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Blue Gold

Technical Note 16
Cycle 8 FFS
October 2016 – March 2017
Comparing benchmark and end data

May , 2017

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Cycle 8 FFS, Khulna, Satkhira, Patuakhali
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Blue Gold Program

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Issue and revision record

Revision	Date	Originator	Checker	Approver	Description
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1. Introduction

FFS Cycle 8 took place from October 2016 to March 2016, with 8 FFSs in Khulna, 28 FFSs in Satkhira, and 28 FFSs in Patuakhali. It included the modules poultry, homestead garden and nutrition.

The collected benchmark data and end data are discussed in this report. Totals and averages of the benchmark and end data are presented side by side in Annexes 1 (Khulna), 2 (Satkhira), and 3 (Patuakhali). Benchmark data of 4 FFSs in Patuakhali were lost and could not be included.

In Khulna, the FFSs took place in polders 26, 29, 30 and 31-part, in Satkhira the FFSs were in polder 2, and in Patuakhali the FFSs were in polders 55/2A and 55/2C. Annex 4 shows the locations (WMG) of the 64 FFS.

When comparing and interpreting these data it is important to understand the objectives of data collection in the FFS. At the start of the FFS, the objectives of conducting a "benchmark survey" are:
- To establish benchmarks that can be used by farmers and facilitators for measuring progress (e.g. in production) or to identify changes in behaviour
- To generate interest among participants and introduce them to the topics which will be discussed and practiced during the FFS.

At the end of the FFS, the "end survey" is a repetition of the same questions. This allows the FFS participants to verify their own progress. It helps them to present their results (e.g. an increase of egg or vegetable production), during their farmer field day.

The data of the 64 FFS together represent 1,600 farmers. Please note that these data were collected by the same facilitators who organized the FFS, who may be biased to show good results. Also the farmers themselves may be tempted during the end survey to give answers that show how successful they have been. This has to be kept in mind when drawing conclusions.

In the following chapters we discuss the data and provide some comments to help with the interpretation of the results.

2. General information FFS participants

In this chapter, the sets of "end data" are used to describe the profile of the FFS participants.

2.1 Gender

The modules poultry and homestead garden are of special interest for women. The following table shows that in cycle 8 about 93% of all FFS participants were women.

Gender of participants (end data)	Percentage women
Khulna (n=200)	92 %
Satkhira (n=700)	97 %
Patuakhali (n=700)	89 %
TOTAL (n=1,600)	93 %

2.2 Age

When selecting participants for the FFS we try to include young dynamic farmers, preferably younger than 50 years old. In cycle 8 the average age of the participants was about 35 years.

Age of participants (end data)	Average age	Youngest	Oldest
Khulna (n=200)	35	20	52
Satkhira (n=700)	34	18	68
Patuakhali (n=700)	36	16	60

2.3 Education

The majority of farmers are literate, but a significant part (21%) is illiterate or can only sign their name. The FFS approach is designed to use as much as possible practical examples and drawings instead of written texts. This allows illiterate farmers to effectively participate.

Education (end data)	Illiterate or can sign name only	Primary	Secondary or higher
Khulna (n=200)	10%	43%	47%
Satkhira (n=700)	18%	50%	32%
Patuakhali (n=700)	27%	48%	25%
TOTAL (n=1,600)	21%	48%	31%

2.4 WMG membership

The WMG executive committee helps selecting FFS participants according to a set of criteria. The following tables show that at the start of Cycle 8 about 92% of the FFS participants were registered WMG members. By the end of the FFS almost all were registered members.

WMG membership	Khulna (number farmers)		Satkhira (number farmers)		Patuakhali (number farmers)	
	Benchmark (n=200)	End FFS (n=200)	Benchmark (n=700)	End FFS (n=700)	Benchmark (n=600)	End FFS (n=700)
WMG member	199	200	689	699	497	692
Not member	1	0	11	1	103	8

WMG membership	Total cycle 8 (number farmers)	
	Benchmark (n=1500)	End FFS (n=1600)
WMG member	1385	1591
Not member	115	9
Percentage member	92%	99%

2.5   Land for agriculture and homestead area

During participant selection, priority is given to poor and landless households. In Cycle 8, about 54% of the participants belong to landless households (i.e. less than 50 decimal agricultural land), and about 21% have no land at all. In Satkhira the percentage landless households is considerably higher than in the other 2 districts.

Agricultural land availability (end data)	No land for agriculture (percentage farmers)	Landless (Less than 50 decimal agricultural land) (percentage farmers)	Farmers (>=50 decimal) (percentage farmers)
Khulna (n=200)	12.0%	37.5%	62.5%
Satkhira (n=700)	34.6%	78.3%	21.7%
Patuakhali (n=700)	10.4%	35.4%	64.6%
TOTAL (n=1,600)	21.2%	54.4%	45.6%

The following table shows the average size of agricultural land and average size of homestead area (Note: 100 decimal = 1 acre = 0.4 ha). The average land size is calculated over all households (including those with no land). In Satkhira the households have much smaller land area than in the other two districts.

Land area (end data) of all FFS households	Agricultural land area (decimal)	Homestead area (decimal)
Khulna (n=200)	70	14
Satkhira (n=700)	31	12
Patuakhali (n=700)	85	22

The next table shows the average land area calculated only for households who do have some agricultural land (>0 decimal), while excluding households who have zero agricultural land area. Also here we see that land area in Satkhira is much lower than in the other two districts.

Land area (end data) of households with land (>0 decimal)	Agricultural land area (decimal)
Khulna (n=176)	79
Satkhira (n=458)	48
Patuakhali (n=627)	95

3. Poultry module

FFS cycle 8 included the poultry module. Objective of this module is to increase the production of birds and eggs and reduce losses due to diseases. Technical topics in the poultry module include housing, feeding, use of hazal, separating chicks from the mother hen, candling, and vaccination. Linkages with input providers, community poultry workers and with staff of the department of livestock are strengthened.

In this chapter, some poultry related data are presented separately for the 3 districts. See also Annexes 1 (Khulna), 2 (Satkhira), and 3 (Patuakhali).

3.1 Number of birds

The following tables show the average number of chicken, chicks, ducks and ducklings per household. The end survey shows big increases in the number of animals. This can be partly attributed to improved rearing methods, and is also partly explained because some chicks or ducklings were distributed to FFS participants. In Satkhira each household received 11 chicks, in Khulna 12 ducklings and in Patuakhali 10 ducklings.

Number of birds	Khulna (average per household)		Satkhira (average per household)		Patuakhali (average per household)	
	Benchmark (n=200)	End FFS (n=200)	Benchmark (n=700)	End FFS (n=700)	Benchmark (n=600)	End FFS (n=700)
Chickens	3.8	6.7	2.5	9.9	3.1	10.4
Chicks	4.4	13.7	1.4	16.8	4.7	20.7
Ducks	4.2	6.7	2.3	8.9	3.7	8.4
Ducklings	1.6	14.4	1.3	9.7	0.4	13.7

Number of birds	Total cycle 8 (average per household)	
	Benchmark (n=1500)	End data (n=1600)
Chickens	2.9	9.7
Chicks	3.1	18.1
Ducks	3.1	8.4
Ducklings	1.0	12.0

3.2 Eggs per bird

In the FFS the participants learn techniques to increase egg production (e.g. separating chicks from hen after 1 week). The following tables show how the farmers estimated the egg production per year for their chickens and ducks. These numbers are of course rough estimates and it seems that in the end survey the estimates were too high. Follow up surveys after one or two years could be organized to see at what level egg production is sustained.

Eggs per bird	Khulna (number per year)		Satkhira (number per year)		Patuakhali (number per year)	
	Benchmark (n=200)	End FFS (n=200)	Benchmark (n=700)	End FFS (n=700)	Benchmark (n=600)	End FFS (n=700)
Eggs per hen	55	91	45	106	41	92
Eggs per duck	70	118	55	112	49	87

3.3   Egg and poultry consumption

With the increase in birds and the increase in egg production we see that households consume more of their own eggs and birds.

Egg and poultry consumptions	Khulna (percentage farmers)		Satkhira (percentage farmers)		Patuakhali (percentage farmers)	
	Benchmark (n=200)	End FFS (n=200)	Benchmark (n=700)	End FFS (n=700)	Benchmark (n=600)	End FFS (n=700)
Consume own eggs	83%	99%	41%	100%	89%	100%
Consume own birds	27%	86%	16%	97%	64%	99%

Farmers also estimated how many eggs they eat in a week and how many poultry they eat in a month. The following tables show that egg and poultry consumption increased as a result of the higher production. This contributes to better nutrition of the farming households.

Egg and poultry consumptions	Khulna (average)		Satkhira (average)		Patuakhali (average)	
	Benchmark (n=200)	End FFS (n=200)	Benchmark (n=700)	End FFS (n=700)	Benchmark (n=600)	End FFS (n=700)
Eggs eaten per week	6.0	8.5	2.2	9.1	3.1	7.1
Poultry eaten per month	0.3	1.3	0.4	1.5	0.8	1.4

3.4   Selling of eggs

The next tables show that in the FFS the number of farmers selling eggs increased and also that the number of eggs sold per month increased. On average we see that farmers reported selling more than 5 times as many eggs each month.

Selling of eggs	Khulna (percentage farmers)		Satkhira (percentage farmers)		Patuakhali (percentage farmers)	
	Benchmark (n=200)	End FFS (n=200)	Benchmark (n=700)	End FFS (n=700)	Benchmark (n=600)	End FFS (n=700)
Farmers selling eggs	56%	94%	38%	91%	27%	93%

Selling of eggs	Khulna (average)		Satkhira (average)		Patuakhali (average)	
	Benchmark (n=200)	End FFS (n=200)	Benchmark (n=700)	End FFS (n=700)	Benchmark (n=600)	End FFS (n=700)
Eggs sold per month	12.1	30.9	2.9	14.9	2.5	27.0

Selling of eggs	Total Cycle 8 (average)	
	Benchmark (n=1500)	End data (n=1600)
Eggs sold per month	4.0	22.2

3.5   Selling of poultry

Farmers also reported how many poultry they sell per year. The next tables show that the percentage of farmers selling poultry increased and also that the number of poultry sold per year increased. On average they reported selling over 6 times as many birds each year.

Selling of poultry	Khulna (percentage farmers)		Satkhira (percentage farmers)		Patuakhali (percentage farmers)	
	Benchmark (n=200)	End FFS (n=200)	Benchmark (n=700)	End FFS (n=700)	Benchmark (n=600)	End FFS (n=700)
Farmers selling poultry	64%	94%	40%	99%	42%	95%

Selling of poultry	Khulna (average)		Satkhira (average)		Patuakhali (average)	
	Benchmark (n=200)	End FFS (n=200)	Benchmark (n=700)	End FFS (n=700)	Benchmark (n=600)	End FFS (n=700)
Poultry sold per year	5.9	25.0	1.7	20.5	4.1	20.4

Selling of poultry	Total Cycle 8	
	Benchmark (n=1500)	End data (n=1600)
Poultry sold per year	3.2	21.0

3.6   Poultry technology practices

In the poultry module, the FFS farmers learn several improved poultry technology practices, such as vaccination of the birds, the use of hazals, and candling of eggs. Many farmers at the end of the FFS report that they have adopted these practices. Follow up surveys will have to show if these practices are sustained.

Vaccinations depend of course on the availability of vaccination services by community poultry workers, but most farmers report that they practice vaccinations sometimes or always. Facilitators of the FFS invited poultry workers to the FFS sessions and field days in order to link them with the FFS participants.

Almost all farmers report that they started using hazals, and all farmers adopted the practicing of candling their eggs. Most farmers separate chicks from hen after one or two weeks, while this was not a common practice before the FFS.

Poultry technology practices	Khulna (percentage farmers)		Satkhira (percentage farmers)		Patuakhali (percentage farmers)	
	Benchmark (n=200)	End FFS (n=200)	Benchmark (n=700)	End FFS (n=700)	Benchmark (n=600)	End FFS (n=700)
Vaccinate always	<1%	58%	4%	82%	<1%	69%
Vaccinate sometimes	2%	40%	13%	13%	4%	27%
Vaccinate never	98%	3%	83%	4%	96%	4%
Use hazal	3%	97%	2%	97%	<1%	99%
Use candling	4%	100%	1%	100%	2%	>99%
Separate chicks after 1 week	1%	90%	2%	89%	1%	47%
Separate chicks after 2 weeks	0%	8%	0%	10%	0%	51%
Separate chicks never	>99%	2%	98%	2%	99%	1%

4.   Homestead garden module

FFS Cycle 8 included the homestead garden module, which tries to promote and increase the production of vegetables and fruits for home consumption and as an income generating activity.

Technical topics in the module include space planning, preparation of vegetable beds, use of quality seeds and fertilizers, integrated pest management (IPM), and preparation of farm yard manure (FYM). The module also emphasizes linkages and networking with input providers and with staff of the department of agricultural extension (DAE).

In this chapter, some data of the homestead garden module are presented separately for the three districts. See also Annexes 1 (Khulna), 2 (Satkhira) and 3 (Patuakhali).

4.1   Growing homestead vegetables

About 18% of the farmers did not yet grow homestead vegetables when they started the FFS, but all of them had a homestead vegetable garden at the end of the FFS.

Homestead vegetables	Khulna (percentage of farmers)		Satkhira (percentage of farmers)		Patuakhali (percentage of farmers)	
	Benchmark (n=200)	End FFS (n=200)	Benchmark (n=700)	End FFS (n=700)	Benchmark (n=600)	End FFS (n=700)
Farmers growing homestead vegetables	89%	100%	77%	100%	87%	100%

4.2   Types of vegetables grown

The percentage of farmers growing a certain type of vegetable is shown in the following table. For the benchmark data, this percentage is calculated for the farmers who already did grow vegetables. At the end survey, they all have vegetables.

Most types of vegetables became more popular during the FFS. This is partly explained by the fact that some vegetable seeds were provided to the participants.

Cabbage and cauliflower seem to be not popular in Patuakhali, probably because the winter season starts later there and cheap cabbage/cauliflower from other regions are available in markets.

The increase of drumstick seen in Khulna and Satkhira is probably not an actual increase in trees, but as drumstick was discussed during the FFS this made farmers realize they have more of these trees in their homestead. In Patuakhali the number of drumstick is very low.

Type of vegetables	Khulna (percentage of farmers)		Satkhira (percentage of farmers)		Patuakhali (percentage of farmers)	
	Benchmark (n=177)	End FFS (n=200)	Benchmark (n=537)	End FFS (n=700)	Benchmark (n=521)	End FFS (n=700)
Gourds	84%	100%	88%	100%	91%	99%
Brinjal	85%	99%	47%	97%	33%	98%
Leafy vegetables	89%	98%	77%	99%	67%	99%
Ladies finger	17%	89%	16%	85%	14%	75%
Cabbage / Cauliflower	13%	91%	15%	74%	2%	32%
Radish	23%	93%	11%	96%	28%	99%
Tomato	25%	97%	13%	95%	14%	97%

Aroids	57%	95%	65%	94%	3%	59%
Drumstick	63%	94%	50%	79%	1%	1%
Other vegetables	22%	78%	18%	67%	40%	75%

4.3   Crop diversification

The number of different types of vegetables grown within a homestead increased significantly. This is of course a direct result of some inputs (seeds, seedlings) provided during the training.

Crop diversification	Khulna (average)		Satkhira (average)		Patuakhali (average)	
	Benchmark (n=200)	End FFS (n=200)	Benchmark (n=700)	End FFS (n=700)	Benchmark (n=600)	End FFS (n=700)
Number of different vegetables grown within the same homestead	4.2	9.3	3.1	8.9	2.5	7.4

4.4   Selling of surplus vegetables

Increase of vegetable production during the FFS season resulted in surplus vegetables which can be sold. At the beginning of the FFS 35% of the farmers reported that they sell vegetables. At the end of the FFS this percentage had increased to 96%.

What happens with vegetables produced	Khulna (percentage farmers)		Satkhira (percentage farmers)		Patuakhali (percentage farmers)	
	Benchmark (n=200)	End FFS (n=200)	Benchmark (n=700)	End FFS (n=700)	Benchmark (n=600)	End FFS (n=700)
Sell none	54%	3%	83%	1%	84%	8%
Sell less than half	28%	16%	17%	16%	14%	35%
Sell and eat about half	15%	43%	<1%	18%	1%	46%
Sell more than half	3%	39%	<1%	64%	<1%	11%
Sell all	0%	<1%	0%	<1%	0%	<1%

4.5   Homestead space planning

In the FFS farmers learn to plan their homestead more efficiently and grow vegetables in different locations.

The table shows in which locations the FFS participants grow their vegetables. For the benchmark data, the average number of farmers was calculated for farmers who already grew vegetable before the FFS.

Locations used for vegetables	Khulna (percentage farmers)		Satkhira (percentage farmers)		Patuakhali (percentage farmers)	
	Benchmark (n=177)	End FFS (n=200)	Benchmark (n=537)	End FFS (n=700)	Benchmark (n=521)	End FFS (n=700)
Sunny open place	95%	100%	69%	97%	86%	97%
Shady place	46%	100%	6%	95%	28%	80%
Wet marshy land	14%	92%	7%	91%	11%	69%
Hedges and fences	29%	93%	11%	80%	25%	89%
Roof	24%	95%	66%	95%	16%	83%
Pond side	17%	87%	8%	78%	28%	87%
Macha	25%	84%	35%	90%	37%	88%
Pond side macha	12%	78%	4%	70%	15%	84%
Pots	3%	30%	1%	32%	1%	16%
Other places	32%	70%	12%	67%	39%	82%

Instead of relying mainly on sunny open areas to grow vegetables farmers started growing their vegetables in more and different locations within their homestead space. The next table shows how many locations were used on average.

Locations used for vegetables	Khulna (average)		Satkhira (average)		Patuakhali (average)	
	Benchmark (n=200)	End FFS (n=200)	Benchmark (n=700)	End FFS (n=700)	Benchmark (n=600)	End FFS (n=700)
Number of different locations used within the same homestead	2.6	8.3	1.7	7.9	2.5	7.8

4.6   Fertilizer use in homestead vegetables

Most farmers who already grew vegetables before they became FFS participants had already experience using fertilizer in their homestead vegetables. At the end of the FFS almost all participants reported that they had applied fertilizers.

Fertilizer use in homestead vegetables	Khulna (percentage farmers)		Satkhira (percentage farmers)		Patuakhali (percentage farmers)	
	Benchmark (n=177)	End FFS (n=200)	Benchmark (n=537)	End FFS (n=700)	Benchmark (n=521)	End FFS (n=700)
Farmers using fertilizers	86%	>99%	56%	99%	63%	100%

The following table shows what types of fertilizers were used. The percentage of farmers is calculated only for farmers who grow vegetables and who used some fertilizers. At the benchmark survey we see that a lot of farmers already used Urea, TSP and cow dung. At the end survey many reported that they were using also MOP, gypsum, zinc, cow dung, chicken manure, FYM and compost.

Type of fertilizers used in homestead vegetables	Khulna (percentage farmers)		Satkhira (percentage farmers)		Patuakhali (percentage farmers)	
	Benchmark (n=152)	End FFS (n=199)	Benchmark (n=299)	End FFS (n=695)	Benchmark (n=327)	End FFS (n=697)
Urea	84%	99%	84%	98%	87%	98%
TSP	72%	99%	57%	97%	77%	97%
MOP	33%	98%	46%	97%	17%	97%
Gypsum	3%	50%	<1%	42%	2%	34%
Zinc	2%	41%	0%	37%	0%	22%
Cow dung	80%	98%	62%	97%	67%	95%
Chicken manure	36%	76%	<1%	82%	10%	95%
FYM	36%	97%	0%	96%	<1%	93%
Compost	0%	45%	1%	36%	0%	26%

4.7   Fruit trees

Most farmers who participated in the FFS have fruit trees in their homestead are. The following table shows for farmers who have fruit trees the average number of each type of tree. Mango, banana and coconut are the most common fruit trees grown at the homestead, while in Patuakhali also guava and jackfruit are more popular.

Types of fruit trees in homestead garden	Khulna (average)		Satkhira (average)		Patuakhali (average)	
	Benchmark (n=191)	End FFS (n=200)	Benchmark (n=540)	End FFS (n=697)	Benchmark (n=545)	End FFS (n=654)
Mango total	5.5	5.8	4.2	3.8	3.4	4.0
Mango grafted	1.6	2.0	1.3	1.3	0.2	0.4
Litchi total	0.2	0.3	0.2	0.3	0.5	0.7
Litchi grafted	0.1	0.2	0.1	0.2	0.1	0.2
Lemon total	1.2	1.4	1.0	1.0	1.2	1.2
Lemon grafted	0.6	0.7	0.6	0.6	0.2	0.2
Guava total	1.8	2.0	1.3	1.5	3.5	3.6
Guava grafted	0.5	0.7	0.5	0.8	0.2	0.3
Jujube total	0.8	0.8	0.2	0.4	0.6	0.7
Jujube grafted	0.3	0.3	0.1	0.3	0.1	0.1
Sapodilla total	1.3	1.3	0.8	1.0	0.1	0.1
Sapodilla grafted	0.4	0.5	0.4	0.6	0.0	0.0

Jackfruit	0.5	0.6	0.6	0.7	3.1	3.2
Blackberry	0.7	0.6	0.2	0.3	0.2	0.3
Coconut	4.5	4.5	2.3	2.7	3.6	3.9
Date palm	1.9	2.2	0.3	0.9	0.8	1.3
Palm tree	0.7	0.8	0.2	0.2	1.7	1.5
Papaya	2.4	2.7	0.7	2.3	1.3	3.1
Banana	8.3	9.7	2.3	4.9	7.8	11.4
Other fruit trees	3.7	4.1	0.3	1.2	1.5	1.9

The following table shows how many fruit trees were reported by the farmers; it shows the average number of trees in each homestead area. The difference between benchmark and end data is probably not an actual increase in number of trees, but partly the result of more accurate counting during the FFS. Satkhira households seem to have fewer trees, but as we have seen before, they also have smaller land available.

Fruit trees in homestead garden	Khulna (average)		Satkhira (average)		Patuakhali (average)	
	Benchmark (n=191)	End FFS (n=200)	Benchmark (n=540)	End FFS (n=697)	Benchmark (n=545)	End FFS (n=654)
Number of trees	32.0	36.8	11.4	21.2	26.5	34.6

4.8 Fertilizer use in fruit trees

Farmers who have fruit trees reported if they use fertilizers for their trees. Before the FFS, most farmers were not doing this, but at the end survey almost all farmers had experience with fertilizing their fruit trees.

Fertilizer use fruit trees	Khulna (percentage farmers)		Satkhira (percentage farmers)		Patuakhali (percentage farmers)	
	Benchmark (n=191)	End FFS (n=200)	Benchmark (n=540)	End FFS (n=697)	Benchmark (n=545)	End FFS (n=654)
Use fertilizer in fruit trees	16%	>99%	7%	>99%	2%	96%

4.9 Pest management

In the FFS farmers learn to use Integrated Pest Management (IPM) methods in their vegetables and/or fruit trees. The following table shows the shift in pest management practices.

Pest management	Khulna (percentage farmers)		Satkhira (percentage farmers)		Patuakhali (percentage farmers)	
	Benchmark (n=200)	End FFS (n=200)	Benchmark (n=700)	End FFS (n=700)	Benchmark (n=600)	End FFS (n=700)
Do nothing	50%	1%	93%	<1%	58%	<1%
Use chemicals only	50%	0%	7%	1%	42%	2%
Use Integrated Pest Management methods	<1%	99%	<1%	99%	0%	98%

4.10 Money used for pesticides

The next table shows the percentage of farmers who spend money on pesticides. We see, especially in Satkhira a large increase of farmers who buy pesticides, even though pesticide use in homestead gardens is discouraged during the FFS. This increase is probably linked to the intensification and diversification of vegetable production in the homesteads. But it remains unclear why at the benchmark survey Satkhira had the fewest farmers using pesticides, while at the end survey Satkhira had most users.

Buying pesticides	Khulna (percentage farmers)		Satkhira (percentage farmers)		Patuakhali (percentage farmers)	
	Benchmark (n=200)	End FFS (n=200)	Benchmark (n=700)	End FFS (n=700)	Benchmark (n=600)	End FFS (n=700)
Farmers buying pesticides	50%	74%	7%	91%	42%	72%

The following two tables show how much money is used on pesticides, but calculated in different ways.

The first table calculates the average amount (Taka) used for all FFS farmers. This shows only in Satkhira a large increase in the amount of money spent on pesticides, as initially the Satkhira farmers did hardly use pesticides.

The second table calculates the average amount used for farmers who do use pesticides. Here we see that these farmers in all cases spend a bit less money to buy pesticides.

The conclusion is that as more vegetables were produced, more farmers started using pesticides, but that the total use per farmer was reduced after the training.

Money for pesticides (all FFS participants)	Khulna (Taka)		Satkhira (Taka)		Patuakhali (Taka)	
	Benchmark (n=200)	End FFS (n=200)	Benchmark (n=700)	End FFS (n=700)	Benchmark (n=600)	End FFS (n=700)
Total money spend on pesticides	18,618	19,629	7,320	89,808	93,190	107,561
Average money spend per farmer (average for all farmers)	93	98	10	128	155	154

Money for pesticides (only participants who use pesticides)	Khulna (Taka)		Satkhira (Taka)		Patuakhali (Taka)	
	Benchmark (n=100)	End FFS (n=148)	Benchmark (n=47)	End FFS (n=635)	Benchmark (n=253)	End FFS (n=502)
Total money spend on pesticides	18,618	19,629	7,320	89,808	93,190	107,561
Average money spend per farmer (average for farmers using pesticides)	186	133	156	141	368	214

4.11 Farm Yard Manure

The following table shows that before the FFS farmers hardly prepared FYM, but at the end of the FFS almost all farmers had started preparing it. A follow up survey after one or two years is needed to verify if this practice will sustain.

Farm Yard Manure	Khulna (percentage farmers)		Satkhira (percentage farmers)		Patuakhali (percentage farmers)	
	Benchmark (n=200)	End FFS (n=200)	Benchmark (n=700)	End FFS (n=700)	Benchmark (n=600)	End FFS (n=700)
No FYM pit	89%	1%	>99%	<1%	99%	5%
Pit without shade	10%	34%	<1%	41%	1%	76%
Pit with shade	1%	65%	0%	59%	0%	20%

5. Nutrition module

The nutrition module is included in all FFS. The module includes cooking procedures, hygiene, and ingredients of balanced food. Emphasis is given on the "thousand day food requirements" which refers to special requirements for mothers during pregnancy and the first 2 years of the child. Farmers also learn about health benefits of Moringa.

To stimulate farmers to think about their own diet, questions are asked in the benchmark survey on what type of food they eat each week.

In this chapter, some data related to the nutrition module are presented separately for the 3 districts where the FFSs took place. See also Annexes 1 (Khulna), 2 (Satkhira), and 3 (Patuakhali).

5.1   Cooking procedures

During the nutrition sessions farmers learn about cooking procedures, for example that it is better to wash vegetables before cutting them. The positive reporting at the end of the FFS will have some bias.

Knows correct cooking procedures	Khulna (percentage farmers)		Satkhira (percentage farmers)		Patuakhali (percentage farmers)	
	Benchmark (n=200)	End FFS (n=200)	Benchmark (n=700)	End FFS (n=700)	Benchmark (n=600)	End FFS (n=700)
Does not know	76%	1%	84%	2%	66%	<1%
Knows partly	18%	5%	14%	2%	28%	10%
Knows fully	6%	95%	2%	95%	7%	90%

5.2   Moringa

At the beginning of the FFS most farmers are not familiar about the health benefits of Moringa leaves. They learn about this during the nutrition sessions, and in the cooking sessions leaves are prepared for tasting. In Patuakhali, leaves were not always available which explains why fewer farmers tried eating the leaves.

These results are just showing what happened during the training. Follow up surveys will be needed to see if farmers really adapt the practice of eating Moringa leaves.

Moringa	Khulna (percentage farmers)		Satkhira (percentage farmers)		Patuakhali (percentage farmers)	
	Benchmark (n=200)	End FFS (n=200)	Benchmark (n=700)	End FFS (n=700)	Benchmark (n=600)	End FFS (n=700)
Does not know that Moringa leaves are healthy	97%	0%	97%	<1%	99%	1%
Knows, but never ate leaves	3%	4%	3%	3%	1%	85%
Knows and has eaten leaves	1%	96%	<1%	97%	<1%	14%

5.3   Thousand day nutrition requirements

At the beginning of the FFS the participants have limited knowledge on the food requirements during the first thousand days (pregnancy period and first 2 years of the child). At the end of the training most seem to

have this knowledge, but we can expect some bias towards giving positive answers in such knowledge questions.

Know 1000 day nutrient requirement	Khulna (percentage farmers)		Satkhira (percentage farmers)		Patuakhali (percentage farmers)	
	Benchmark (n=200)	End FFS (n=200)	Benchmark (n=700)	End FFS (n=700)	Benchmark (n=600)	End FFS (n=700)
Does not know	83%	1%	85%	0%	77%	<1%
Knows partly	17%	2%	14%	1%	23%	8%
Knows well	1%	98%	1%	99%	<1%	91%

5.4   Food habits

To emphasize the need for a balanced diet, farmers were asked to estimate how many times per week they eat meat, fish, eggs, and fruits. Another question was to estimate how much vegetables they eat in a week.

We see in all cases an increased consumption at the end of FFS. The increase in meat, eggs, vegetables and fruits consumption can be the result of higher homestead production of poultry, eggs and vegetables. Increase in fruit consumption can be caused by more fruits being available during the end survey. But the increase in fish production is also obvious. It may be because of increased awareness on balanced nutrition, but we can also expect some bias in giving desirable answers.

Food habits	Khulna		Satkhira		Patuakhali	
	Benchmark (n=200)	End FFS (n=200)	Benchmark (n=700)	End FFS (n=700)	Benchmark (n=600)	End FFS (n=700)
Meat (times per week)	0.9	1.0	0.8	1.5	0.7	1.1
Fish (times per week)	3.9	4.5	2.8	4.5	1.3	2.6
Eggs (times per week)	2.1	3.2	1.1	1.8	1.1	2.2
Fruits (times per week)	1.5	2.8	0.9	2.2	0.8	2.0
Amount vegetables per week (g)	1,116	1,741	3,500	3,580	2,600	3,500

5.5   Mati-o-manush

The agricultural TV program Mati-o-manush has on several occasions paid attention to Blue Gold activities, such as poultry production, beef fattening and use of mini ponds to grow water melon. The FFS facilitators mention this to the FFS participants and recommend them to watch the program. A question was included in the benchmark and end surveys about this.

Mati-o-manush	Khulna (percentage farmers)		Satkhira (percentage farmers)		Patuakhali (percentage farmers)	
	Benchmark (n=200)	End FFS (n=200)	Benchmark (n=700)	End FFS (n=700)	Benchmark (n=600)	End FFS (n=700)
Watch never	77%	24%	70%	4%	96%	65%
Watch sometimes	22%	64%	29%	85%	4%	35%
Watch always	2%	13%	<1%	11%	<1%	<1%

6. Conclusion

The data presented in this report were collected in the benchmark and end surveys of cycle 8 and represent the results of about 1,600 farmers.

Comparing end data with benchmark data shows some immediate effects of the FFS training, such as a considerable increase of eggs, poultry and vegetable production. This has resulted in higher consumption and in selling of surplus produce to generate some extra income.

Some inputs (chicks, vegetable seed) were distributed during the FFS, which explains some of the increases in production.

We can also expect some bias in the answers, as both the interviewers (FFS facilitators) and the interviewees (farmers) can be tempted to report positive results. However even if we consider this bias, we can conclude that the FFSs in cycle 8 have successfully increased production and income of the participants during the FFS season.

To understand the long-term impact of an FFS, it is recommended that follow-up surveys are organized after one or two years. It may also be considered to do an independent impact survey (i.e. not by FFS facilitators), comparing trained and non trained farmers.

Annex 1 Khulna

FFS modules: Poultry, Homestead garden, Nutrition

Benchmark data of 8 FFSs (Cycle 8)	End data of 8 FFS (Cycle 8)
200 records	200 records

Polder

Polder 26 count	50	Polder 26 count	50
Polder 29 count	50	Polder 29 count	50
Polder 30 count	50	Polder 30 count	50
Polder 31-part count	50	Polder 31-part count	50
Polder total count	200	Polder total count	200

Age

Average age	35	Average age	35
Median age	35	Median age	35
Youngest	20	Youngest	20
Oldest	52	Oldest	52
Total farmers	200	Total farmers	200

Gender

Men	15	Men	16
Women	185	Women	184
Total	200	Total	200
Percentage women	93	Percentage women	92

Education

Illiterate	5	Illiterate	4
Can sign	15	Can sign	16
Primary	90	Primary	86
Secondary	74	Secondary	78
HCC and above	16	HCC and above	16
Total	200	Total	200

WMG member

Member	199	Member	200
Not member	1	Not member	-
Total	200	Total	200

Area agriculture (decimal)

Average	69
Median	50
Zero area (0 decimal)	23
Landless (<50 decimal)	77
Not landless (>=50 decimal)	123
Total	200
Percentage zero area	12
Percentage landless	39
Percentage not landless	62
Min area (decimal)	-
Max area (decimal)	400
Total area	13,875
Households with land (>0 ha)	177
Average area for HH with land	78

Area agriculture (decimal)

Average	70
Median	50
Zero area (0 decimal)	24
Landless (<50 decimal)	75
Not landless (>=50 decimal)	125
Total	200
Percentage zero area	12
Percentage landless	38
Percentage not landless	63
Min area (decimal)	-
Max area (decimal)	400
Total area	13,976
Households with land (>0 ha)	176
Average area for HH with land	79

Area homestead (decimal)

Average	15
Median	10
Min	2
Max	80
Zero area (num farmers)	-
Total	200

Area homestead (decimal)

Average	14
Median	10
Min	2
Max	75
Zero area (num farmers)	-
Total	200

VEGETABLES & FRUITS	VEGETABLES & FRUITS

Grows vegetables

Yes	177
No	23
Total	200

Grows vegetables

Yes	200
No	-
Total	200

Vegetables

Gourds	149
Brinjal	150
Leafy vegetables	158
Ladies finger	30
Cabbage / Cauliflower	23
Radish	41
Tomato	45
Aroids	101
Drumstick	111
Other vegetables	39
Total farmers	177

Vegetables

Gourds	199
Brinjal	198
Leafy vegetables	196
Ladies finger	177
Cabbage / Cauliflower	182
Radish	186
Tomato	193
Aroids	189
Drumstick	188
Other vegetables	156
Total farmers	200

Number of vegetables grown

Min	-
Max	10
Average	4.2
Total	200

Number of vegetables grown

Min	7
Max	10
Average	9.3
Total	200

What happens with the vegetables

Sell none	96
Sell less than half	49
Sell and eat about half	26
Sell more than half	6
Sell all	-
Total	177

What happens with the vegetables

Sell none	5
Sell less than half	31
Sell and eat about half	86
Sell more than half	77
Sell all	1
Total	200

Vegetable locations

Sunny open place	169
Shady place	81
Wet marshy land	24
Hedges and fences	51
Roof	42
Pond side	30
Macha	44
Pond side macha	21
Pots	6
Other places	56
Total farmers	177

Vegetable locations

Sunny open place	200
Shady place	199
Wet marshy land	183
Hedges and fences	185
Roof	190
Pond side	174
Macha	168
Pond side macha	155
Pots	60
Other places	140
Total farmers	200

Number of vegetable locations used

Min	-
Max	10
Average	2.6
Total	200

Number of vegetable locations used

Min	5
Max	10
Average	8.3
Total	200

Seeds from

Own seeds	98
DAE	2
BADC	2
NGO	3
Company	14
Market	141
Neighbours	53
Total farmers	177

Seeds from

Own seeds	197
DAE	14
BADC	5
NGO	60
Company	88
Market	186
Neighbours	96
Total farmers	200

Fertilizer use

Use no fertilizers	25
Use some fertilizers	152
Total	177

Fertilizer use

Use no fertilizers	1
Use some fertilizers	199
Total	200

Type of fertilizers used

Urea	127
TSP	109
MOP	50
Gypsum	4
Zinc	3
Cowdung	122
Chicken manure	55
FYM	55
Compost	-
Total farmers	152

Type of fertilizer used

Urea	198
TSP	197
MOP	196
Gypsum	100
Zinc	82
Cowdung	195
Chicken manure	152
FYM	194
Compost	89
Total farmers	199

Have fruit trees

Yes	191
No	9
Total	200

Have fruit trees

Yes	200
No	-
Total	200

Fruit trees (total trees all farmers)

Total mango	1,052
Grafted mango	299
Total litchi	43
Grafted litchi	23
Total lemon	235
Grafted lemon	107
Total guava	343
Grafted guava	96
Total jujube	144
Grafted jujube	48
Total sapodilla	255
Grafted sapodilla	85
Total jackfruit	104
Total blackberry	142
Total coconut	854
Total date palm	363
Total palm tree	131
Total papaya	460
Total banana	1,576
Other fruit trees	706
Total farmers	191

Fruit trees (total trees all farmers)

Total mango	1,157
Grafted mango	407
Total litchi	68
Grafted litchi	43
Total lemon	286
Grafted lemon	137
Total guava	403
Grafted guava	137
Total jujube	155
Grafted jujube	57
Total sapodilla	251
Grafted sapodilla	105
Total jackfruit	112
Total blackberry	113
Total coconut	906
Total date palm	442
Total palm tree	161
Total papaya	543
Total banana	1,936
Other fruit trees	821
Total farmers	200

Fruit trees (average per farmer)

Total mango	5.5
Grafted mango	1.6
Total litchi	0.2
Grafted litchi	0.1
Total lemon	1.2
Grafted lemon	0.6
Total guava	1.8
Grafted guava	0.5
Total jujube	0.8
Grafted jujube	0.3
Total sapodilla	1.3
Grafted sapodilla	0.4
Total jackfruit	0.5
Total blackberry	0.7
Total coconut	4.5
Total date palm	1.9
Total palm tree	0.7
Total papaya	2.4
Total banana	8.3
Other fruit trees	3.7
Total farmers	191

Fruit trees (average per farmer)

Total mango	5.8
Grafted mango	2.0
Total litchi	0.3
Grafted litchi	0.2
Total lemon	1.4
Grafted lemon	0.7
Total guava	2.0
Grafted guava	0.7
Total jujube	0.8
Grafted jujube	0.3
Total sapodilla	1.3
Grafted sapodilla	0.5
Total jackfruit	0.6
Total blackberry	0.6
Total coconut	4.5
Total date palm	2.2
Total palm tree	0.8
Total papaya	2.7
Total banana	9.7
Other fruit trees	4.1
Total farmers	200

Count fruit trees

Total	6,408
Average	32.0
Min	-
Max	223
Total farmers	200

Count fruit trees

Total	7,354
Average	36.8
Min	3
Max	280
Total farmers	200

Pest management

Do nothing	100
Use chemicals	99
Use IPM	1
Total farmers	200

Pest management

Do nothing	2
Use chemicals	-
Use IPM	198
Total farmers	200

Pesticide cost

No money used on pesticides	-
Used money for pesticides	100
Total farmers	200

Pesticide cost

No money used on pesticides	50
Used money for pesticides	148
Total farmers	200

How much money used

Total	18,618
Average (of farmers doing pest managem	186
Average (of all farmers)	93
Max	1,200

How much money used

Total	19,629
Average (of farmers doing pest managem	133
Average (of all farmers)	98
Max	500

FYM

No pit	178
Pit without shade	20
Pit with shade	2
Total farmers	200

FYM

No pit	2
Pit without shade	68
Pit with shade	130
Total farmers	200

Use fertilizer on fruit trees

Use fertilizers	30
No fertilizers	161
Total who have fruit trees	191

POULTRY

Number of chicken

Max chicken	20
Min chicken	-
Farmers with chicken	188
Farmers without chicken	12
Total farmers	200
Total chicken	754
Average chicken (of farmers with chicken)	4.0
Average chicken (of all farmers)	3.8

Number of chicken

Max chicken	25
Min chicken	-
Farmers with chicken	198
Farmers without chicken	2
Total farmers	200
Total chicken	1,347
Average chicken (of farmers with chicken)	6.8
Average chicken (of all farmers)	6.7

Number of chicks

Max chicks	50
Min chicks	-
Farmers with chicks	112
Farmers without chicks	88
Total farmers	200
Total chicks	880
Average chicks (of farmers with chicks)	7.9
Average chicks (of all farmers)	4.4

Number of chicks

Max chicks	65
Min chicks	-
Farmers with chicks	178
Farmers without chicks	22
Total farmers	200
Total chicks	2,734
Average chicks (of farmers with chicks)	15.4
Average chicks (of all farmers)	13.7

Number of ducks

Max ducks	44
Min ducks	-
Farmers with ducks	170
Farmers without ducks	30
Total farmers	200
Total ducks	849
Average ducks (of farmers with ducks)	5.0
Average ducks (of all farmers)	4.2

Number of ducks

Max ducks	40
Min ducks	-
Farmers with ducks	176
Farmers without ducks	24
Total farmers	200
Total ducks	1,333
Average ducks (of farmers with ducks)	7.6
Average ducks (of all farmers)	6.7

Number of ducklings

Max ducklings	15
Min ducklings	-
Farmers with ducklings	58
Farmers without ducklings	142
Total farmers	200
Total ducklings	313
Average ducklings (of farmers with ducklings)	5.4
Average ducklings (of all farmers)	1.6

Number of ducklings

Max ducklings	35
Min ducklings	-
Farmers with ducklings	198
Farmers without ducklings	2
Total farmers	200
Total ducklings	2,872
Average ducklings (of farmers with ducklings)	14.5
Average ducklings (of all farmers)	14.4

Eggs per hen per year

Max	150
Min	-
Average	55

Eggs per hen per year

Max	150
Min	50
Average	91

Eggs per duck per year

Max	150
Min	-
Average	70

Eggs per duck per year

Max	220
Min	60
Average	118

Own egg consumption per week

Max	35
Min	-
Total	1,196
Average	6.0
Farmers eat own eggs	166
Farmers not eat own eggs	34
Total farmers	200

Own egg consumption per week

Max	50
Min	-
Total	1,705
Average	8.5
Farmers eat own eggs	197
Farmers not eat own eggs	3
Total farmers	200

Own poultry concumption per month

Max	3
Min	-
Total	69
Average	0.3
Farmers eat own poultry	54
Farmers not eat own poultry	146
Total farmers	200

Own poultry concumption per month

Max	12
Min	-
Total	263
Average	1.3
Farmers eat own poultry	172
Farmers not eat own poultry	28
Total farmers	200

Eggs sold per month

Max	150
Min	-
Total	2,440
Average	12.1
Farmers selling eggs	112
Farmers not selling eggs	89
Total farmers	201

Eggs sold per month

Max	250
Min	-
Total	6,208
Average	30.9
Farmers selling eggs	188
Farmers not selling eggs	13
Total farmers	201

Poultry sold per year

Max	45
Min	-
Total	1,173
Average	5.9
Farmers selling poultry	127
Farmers not selling poultry	73
Total farmers	200

Poultry sold per year

Max	150
Min	-
Total	5,005
Average	25.0
Farmers selling poultry	187
Farmers not selling poultry	13
Total farmers	200

Poultry vaccinated

Never	196
Sometimes	3
Always	1
Total farmers	200

Poultry vaccinated

Never	6
Sometimes	79
Always	115
Total farmers	200

Hazal

Yes	6
No	194
Total farmers	200

Hazal

Yes	194
No	6
Total farmers	200

Chick separation

After 1 week	1
After 2 weeks	-
After 3 weeks	-
After 4 weeks	-
Never	199
Total farmers	200

Chick separation

After 1 week	180
After 2 weeks	15
After 3 weeks	2
After 4 weeks	-
Never	3
Total farmers	200

Candling

Yes	8
No	192
Total farmers	200

Candling

Yes	200
No	-
Total farmers	200

NUTRITION

NUTRITION

Know cooking process

Does not know	152
Knows partly	36
Knows fully	12
Total farmers	200

Know cooking process

Does not know	1
Knows partly	9
Knows fully	190
Total farmers	200

Know Moringa is healthy

Does not know	193
Knows but did not eat	5
Knows and has eaten	2
Total farmers	200

Know Moringa is healthy

Does not know	-
Knows but did not eat	8
Knows and has eaten	192
Total farmers	200

Know 1000 day food requirement

Does not know	166
Knows partly	33
Knows well	1
Total farmers	200

Know 1000 day food requirement

Does not know	1
Knows partly	4
Knows well	195
Total farmers	200

Days per week eat meat

Average	0.9
Min	-
Max	3

Days per week eat meat

Average	1.0
Min	-
Max	2

Days per week eat fish

Average	3.9
Min	1
Max	7

Days per week eat fish

Average	4.5
Min	2
Max	7

Days per week eat eggs

Average	2.1
Min	-
Max	7

Days per week eat eggs

Average	3.2
Min	1
Max	7

Days per week eat fruit

Average	1.5
Min	-
Max	6

Days per week eat fruit

Average	2.8
Min	-
Max	6

Amount vegetables per week (gram)

Average	1,116
Min	-
Max	2,500

Amount vegetables per week (gram)

Average	1,741
Min	1
Max	3,500

Watch Mati-o-manush

Never	153
Sometimes	44
Always	3
Total farmers	200

Watch Mati-o-manush

Never	48
Sometimes	127
Always	25
Total farmers	200

Annex 2 Satkhira

FFS modules: Poultry, Homestead garden, Nutrition

Benchmark data of 28 FFSs (Cycle 8)	End data of 28 FFS (Cycle 8)
700 records	700 records

Polder

Polder 2 count	700
Polder total count	700

Polder

Polder 2 count	700
Polder total count	700

Age

Average age	34
Median age	33
Youngest	18
Oldest	68
Total farmers	700

Age

Average age	34
Median age	33
Youngest	18
Oldest	68
Total farmers	700

Gender

Men	19
Women	681
Total	700
Percentage women	97

Gender

Men	22
Women	678
Total	700
Percentage women	97

Education

Illiterate	37
Can sign	110
Primary	334
Secondary	190
HCC and above	29
Total	700

Education

Illiterate	11
Can sign	115
Primary	348
Secondary	191
HCC and above	35
Total	700

WMG member

Member	689
Not member	11
Total	700

WMG member

Member	699
Not member	1
Total	700

Area agriculture (decimal)

Average	31
Median	16
Zero area (0 decimal)	249
Landless (<50 decimal)	554
Not landless (>=50 decimal)	146
Total	700
Percentage zero area	36
Percentage landless	79
Percentage not landless	21
Min area (decimal)	-
Max area (decimal)	330
Total area	21,358
Households with land (>0 ha)	451
Average area for HH with land	47

Area agriculture (decimal)

Average	31
Median	18
Zero area (0 decimal)	242
Landless (<50 decimal)	548
Not landless (>=50 decimal)	152
Total	700
Percentage zero area	35
Percentage landless	78
Percentage not landless	22
Min area (decimal)	-
Max area (decimal)	330
Total area	21,844
Households with land (>0 ha)	458
Average area for HH with land	48

Area homestead (decimal)

Average	12
Median	10
Min	-
Max	66
Zero area (num farmers)	1
Total	700

Area homestead (decimal)

Average	12
Median	10
Min	-
Max	66
Zero area (num farmers)	1
Total	700

VEGETABLES & FRUITS

VEGETABLES & FRUITS

Grows vegetables

Yes	537
No	163
Total	700

Grows vegetables

Yes	700
No	-
Total	700

Vegetables

Gourds	470
Brinjal	255
Leafy vegetables	413
Ladies finger	85
Cabbage / Cauliflower	80
Radish	58
Tomato	68
Aroids	348
Drumstick	271
Other vegetables	98
Total farmers	537

Vegetables

Gourds	699
Brinjal	680
Leafy vegetables	690
Ladies finger	597
Cabbage / Cauliflower	515
Radish	675
Tomato	667
Aroids	655
Drumstick	554
Other vegetables	470
Total farmers	700

Number of vegetables grown

Min	-
Max	10
Average	3.1
Total	700

Number of vegetables grown

Min	3
Max	10
Average	8.9
Total	700

What happens with the vegetables

Sell none	444
Sell less than half	91
Sell and eat about half	1
Sell more than half	1
Sell all	-
Total	537

What happens with the vegetables

Sell none	9
Sell less than half	115
Sell and eat about half	125
Sell more than half	450
Sell all	1
Total	700

Vegetable locations

Sunny open place	372
Shady place	33
Wet marshy land	37
Hedges and fences	58
Roof	357
Pond side	43
Macha	190
Pond side macha	19
Pots	8
Other places	66
Total farmers	537

Vegetable locations

Sunny open place	676
Shady place	664
Wet marshy land	639
Hedges and fences	562
Roof	667
Pond side	544
Macha	627
Pond side macha	493
Pots	225
Other places	467
Total farmers	700

Number of vegetable locations used

Min	-
Max	7
Average	1.7
Total	700

Number of vegetable locations used

Min	2
Max	10
Average	7.9
Total	700

Seeds from

Own seeds	220
DAE	3
BADC	3
NGO	3
Company	26
Market	405
Neighbours	193
Total farmers	537

Seeds from

Own seeds	681
DAE	123
BADC	119
NGO	148
Company	531
Market	672
Neighbours	387
Total farmers	700

Fertilizer use

Use no fertilizers	238
Use some fertilizers	299
Total	537

Fertilizer use

Use no fertilizers	5
Use some fertilizers	695
Total	700

Type of fertilizers used

Urea	251
TSP	169
MOP	139
Gypsum	1
Zinc	-
Cowdung	185
Chicken manure	1
FYM	-
Compost	2
Total farmers	299

Type of fertilizer used

Urea	680
TSP	671
MOP	673
Gypsum	292
Zinc	257
Cowdung	675
Chicken manure	569
FYM	668
Compost	250
Total farmers	695

Have fruit trees

Yes	540
No	160
Total	700

Have fruit trees

Yes	697
No	3
Total	700

Fruit trees (total trees all farmers)

Total mango	2,257
Grafted mango	719
Total litchi	124
Grafted litchi	79
Total lemon	558
Grafted lemon	324
Total guava	723
Grafted guava	261
Total jujube	88
Grafted jujube	46
Total sapodilla	452
Grafted sapodilla	193
Total jackfruit	320
Total blackberry	123
Total coconut	1,226
Total date palm	182
Total palm tree	111
Total papaya	398
Total banana	1,229
Other fruit trees	181
Total farmers	540

Fruit trees (total trees all farmers)

Total mango	2,671
Grafted mango	939
Total litchi	213
Grafted litchi	160
Total lemon	675
Grafted lemon	439
Total guava	1,059
Grafted guava	542
Total jujube	294
Grafted jujube	181
Total sapodilla	668
Grafted sapodilla	442
Total jackfruit	485
Total blackberry	211
Total coconut	1,909
Total date palm	612
Total palm tree	146
Total papaya	1,632
Total banana	3,399
Other fruit trees	870
Total farmers	697

Fruit trees (average per farmer)

Total mango	4.2
Grafted mango	1.3
Total litchi	0.2
Grafted litchi	0.1
Total lemon	1.0
Grafted lemon	0.6
Total guava	1.3
Grafted guava	0.5
Total jujube	0.2
Grafted jujube	0.1
Total sapodilla	0.8
Grafted sapodilla	0.4
Total jackfruit	0.6
Total blackberry	0.2
Total coconut	2.3
Total date palm	0.3
Total palm tree	0.2
Total papaya	0.7
Total banana	2.3
Other fruit trees	0.3
Total farmers	540

Fruit trees (average per farmer)

Total mango	3.8
Grafted mango	1.3
Total litchi	0.3
Grafted litchi	0.2
Total lemon	1.0
Grafted lemon	0.6
Total guava	1.5
Grafted guava	0.8
Total jujube	0.4
Grafted jujube	0.3
Total sapodilla	1.0
Grafted sapodilla	0.6
Total jackfruit	0.7
Total blackberry	0.3
Total coconut	2.7
Total date palm	0.9
Total palm tree	0.2
Total papaya	2.3
Total banana	4.9
Other fruit trees	1.2
Total farmers	697

Count fruit trees

Total	7,972
Average	11.4
Min	-
Max	80
Total farmers	700

Count fruit trees

Total	14,844
Average	21.2
Min	-
Max	98
Total farmers	700

Pest management

Do nothing	652
Use chemicals	47
Use IPM	1
Total farmers	700

Pest management

Do nothing	1
Use chemicals	4
Use IPM	695
Total farmers	700

Pesticide cost

No money used on pesticides	1
Used money for pesticides	47
Total farmers	700

Pesticide cost

No money used on pesticides	64
Used money for pesticides	635
Total farmers	700

How much money used

Total	7,320
Average (of farmers doing pest managem	156
Average (of all farmers)	10
Max	300

How much money used

Total	89,808
Average (of farmers doing pest managem	141
Average (of all farmers)	128
Max	550

FYM

No pit	697
Pit without shade	3
Pit with shade	-
Total farmers	700

FYM

No pit	4
Pit without shade	284
Pit with shade	412
Total farmers	700

Use fertilizer on fruit trees

Use fertilizers	38
No fertilizers	502
Total who have fruit trees	540

Use fertilizer on fruit trees

Use fertilizers	694
No fertilizers	3
Total who have fruit trees	697

POULTRY

POULTRY

Number of chicken

Max chicken	20
Min chicken	-
Farmers with chicken	632
Farmers without chicken	68
Total farmers	700
Total chicken	1,746
Average chicken (of farmers with chicken)	2.8
Average chicken (of all farmers)	2.5

Number of chicken

Max chicken	28
Min chicken	-
Farmers with chicken	698
Farmers without chicken	2
Total farmers	700
Total chicken	6,949
Average chicken (of farmers with chicken)	10.0
Average chicken (of all farmers)	9.9

Number of chicks

Max chicks	20
Min chicks	-
Farmers with chicks	278
Farmers without chicks	422
Total farmers	700
Total chicks	979
Average chicks (of farmers with chicks)	3.5
Average chicks (of all farmers)	1.4

Number of chicks

Max chicks	90
Min chicks	-
Farmers with chicks	696
Farmers without chicks	4
Total farmers	700
Total chicks	11,741
Average chicks (of farmers with chicks)	16.9
Average chicks (of all farmers)	16.8

Number of ducks

Max ducks	12
Min ducks	-
Farmers with ducks	508
Farmers without ducks	192
Total farmers	700
Total ducks	1,590
Average ducks (of farmers with ducks)	3.1
Average ducks (of all farmers)	2.3

Number of ducks

Max ducks	28
Min ducks	-
Farmers with ducks	675
Farmers without ducks	25
Total farmers	700
Total ducks	6,253
Average ducks (of farmers with ducks)	9.3
Average ducks (of all farmers)	8.9

Number of ducklings

Max ducklings	60
Min ducklings	-
Farmers with ducklings	292
Farmers without ducklings	408
Total farmers	700
Total ducklings	896
Average ducklings (of farmers with ducklings)	3.1
Average ducklings (of all farmers)	1.3

Number of ducklings

Max ducklings	28
Min ducklings	-
Farmers with ducklings	515
Farmers without ducklings	185
Total farmers	700
Total ducklings	6,780
Average ducklings (of farmers with ducklings)	13.2
Average ducklings (of all farmers)	9.7

Eggs per hen per year

Max	120
Min	-
Average	45

Eggs per hen per year

Max	150
Min	15
Average	106

Eggs per duck per year

Max	140
Min	-
Average	55

Eggs per duck per year

Max	200
Min	-
Average	112

Own egg consumption per week

Max	45
Min	-
Total	1,556
Average	2.2
Farmers eat own eggs	288
Farmers not eat own eggs	412
Total farmers	700

Own egg consumption per week

Max	81
Min	-
Total	6,357
Average	9.1
Farmers eat own eggs	699
Farmers not eat own eggs	1
Total farmers	700

Own poultry concumption per month

Max	30
Min	-
Total	246
Average	0.4
Farmers eat own poultry	115
Farmers not eat own poultry	585
Total farmers	700

Own poultry concumption per month

Max	5
Min	-
Total	1,018
Average	1.5
Farmers eat own poultry	679
Farmers not eat own poultry	21
Total farmers	700

Eggs sold per month

Max	120
Min	-
Total	2,046
Average	2.9
Farmers selling eggs	266
Farmers not selling eggs	434
Total farmers	700

Eggs sold per month

Max	150
Min	-
Total	10,454
Average	14.9
Farmers selling eggs	635
Farmers not selling eggs	65
Total farmers	700

Poultry sold per year

Max	18
Min	-
Total	1,195
Average	1.7
Farmers selling poultry	282
Farmers not selling poultry	418
Total farmers	700

Poultry sold per year

Max	60
Min	-
Total	14,327
Average	20.5
Farmers selling poultry	692
Farmers not selling poultry	8
Total farmers	700

Poultry vaccinated

Never	583
Sometimes	92
Always	25
Total farmers	700

Poultry vaccinated

Never	29
Sometimes	94
Always	577
Total farmers	700

Hazal

Yes	11
No	689
Total farmers	700

Hazal

Yes	682
No	18
Total farmers	700

Chick separation

After 1 week	11
After 2 weeks	-
After 3 weeks	-
After 4 weeks	1
Never	688
Total farmers	700

Chick separation

After 1 week	621
After 2 weeks	68
After 3 weeks	-
After 4 weeks	-
Never	11
Total farmers	700

Candling

Yes	8
No	692
Total farmers	700

Candling

Yes	700
No	-
Total farmers	700

NUTRITION

NUTRITION

Know cooking process

Does not know	589
Knows partly	97
Knows fully	14
Total farmers	700

Know cooking process

Does not know	15
Knows partly	17
Knows fully	668
Total farmers	700

Know Moringa is healthy

Does not know	676
Knows but did not eat	23
Knows and has eaten	1
Total farmers	700

Know Moringa is healthy

Does not know	2
Knows but did not eat	19
Knows and has eaten	679
Total farmers	700

Know 1000 day food requirement

Does not know	594
Knows partly	99
Knows well	7
Total farmers	700

Know 1000 day food requirement

Does not know	-
Knows partly	10
Knows well	690
Total farmers	700

Days per week eat meat

Average	0.8
Min	-
Max	3

Days per week eat meat

Average	1.5
Min	1
Max	5

Days per week eat fish

Average	2.8
Min	-
Max	6

Days per week eat fish

Average	4.5
Min	1
Max	6

Days per week eat eggs

Average	1.1
Min	-
Max	4

Days per week eat eggs

Average	1.8
Min	1
Max	5

Days per week eat fruit

Average	0.9
Min	-
Max	5

Days per week eat fruit

Average	2.2
Min	1
Max	6

Amount vegetables per week (gram)

Average	1,041
Min	-
Max	3,500

Amount vegetables per week (gram)

Average	2,296
Min	1
Max	3,580

Watch Mati-o-manush

Never	492
Sometimes	206
Always	2
Total farmers	700

Watch Mati-o-manush

Never	30
Sometimes	596
Always	74
Total farmers	700

Annex 3 Patuakhali

FFS modules: Poultry, Homestead garden, Nutrition

Benchmark data of 28 FFSs (Cycle 8)
600 records (data of 4 FFS were lost)

End data of 28 FFS (Cycle 8)
700 records

GENERAL INFO PARTICIPANTS

Polder

Polder 55/2A count	200
Polder 55/2C count	400
Polder total count	600

Polder

Polder 55/2A count	300
Polder 55/2C count	400
Polder total count	700

Age

Average age	36
Median age	35
Youngest	18
Oldest	60
Total farmers	600

Age

Average age	36
Median age	35
Youngest	16
Oldest	60
Total farmers	700

Gender

Men	70
Women	530
Total	600
Percentage women	88

Gender

Men	78
Women	622
Total	700
Percentage women	89

Education

Illiterate	27
Can sign	125
Primary	282
Secondary	133
HCC and above	33
Total	600

Education

Illiterate	9
Can sign	182
Primary	335
Secondary	144
HCC and above	30
Total	700

WMG member

Member	497
Not member	103
Total	600

WMG member

Member	692
Not member	8
Total	700

Area agriculture (decimal)

Average	78
Median	60
Zero area (0 decimal)	66
Landless (<50 decimal)	225
Not landless (>=50 decimal)	375
Total	600
Percentage zero area	11
Percentage landless	38
Percentage not landless	63
Min area (decimal)	-
Max area (decimal)	480
Total area	46,885
Households with land (>0 ha)	534
Average area for HH with land	88

Area agriculture (decimal)

Average	85
Median	60
Zero area (0 decimal)	73
Landless (<50 decimal)	248
Not landless (>=50 decimal)	452
Total	700
Percentage zero area	10
Percentage landless	35
Percentage not landless	65
Min area (decimal)	-
Max area (decimal)	480
Total area	59,528
Households with land (>0 ha)	627
Average area for HH with land	95

Area homestead (decimal)

Average	22
Median	20
Min	4
Max	90
Zero area (num farmers)	-
Total	600

Area homestead (decimal)

Average	22
Median	20
Min	-
Max	90
Zero area (num farmers)	1
Total	700

VEGETABLES & FRUITS

VEGETABLES & FRUITS

Grows vegetables

Yes	521
No	79
Total	600

Grows vegetables

Yes	700
No	-
Total	700

Vegetables

Gourds	473
Brinjal	174
Leafy vegetables	348
Ladies finger	73
Cabbage / Cauliflower	8
Radish	146
Tomato	72
Aroids	17
Drumstick	3
Other vegetables	211
Total farmers	521

Vegetables

Gourds	696
Brinjal	689
Leafy vegetables	693
Ladies finger	524
Cabbage / Cauliflower	224
Radish	696
Tomato	678
Aroids	415
Drumstick	9
Other vegetables	525
Total farmers	700

Number of vegetables grown

Min	-
Max	7
Average	2.5
Total	600

Number of vegetables grown

Min	5
Max	10
Average	7.4
Total	700

What happens with the vegetables

Sell none	440
Sell less than half	75
Sell and eat about half	4
Sell more than half	2
Sell all	-
Total	521

What happens with the vegetables

Sell none	53
Sell less than half	247
Sell and eat about half	321
Sell more than half	76
Sell all	3
Total	700

Vegetable locations

Sunny open place	446
Shady place	145
Wet marshy land	57
Hedges and fences	130
Roof	83
Pond side	148
Macha	194
Pond side macha	76
Pots	5
Other places	205
Total farmers	521

Vegetable locations

Sunny open place	682
Shady place	562
Wet marshy land	482
Hedges and fences	625
Roof	583
Pond side	610
Macha	616
Pond side macha	586
Pots	115
Other places	571
Total farmers	700

Number of vegetable locations used

Min	-
Max	8
Average	2.5
Total	600

Number of vegetable locations used

Min	3
Max	10
Average	7.8
Total	700

Seeds from

Own seeds	469
DAE	1
BADC	1
NGO	1
Company	3
Market	404
Neighbours	138
Total farmers	521

Seeds from

Own seeds	686
DAE	132
BADC	68
NGO	479
Company	395
Market	618
Neighbours	450
Total farmers	700

Fertilizer use

Use no fertilizers	194
Use some fertilizers	327
Total	521

Fertilizer use

Use no fertilizers	3
Use some fertilizers	697
Total	700

Type of fertilizers used

Urea	285
TSP	253
MOP	55
Gypsum	5
Zinc	-
Cowdung	219
Chicken manure	33
FYM	1
Compost	-
Total farmers	327

Type of fertilizer used

Urea	685
TSP	675
MOP	675
Gypsum	238
Zinc	155
Cowdung	663
Chicken manure	660
FYM	646
Compost	184
Total farmers	697

Have fruit trees

Yes	545
No	55
Total	600

Have fruit trees

Yes	654
No	46
Total	700

Fruit trees (total trees all farmers)

Total mango	1,839
Grafted mango	135
Total litchi	295
Grafted litchi	71
Total lemon	640
Grafted lemon	132
Total guava	1,889
Grafted guava	105
Total jujube	324
Grafted jujube	34
Total sapodilla	35
Grafted sapodilla	7
Total jackfruit	1,709
Total blackberry	122
Total coconut	1,954
Total date palm	452
Total palm tree	902
Total papaya	682
Total banana	4,232
Other fruit trees	815
Total farmers	545

Fruit trees (total trees all farmers)

Total mango	2,634
Grafted mango	252
Total litchi	456
Grafted litchi	116
Total lemon	806
Grafted lemon	161
Total guava	2,327
Grafted guava	194
Total jujube	433
Grafted jujube	55
Total sapodilla	54
Grafted sapodilla	10
Total jackfruit	2,103
Total blackberry	203
Total coconut	2,530
Total date palm	822
Total palm tree	1,003
Total papaya	2,059
Total banana	7,428
Other fruit trees	1,216
Total farmers	654

Fruit trees (average per farmer)

Total mango	3.4	Total mango	4.0
Grafted mango	0.2	Grafted mango	0.4
Total litchi	0.5	Total litchi	0.7
Grafted litchi	0.1	Grafted litchi	0.2
Total lemon	1.2	Total lemon	1.2
Grafted lemon	0.2	Grafted lemon	0.2
Total guava	3.5	Total guava	3.6
Grafted guava	0.2	Grafted guava	0.3
Total jujube	0.6	Total jujube	0.7
Grafted jujube	0.1	Grafted jujube	0.1
Total sapodilla	0.1	Total sapodilla	0.1
Grafted sapodilla	0.0	Grafted sapodilla	0.0
Total jackfruit	3.1	Total jackfruit	3.2
Total blackberry	0.2	Total blackberry	0.3
Total coconut	3.6	Total coconut	3.9
Total date palm	0.8	Total date palm	1.3
Total palm tree	1.7	Total palm tree	1.5
Total papaya	1.3	Total papaya	3.1
Total banana	7.8	Total banana	11.4
Other fruit trees	1.5	Other fruit trees	1.9
Total farmers	545	Total farmers	654

Count fruit trees

Total	15,890	Total	24,235
Average	26.5	Average	34.6
Min	-	Min	-
Max	135	Max	153
Total farmers	600	Total farmers	700

Pest management

Do nothing	346	Do nothing	3
Use chemicals	254	Use chemicals	12
Use IPM	-	Use IPM	685
Total farmers	600	Total farmers	700

Pesticide cost

No money used on pesticides	1	No money used on pesticides	195
Used money for pesticides	253	Used money for pesticides	502
Total farmers	600	Total farmers	700

How much money used

Total	93,190	Total	107,561
Average (of farmers doing pest managem	368	Average (of farmers doing pest managem	214
Average (of all farmers)	155	Average (of all farmers)	154
Max	3,000	Max	1,800

FYM

No pit	595	No pit	33
Pit without shade	5	Pit without shade	530
Pit with shade	-	Pit with shade	137
Total farmers	600	Total farmers	700

Use fertilizer on fruit trees

Use fertilizers	11
No fertilizers	534
Total who have fruit trees	545

Use fertilizer on fruit trees

Use fertilizers	629
No fertilizers	25
Total who have fruit trees	654

POULTRY

POULTRY

Number of chicken

Max chicken	33
Min chicken	-
Farmers with chicken	557
Farmers without chicken	43
Total farmers	600
Total chicken	1,883
Average chicken (of farmers with chicken)	3.4
Average chicken (of all farmers)	3.1

Number of chicken

Max chicken	60
Min chicken	-
Farmers with chicken	699
Farmers without chicken	1
Total farmers	700
Total chicken	7,295
Average chicken (of farmers with chicken)	10.4
Average chicken (of all farmers)	10.4

Number of chicks

Max chicks	30
Min chicks	-
Farmers with chicks	371
Farmers without chicks	229
Total farmers	600
Total chicks	2,838
Average chicks (of farmers with chicks)	7.6
Average chicks (of all farmers)	4.7

Number of chicks

Max chicks	130
Min chicks	-
Farmers with chicks	686
Farmers without chicks	14
Total farmers	700
Total chicks	14,499
Average chicks (of farmers with chicks)	21.1
Average chicks (of all farmers)	20.7

Number of ducks

Max ducks	25
Min ducks	-
Farmers with ducks	512
Farmers without ducks	88
Total farmers	600
Total ducks	2,204
Average ducks (of farmers with ducks)	4.3
Average ducks (of all farmers)	3.7

Number of ducks

Max ducks	150
Min ducks	-
Farmers with ducks	686
Farmers without ducks	14
Total farmers	700
Total ducks	5,891
Average ducks (of farmers with ducks)	8.6
Average ducks (of all farmers)	8.4

Number of ducklings

Max ducklings	14
Min ducklings	-
Farmers with ducklings	49
Farmers without ducklings	551
Total farmers	600
Total ducklings	268
Average ducklings (of farmers with ducklings)	5.5
Average ducklings (of all farmers)	0.4

Number of ducklings

Max ducklings	58
Min ducklings	-
Farmers with ducklings	696
Farmers without ducklings	4
Total farmers	700
Total ducklings	9,615
Average ducklings (of farmers with ducklings)	13.8
Average ducklings (of all farmers)	13.7

Eggs per hen per year

Max	65
Min	-
Average	41

Eggs per hen per year

Max	150
Min	5
Average	92

Eggs per duck per year

Max	82
Min	-
Average	49

Eggs per duck per year

Max	120
Min	8
Average	87

Own egg consumption per week

Max	23
Min	-
Total	1,862
Average	3.1
Farmers eat own eggs	536
Farmers not eat own eggs	64
Total farmers	600

Own egg consumption per week

Max	20
Min	1
Total	4,936
Average	7.1
Farmers eat own eggs	700
Farmers not eat own eggs	-
Total farmers	700

Own poultry concumption per month

Max	11
Min	-
Total	467
Average	0.8
Farmers eat own poultry	386
Farmers not eat own poultry	214
Total farmers	600

Own poultry concumption per month

Max	15
Min	-
Total	998
Average	1.4
Farmers eat own poultry	695
Farmers not eat own poultry	5
Total farmers	700

Eggs sold per month

Max	152
Min	-
Total	1,526
Average	2.5
Farmers selling eggs	164
Farmers not selling eggs	436
Total farmers	600

Eggs sold per month

Max	250
Min	-
Total	18,909
Average	27.0
Farmers selling eggs	652
Farmers not selling eggs	48
Total farmers	700

Poultry sold per year

Max	38
Min	-
Total	2,448
Average	4.1
Farmers selling poultry	252
Farmers not selling poultry	348
Total farmers	600

Poultry sold per year

Max	180
Min	-
Total	14,266
Average	20.4
Farmers selling poultry	662
Farmers not selling poultry	38
Total farmers	700

Poultry vaccinated

Never	574
Sometimes	25
Always	1
Total farmers	600

Poultry vaccinated

Never	31
Sometimes	186
Always	483
Total farmers	700

Hazal

Yes	1
No	599
Total farmers	600

Hazal

Yes	691
No	9
Total farmers	700

Chick separation

After 1 week	6
After 2 weeks	-
After 3 weeks	-
After 4 weeks	1
Never	593
Total farmers	600

Chick separation

After 1 week	330
After 2 weeks	355
After 3 weeks	11
After 4 weeks	-
Never	4
Total farmers	700

Candling

Yes	9
No	591
Total farmers	600

Candling

Yes	699
No	1
Total farmers	700

NUTRITION

NUTRITION

Know cooking process

Does not know	394
Knows partly	166
Knows fully	40
Total farmers	600

Know cooking process

Does not know	2
Knows partly	67
Knows fully	631
Total farmers	700

Know Moringa is healthy

Does not know	594
Knows but did not eat	5
Knows and has eaten	1
Total farmers	600

Know Moringa is healthy

Does not know	5
Knows but did not eat	594
Knows and has eaten	101
Total farmers	700

Know 1000 day food requirement

Does not know	464
Knows partly	135
Knows well	1
Total farmers	600

Know 1000 day food requirement

Does not know	1
Knows partly	59
Knows well	640
Total farmers	700

Days per week eat meat

Average	0.7
Min	-
Max	3

Days per week eat meat

Average	1.1
Min	-
Max	3

Days per week eat fish

Average	1.3
Min	-
Max	4

Days per week eat fish

Average	2.6
Min	-
Max	5

Days per week eat eggs

Average	1.1
Min	-
Max	3

Days per week eat eggs

Average	2.2
Min	-
Max	5

Days per week eat fruit

Average	0.8
Min	-
Max	3

Days per week eat fruit

Average	2.0
Min	-
Max	6

Amount vegetables per week (gram)

Average	1,085
Min	-
Max	2,600

Amount vegetables per week (gram)

Average	2,109
Min	800
Max	3,500

Watch Mati-o-manush

Never	573
Sometimes	26
Always	1
Total farmers	600

Watch Mati-o-manush

Never	454
Sometimes	244
Always	2
Total farmers	700

Annex 4 Locations of 64 FFS in Cycle 8

Satkhira, Khulna, Patuakhali
October 2016 - March 2017

FFS ID	WMG	Polder	Union name	Upazila name	Facilitator 1
447	Baradal Baghdangi	2	Dhulihar	Satkhira Sadar	Asma
448	Baradal Paschim Para	2	Dhulihar	Satkhira Sadar	Asma
449	Guddir Beeler khal	2	Bramharajpur	Satkhira Sadar	Asma
450	Purba Kochuar Beeler khal	2	Bramharajpur	Satkhira Sadar	Asma
451	Darar khal	2	Dhulihar	Satkhira Sadar	Zahida
452	Kochuar Beeler khal	2	Bramharajpur	Satkhira Sadar	Zahida
453	Paschim Chelar Beeler khal	2	Fingri	Satkhira Sadar	Zahida
454	Hazikhali khal	2	Dhulihar	Satkhira Sadar	Zahida
455	Baluigachha Dhulihar	2	Dhulihar	Satkhira Sadar	Popi
456	Chelar Beeler khal	2	Bramharajpur	Satkhira Sadar	Popi
457	Sana Para	2	Dhulihar	Satkhira Sadar	Popi
458	Suparighata O Sana Para	2	Dhulihar	Satkhira Sadar	Popi
459	Amodkhali khal	2	Dhulihar	Satkhira Sadar	Mijan
460	Madhya Adahrmanik Khal	2	Dhulihar	Satkhira Sadar	Mijan
461	Purba Amodkhali khal	2	Dhulihar	Satkhira Sadar	Mijan
462	Uttar Palechand khal	2	Dhulihar	Satkhira Sadar	Mijan
463	Dakshin Buramara	2	Fingri	Satkhira Sadar	Rasel
464	Jhiyar khal	2	Fingri	Satkhira Sadar	Rasel
465	Pallerchand khal	2	Fingri	Satkhira Sadar	Rasel
466	Purba Buramara khal	2	Fingri	Satkhira Sadar	Rasel
467	Budhhata Dakshinpara Bakri Beeler khal	2	Budhata	Assasuni	Feroj
468	Budhhata Paschim Para	2	Budhata	Assasuni	Feroj
469	Dhelkhola khal	2	Budhata	Assasuni	Feroj
470	Kulla Amodkhali khal	2	Kulla	Assasuni	Feroj
471	Addarmani khal	2	Budhata	Assasuni	Zakir
472	Jordia Eru khal	2	Fingri	Satkhira Sadar	Zakir
473	Nobadkhali khal	2	Budhata	Assasuni	Zakir
474	Naoa Para	2	Budhata	Assasuni	Zakir
475	Thandamari Khal	31-part	Surkhali	Batiaghata	Nasir
476	Ralla	31-part	Surkhali	Batiaghata	Sabina
477	Mailmara	30	Batiaghata	Batiaghata	Salam
478	Boyarbhanga Purba	30	Gangarampur	Batiaghata	Nasima
479	Bara Aria	29	Surkhali	Batiaghata	Monalisa
480	Sambhunagar	29	Surkhali	Batiaghata	Hafsa
481	Patibunia	26	Sobhana	Dumuria	Shahidul
482	Kadomtala	26	Sobhana	Dumuria	Waliullah
483	Char Moishadi Sluice	55/2A	Kamalapur	Patuakhali Sadar	Zabber
484	Dakshin Dharandi Bazar Sluice gate	55/2A	Kamalapur	Patuakhali Sadar	Zabber
485	Bot-O-Char Balaikati Krokmohal	55/2A	Kamalapur	Patuakhali Sadar	Zabber
486	Dharandi Kamalapur Adarsha	55/2A	Kamalapur	Patuakhali Sadar	Zabber
487	Hazirahat Sluice	55/2A	Adabaria	Bauphal	Rohima
488	Noamala Niz Botkazal Bhangra	55/2A	Noamala	Bauphal	Rohima
489	Akhoibaria Baher Mouz	55/2A	Kamalapur	Patuakhali Sadar	Rohima
490	Patabunia	55/2A	Bakulbaria	Galachipa	Rohima
491	Sankipur Moishadi Naomala Adarsha	55/2A	Noamala	Bauphal	Nahar
492	Betagi Chikerbandh	55/2A	Betagi Sankipura	Dashmina	Nahar
493	Chownkhola Lobi-lochan Lamna	55/2A	Bakulbaria	Galachipa	Nahar
494	Kharija Betagi Sluice	55/2A	Betagi Sankipura	Dashmina	Nahar
495	Sutabaria Khal	55/2C	Chiknikandi	Galachipa	Nargis

496	Bashabaria Khal	55/2C	Kalagachhia	Galachipa	Nargis
497	Kachua-Mohisdanga Khal	55/2C	Chiknikandi	Galachipa	Nargis
498	Bhadrabariar Khal	55/2C	Kalagachhia	Galachipa	Nargis
499	Chilar Khal	55/2C	Kalagachhia	Galachipa	Aklima
500	Kharizzama Khal	55/2C	Kalagachhia	Galachipa	Aklima
501	Kalyakalash Prodhan Khal	55/2C	Kalagachhia	Galachipa	Aklima
502	Ulashir Khal	55/2C	Bakulbaria	Galachipa	Aklima
503	Katakhali Khal	55/2C	Kalagachhia	Galachipa	Eusuf
504	Kamarkhali Khal	55/2C	Bakulbaria	Galachipa	Eusuf
505	Bakulbaria-Kharizza Betagi Sonamiar Khal	55/2C	Betagi Sankipura	Dashmina	Eusuf
506	Lamna-Guabaria Khal	55/2C	Bakulbaria	Galachipa	Eusuf
507	Guabaria-Ranuar Khal	55/2C	Bakulbaria	Galachipa	Basar
508	Budaram Khal	55/2C	Alipura	Satkhira Sadar	Basar
509	Rohitpura Khal	55/2C	Alipura	Satkhira Sadar	Basar
510	Madhupura-Denath Khan Khal	55/2C	Alipura	Satkhira Sadar	Basar