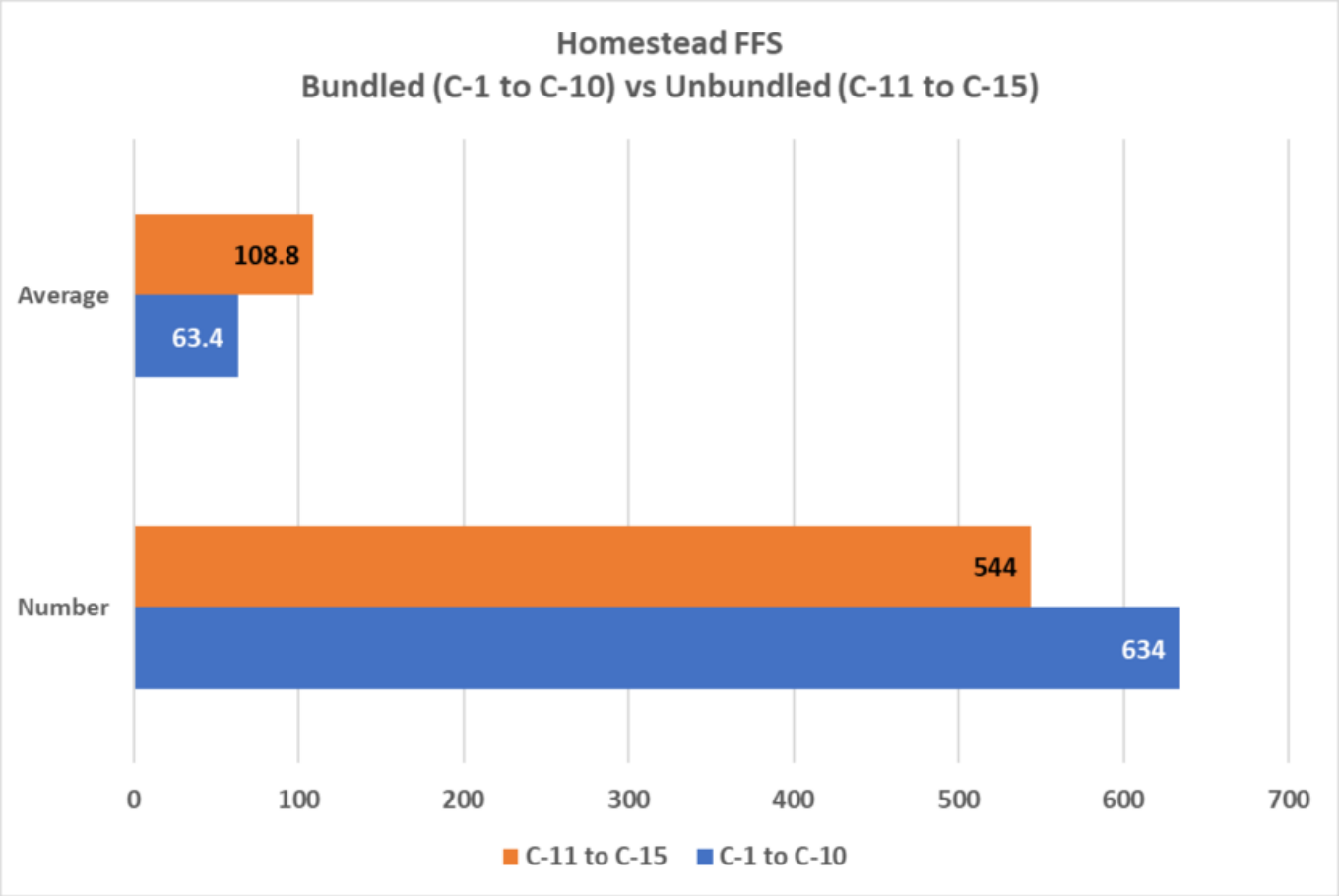

Figure 25.2 Homestead FFS Bundled (C-1 to C-10) vs Unbundled (C-11 to C-13)

As mentioned, from cycle 11 onwards the homestead FFS also became “unbundled” and covered a single module, instead of combining 2 to 3 modules on several topics in one cycle. This meant that the number of sessions per cycle was reduced from about 20 to 6 - 9.

The selection of an individual as participant for a specific FFS was based on the available household assets to improve the concerned production and the potential interest of the concerned household member in applying the new knowledge. Both, the use of local FTs and the conversion to a single module approach, contributed to increasing the number of homestead FFS per cycle. From cycle 11 to 15, 544 single module modified homestead FFS were implemented by mid 2021, bringing the total with the 634 of the first ten cycles to 1178 homestead FFS in the Blue Gold area.

Six modules were retained for continued implementation; namely poultry, fish culture, beef fattening, homestead vegetables, dyke vegetables and fruit production. Simultaneously the content of the modules was revised to become more needs based and better focused on key technologies. The nutrition session was retained and the market orientation content was expanded. Some relevant gender issues were integrated, such as addressing joint decision-making and emphasizing market access also for women. The market orientation focused on facilitating market linkages and collective actions and improving decision making by basic financial literacy and record keeping. The number of sessions per module varied from 6 to 9. The better alignment of the modules to the available household assets and to the actual knowledge needs, resulted in a more meaningful participation of the beneficiaries. An overview of the modules implemented from cycle 11 to 15 is presented in table 25.3. The key technologies promoted in each module are summarised in table 25.4.

Table 25.3: Description of Single Module Homestead FFS Cycles

Sl. no	Cycle	Duration	Module	FFS	Male	Female	Total

1	**Cycle-11**	April 2018 - November 2018	Poultry	80	57	1943	2000
2	**Cycle-11**	April 2018 - November 2018	Beef fattening	25	144	481	625
3	**Cycle-11**	April 2018 - November 2018	Fish	38	165	785	950
4	**Cycle-11**	April 2018 - November 2018	Homestead vegetables	7	1	174	175
5	**Cycle-11**	April 2018 - November 2018	Dyke vegetables	9	39	186	225
6	**Cycle-11**	April 2018 - November 2018	Fruit	7	15	160	175
7	**Cycle-12**	November 2018 - March 2019	Poultry	158	58	3892	3950
8	**Cycle-12**	November 2018 - March 2019	Homestead vegetables	55	180	1195	1375
9	**Cycle-13**	April 2019 - November 2019	Poultry	67	40	1635	1675
10	**Cycle-13**	April 2019 - November 2019	Beef fattening	40	183	817	1000
11	**Cycle-13**	April 2019 - November 2019	Fish	13	191	134	325
12	**Cycle-14**	June 2020- November 2020	Poultry	30	3	747	750
13	**Cycle-15**	Feb,21-Jun,21	Poultry	15	0	375	375
			Total	544	1076	12524	13600

Table 25.4: Key Technology and Additional Topics at Single Module FFS

Module	**Key Technology Promoted**	**Additional Topics**	**Comments**
Homestead vegetable production	Production planning, production technology- raised bed, pollination, pest management, farmyard manure production	Market orientation and networking, integration of relevant gender messages	Promoted collective action for input purchase, collective sale using Resource Farmers
Fruit tree management	Planning, plantation, pest management	Market orientation and networking, integration of relevant gender messages	Collective sale of fruit

Poultry rearing	Poultry housing, laying & broody hen management, hajol, separation of chick, vaccination, bio security	Market orientation and networking, integration of relevant gender messages	Use of mobile phones for price information on feed, day old chicks, egg and hen. Collective action for feed purchase and sale of egg and hen
Fish culture	Pre and post stocking of fingerling and management, disease management,	Market orientation and networking, integration of relevant gender messages	Collective action for lime, fingerling purchase and sells of fish
Cattle fattening	Housing, selection & deworming, feeding, fattening, disease management and bio security	Market orientation and networking, integration of relevant gender messages	Use of ICT for price information.

Market orientation issues were included in the FFS sessions, because there was clearly a demand and need for such information among both male and female FFS participants. Market orientation took the FFS content beyond technology transfers. Even at homestead level, producers require quality inputs and increasingly have surplus for sale. Market orientation also helped them to see their homestead production as a business (a micro-enterprise), requiring basic record keeping to ensure an actual benefit is obtained. It also provided the skills to access market actors as input providers and traders, and focused on lowering costs or increasing revenues using mobile phones and collective actions exploiting a group's bargaining power. To embed market orientation, questions were asked in the benchmark survey (at the start of each FFS) and end line survey (at the end of each FFS) also on record keeping, networking, use of mobile phone for contacting market actors, collective action, etc.

Instead of being treated as stand-alone groups, the homestead FFS groups were linked to other actors e.g. CAHW groups, vaccinators, resource farmers (RFs), extension agencies and other input and service providers to explain their business model and develop trusting relations. Resource Farmers (or group leaders), of whom 71% were women, received additional training on market orientation, e.g. how to organize collective actions. They were also taken on familiarising market visits and were introduced to different input suppliers and buyers. Thus, Resource Farmers can communicate with market actors and engage in face to face discussions to build or strengthen market linkages. The involvement of other actors in the FFS sessions served also another important purpose, namely the introduction of local resource persons, such as Resource Farmers and Farmer Trainers, into the network of the Water Management Groups (WMGs). Box 25.1 provides the example of Community Animal Health Workers as service providers.

Box 25.1 Developing sustainable service for poultry and livestock homestead FFS participants

To be successful in poultry and livestock farming through homestead FFS, access is required to essential services like vaccination. With the active participation and support from the Department of Livestock Services, Blue Gold identified and trained 100 community animal health worker (CAHW) as micro-entrepreneurs. Of these CAHW, 60 are Community Poultry Workers (CPW) (all women) and 40 Community Livestock Workers (CLW) (38 men). They fulfil an essential role, as sustainable animal health service providers, and overcome a critical gap in the market system. Both CPW & CLW were linked with homestead FFS participants to encourage quality and timely vaccination services. For the practical organisation of vaccination campaigns they were linked to the WMGs. Only such access to sustainable animal health services can enable FFS participants to enjoy the economic benefit from poultry and livestock rearing.

For the cycles 11-15 both the WMGs and FTs were involved in the selection of the modules and the participants. WMG leaders were asked to choose specific FFS modules suitable for their area and based upon local needs. It was emphasized that the objective of the Homestead FFS program was to reach the poorest households. The base selection criterion for FFS participants thus was to be a member of the poorest landless households (owning < 50 decimals of land), but with sufficient assets to meaningfully participate in the chosen module. In particular, the participation of women was sought as most modules would have high relevance for women's empowerment and often women are in charge for homestead production. The local FTs provided additional insights to this selection process of including the really-needy.

Box 25.2 FFS training modules and booklets on FFS messages used in BGP's homestead FFS

• On homestead vegetable gardening: FFS Training Module (Bangla); FFS booklet (Bangla) and key FFS messages in English
• On fruit farming: FFS Training Module (Bangla); the above mentioned FFS booklets on homestead vegetable gardening also include messages on fruit tree management
• On poultry rearing: FFS Training Module (Bangla); FFS booklet (Bangla) and key FFS messages in English
• On fish cultivation: FFS Training Module (Bangla); FFS booklet (Bangla) and key FFS messages in English
• On beef fattening: FFS Training Module (Bangla); FFS booklet (Bangla) and key FFS messages in English
• On nutrition: FFS booklet (Bangla) an key FFS messages in English
• On Market Orientation and Value Chain Development: FFS Training Manual

Results of the homestead FFS[edit | edit source]

Number of homestead FFS and modules[edit | edit source]

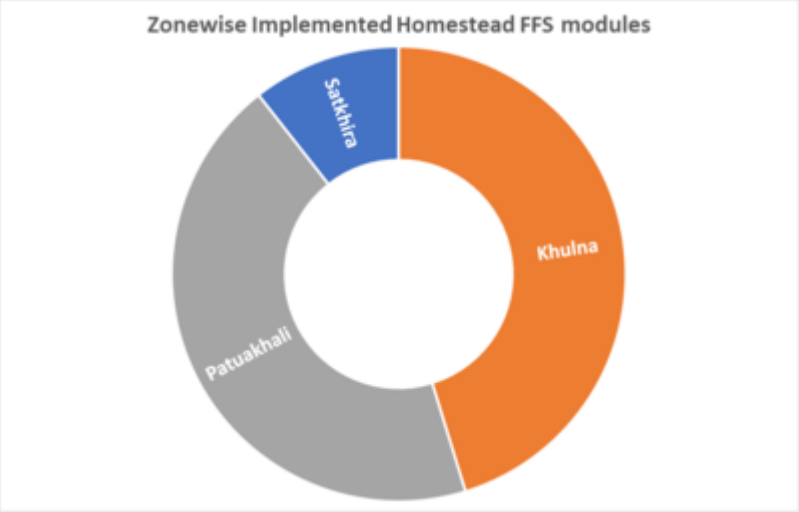

Figure 25.3 Zonewise implemented Homestead FFS modules

Of the 1178 Homestead FFS implemented in total during 15 cycles, 130 FFS were in Satkhira, 543 in Khulna and 505 in Patuakhali. About 54% of FFS were implemented in a bundled way and the rest in the single module approach.

By implementing 1178 FFS, a total of 1806 modules were completed. The number of modules is higher than the number of FFS because in the first 10 cycles the FFS consisted of bundled modules. Khulna had the highest number of modules (805), followed by 787 modules in Patuakhali and 214 modules in Satkhira, as represented in figure 25.3.

Of the implemented modules, the highest number of modules was on poultry (741), followed by homestead gardening / vegetable production (469), fish culture (323) and beef fattening (273), see table 25.5 for more details. From the total participants, 41% took part in the poultry module, 26% in homestead gardening / vegetable production module (27%), 18% in fish culture and 15% in beef fattening.

Table 25.5: Numbers of implemented homestead FFS modules per zone and per subject

		# of modules				
Zone	**# of homestead FFS**	**Poultry**	**Homestead vegetables [1]**	**Fish [2]**	**Beef Fattening**	**Total modules**
Khulna	543	355	221	125	104	805
Patuakhali	505	306	178	162	141	787
Sathkira	130	80	70	36	28	214
Total	1178	741	469	323	273	1806

[1] This includes 9 modules on dyke vegetable cultivation and 7 modules specifically on fruit tree management
[2] This includes 6 Rice-Fish modules in Khulna; the other modules concern fish cultivation in small ponds

Outreach and Targeting[edit | edit source]

The number of FFS participants in all cycles (1-15) amounted to 29,450, of whom 25,856 were women (88%). Correcting for an estimated 10% of multiple participations, Blue Gold reached 26,505 households directly with the TA homestead FFS program. In addition to this, it also reached other households in two indirect ways. Firstly, there is a standard request to all FFS participants to inform

two other households of what was learned in the sessions. Especially women have a high propensity to share their learnings with neighbouring women. It is assumed that on average each FFS participant effectively shared new knowledge with at least one other household, i.e. 26,505 more households. Secondly, most FFS (90% or 1060) arranged a Farmer Field Day (FFD) to which the wider community was invited and where all the experiences were disseminated in various ways. While on average each FFD drew about 100 visitors, it is assumed that about 25 FFD visitors were truly interested, also having the means to implement the improved technologies, also amounting to another 26,500 households more. Based on these rather conservative estimates, 53,010 households have been indirectly reached. The total of households reached directly and indirectly therewith reaches 79,510 or 43% of the total Blue Gold target population of households, see the below table. It should be noted that households reached through other horizontal learning activities, such as exchange visits, have not been included here.

Table 25.6: Household (HH) outreach of homestead FFS interventions

Activity	**#**	**Participation**	**Total # of participants**	**Assumptions**	**# HHs effectively reached by the activity**
Homestead FFS	1178	25	29,450	10% multiple participation	26,505
Neighbouring households learning from FFS participants				One FFS participant informs one neighbouring HH	26,505
Homestead FFS Farmers' Field Days	1060	100	106,000	25 FFD visitors / FFD effectively reached	26,500
Total # HHs reached by homestead FFS					**79,510**

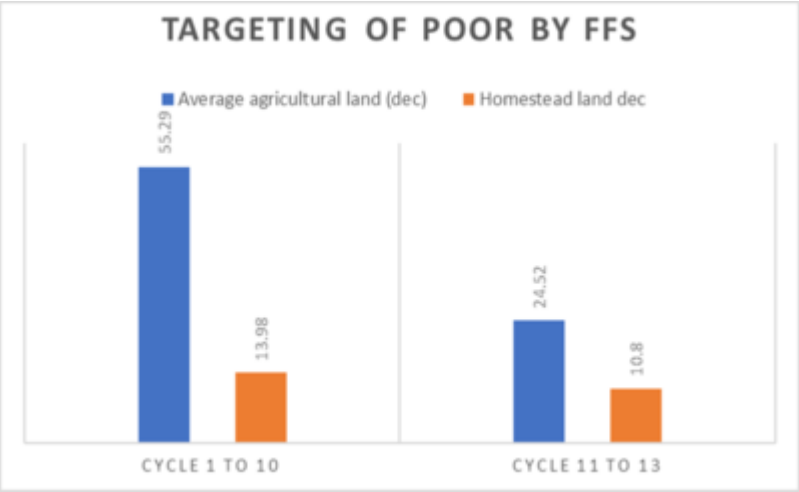

Figure 25.4 Targeting of poor by FFS

The targeting on the actually poorest was constrained by several factors. Despite efforts, the proportion of actually poor households reached was substantially lower than 100% of the participants. Originally the main selection criterion for FFS participants was to belong to landless households with less than 50 decimals or 0.5 acres of land. However, the average land holding of FFS participants across all modules of cycles 1 - 13 was 54.5 decimals, with an additional 14.9 decimals of homestead land. In total 77% of all participants belonged to households that had less than 50 decimals. The other 23% of the participants were from households holding more than 50 decimals of land, but these were mainly participants of cycle 1 – 10, see figure 25.4. From cycle 11 onwards, more emphasis was given to truly selecting participants from poor households. As a consequence, participants from FFS cycles 11 – 13 had only half the agricultural land ownership

compared to that of cycles 1 to 10. Similarly, the average homestead area was about 22% less in cycle 11 – 13 than for participants in cycle 1 - 10. Figure 25.4 does not include the data for cycle 14 and 15, but these are similar to those of cycle 11 to 13.

A limited landownership is not automatically correlated to belonging to the poorest households. Following the ARM 2017 call to better focus on the poorest, BGP decided to use -from cycle 11 onwards- a broader proxy definition to assess the extent to which potential participants belonged to the program's target households. This proxy criterion for poverty used three sub-criteria, namely i) land ownership, ii) participation in agricultural wage labour and iii) house structure. More specifically, the prospective FFS participants from the poorest households in rural areas would be agricultural wage labourers, residing in *jhupri* or single structure thatch houses, owning up to 0.5 acres of land. According to the conducted FFS surveys in cycle 11 - 13, and depending on the module, between 45% and 65% of the participants fell within the proxy poverty definition of our target population. With an average of 55% for the last five cycles (assuming that data for cycle 14 and 15 are similar to those of cycle 11 to 13) and assuming a 30% participants of the first ten cycles meeting the poverty criteria, a weighted average across all cycles results in an estimated 42% of the homestead FFS participants belonging to the poorest households in the Blue Gold polders.

Applying this 42% to the 79,510 directly and indirectly reached households by the homestead FFS (refer to table 25.5 above), means that over 33,000 poor households in the 22 BGP polders have been reached. This corresponds with 18% of the total population and compares well with the original estimate of the proportion of households eligible for homestead FFS of 15% -or about 30.000 households- of truly needy households, virtually landless but still with the necessary assets to participate.

The 57% of the households reached by homestead FFS that did not exactly meet the above mentioned poverty criteria -but still are relatively poor- also clearly benefited. The increase of their homestead production often led to both the increase in own consumption and the increase in sales of surplus, hence improving their income and nutritional status. Improved homestead production also contributed to income diversification and increased resilience, reducing the risk that households that are just above the poverty line fall back under this line once they meet some setbacks; oscillating in and out of poverty is a common phenomenon among a large part of the polder inhabitants.

Monitoring and Evaluation results of key modules [edit | edit source]

Each cycle was monitored and evaluated based on benchmark and end-line surveys. A semi-structured questionnaire was used for the data collection; for each cycle an M&E report was prepared; many are available in the file library. Below the FFS results per module are presented, focusing on the adoption of improved technologies and production increase, and covering M&E data for cycle 1 to 13.

A follow-up survey, conducted in September 2019 among FFS participants of cycle 9 and cycle 10, found that improvements measured by the end line survey, had been maintained across the board. Some results had further improved over time (such as the numbers of chicken and eggs monthly sold and the number of fruit trees at the homestead); a few results, however, had dwindled somewhat, such as the percentage of poultry FFS participants having their chicken vaccinated, the latter due to the availability of vaccination services still being a problem locally.

Poultry (18,525 FFS participants - up to cycle 15; 94.2 % women farmers)[edit | edit

source]

The M&E results of the Poultry FFS modules from cycle 1 to 13 revealed that the average number of birds per FFS participant, mostly chicken and/or duck, increased from nearly 7 before the FFS to nearly 19 at the end of the FFS, which is an increase of almost 165%. The use of *hajols* to hatch chicks was an important key technology promoted; its use increased from 4.5% to 97.1% of the participating farmers. Chick separation after one week increased from 1.0% to 82.2% and after two weeks from 0.6% to 14.4%. After FFS 98.6% of the farmers were candling eggs to assess hatching potential, compared with a 4.3% benchmark. By creating awareness of the need for vaccination, 82.6% of the farmers have now their chicks vaccinated compared with 7.3% before.

As an indication of the overall impact of the poultry FFS, egg production increased on average from 46 to 86 eggs per farmer per month. The average production and/or sale of chicken and ducks also increased; in cycle 11, for example, this was from 1.5 to 4.5 birds per farmer per month.

Table 25.7: Adoption of improved technologies for poultry production as average of all FFS cycles

Sl No.	Key Technology	Adoption rate (% of FFS participants)	
		Benchmark	End line
1	Use of *hajol*	4.5	97.1
2	Chick separation after 1 week	1.0	82.2
3	Chick separation after 2 week	0.6	14.4
4	Egg candling	4.3	98.6
5	Regular vaccination	7.3	82.6

Beef Fattening (5650 FFS participants; 74% women farmers)[edit | edit source]

The M&E results for all beef fattening modules show that participants' understanding of the importance of proper housing substantially increased. The assurance of ventilation increased by 69.5%, the provision of a gutter for drainage improved by 78.7% and the practice of daily cleaning of shed improved by 63.9% amongst the participants.

Table 25.8: Adoption of improvements in cattle housing for beef fattening as average of all FFS cycles

Sl No.	Key Technology – Cattle housing	Adoption rate (% of FFS participants)	
		Benchmark	End line
1	Ventilation	29.2	98.7
2	Gutter for drainage	16.5	95.2
3	Shed daily cleaning	30.9	94.8

Before the FFS, the participating farmers had little knowledge about proper feeding of their cattle. After the FFS, the farmers were more aware of the need for balanced feed, as illustrated by the shift in the use of feed ingredients: 64.5% of farmers were now feeding their cattle with a proper combination of roughage, concentrate and straw compared with only 9.2% before. Only 2% of farmers used to grow Napier grass, recommended because it is nutritious and easy to grow, but after the FFS 48.3% cultivated this forage. In total 96% of farmers are now feeding Urea Molasses Straw (UMS) to their cattle versus 1% before. About 99% of participants now know how to measure cattle body weight and now deworm regularly. And nearly 68% of the farmers make now use of the

cattle health service, either always or sometimes, versus the benchmark of 14%.

Due to the FFS beef fattening intervention, meat production per animal increased with 37.2%, or on average from 172 kg to 236 kg per animal fattened. There was a slight increase in the number of cattle in the households of the FFS participants, from 3.3 animals before the FFS to 3.5 animals at the end.

Fish culture in small ponds (7200 FFS participants; 74.6% women farmers)[edit | edit source]

The average pond size of participants in all the FFS fish modules was 11.4 decimal; nearly 80% of the ponds were perennial. The number of cultured fish species increased from 3.8 at the benchmark to 5.9 at the end line. In total 97.3% of the participants are now aware of proper pond preparation compared to 2.7% at the beginning of the FFS. Farmers' knowledge about production technology, e.g. fingerling selection, use of supplementary feed, knowledge on stocking density, natural feed testing and fish sampling, increased significantly from less than 5% to over 98% (see table 25.9).

Table 25.9: Adoption of improved technologies for fish culture as average of all FFS cycles

Sl.no.	Key Technologies – Fish module	Adoption rate (% of FFS participants)	
		Benchmark	End line
1	Know proper pond preparation	2.7	97.3
2	Fingerling selection knowledge	1.2	99.0
3	Use of supplementary feed	13.4	98.0
4	Knowledge on stocking density	1.3	99.1
5	Knowledge on natural feed test	1.8	99.7
6	Knowledge on sampling	3.7	99.8
7	Average number of cultivated fish species	3.8	5.9

After implementing fish FFS, the production of fish increased from 3 kg per decimal to 10.6 kg per decimal per fish culture cycle season of about 4 months, which is an increase of 253%. Correspondingly, average fish production per farmer increased with 234%, or from 40.6 kg to 135.8 kg per fish culture cycle. The proportion of farmers selling roughly half of their fish production, next to consuming the other half, increased from 5.7% in the benchmark to 43.9% in the end line survey.

Vegetable production (11,550 FFS participants; 90.1% women farmers)[edit | edit source]

The types of vegetables grown among FFS participants increased from 3.3 to 7.2; the use of fertilizer increased with 21.8%. The number of farmers following IPM increased by 70%, thus reducing expenditure on pest management on average with Tk. 51 per crop cycle, despite more vegetables being grown. Finally, 84.5% and 91% of farmers are now familiar with the pit method and the bed method of vegetable cultivation, respectively.

Table 25.10: Adoption of improved technologies for vegetable production as average of all cycles

Sl. No	Key Technologies Vegetables	Adoption by FFS participants	
		Benchmark	End line

1	Average number of different vegetables grown (in nos.)	3.3	7.2
2	Homestead locations used for cultivation (in nos.)	2.3	7.1
3	Fertilizer use for vegetable cultivation (% of FFS farmers)	73.8	95.6
4	Follow IPM for pest management (% of FFS farmers)	3.2	73.2
5	Average money spent for pest management (Tk. per cycle)	154.6	103.5
6	Follow proper pit methods (% of FFS farmers)	7.5	92.0
7	Follow proper bed methods (% of FFS farmers)	7.0	98.2

Fruit tree management (10,150 FFS participants; 89.3% women farmers)[edit | edit source]

During cycle 1 - 10 fruit tree productions was included in the bundled homestead FFS (in homestead gardening) with 9,975 participants; in cycle 11 separate fruit production FFSs were implemented, with 175 participants. After participation in a fruit tree module, the number of fruit trees had increased by 14% in the homestead area of the FFS participants. The use of fertilizer for fruit cultivation increased from 4.2% to 98.9% amongst these FFS farmers. After attending FFS, 97% of the farmers followed pruning techniques, whereas they had no such practice at benchmark. Before the FFS farmers had no idea about propagation, but at the end 99% of the farmers were aware about propagation.

Due to the nature of fruit production, one FFS cycle did not allow to properly measure the increase in fruit production, although there was evidence that the better technologies resulted in such an increase. At the start of the FFS, 10% of the farmers were found to both consume and sell fruits; this had increased to 39% at the end of the FFS, implying a positive impact on nutrition and income.

Nutrition (15,850 homestead FFS participants; 84% women)[edit | edit source]

In the bundled module aproach, as implemented during cycle 1 to 10, also a nutrition module was included, which addressed the “1,000 days dietary approach”, along with proper cooking practices, dietary needs etc. The proportion of FFS participants who were aware of proper cooking practices, focusing on reducing losses of nutritional value, increased from 6.5% at the start of the FFS to 86.6% at the end. The inclusion in daily meals of the very nutritional moringa leaves, well available in the polders, was promoted during cycles 8 to 10, especially for children under the age of 5 years. After attending FFS, 47.2% of the participating farmers are now aware of the nutritional value and had actually tried moringa leaves.

The end line surveys of all cycles show positive changes in the nutrition uptake scenario of FFS participants. The consumption of eggs in the households of the poultry FFS participants increased considerably over the FFS period, with a consumption of 10.6 eggs per week per household after the FFS compared to 5.1 before FFS. Alongside, also chicken consumption increased with these households, consuming before the FFS on average 0.8 chicken per month per household, reporting a consumption of 1.9 chicken per month after the FFS. Similarly, vegetable and fruit consumption increased, especially in the households of participants of vegetable or fruit FFS modules. An increase of about 50% in fish consumption was observed for households that took part in the FFS fish culture.

Table 25.11: Improvement in Nutrition Situation

Sl. no	Key issue	Benchmark	End line
	Nutritional value (% FFS participants):		
1	Fully knowledgeable of cooking procedures (cycle 1-10)	6.5	86.6
2	Knows and has eaten moringa leaves (cycles 8-10)	1.6	47.2
	Dietary changes (all relevant cycles)		
3	Meat days per week per person (only for poultry FFS participants)	0.6	1.2
4	Fish days per week per person (only for participants in fish FFS)	2.1	3.4
5	Egg days per week per person (only for poultry FFS participants)	1.4	2.4
6	Fruit days per week per person (only for participants of FFS that addressed homestead fruit tree management)	1.1	2.2
7	Vegetable consumption in grams per week per person (only for participants in homestead vegetable FFS)	941	1625

Table 25.11 above demonstrates that the consumption of homestead produce in the household of the FFS participant often increased with 50 to 100%; this is in addition to a varying increase in the sale of homestead produce, enhancing household income, which also has the potential to increase food security.

Market orientation (13,600 FFS participants (C11-C15); 92% women famers)[edit | edit source]

The inclusion of market orientation in the FFS curriculum of all modules in cycle 11 to 15, motivated farmers to consider ‘agriculture as a business’. Farmers are aware of the potential income of homestead production and consider market demand when deciding on production. Farmers learnt to keep basic records of their expenses and income. FFS participants were found to communicate more often with input suppliers and buyers; they also sought price and quality benefits by working together. As individual farmers, they only require small input volumes and have relatively little surplus quantities to market. They learned to act collectively by jointly buying inputs, jointly selling produce and/or jointly acquiring market information, and thus to exploit their bargaining power. Table 25.12 shows improvements in terms of key market orientation practices across the modified modules which covered market orientation issues.

Table 25.12: Adoption rate of Market Orientation topics as average of cycle 11-13 FFS

Sl.no.	Key Topics	Adoption rate in % of farmers (FFS participants)	
		Benchmark	End line
1	Agriculture is a business	18.6	73.7
2	Record Keeping	3.4	99.2
3	Use of mobile phone, often or sometimes	3.8	58.8
4	Collective selling sometimes	3.3	74.4

Across all modules, the M&E results show that 99.2% of the participating farmers have adopted simple record keeping compared to only 3.4% at benchmark. Nearly 59% of the participating farmers are now using their mobile phones to collect information on supplies and markets, or to get advice. Nearly 75% of the farmers are now -at least sometimes- working in groups to collect inputs or to sell surplus produce. These changed attitudes reflect the enhanced business sense of these FFS participants. At end line 73.7% saw their 'production as a business', a huge shift from the 18.6% in the benchmark.

Box 25.3: More details on market orientation impact in the poultry and beef fattening modules

Poultry module – Farmers are now keeping records of their expenses and revenues in a basic format with a view to understand their net income from poultry production and selling. Before FFS, only 4.1% of the farmers who participated in the poultry module kept records but after FFS 95.6% farmers reported to keep such information. 56.6% of farmers now use their mobile phones to get information on poultry rearing compared to only 3.0% at the beginning. Collective action as a means to reduce cost or getting a premium price among farmers is taking root and 96% of the poultry rearing farmers got involved compared to only 0.7% before attending FFS. Farmers are producing more eggs, consume also more and increasingly sell surpluses to the market. They are now selling on average 20.9 eggs per month compared to 5.7 eggs before. Farmers are also selling more chickens to the market after household consumption: now 21.4 chickens on average on an annual basis compared to only 4 before.
Beef Fattening module- Farmers taking part in this module needed to invest in cattle, improved cattle housing and improved feed and recover these investments by adhering to good beef fattening practices. To grasp the financial impact, basic record keeping was promoted. The end line survey shows that 98.9% farmers kept records of their expenses and income compared to only 6.1% at the benchmark. Farmers are now using mobile phones for accessing market information and to communicate with service providers. 58.5% of the farmers reported to seek information or services via their mobile phones after the FFS compared with only 1.7% at the beginning. It is not easy to sell cattle collectively, but farmers have adopted collective actions for procuring inputs. About 46% of the farmers are now engaged in collective input purchasing and/or collection of information, something which was non-existent before FFS.

Women's empowerment[edit | edit source]

By implementing the Homestead FFS approach, Blue Gold aimed at increasing inclusiveness by targeting the functionally landless while the 'Commercialisation of Agriculture' approach focused on those farmers with access to land for field crops. With homestead production largely undertaken by women, homestead FFS offered opportunities to contribute to women's empowerment in the polders.

During cycles 1 to 10, on average 84% of the homestead FFS participants were women. By increasingly targeting women, this percentage increased to 92% in the last five cycles bringing the overall average to 88%, well ahead of the original 50% target. The variation over the modules can be seen in figure 25.5.

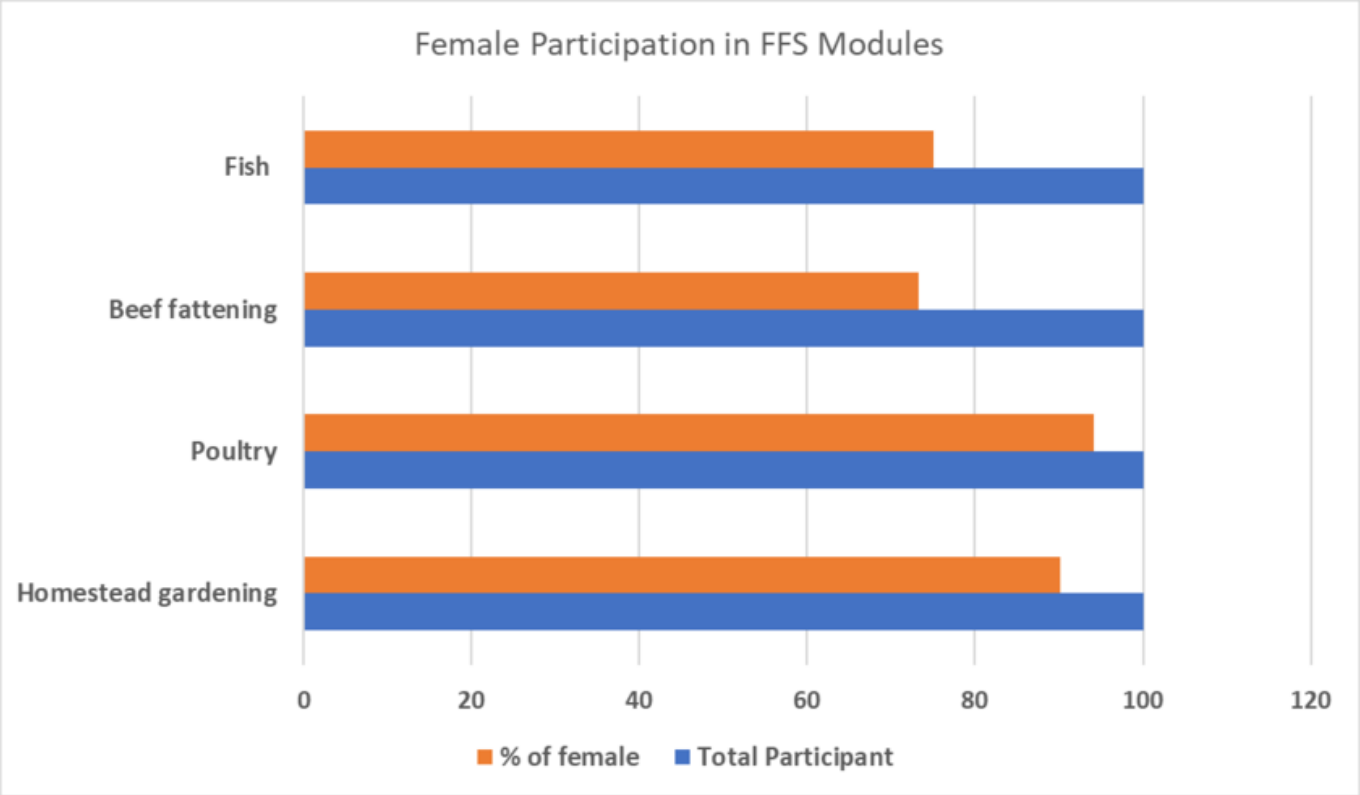

Figure 25.5 Female participation in FFS modules

The poultry and homestead vegetable modules contributed more to women's empowerment than the beef fattening and pond aquaculture modules for the below reasons. These same reasons also allowed that the most needy households better applied the learnings from the poultry and vegetable modules as compared to beef fattening and fish production. The reasons are:

- Poultry and homestead vegetable gardening allow more easily that women undertake all purchase, production and marketing activities by themselves.
- Income from surplus selling of eggs and vegetables can traditionally more readily be retained by women. However, in case of beef fattening by women, often the husbands sell the animals and keep the money. The same applies, but to a lesser extent, to fish production.
- The use of mobile phones provides virtual access to markets for goods, information and services and is easily accessed by women, as an increasing proportion of women nowadays have an own mobile phone. Homestead FFS complemented this by capacity strengthening of female Resource Farmers and arranging physical market visits especially for them and other interested women, including establishing first contacts with traders.
- Households living together in the same or adjacent yards benefitted from one's participation. Women were found to more readily share learnings with other women by horizontal learning, thereby enhancing the impact of the modules.
- Including a small percentage of men and/or women of slightly better-off households in the FFS membership mix, appeared to benefit both learning objectives and women's empowerment, especially by enlarging women's social networks beyond the poorest socio-economic classes.

The M&E results from the benchmark and end line surveys provided additional insights. Efforts to link female farmers with other value chain actors, e.g. input retailers, extension agents, service providers and buyers, has shown encouraging results. 56.5% of the female farmers of FFS groups had contact numbers of market actors at the end line survey, compared to only 3.8% at the benchmark. The percentage of female farmers actually engaged in communicating with market actors, by phone or in person, has increased to at least 60%.

Another indicator of women's empowerment is their increased participation in decision making. The female farmers played a bigger role in homestead production planning after their participation in an FFS. At end line 77.3% of the farmers indicated that decisions on production were influenced by a female member of the household, compared to only 19.2 at benchmark. In addition, 75.6% of farmers indicated at the end of the FFS that input purchase decisions were taken jointly compared with only 29.4% before the FFS.

Table 25.13: Women's Empowerment in FFS

Sl.no	Key Women's Empowerment Issues	Adoption rate (%) as average of modules of cycle 11-13	
		Benchmark	**End line**
1	Women have market actor phone number	3.8	56.5
2	Networking by women with market actor - sometimes	18.5	80.7
3	Decision on utilization of homestead production by women on their own	41.2	8.6
4	Decision on utilization of homestead production jointly	19.2	77.3
5	Decision on input management jointly	29.4	75.6

The reduction of the proportion of women who make decisions on their own, as shown in table 25.13 above, may look like a negative achievement. However, in practice this means that decision making by women based on traditional low-value production practices have been replaced by more intelligent decision-making by husband and wife, combining their joint expertise on higher value production.

Next to the above findings based on changes measured by the FFS benchmark and end line surveys, a wealth of anecdotal information exists of how women changed from shy and not speaking out during the first FFS sessions to more confident and vocal participants towards the end. The women feel that trainers take them as equals, because trainers tend to stop men dominating. Women are often more committed and more serious to well apply the learnings from the FFS training than men, and feel proud to contribute to production and income increase of their household. This leads to more respect from their husbands, relatives and other community members. Men report to involve their wives more in decision-making now that the women have knowledge about improved technologies and contribute to increased production. Some men added that joint decision-making leads to better decisions, and to more peace in the household. Among women there was reporting of some reduction in domestic violence. Such findings are in line with research findings from Kenya on the impact of FFSs on gender relations in Kenya, demonstrating that mixed FFS groups contributed to improved gender relations.

A remaining challenge is women's increased workload due to their increased role in productive work in addition to their domestic and care tasks. There were some first indications that men became aware of this. Such first changes in norms and attitudes were also pursued by the use of the gender flipcharts (on gender awareness and women in agriculture), see also chapter 24 (on Gender Equality and Women's Empowerment), also as integrated in some of the FFS sessions in 2019 and 2020/21.

In 2018 two external consultants reviewed the gender activities of the Integrated Farm Management Component (IFMC), Bangladesh, a program implemented by DAE and the Embassy of Denmark to promote agricultural development and to contribute to poverty reduction, with also Farmer Field

Schools as a main extension method. Findings from this gender review are similar or complementary to BGP's experiences, such as the need to support women's engagement with market actors. An interesting recommendation is to adjust the FFS curriculum to remove negative gender stereotypes, instead more effectively addressing gender inequalities among farmers.

Cost-benefit or efficiency considerations[edit | edit source]

The Blue Gold homestead FFS program is believed to have well reached its target population of households amongst the poorest, which realistically benefited by participation. The modification of the approach in terms of reducing the number of sessions per participant increased the number of households benefiting from FFS without having had a negative impact on the effectiveness of the program. Below the cost and efficiency considerations are highlighted.

Blue Gold has spent Tk. 55,389,035 or Euro 553,890 for implementing the FFS cycles 1 to 15, covering the direct costs. The salaries of the involved TA staff and supplementary costs, such as the costs of monitoring visits and related office costs, are not included. Of the total expenditure on FFS, 45% was done at Patuakhali, 44% was at Khulna and 11% was at Satkhira.

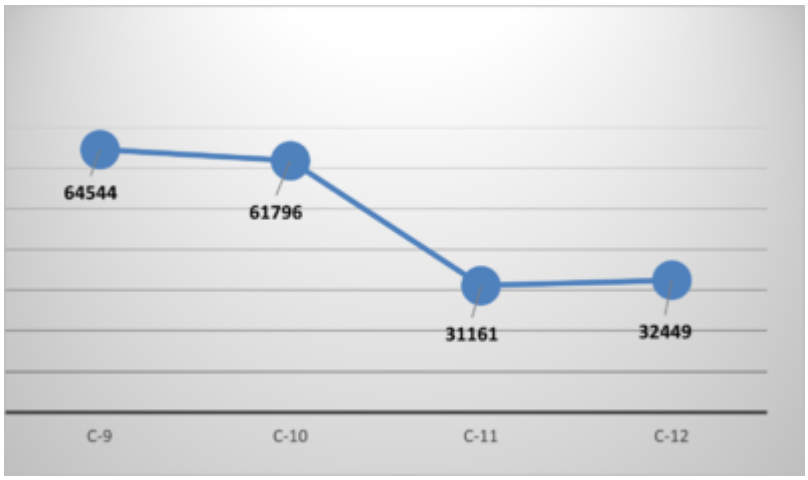

Figure 25.6 Average cost per FFS

The total cost amounts to an average cost of BDT 47,020 per FFS or 470 Euro. It reached therewith 29,450 participants at an average cost of BDT 1881 or Euro 19 per participant. The average cost per FFS was considerable higher for the bundled approach of cycle 1 – 10 than for the single module approach thereafter. The average costs per cycle reduced from over BDT 60,000 for the multi-module approach in cycle 9 and 10 to about BDT 32,000 in cycle 11 and 12 (see figure 25.6). This means that the modified homestead FFS approach by Farmer Trainers with the reduced number of sessions reduced the costs per FFS substantially. The latter costs correspond with BDT 1280 or Euro 13 per participant. When considering Blue Gold has reached 79,510 households directly and indirectly, the cost per reached household is in fact only BDT 697 or Euro 7.0.

The average FFS cost of BDT 47,020 includes the costs of capacity building of the facilitators, Farmer Trainers and Resource Farmers, along with all direct costs of FFS implementation. The single module FFS were run by FTs, the FTs' wages are included in the module expenses. The difference in figures illustrates that the modified approach adopted by BGP from cycle 11 onwards was more cost-efficient compared to multiple module approach of consecutive cycles 1 to 10, whereas reaching out to more households per cycle.

Cost-Benefit Analysis of Poultry FFS[edit | edit source]

A total of 738 poultry FFS were carried out in different zones (up to cycle 13), at the cost of BDT

47,020 on average per FFS. In order to assess the efficiency of BGP poultry FFS Polder 55/2C was selected for this analysis, which was conducted by an external consultant. The total number of households in polder 55/2C amounts to 10,173; BGP conducted 43 poultry FFS till cycle 13 with 1075 participants, thus directly reaching 1075 households. The total costs for poultry FFS in polder 55/2C were BDT 2,021,860. The income from poultry was calculated at BDT 3,036 per month per FFS participant at the end line, whereas income from poultry at benchmark was BDT 1,179. This resulted in an income increase by BDT 1,857 per month per farmer or household. This means an annual income increase of all participating farmers together of BDT 23,955,300 from poultry rearing at polder 55/2C, which is over 10 times the direct FFS costs involved. The return on investment (ROI) of BGP for poultry FFS is significant and high considering the increased production and profit of the participating farmers. If including the increased income of households reached indirectly through horizontal learning, the return on investments would be much higher.

Cost-Benefit Analysis of Beef Fattening FFS[edit | edit source]

For conducting all 226 beef fattening FFS in the BGP polders, with 5650 participants in total, BGP spent a total of BDT 10,626,520. The M&E reports show that meat production per head of cattle increased by 64 kgs on average over all the cycles, usually achieved within a 3 months period. Thus, cattle owing farmers would achieve an additional gross income of BDT 32,000 per head of cattle after participating in a beef fattening FFS; corresponding with about BDT 96,000 per farmer considering that on average they have at least 3 animals. If 50% of the participating farmers continue to engage themselves in beef fattening using the improved technologies, the accumulated additional income together would be BDT 256,800,000, also well outweighing the direct costs of the beef fattening FFS, also after the additional costs for the farmers are deducted.

Cost-Benefit Analysis of Fish FFS[edit | edit source]

The expenditure of establishing and running one FFS by BGP was BDT 47,020. A total of 288 FFS were carried out, with 7200 participants, at a total cost of BDT 13,541,760. An independent consultant found that the average fish production during one fish culture cycle was 2,964 kg per hectare (12 kg per decimal) for FFS participants and about 1,976 kg per hectare (8 kg per decimal) for non-FFS members. Considering that the average pond size is over 11 decimals, the FFS households had increased the value of their fish production with about BDT 7,000 per fish (or EUR 73) culture cycle of 4 months as compared to that of the control village households. Considering the cost per FFS participant of BDT 1881, this means that the ‘investment’ in households through fish culture FFS is paid back in less than a year after FFS has been completed.

Lessons learned and further insights[edit | edit source]

- The most-needy of the households, but with access to a homestead, are best reached -in terms of easy adoption and increase of income- by the FFS module on poultry, then vegetables and fruits, subsequently pond aquaculture and lastly by the beef fattening module.
- The shortlisting of 35-40 households as potential FFS participants (i.e. one member per household) by the WMGs should not be influenced by personal interests, in particular by including relatives and/or extended family members of WMG leaders. Also module choice should be genuinely based on the needs of the participants avoiding personal bias from WMG leaders.
- More can be done to ensure the module content is focusing on real needs and feasible innovations. There is a trade-off between limiting the number of sessions (to limit the costs) and maintaining group dynamics, requiring more sessions.
- FFS participation by women contributes to their empowerment. Apart from learning to apply improved technologies, women also increased their confidence, social networks and contacts

with service providers. In particular, the poultry module contributed more to women's empowerment than any of the other modules.
- Farmer Trainers who facilitate FFS in their neighbourhood often also get opportunities to develop themselves as local resource persons or service providers
- Including a small percentage of men and participants of slightly better off households in the FFS membership mix, supports empowerment and learning objectives, also contributing to broader social networks of the FFS participants from the poorest households.

References[edit | edit source]

1. ↑ "GFRAS - #2 Farmer Field Schools". Retrieved 2020-12-13.
2. ↑ *FAO Farmer Field Schools Implementation Guide* (PDF). Farm Forestry and Livelihood Development. 2011.

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

Blue Gold Program

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.

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.

Household

Any formal or informal structure (not necessarily a physical place) in which buyers and sellers exchange goods, labour, or services for cash or other goods. The word 'market' can simply mean the place in which goods or services are exchanged. Essentially, markets are defined by forces of supply and demand, rather than geographical location

contiguous area of land operated as a single unit by a farmer - average area of 27 decimals (0.11 ha), with a normal range between 10 and 70 decimals (0.04 to 0.28 ha)

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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Food and Agriculture Organization

Integrated Pest Management

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.

Danish International Development Agency

Integrated Farm Management Component (DANIDA-funded program)

Technical Assistance

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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.

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

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Value chain - the set of activities that need to be performed in a specific production sector in order to deliver the end product to the consumer. Agricultural value chains typically include input supply, growing/production, processing and marketing/distribution.

Within BGP this refers to enhancing insights of especially FFS participants in how markets work, how to collect market information, facilitating linkages with market actors and increasing negotiation capacities

A hajol is an unfired earthenware nesting vessel for egg hatching, with small receptacles for water and seed to provide the immediate needs. The hajol saves the hen effort and time for searching food, thus ensuring proper hatching in less time, thereby reducing egg waste.

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

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

Learning from peers; and in the context of Blue Gold, farmer-to-farmer learning in which a host WMG invites representatives from visiting WMGs to witness an event - such as the harvesting of a new variety of rice - to pass on the knowledge and lessons gained from their experience

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.

Any issue where relations, differences, connections and/or inequalities between men and women have either a positive or negative effect or influence

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

Farmer Trainer - Well-performing and capable farmers, previously trained in Farmer Field Schools, who became FFS facilitator themselves after ToT training

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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

Community Development Facilitator - a member of the Blue Gold technical assistance team who lived and worked in a specific polder, and provided the main point of contact between the project and the polder communities

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Resource Farmers (RF) are members of Farmer Field Schools (FFSs). They are selected from the FFS groups to lead other members in organizing different useful collective actions and to maintain networks on behalf of the members. These RFs are given additional capacity building training to enhance their knowlege on simple record keeping and business skills.

Information Communication Technology

Community Animal Health Workers: members of the community who are trained to provide farmers with basic health and production support for their animals

Community Animal Health Workers: members of the community who are trained to provide farmers with basic health and production support for their animals

Community Poultry Workers: members of the community who are trained to provide farmers with basic health and production support for their poultry

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Community Livestock Workers: members of the community who are trained to provide farmers with basic health and production support for their livestock

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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.

Value chain - the set of activities that need to be performed in a specific production sector in order to deliver the end product to the consumer. Agricultural value chains typically include input supply, growing/production, processing and marketing/distribution.

Household

Monitoring and Evaluation

A hajol is an unfired earthenware nesting vessel for egg hatching, with small receptacles for water and seed to provide the immediate needs. The hajol saves the hen effort and time for searching food, thus ensuring proper hatching in less time, thereby reducing egg waste.

one hundredth of an acre (0.004 ha)

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

Generally refers to how many and/or in which way people are able to buy or sell, and reach, a reliable supplier or buyer in a market

Gender relations are the specific sub-set of social relations uniting men and women as social groups in a particular community, including how power and access to and control over resources are distributed between the sexes. Gender relations intersect with all other influences on social relations - age, ethnicity, race, religion - to determine the position and identity of people in a social group. Since gender relations are a social construct, they can be transformed over time to become more equitable.

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.

Bangladesh Taka

Return on Investment

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- Discussion

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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Blue Gold Program Wiki