



Bangladesh Water Development Board (BWDB)



Kingdom of the Netherlands



Department of Agricultural Extension (DAE)



**Technical Note 11
Cycle 5 FFS Patuakhali
(March-November 2015)**

Comparing Benchmark and End Data

May 2016



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Blue Gold Program

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List of Abbreviations

BADC	Bangladesh Agricultural Development Corporation
BBS	Bangladesh Bureau of Statistics
BRRI	Bangladesh Rice Research Institute
BWDB	Bangladesh Water Development Board
CAHW	Community Animal Health Worker
CBO	Community-Based Organisation
CDMP	Comprehensive Disaster Management Program
CEIP	Coastal Embankment Improvement Project
CO	Community Organizer
CSISA	Cereal Systems Initiative for South Asia
DAE	Department of Agricultural Extension
DAM	Department of Agricultural Marketing
DLS	Department of Livestock Services
DOC	Day Old Chicks
DoC	Department of Cooperatives
DoF or DOF	Department of Fisheries
DPHE	Department of Public Health Engineering
DPP	Development Project Proposal
DRR	Disaster Risk Reduction
DTL	Deputy Team Leader
EKN	Embassy of the Kingdom of the Netherlands
FCD	Flood Control and Drainage
FCDI	Flood Control, Drainage and Irrigation
FFS	Farmers Field School
FGD	Focus Group Discussion
FO	FFS Organiser
FT	Farmer Trainers
GAP	Gender Action Plan
GoB	Government of Bangladesh
GPWM	Guidelines for Participatory Water Management
ha	Hectare
HH	Household
HYV	High Yielding Variety
IGA	Income Generating Activity
IPM	Integrated Pest Management
IPSWAM	Integrated Planning for Sustainable Water Management
IPSWARM	Guidelines for Integrated Planning for Sustainable Water Resources Management
IRRI	International Rice Research Institute
KII	Key Informant Interview
LCS	Landless/Labour Contracting Societies
LGED	Local Government Engineering Department
LGI	Local Government Institutions
M&E	Monitoring and Evaluation
MFI	Microfinance Institutions
NGO	Non-Governmental Organisation
O&M	Operation and Maintenance
PDP	Polder Development Plan
PSF	Pond Sand Filter
PWMR 2014	Participatory Water Management Rules 2014
SAAO	Sub-Assistant Agricultural Officer
SAFAL	Sustainable Agriculture, Food security and Linkages
SLR	Sea Level Rise
SMART	Specific Measurable Attainable Relevant Time Bound
SRDI	Soil Resources Development Institute
SWOT	Strengths, Weaknesses, Opportunities, and Threats
TOT	Training of Trainers
UP	Union Parishad
VC	Value Chain
VCA	Value Chain Analysis
VCD	Value Chain Development
VCS	Value Chain Selection
WASH	Water Sanitation and Hygiene education
WMA	Water Management Association
WAP	Water Management Group Action Plan
WMF	Water Management Federation
WMG	Water Management Group
WMO	Water Management Organisation
ZSE	Zonal Socio Economist

1. Introduction

FFS Cycle 5 took place from March to November 2015, when 48 FFSs were organized in Patuakhali with modules fish (Tilapia, mixed), poultry and nutrition. Benchmark data and end data were collected using ODK software on tablets and are discussed in this document.

Annex 1 shows totals and averages of the collected benchmark data and end data side by side. Due to a technical problem with one of the tablets the benchmark data of 4 FFSs were lost and could not be included, which means that benchmark information is available for 1,100 farmers, while the end data are available for all 1,200 participating farmers.

When interpreting these data it should be understood that the objectives of data collection at the beginning of the FFS are:

- To establish benchmarks that can be used by facilitators and farmers for measuring progress or changes in behavior, and
- To generate interest among farmers and introduce them to the topics which will be discussed and practiced during the FFS season.

The collection of end data is a repetition of the same questions at the end of the FFS season, so that the FFS participants can verify their own progress. They can share their accomplishment, such as an increase of fish or egg production, during farmer field days.

Annex 2 shows the locations of the 48 FFS.

2. General information FFS participants

Some of the collected data (end data) can be used to describe the profile of the FFS participants.

2.1 Gender

A high percentage of FFS participants are women because FFS cycle 5 included modules on homestead activities (fish, poultry).

Total participants (N)	Percentage women
1,200	83 %

2.2 Age

When selecting participants for the FFS we try to include young dynamic farmers, preferably younger than 50 years old.

Number of farmers	Average age	Youngest	Oldest
1,200	36	16	65

2.3 Education

The majority of farmers are literate, but a significant part (28 %) is illiterate or can only sign their name. This means that it is still important in the FFS to work with drawings where possible and avoid the use of texts. Writing notes and keeping records (for example of expenses and use of farm inputs) is only possible for part of the participants.

	Number of farmers
Illiterate	49
Can sign	292
Primary	523
Secondary	258
HCC and above	78

2.4 WMG membership

The process of selecting participants for the FFS includes consulting the WMG. The WMG will assist in organizing a community meeting and selecting FFS participants according to a set of criteria. In cycle 5 most FFS participants were registered WMG members. During the FFS season, WMG membership has increased.

	WMG members	Not WMG member	Percentage WMG member
Benchmark (N=1,100)	868	232	79 %
End data (N=1,200)	1,060	140	88 %

2.5 Land for agriculture and homestead area

When farmers are selected we give priority to poor and landless households. In Cycle 5, about 88% of the participants belong to landless or marginal households. The average size of their agricultural land is 71 decimal (0.28 hectare). The homestead area is on average 20 decimal (800 m²).

N=1,200	Farmers with no land for agriculture	Landless (Less than 50 decimal agricultural land)	Marginal (50-149 decimal)	Small (150-249 decimal)	Medium (250-749 decimal)	Large (>750 decimal)
Number of farmers	108	473	581	120	26	0
Percentage	9%	39%	48%	10%	2%	0%

N=1,200	Agricultural land area (decimal)	Homestead area (decimal)
Average	71	20
Largest	400	90

3. Comparing benchmark data with end data

The calculated averages of data collected at the beginning and end of the FFS can be used get an idea of the effect of the training. However, this should not be seen as an impact study because some of the differences measured are a direct result of the training. For example, all FFS farmers report during the end survey that they practice “candling” of eggs (a technique to see if the egg is fertilized). This result shows that they did this during the training, but does not prove that they will continue to do this. Adoption of such practices (and other behavioral changes) should be measured at one or two years after completing the FFS.

This chapter compares the collected benchmark and end data and provides some comments for interpreting the differences.

3.1 Poultry

The percentage of farmers having chicken, chicks and ducks increased during the FFS season. One reason for this increase is that some chicks and ducklings were distributed among FFS participants. The percentage of farmers with ducklings decreased. The reason for this could be that end data were collected in November, when farmers tend to have fewer ducklings because of the cool weather in the winter season.

	Percentage farmers	
	Benchmark (N=1,100)	End data (N=1,200)
Have chicken	95 %	100 %
Have chicks	59 %	97 %
Have ducks	22 %	99 %
Have ducklings	61 %	46 %

The average number of birds present in each household increased. Also the increase of these numbers is of course influenced by the distribution of some chicks and ducklings.

	Average number of birds	
	Benchmark (N=1,100)	End data (N=1,200)
Chicken	3.4	12.1
Chicks	4.6	15.3
Ducks	3.0	10.8
Ducklings	4.9	4.9

3.2 Eggs per bird

Farmers were asked to estimate how many eggs were produced per hen or per duck in a year. During the end survey they estimated this number much higher than at the start of the FFS. It is likely that this is because they have learned new practices (e.g. separating ducks from hen after 1 week) which they expect to have positive result on egg production. These numbers are of course rough estimates. We have to plan follow up surveys to see if egg production is really sustained at a much higher level.

	Estimated average number of eggs per bird per year	
	Benchmark	End data
Eggs per hen	41	75
Eggs per duck	47	98

3.3 Egg and poultry consumption

The higher production of birds and eggs resulted also in more households eating their own produced eggs and poultry.

	Percentage farmers	
	Benchmark (N=1,100)	End data (N=1,200)
Consuming own eggs	70 %	99 %
Consuming own poultry	53 %	97 %

Farmers were asked to estimate how many eggs they eat in a week and how many poultry they eat in a month.

	Benchmark (N=1,100)	End data (N=1,200)
Eggs eaten per week	2.4	7.3
Poultry eaten per month	0.8	1.9

3.4 Selling of eggs

During the FFS the number of farmers selling eggs increased and also the number of eggs sold per month increased.

	Benchmark (N=1,100)	End data (N=1,200)
Percentage farmers who sell eggs	23 %	89 %
Average number eggs sold per month	2.1	15.9

3.5 Selling of poultry

Farmers also estimated how many poultry they could sell in a year.

	Benchmark (N=1,100)	End data (N=1,200)
Percentage farmers who sell poultry	36 %	96 %
Average number birds sold per year	2.2	17.1

3.6 Poultry rearing practices

During the FFS farmers learn several practices that help increase their poultry and egg production. The following tables show that these practices were commonly used during the FFS, but follow up surveys will have to show if these practices are all adopted in future.

	Percentage farmers	
	Benchmark (N=1,100)	End data (N=1,200)
Always vaccinate poultry	0 %	81 %
Use hazal	13 %	> 99%
Use candling	2 %	100 %
Separate chicks after 1 week	< 1 %	87 %

3.7 Fish ponds

Farmers who participated in this FFS cycle all own or have access to a pond. The average pond size was 11 decimal, which is about 440 square meters.

End survey data of 1,200 farmers	Pond size (decimal)
Maximum pond size	80
Minimum pond size	2
Average pond size	11

3.8 Type of ponds

Ponds were classified as seasonal ponds (which are dry during the summer season) and perennial ponds which hold water throughout the year.

End survey data	Percentage (N = 1,200)
Seasonal ponds	28 %
Year-round ponds	72 %

3.9 Pond ownership

Most ponds were owned by one household, but about 5% of the ponds had shared ownership.

End survey data	Percentage (N = 1,200)
Single ownership	95 %
Shared ownership	5 %

3.10 Pond preparation

One of the methods learned in the FFS is how to prepare the ponds before stocking fingerlings. Follow up survey after 1 or 2 years should be done to see how this practice gets sustained.

	Percentage farmers	
	Benchmark (N=1,100)	End data (N=1,200)
Practice pond preparation	1 %	97 %
Partly preparation	17 %	1 %
No pond preparation	81 %	1 %

3.11 Types of fish

It was found that farmers have many different fish types in their ponds. The difference between benchmark and end data is probably because farmers became during the FFS more familiar with the types of fish they have. The increase in farmers having Tilapia is because Tilapia was promoted and some fingerlings were distributed during this FFS cycle.

	Percentage farmers	
	Benchmark (N=1,100)	End data (N=1,200)
Silver carp	87 %	97 %
Catla	64 %	79 %
Rui	61 %	79 %
Mrigel	31 %	58 %
Common carp	19 %	17 %
Mirror carp	18 %	21 %
Rajputi	40 %	83 %
Grass carp	21 %	58 %
Tilapia	28 %	>99 %
Golda	<1%	1 %
Bagda	0 %	0 %
Others	28 %	6 %

	Percentage farmers	
	Benchmark (N=1,100)	End data (N=1,200)
Reported more than 5 fish species in their pond	16 %	68 %

3.12 Production of Tilapia per farmer

The FFS module emphasized the production of Tilapia, but as farmers also have other fish species in their ponds the data have been collected separately for Tilapia and other fish species.

This table shows that Tilapia production per farmer increased. Part of this increase is explained by the release of fingerlings during the FFS season and part by better feeding and management of the ponds.

	Tilapia production (kg per farmer)	
	Benchmark (N=265)	End data (N=1,199)
Average production per farmer	3	25
Max production per farmer	150	330

3.13 Production of Tilapia per decimal

This table shows that also the Tilapia production per decimal increased as a result of better pond management and feeding.

	Tilapia production (kg per decimal)	
	Benchmark (N=265)	End data (N=1,199)
Average production per decimal	1.4	2.8
Max production per decimal	7.5	22.0

3.14 Production of other fish (excluded Tilapia) per farmer

Production of other fish (apart from Tilapia) also increased during the FFS.

	Production of other fish (kg per farmer)	
	Benchmark (N=943)	End data (N=1,157)
Average production per farmer	24	87
Max production per farmer	140	660

3.15 Production of other fish (excluded Tilapia) per decimal

Also the production per decimal for other fish increased.

	Other fish production (kg per decimal)	
	Benchmark (N=943)	End data (N=1,157)
Average production per decimal	2.2	7.9
Max production per decimal	10.8	21.4

3.16 Production of fish per farmer

This table shows the production of all fish (Tilapia plus other fish species together) per farmer.

	Production of fish (kg per farmer)	
	Benchmark (N=975)	End data (N=1,200)
Average production per farmer	26	110
Max production per farmer	200	760

3.17 Production of fish per decimal

This table shows the production of all fish (Tilapia plus other fish species) per decimal.

	Other fish production (kg per decimal)	
	Benchmark (N=975)	End data (N=1,200)
Average production per decimal	2.5	10.3
Max production per decimal	13.2	36.7

3.18 Use of fish feed

Farmers were asked if they feed fish, and what type of feed (own, local or commercial) they used. The following table shows how use of fish feed changed during the FFS.

	Percentage of farmers	
	Benchmark (N=1,100)	End data (N=1,200)
No feed used	79 %	< 1 %
Own feed	20 %	80 %
Local feed	4 %	74 %
Commercial feed	0 %	42 %

3.19 What happens with the produced fish

Farmers indicated whether the fish was sold or consumed by them.

	Number of farmers	
	Benchmark (N=1,100)	End data (N=1,200)
Sell none	961	124
Sell less than half	115	274
Sell and consume about half	23	543
Sell more than half	1	255
Sell all	0	4

3.20 Vegetables on pond dyke

In the FFS farmers learn to grow vegetables on the dyke of the pond. The increase in this practice is influenced by the fact that some vegetable seeds were distributed during the FFS. Follow up surveys will be needed to see if this practice sustains after the training.

	Number of farmers	
	Benchmark (N=1,100)	End data (N=1,200)
Vegetables on dyke	53	1,112
No vegetables	1,047	88

3.21 Vegetable washing

During the nutrition sessions farmers learn that it is better to wash vegetables before cutting them.

	Percentage farmers	
	Benchmark (N=1,100)	End data (N=1,200)
Wash after cutting	90 %	<1 %
Wash before cutting	10 %	>99 %

3.22 Food habits

Farmers estimated how many times per week they eat meat, fish, eggs and fruits. Interpreting the differences in meat and fish consumption is difficult and it is not sure that this can be attributed to the nutrition training. It also depends on when the questions are asked, as availability of for example fruits and vegetables depends on the time of the year.

We realize that it is difficult to get accurate information with these questions. However we keep this type of questions in the surveys, as by asking the questions we are strengthening the messages on a balanced, eating proteins, etc.

	Average number of days per week	
	Benchmark (N=1,100)	End data (N=1,200)
Meat	0.4	1.4
Fish	1.9	3.0
Eggs	0.9	2.2
Fruits	1.0	1.6

As farmers eat some vegetables every day, they were asked to estimate how many grams they eat per week. This is a difficult question and amounts estimated cover a wide range. But also here we keep this question in the questionnaire as it starts the process of raising awareness on eating more vegetables.

	Estimated grams per week	
	Benchmark (N=1,100)	End data (N=1,200)
Vegetables	893	1,812

4. Some more data analysis

In the previous chapter we looked at averages and totals to compare benchmark data with end data. With the collected data (see Annex 1) it is also possible to make some other analysis trying to find answers to some questions. For example: “If farmers grow more vegetables on the dyke, does this result in farmers eating more vegetables?” or “Do farmers with a bigger flock sell more eggs or more poultry than farmers who have only few birds?” In this chapter we present some of such analysis.

4.1 Vegetables on dyke of pond

The following table shows that farmers who grow vegetables on the dyke of their pond report to eat slightly more vegetables than farmers without dyke vegetables.

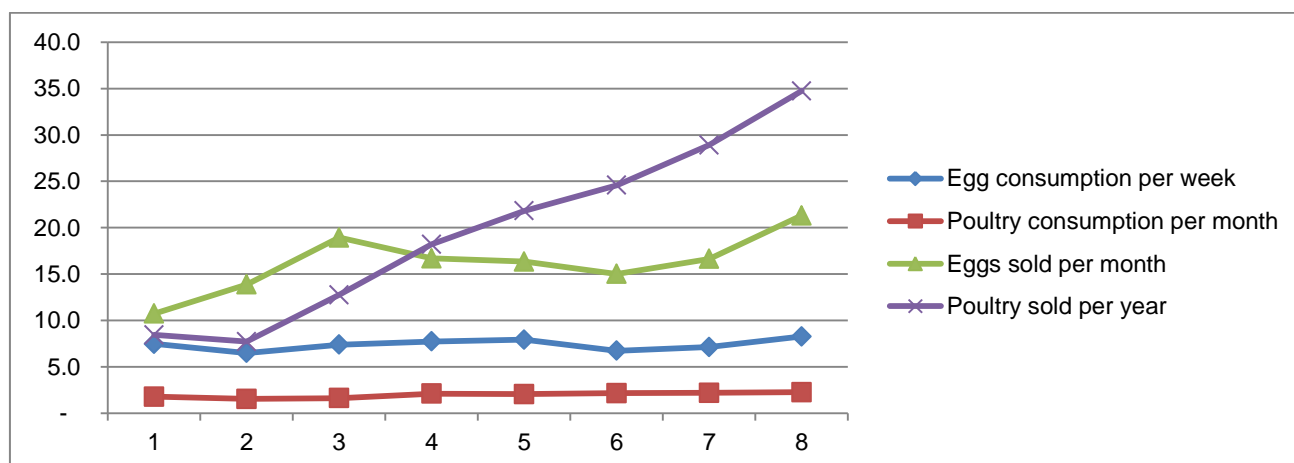
End data Cycle 5 FFSs	Num participants	Average gram vegetables consumed per week
No vegetables on pond dyke	88	1,713
Vegetables on pond dyke	1112	1,820

4.2 Number of birds

What happens if household have a bigger flock of birds? Does their consumption increase? Do they sell more eggs? Or do they sell more birds? To analyze this we divided the farmers in 8 groups, based on the number of birds they have (chicken and ducks were added together). For these groups we compare how many eggs and birds they sell, and we compare their consumption of poultry and eggs.

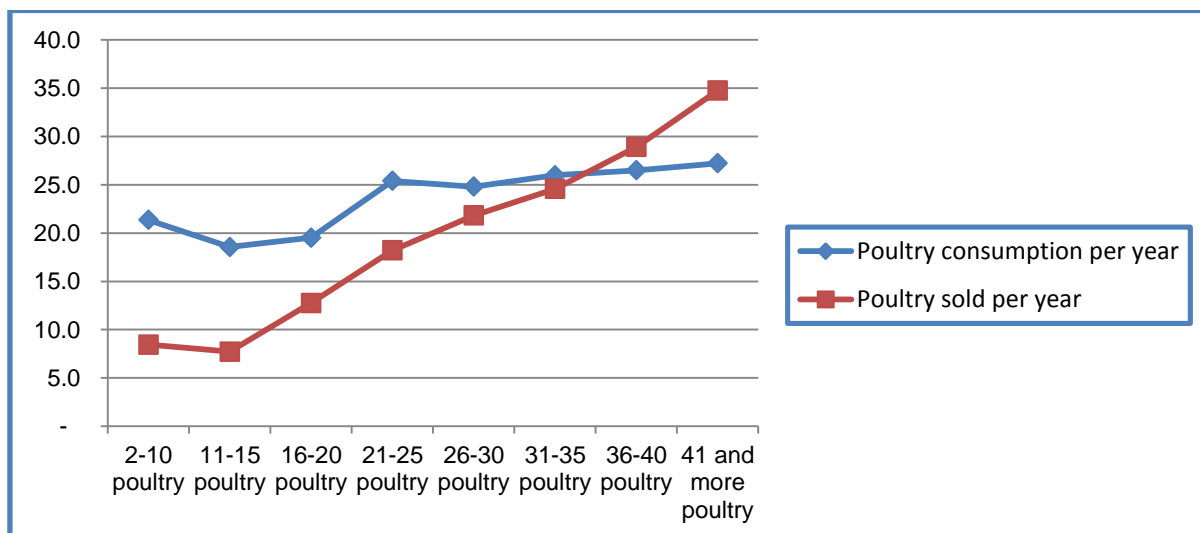
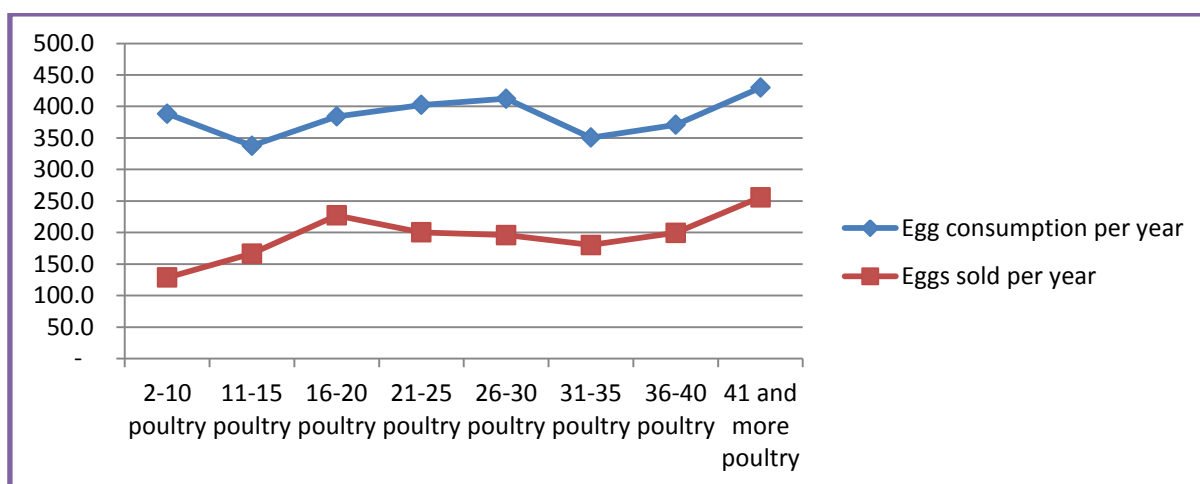
We see in the following table and graph that the effect of flock size is stronger in producing more birds rather than producing more eggs.

Cycle 5 FFSs	Number of farmers	Egg consumption per week	Poultry consumption per month	Eggs sold per month	Poultry sold per year
2-10 poultry	127	7.5	1.8	10.7	8.4
11-15 poultry	220	6.5	1.5	13.9	7.7
16-20 poultry	198	7.4	1.6	18.9	12.8
21-25 poultry	208	7.7	2.1	16.7	18.2
26-30 poultry	181	7.9	2.1	16.3	21.8
31-35 poultry	128	6.7	2.2	15.0	24.6
36-40 poultry	82	7.1	2.2	16.6	28.9
41 and more poultry	56	8.3	2.3	21.3	34.7



In the next table and figures the consumption and production are calculated per year. It shows that in all groups more eggs are consumed than sold. But in households with smaller flocks there is more home consumption, while in households with bigger flocks more birds are sold than consumed.

Cycle 5 FFSs	Number of farmers	Egg consumption per year	Poultry consumption per year	Eggs sold per year	Poultry sold per year
2-10 poultry	127	388.6	21.4	128.8	8.4
11-15 poultry	220	337.8	18.5	166.6	7.7
16-20 poultry	198	384.2	19.5	227.2	12.8
21-25 poultry	208	402.5	25.4	200.3	18.2
26-30 poultry	181	412.3	24.8	196.0	21.8
31-35 poultry	128	350.6	26.0	180.2	24.6
36-40 poultry	82	371.0	26.5	199.6	28.9
41 and more poultry	56	429.9	27.2	255.9	34.7



4.3 Relate fish feed used to production

The following table compares the type of feeds used by the farmers with the production and the production per decimal. The table is sorted on “production per decimal”. Effect of feeding, especially with commercial feed, is clearly visible.

	Number farmers	Average production (kg)	Average production per decimal (kg)
none	5	30	3.4
own feed	215	78	8.8
own feed + local feed	298	86	9.0
local feed	181	112	9.4

local feed + commercial feed	119	124	10.8
commercial feed	15	179	11.5
own feed + commercial feed	76	159	12.6
own feed + local feed + commercial feed	291	136	13.0

4.4 Relate fish production to fish consumption

The following table relates fish production to the number of days per week that fish is on the menu. Differences are not very big, but the households with lowest production (less than 10 kg) seem to consume fish less frequently.

Fish production	Num farmers	Days per week fish
Produce < 10 kg	62	2.6
11-40 kg	104	3.2
41-80 kg	278	3.1
81-100 kg	206	2.9
>100 kg	550	3.1

5. Conclusions

FFS Cycle 5 was the first time that benchmark data and end data of the fish module were collected using ODK forms on tablets.

The presented data collected from 1,200 FFS participants show the immediate effects of the training (e.g. increased fish and egg production). However, real impact and sustainability of the FFS training will have to be measured later when the survey is repeated with the same households after one or two years.

Annex 1. Benchmark and End data of FFS Cycle 5 in Patuakhali

FFS modules: Fish (Tilapia, mixed), Poultry, and Nutrition (March-November 2015)

Benchmark data		End data	
Data of 44 FFS out of 48 FFS in March 2015		Data of all 48 FFS in November 2015	
(data of 4 FFS lost due to broken tablet)			
GENERAL INFO PARTICIPANTS		GENERAL INFO PARTICIPANTS	
Gender		Gender	
Men	192	Men	202
Women	908	Women	998
Total farmers	1,100	Total farmers	1,200
Percentage women	83	Percentage women	83
Age		Age	
Average age	37	Average age	36
Youngest	16	Youngest	16
Oldest	65	Oldest	65
Education		Education	
Illiterate	66	Illiterate	49
Can sign	264	Can sign	292
Primary	478	Primary	523
Secondary	215	Secondary	258
HCC and above	77	HCC and above	78
Total farmers	1,100	Total farmers	1,200
WMG membership		WMG membership	
WMG member	868	WMG member	1,060
Not WMG member	232	Not WMG member	140
Total farmers	1,100	Total farmers	1,200
Percentage member	79	Percentage member	88
Land for Agriculture		Land for Agriculture	
Largest area (decimal)	400	Largest area (decimal)	400
Average (decimal)	71	Average (decimal)	71
Have area for agriculture	995	Have area for agriculture	1,092
Have no area for agriculture	105	Have no area for agriculture	108
Landless (<50 decimal)	444	Landless (<50 decimal)	473
Marginal (50-149 decimal)	524	Marginal (50-149 decimal)	581
Small (150-249 decimal)	105	Small (150-249 decimal)	120
Medium (250-749 decimal)	27	Medium (250-749 decimal)	26
Large (>750 decimal)	-	Large (>750 decimal)	-
Total	1,100	Total	1,200
Percentage landless	40	Percentage landless	39
Homestead area		Homestead area	
Average homestead (decimal)	20	Average homestead (decimal)	20
Smallest (decimal)	2	Smallest (decimal)	2

Largest (decimal)	90		Largest (decimal)	90
POULTRY			POULTRY	
Chicken			Chicken	
Max chicken	25		Max chicken	50
Min chicken	-		Min chicken	-
Total chicken	3,778		Total chicken	14,511.0
Farmers with chicken	1,047		Farmers with chicken	1,199
Farmers without chicken	53		Farmers without chicken	1
Average chicken	3.4		Average chicken	12.1
Total farmers	1,100		Total farmers	1,200
Chicks			Chicks	
Max chicks	99		Max chicks	170
Min chicks	-		Min chicks	-
Total chicks	5,104		Total chicks	18,323
Farmers with chicks	650		Farmers with chicks	1,160
Farmers without chicks	450		Farmers without chicks	40
Average chicks	4.6		Average chicks	15.3
Total farmers	1,100		Total farmers	1,200
Ducks			Ducks	
Max ducks	30		Max ducks	87
Min ducks	-		Min ducks	-
Total ducks	3,297		Total ducks	12,913
Farmers with ducks	241		Farmers with ducks	1,190
Farmers without ducks	859		Farmers without ducks	10
Average ducks (N=1100)	3.0		Average ducks (N=1200)	10.8
Average ducks (N=859)	3.8		Average ducks (N=1190)	10.9
Total farmers	1,100		Total farmers	1,200
Ducklings			Ducklings	
Max ducklings	48		Max ducklings	80
Min ducklings	-		Min ducklings	-
Total ducklings	5,438		Total ducklings	5,893
Farmers with ducklings	676		Farmers with ducklings	556
Farmers without ducklings	424		Farmers without ducklings	644
Average ducklings (N=1100)	4.9		Average ducklings (N=1200)	4.9
Average ducklings (N=676)	8.0		Average ducklings (N=556)	10.6
Total farmers	1,100		Total farmers	1,200
Eggs per hen per year			Eggs per hen per year	
Max	66		Max	100
Average	41		Average	75
Eggs per duck per year			Eggs per duck per year	
Max	72		Max	220
Average	47		Average	98
Own eggs consumed per week			Own eggs consumed per week	
Max	15		Max	30
Min	-		Min	-
Total	2,630		Total	8,725
Average	2.4		Average	7.3
Farmers eat own eggs	774		Farmers eating own eggs	1,194
Farmers not eat own eggs	326		Farmers not eating own eggs	6
Total farmers	1,100		Total farmers	1,200

Poultry consumed per month			Poultry consumed per month	
Max			Max	
Min			Min	
Total	888		Total	2,287
Average	0.8		Average	1.9
Farmers eat own poultry	585		Farmers eating own poultry	1,164
Farmers not eat own poultry	515		Farmers not eating own poultry	36
Total farmers	1,100		Total farmers	1,200
Eggs sold per month			Eggs sold per month	
Max			Max	
Min			Min	
Total	2,327		Total	19,073
Average	2.1		Average	15.9
Farmers selling eggs	250		Farmers selling eggs	1,074
Farmers not selling eggs	850		Farmers not selling eggs	126
Total farmers	1,100		Total farmers	1,200
Poultry sold per year			Poultry sold per year	
Max			Max	
Min			Min	
Total	2,420		Total	20,497
Average	2.2		Average	17.1
Farmers selling poultry	392		Farmers selling poultry	1,157
Farmers not selling poultry	708		Farmers not selling poultry	43
Total farmers	1,100		Total farmers	1,200
Poultry vaccinated			Poultry vaccinated	
Never	1,045		Never	6
Sometimes	55		Sometimes	223
Always	-		Always	971
Total	1,100		Total	1,200
Hazal			Hazal	
Use hazal	138		Use hazal	1,195
No hazal	962		No hazal	5
Total	1,100		Total	1,200
Separate chicks from hen			Separate chicks from hen	
After 1 week	1		After 1 week	1,044
After 2 weeks	-		After 2 weeks	143
After 3 weeks	-		After 3 weeks	-
After 4 weeks			After 4 weeks	-
Never	1,099		Never	13
Total	1,100		Total	1,200
Candling			Candling	
Use candling	25		Use candling	1,200
No candling	1,075		No candling	-
Total	1,100		Total	1,200
FISH - TILAPIA			FISH - TILAPIA	
Pond size (decimal)			Pond size (decimal)	
Max pond size	80		Max pond size	80
Min pond size	3		Min pond size	3
Average pond size	11		Average pond size	11
Pond type			Pond type	

Seasonal	344		Seasonal	331
Year-round	756		Year-round	869
Total	1,100		Total	1,200
Pond ownership			Pond ownership	
Single ownership of pond	1,015		Single ownership of pond	1,136
Shared ownership	85		Shared ownership	64
Total	1,100		Total	1,200
Pond preparation			Pond preparation	
Practice pond preparation	12		Practice pond preparation	1,168
Partly pond preparation	192		Partly pond preparation	15
No pond preparation	896		No pond preparation	17
Total	1,100		Total	1,200
Fish types in pond (num farmers)			Fish types in pond (num farmers)	
Silver carp	953		Silver carp	1,164
Catla	708		Catla	953
Rui	669		Rui	943
Mrigel	341		Mrigel	693
Common carp	214		Common carp	198
Mirror carp	202		Mirror carp	256
Rajputi	440		Rajputi	996
Grass carp	227		Grass carp	695
Tilapia	303		Tilapia	1,199
Golda	5		Golda	16
Bagda	-		Bagda	1
Others	311		Others	77
Total	1,100		Total	1,200
Number of fish species			Number of fish species	
Count 1	82		Count 1	1
Count 2	80		Count 2	27
Count 3	282		Count 3	120
Count 4	273		Count 4	108
Count 5	207		Count 5	133
Count 6	102		Count 6	242
Count 7	49		Count 7	407
Count 8	22		Count 8	108
Count 9	3		Count 9	53
Count 10	-		Count 10	1
Count 11	-		Count 11	-
Total farmers	1,100		Total farmers	1,200
Production Tilapia (kg)			Production Tilapia (kg)	
Average Tilapia	13		Average Tilapia	25
Max Tilapia	150		Max Tilapia	330
Num farmers producing Tilapia	265		Num farmers producing Tilapia	1,199
Tilapia (kg per decimal)			Tilapia (kg per decimal)	
Average Tilapia per decimal	1.4		Average Tilapia per decimal	2.8
Max Tilapia per decimal	7.5		Max Tilapia per decimal	22.0
Num farmers producing Tilapia	265		Num farmers producing Tilapia	1,199
Production other fish (kg)			Production other fish (kg)	
Average other fish	24		Average other fish	87

Max other fish	140		Max other fish	660
Num farmers producing other fish	943		Num farmers producing other fish	1,157
Other fish (kg per decimal)			Other fish (kg per decimal)	
Average other fish per decimal	2.2		Average other fish per decimal	7.9
Max other fish per decimal	10.8		Max other fish per decimal	21.4
Num farmers producing other fish	943		Num farmers producing other fish	1,157
Tilapia plus other Fish (kg)			Tilapia plus other Fish (kg)	
Average Tilapia plus other fish	26		Average Tilapia plus other fish	110
Max Tilapia plus other fish	200		Max Tilapia plus other fish	760
Num farmers producing fish	975		Num farmers producing fish	1,200
Tilapia plus other fish (kg per decimal)			Tilapia plus other fish (kg per decimal)	
Average Tilapia plus other fish	2.5		Average Tilapia plus other fish	10.3
Max Tilapia plus other fish	13.2		Max Tilapia plus other fish	36.7
Num farmers producing fish	975		Num farmers producing fish	1,200
Production shrimp prawn (kg)			Production shrimp prawn (kg)	
Average shrimp-prawn	9.10		Average shrimp-prawn	4.74
Max shrim-prawn	28		Max shrim-prawn	20
Num farmers with production	10		Num farmers with production	38
Total farmers	1,100		Total farmers	1,200
Fish feed used (num farmers)			Fish feed used (num farmers)	
Own feed	193		Own feed	215
Own feed + Local feed	30		Own feed + Local feed	298
Own feed + Commercial feed	-		Own feed + Commercial feed	76
Own feed + Local feed + Commercial feed	-		Own feed + Local feed + Commercial feed	291
Local feed	11		Local feed	181
Local feed + Commercial feed	-		Local feed + Commercial feed	119
Commercial feed	-		Commercial feed	15
None	866		None	5
Total farmers	1,100		Total farmers	1,200
What happens with fish			What happens with fish	
Sell none	961		Sell none	124
Sell less than half	115		Sell less than half	274
Sell and eat about half	23		Sell and eat about half	543
Sell more than half	1		Sell more than half	255
Sell all	-		Sell all	4
Total farmers	1,100		Total farmers	1,200
Vegetable on pond dyke			Vegetable on pond dyke	
Vegetables on dyke	53		Vegetables on dyke	1,112
No vegetables	1,047		No vegetables	88
Total	1,100		Total	1,200
NUTRITION			NUTRITION	
Vegetables washing			Vegetables washing	
Wash after cutting	992		Wash after cutting	6
Wash before cutting	108		Wash before cutting	1,194
Total	1,100		Total	1,200
Eat meat			Eat meat	
Never eat meat	675		Never eat meat	52
1 day per week	421		1 day per week	801

2 days per week	3		2 days per week	226
3 days per week	1		3 days per week	104
4 days per week	-		4 days per week	7
5 days per week	-		5 days per week	9
6 days per week	-		6 days per week	1
7 days per week	-		7 days per week	-
Total	1,100		Total	1,200
Average days per week eating meat	0.4		Average days per week eating meat	1.4
Eat fish			Eat fish	
Never eat fish	37		Never eat fish	1
1 day per week	525		1 day per week	54
2 days per week	253		2 days per week	357
3 days per week	151		3 days per week	447
4 days per week	70		4 days per week	205
5 days per week	63		5 days per week	91
6 days per week	1		6 days per week	45
7 days per week	-		7 days per week	-
Total	1,100		Total	1,200
Average days per week eating fish	1.9		Average days per week eating fish	3.0
Eat eggs			Eat eggs	
Never eat eggs	212		Never eat eggs	4
1 day per week	779		1 day per week	326
2 days per week	91		2 days per week	511
3 days per week	11		3 days per week	238
4 days per week	3		4 days per week	75
5 days per week	4		5 days per week	38
6 days per week	-		6 days per week	6
7 days per week	-		7 days per week	2
Total	1,100		Total	1,200
Average days per week eating eggs	0.9		Average days per week eating eggs	2.2
Eat fruits			Eat fruits	
Never eat fruits	187		Never eat fruits	34
1 day per week	765		1 day per week	521
2 days per week	121		2 days per week	515
3 days per week	24		3 days per week	117
4 days per week	3		4 days per week	8
5 days per week	-		5 days per week	5
6 days per week	-		6 days per week	-
7 days per week	-		7 days per week	-
Total	1,100		Total	1,200
Average days per week eating fruits	1.0		Average days per week eating fruits	1.6
Eat vegetables			Eat vegetables	
Average grams per week	893		Average grams per week	1,812
Max	1,800		Max	4,000

Annex 2. Locations of 48 FFS in Cycle 5

Patuakhali, March-November 2015

FFS ID	Water Management Group	Polder	Union	Upazila	Facilitator
217	Khagdon	43/1A	Kukua	Amtali	Aklima (Patuakhali)
218	Purba Chunakhali	43/1A	Kukua	Amtali	Aklima (Patuakhali)
219	Purba Keowabunia	43/1A	Kukua	Amtali	Aklima (Patuakhali)
220	Roybala	43/1A	Kukua	Amtali	Aklima (Patuakhali)
221	Abad Hajikhali	43/2D	Madarbunia	Patuakhali Sadar	Asma
222	Chalitabunia	43/2D	Madarbunia	Patuakhali Sadar	Asma
223	Chamta	43/2D	Jainkati	Patuakhali Sadar	Asma
224	Dakshin Hajikhali	43/2D	Madarbunia	Patuakhali Sadar	Asma
225	Dakshin-Purba Gol Banshbunia	43/2B	Amkhola	Galachipa	Basar
226	Madhya Chhailabunia	43/2B	Amkhola	Galachipa	Basar
227	Paschim Atharagashia	43/1A	Atharagashia	Amtali	Basar
228	Paschim Sonakhali	43/1A	Atharagashia	Amtali	Basar
229	Dakshin Atharagashia	43/1A	Atharagashia	Amtali	Eusuf
230	Dakshin Sonakhali	43/1A	Atharagashia	Amtali	Eusuf
231	Uttar Atharagashia	43/1A	Atharagashia	Amtali	Eusuf
232	Uttar Sonakhali	43/1A	Atharagashia	Amtali	Eusuf
233	Bhajna	43/2A	Chhota Bighai	Patuakhali Sadar	Feroj
234	Ramdula	43/2B	Amkhola	Galachipa	Feroj
235	Dakshin Titkata	43/2A	Bara Bighai	Patuakhali Sadar	Feroj
236	Paschim Kewabunia	43/2A	Bara Bighai	Patuakhali Sadar	Feroj
237	Nijsuhari-Dakshin Chhailabunia	43/2B	Amkhola	Galachipa	Zabber
238	Purba Badura	43/2B	Auliapur	Patuakhali Sadar	Zabber
239	Uttar Badura	43/2B	Auliapur	Patuakhali Sadar	Zabber
240	Kalai Kishore	43/2B	Amkhola	Galachipa	Zabber
241	Dakshin Gulisakhali	43/2F	Gulisakhali	Amtali	Mijan
242	Paschim Kalagachia	43/2F	Gulisakhali	Amtali	Mijan
243	Paschim Kalagachia Paschim	43/2F	Gulisakhali	Amtali	Mijan
244	Uttar Gulisakhali Purba	43/2F	Gulisakhali	Amtali	Mijan
245	Chowla	43/1A	Atharagashia	Amtali	Nahar
246	Paschim Keowabunia	43/1A	Kukua	Amtali	Nahar
247	Paschim Sakharia	43/1A	Atharagashia	Amtali	Nahar
248	Purba Sakharia	43/1A	Atharagashia	Amtali	Nahar
249	Dakshin-Paschim Badura	43/2B	Auliapur	Patuakhali Sadar	Nargis
250	Dakshin-Purba Badura	43/2B	Auliapur	Patuakhali	Nargis

				Sadar	
251	Uttar Chhailabunia	43/2B	Amkhola	Galachipa	Nargis
252	Uttar-Paschim Gol Banshbunia	43/2B	Amkhola	Galachipa	Nargis
253	Deppur	43/2F	Gulisakhali	Amtali	Popi
254	Madhya Kalagachia	43/2F	Gulisakhali	Amtali	Popi
255	Uttar Dalachara Uttar	43/2F	Gulisakhali	Amtali	Popi
256	Uttar Khekuani	43/2F	Gulisakhali	Amtali	Popi
257	Ballabhpur	43/2D	Kalikapur	Patuakhali Sadar	Rohima
258	Dibuapur	43/2D	Kalikapur	Patuakhali Sadar	Rohima
259	Thangai	43/2D	Jainkati	Patuakhali Sadar	Rohima
260	Uttar Bahalgachia	43/2D	Kalikapur	Patuakhali Sadar	Rohima
261	Madarbunia-Nandipara	43/2A	Madarbunia	Patuakhali Sadar	Rasel
262	Uttar Kalibari-Bazarghona	43/2F	Gulisakhali	Amtali	Rasel
263	Paschim Sarikkhali	43/2D	Kalikapur	Patuakhali Sadar	Rasel
264	Purba Gerakhali Uttar	43/2D	Madarbunia	Patuakhali Sadar	Rasel