

Char Development and Settlement Project Phase IV Bangladesh

Annual Outcome Survey 2013

Technical Report No 7

April 2014

Government of Bangladesh / IFAD / Government of the Netherlands

Implementing Government Agencies:

- Bangladesh Water Development Board (BWDB)
- Ministry of Land (MoL)
- Local Government Engineering Department (LGED)
- Department of Public Health Engineering (DPHE)
- Department of Agriculture Extension (DAE)
- Forest Department (FD)
and NGOs

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1. Introduction

As part of the M&E systems of CDSP-IV the annual outcome monitoring survey gathers more detailed information on log frame goal and purpose level indicators (plus a couple of output indicators– see below). This survey also covers CDSP I, II and III areas and incorporates indicators that have been covered in past CDSP III monitoring surveys (land tenure and retention, cropping intensity, and coverage of HYV paddy varieties). This enables the CDSP data-set for these indicators to be continued and the long term development and sustainability of benefits in older CDSP chars to be measured. As conditions in CDSP I, II and III areas are better than in CDSP IV, they act as control area in terms of measurement of the rate of change. The survey is carried out on an annual basis. This provides continuous information on project outcomes and helps avoid relying on results from a single year with abnormal weather or other external events. Annual surveys also provide evidence for RIMS level II performance ratings.

Table 1.1 Indicators for outcome monitoring survey

Impact	Indicators	Data to be collected
Goal	* No. of HH with improved food security disaggregated by gender of HH head	Months of food scarcity Frequency of consumption of meat, eggs, milk
	* No. of HH with improved water & sanitation disaggregated by gender of HH head	Distance to potable water source, own sanitary latrines, use sanitary latrines
	* No. of HH with improved housing disaggregated by gender of HH head	Materials for construction of roof and walls, number of rooms, number of times of flooding each year
	* No. of HH and number of assets owned disaggregated by gender of HH head	Ownership/ tenure of land, livestock, farm equipment, boats, vehicles, furniture, radio, TV
	No. of HH with women owning assets, and with increased mobility	Land and livestock owned Frequency of visits to market, town, hospitals
	Household expenditure	Annual expenditure on housing, health, festivals and education Annual expenditure on clothing by male and female HH members
Outcome	* Increase in crop production and sales of crops	No. of HH reporting increased crop production and sales Area, cropping intensity, yield, and sales of key crops Area of HYV paddy Months of food supply derived from own land
	Increase in livestock ownership	Number of households owning livestock and numbers owned by type of livestock. Number of households selling livestock products and value of sales
	Increase in number of homestead trees	Number of trees (timber, fruit) owned.
	* Income and employment	No. of people (m/f) in each household earning an income, sources of income (occupational mobility index). Numbers migrating out. Amount of cash income earned each year.
	Improved communications	Reduction in travel time to education and health facilities
	No. of HH maintaining possession of land.	Area of land occupied, status of land title. No. of HH still in occupation each year following granting of title.
Output	* Reduced salinity and flooding of land	No. of HH reporting reduced salinity and flooding
	No. of new enterprises and employment created.	Sales of homestead enterprises

* log frame indicators

1.1 Objective of the survey

1. To gather information on purpose and goal level log frame indicators, which are not covered adequately by RIMS Impact monitoring.

2. In particular outcome monitoring aims to collect evidence for a “results chain” with changes in physical environment and/ or improved technology, leading to changes in cropping patterns, resulting in increased crop yields and/ or income, which in turn results in increased sales and improved food security, leading finally to reduced poverty.
3. In addition outcome surveys also gather information on the project services received by respondents.

1.2 Sampling procedure

The sample for this survey is 200 households in each of the three areas (CDSP I/II, CDSP III and CDSP IV) making a total sample of 600. The sample is a ‘panel sample’ with the same households being visited each survey round, which minimises sample errors caused by variations in the sample composition in each survey round.

Table 1.2 Sample distribution

Area	Total Number of samples	Union/Char	Village/Somaj	Nos. of Sample HH			
CDSP I&II	200	Char Bata	Char Majid	22			
			Purbo Char Bata	24			
			Poshchim Char Bata	20			
		Char Jabbar	Char Jabbar	14			
			Char Jublee	Modhya Char Bagga	18		
		Char Elahi	Char Mohiuddin	20			
			Gangchil	20			
			Char Kalmi	20			
			Char Clark	Baisakhai	20		
			Shudolpur	Nobogram	22		
		CDSP III	200	Horni Union	Poshchim Gabtoli Adorsho Gram	9	
					Shahab Uddin Shop	20	
					Mirajpur	21	
					Mohammadpur	10	
Molla Gram	20						
Adorsho Gram	20						
East 10 Number	20						
Forest Center	20						
Ali Bazar	32						
South Katakhal	28						
CDSP-IV	200				Char Nangulia	Alamin Somaj	14
						4 no. ward	14
						Haji Gram	7
		Nasirpur	14				
		Rani Gram	7				
		Poshchim Char Basar	14				
		Ismail Bazar	14				
		Noler Char	Al Amin Somaj	7			
			Dokshin Azim Nagar	14			
			Dokshin Mojlshpur Killer Bazar	14			
		Caring Char	North Musapue	7			
			Joypur Somaj	14			
			Krishno Nagar Somaj	14			
			Shahebani Bazar	14			
		Char Ziauddin	Ziauddin Bazar	8			
			Sofi Neta Somaj	8			
		Urir Char	Coloni Bazar Moshjid Somaj	8			
Janata Bazar Moshjid Somaj	8						

1.3 Survey questionnaire

In order to fulfil the survey objectives, a household survey questionnaire was carefully prepared for the base line survey. For the present survey the questionnaire was slightly modified (see Annex 1 for the questionnaire).

1.4 Field data collection and data analysis

During November-December 2013 data have been collected from the field by six (4-male, 2-female) hired enumerators along with two M&E Officers of CDSP-IV. The enumerators were trained on the survey questionnaire. After computerization of the collected data, analysis has been done using MS Access and SPSS during January 2014.

2. Results and discussion

2.1 Settlement status

In the CDSP-IV area the settlement activities have not yet been completed; the first part of the settlement activities, the Plot to Plot Survey (PTPS), is still going on. In CDSP- I , II and III areas some people have settled by purchasing land from CDSP settlers, often a part of the allocated land. The figures are 23% and 17% in CDSP-I&II and CDSP-III areas respectively. This is a change from the baseline survey of 17% in CDSP III; no change in CDSP I&II. This issue needs further investigation; selling of newly received land is not allowed.

Table 2.1 Settlement Status (% of HH)

	CDSP-I & II	CDSP-III	CDSP-IV
Settled under CDSP settlement program	73	83	-
Settled through purchasing land	23	17	-
Occupying <i>khas</i> land	-	-	100
Inherited	4	-	-

2.2 Changes in occupational profile of the respondents

A comparison of principle occupation of the household heads between CDSP-IV baseline and present status of CDSP phases is given in Table 2. The principle occupation is the one which provides the main part of their annual income. The principle occupation in all areas is mainly in agriculture and day labour. Comparison of the situation of the CDSP-IV baseline and the present status shows very interesting results. The proportion of household heads involved with agriculture as a principle occupation has increased in all the areas, most notably in the CDSP-IV areas it has remarkably increased (from 37% to 45%).

Table 2.2 Principle occupation of household head (%)

	CDSP-IV Baseline	CDSP-I & II	CDSP-III	CDSP-IV
Agriculture	37	34	30	45
Day Labour	31	20	17	29
House keeping	3	3	1	2
Fisherman	3	2	5	5
Job	3	13	5	2
Petty trading	9	12	22	9
Rickshaw/ Van/ Boat puller	4	1	3	4
Old age	6	3	4	3
Others	5	12	13	2

2.3 Changes in housing patterns of the households

The average size of the main houses observed in the CDSP-I&II, CDSP-III and CDSP-IV areas is 416, 403 and 294 square feet respectively. This is 64%, 59% and 16% bigger than during the CDSP-IV baseline size respectively. No changes have been observed in all areas in the floor type of the house, which is mainly the mud floor. A remarkable change is observed regarding the wall and the roof: An increase with 30% and 27% for both tin made wall and roof! Details are given below in Table 3.

Table 2.3 Housing Condition

	CDSP-IV Baseline	CDSP-I,II	CDSP-III	CDSP-IV
Average size of main house (sq. ft)	253	416	403	294
Type of floor (%)				
Mud	99	93	96	98
Bricks	1		2	1
Pacca	-	7	2	1
Type of Wall (%)				
Leaf	4	1	3	6
Straw	34	0	4	15
Mud	0	0	0	1
Bamboo	50	32	29	35
Tin	13	64	61	43
Pacca	0	3	3	0
Type of Roof (%)				
Leaf	2	1	5	2
Straw	82	7	24	55
Tin	16	90	71	43
Pacca	0	2	0	0

2.4 Changes in water and sanitation status

The incidence of household drinking water sources has increased compared to the baseline situation. Now 55% households from CDSP-IV area collect drinking water from deep tube wells installed by CDSP-IV. The important change is that earlier they collect water on an average 345 meter and 418 meter in the dry and rainy seasons respectively. Now the average distance is 112 and 133 meter in the dry and rainy seasons respectively. It saves time for collecting drinking water specially for the women of the households.

Table 2.4 Water and sanitation

	Baseline CDSP IV	CDSP-I,II	CDSP-III	CDSP-IV
Source of Drinking Water (%)				
Shallow Tube well	3	33	26	2
Deep Tube well	96	64	84	97
Dug well	0	0	0	0
Rain Water	0	0	0	0
Pond Sand Filter	0	3	0	0
Untreated pond water	2	0	0	1
River/Canal water	0	0	0	0
Ownership of tube well (%)				
Owned by HH	5	18	18	3
Jointly owned	5	3	1	0
Neighbour	27	35	8	8
Govt./Community	63	20	11	35
From CDSP	0	25	63	55

Distance of water sources				
Dry Season (meter)	345	60	74	112
Rainy Season (meter)	418	87	81	133
Type of latrine used by HH (%)				
No latrine	5	0	1	3
Hanging/open	77	15	11	36
Ring slab (unhygienic)	14	46	60	29
Hygienic	6	40	28	33
Source of ring slab or hygienic latrine				
Purchased from market	61	62	27	22
Purchased from NGO/other organization	8	1	0	0
Donated by GO/NGO/other organization	31	5	3	11
Installed by CDSP	0	32	70	68

It is observed from the analysis that the use of ring slab and hygienic latrine has doubled compared to the baseline situation. But it is alarming that in the CDSP older phase areas 11-15% of households are using open latrine and in CDSP-IV area it is still 36%. Sixty eight percent of the households received a sanitary latrine from CDSP-IV. It is hope that by the end of the year 2014 most of the household of CDSP-IV area.

2.5 Changes in health and family planning issues

The study investigated four areas of health practices of the char dwellers. One is washing hands before taking food and after returning from latrine, the immunization of the children, regular visits of Community Health Workers and use of family planning method. Compared to the baseline of CDSP-IV very little changes have taken place last two years regarding washing hands before taking food and after return from latrine and also not regarding the children immunization. The situation of CDSP older phase areas has improved slightly but is not up to the mark. On the other hand the visits of Health Workers to the community has increased compared to the CDSP-IV baseline situation and it is also notable that the CDSP-IV area is in a better position compared to the older phases areas. It is due to the intensive support from the CDSP-IV partner NGOs (Table 5 and 6). It has to be noted that the visits of the health workers had yet no impact on the health situation!

Table 2.5 Washing hands before taking food and after return from latrine (%)

	Baseline	CDSP-I,II	CDSP-III	CDSP-IV
Washing hand before taking food				
Wash by plain water	96	82	91	91
Wash by Soap	04	18	9	9
Washing hand after return from latrine				
Wash by plain water	94	39	57	68
Wash by soap	0	35	19	11
Wash by ash	6	26	25	21

Table 2.6 Health and family planning

	CDSP-IV Baseline	CDSP-I,II	CDSP-III	CDSP-IV
Immunization of the children (% of HH)				
Yes	52	82	71	57
No	48	19	29	43
Regular visit of Govt./NGO health worker in the community (% of HH)				
Yes	6	59	57	89
No	94	41	43	11
Use of Family Planning Method (% of HH)				
No	66	18	9	13

Temporary method	32	79	89	82
Permanent method	2	3	2	5

2.6 Household assets

A long list of family assets was examined including furniture, electrical and electronic goods, gold, agricultural and fishing instruments, transport, trees and poultry and livestock (Table 7). Average assets value in CDSP older phases are three times more compared to the CDSP-IV baseline situation. Average assets value in CDSP IV increased around 75% compared to the baseline data in CDSP-IV area. Major increment of the assets in CDSP-IV area is observed in case of mobile phone, ornaments (gold), trees and solar panel.

Table 2.7 Household assets (households in percent and value in taka)

Assets	Baseline		CDSP-I,II		CDSP-III		CDSP-IV	
	HH	Value	HH	Value	HH	Value	HH	Value
Cot/ Khaat	90	1,411	97.0	3,145	95.0	3,398	93.5	2,139
Almira	05	2,540	45.0	2,838	33.5	3,434	14.0	2,435
Chair/Table	28	1,061	79.0	1,680	68.5	1,945	50.0	1260
Shinduk (Wooden box)/Trunk (Tin)	36	1,990	53.0	1,654	49.0	2,316	52.0	2,118
Alna	22	1,113	41.0	701	28.0	767	10.0	725
Ceiling/Table Fan	.21	833	7.5	1,620	5.0	810	1.5	900
Radio/Cassette Player	01	421	0.0	0	0.0	0	0.0	0
B&W TV	.71	4,120	7.5	2,400	5.0	3,000	1.0	3,250
Color TV	0	0	3.5	4,285	1.5	4,333	0.0	0
Mobile Phone	46	1,984	79.5	2,546	82.0	2,700	78.5	2,400
Sewing machine	02	4,013	4.5	2,644	3.5	3,828	4.0	6,625
Ornaments	54	6,687	90.0	15,598	92.5	14,449	89.0	10,780
Bicycle	07	2,962	24.5	2,952	20.5	2,307	15.5	2,970
Rickshaw/Van	01	5,900	5.0	4,900	2.5	5,000	3.0	4,083
Boat	.49	9,500	0.0	0	2.0	13,750	0.5	7,000
Motor Cycle	0	0	5.0	52000	4.5	86,111	1.5	45,666
Auto Rickshaw	0	0	0.5	100000	0.0	0	0.0	0
Solar	0	0	35.0	26657	29.5	32,728	17.5	27,343
Mechanized boat	01	94,928	0.5	70000	3.5	102,142	2.5	44,000
Power tiller/Husking Machine	03	26,155	3.0	129,500	4.0	28,462	2.0	41,250
Pump Machine	0	0	1.0	12,500	0.5	8,000	1.5	13,000
Fishing net	40	3,377	41.0	2,082	57.5	3,183	63.5	3,014
Trees	24	10,765	94.0	38,301	89.5	31,463	84.5	13,453
Cow	61	23,328	41.0	34,893	57.0	32,542	63.0	32,513
Buffalo	02	216,204	0.0	0	1.0	75,000	1.0	3,725
Goat	36	3,533	19.5	3,458	26.0	2,938	21.5	2,765
Sheep	01	21,988	1.5	7483	0.0	0	0.0	0
Chicken	90	903	91.5	1,136	90.0	1,108	92.5	1,390
Duck	81	1,269	79.0	1,310	86.0	1,424	83.0	1,877
Others	-	35,162	6.5	16,503	11.5	2,791	7.0	1,471
All (average)	-	35,162		96,306		94,780		61,485

2.7 Changes in household annual income from different sources

The following table shows the average annual income of the households from different sources. The average annual incomes of the sampled households are at present 123,071, 110,016 and 107,771 in CDSP- I&II, CDSP-III and CDSP-IV areas respectively. Compared with the CDSP-IV baseline data the annual household income in the CDSP- I & II area is 70% more, in the CDSP-III 50% more and the CDSP-IV area it is 48% more. It is also observed

that in the CDSP-IV area the contribution of wage/ salary in the annual household income has decreased and contribution from field crops and pond aquaculture and poultry income has increased remarkably compared to the baseline situation (Table 8).

Table 2.8 Annual household income from different sources

	CDSP-IV Baseline	CDSP-I &II	CDSP-III	CDSP-IV
Wage/Salary	33,378	45,526	29,605	29,788
Field Crops	15,617	19,597	20,930	20,031
Petty Trading	6,879	20,520	19,490	17,510
Homestead Gardening	3,115	3,734	6,007	7,721
Rickshaw/Van Pulling	2,749	2,400	725	1,325
Pond Aquaculture	2,713	7,526	7,920	10,483
Livestock Rearing	2,666	2,626	3,511	5,065
Fishing/PL Catching	2,093	4,065	4,080	5,607
Poultry Rearing	1,887	8,547	8,038	8,326
Remittance	601	7,600	9,250	1620
Handicrafts	252	930	460	295
Total	71,951	123,071	110,016	107,771

2.8 Field crop cultivation

2.8.1 Changes in cropping Intensity

The average cropping intensity of the CDSP older phases is 151% (47% more than the CDSP-IV baseline) and 153% (48% more than the CDSP-IV baseline survey) in the CDSP-I & II and CDSP-III areas respectively. Compared to the CCDSP-IV baseline, cropping intensity has also increased in CDSP-IV area at 31%. This is due to the more area coverage with *amon* and other cash crops during *robi* season. Table 9 also shows that rice cultivation in Boro/ Robi season is almost absent in all areas. This is due to the high salinity during the dry season and lack of irrigation facilities in the new chars.

Table 2.9 Cropping intensity and average area by crops

	CDSP-IV Baseline	CDSP-I &II	CDSP-III	CDSP-IV
Average cultivable land (Deci) per family	154	115	101	126
Average cultivated land (Deci) per family	163	174	155	174
Cropping intensity (%)	105	151	153	138
Average cultivated land by crop				
Aush (HH in %)	06	17	39	13
Average area (Deci)	98	82	78	86
Amon (HH in %)	87	64	69	74
Average area (Deci)	165	156	134	155
Boro/Robi (HH in %)	01	13	8	3
Average area (Deci)	98	119	71	215
Other cash crop (HH in %)	24	45	36	37
Average area (Deci)	53	35	39	41

2.8.2 Changes in average production, consumption and sale of field crops

The average production per hectare (yield) of rice is given in kg and for pulse and other crops in taka (Table 10). The production rate (yield) of other crops like pulse, oil seed, ground nut and water melon etc are difficult to measure because of the different productivity and the farmers can't clearly estimate the total production in units. So the production and income of other crops is presented in the following table in taka. Average rice production per hectare is 2.1 MT, which is 0.2 MT more than the CDSP-IV baseline yield. Average yield in CDSP-I & II and CDSP-III areas are 2.9 and 2.6 MT, around 52% and 31% higher than the CDSP-IV baseline yield respectively. Besides the few HYV demonstration plots demonstrated by the DAE under the CDSP-IV program, still the CDSP-IV areas farmers cultivating the local variety namely *Rajashail*. Consumption of both rice and pulses and others has increased in CDSP-IV area compared to the baseline. It is also noticeable that sales of production are not the

household surplus, they sell it to meet up the production cost, because in the food security section respondents mention that still on average 7 month in a year households can meet up the household needs from their own production.

Table 2.10 Production and income from field crops

	CDSP-IV Baseline	CDSP-I &II	CDSP-III	CDSP-IV
Rice				
Production (MT/ha)	1.9	2.9	2.6	2.1
Average Production (kg/HH)	1,261	1,480	1,545	1,358
Consumption (kg/HH)	877	1,095	1,182	995
Average Income (Taka/HH)	17,744	20,728	21,631	19,012
Pulses and other crops				
Average Sales(taka/HH)	2,128	5,228	7,237	6,027
Consumption (Taka/HH)	1,126	4,692	6,194	4,459
Total Income (Taka)	3,254	9,920	13,431	10,486

2.9 Homestead Gardening

2.9.1 Changes in vegetable cultivation in homestead

From the study it is clear that vegetables are grown mainly in homestead areas. The main vegetables cultivated by the households in their homestead among non-leafy vegetables are Bean, Long bean, Bottle gourd, Sponge gourd etc. and among the leafy vegetables Red amaranth (*Lal Shak*) is mostly grown in the homestead. Due to lack of irrigation facilities most common winter vegetables like Carrot, Cauliflower and cabbage are mostly absent in all chars. In comparison to CDSP-IV baseline and present situation it is observed that more households are cultivating different vegetables on the homestead.

Table 2.11 Type of vegetable cultivated in homestead (% of HH)

	CDSP-IV Baseline	CDSP-I &II	CDSP-III	CDSP-IV
Bean	82	84	93	95
Long Bean	35	41	65	61
<i>Jali Kumra</i> (Ridge gourd)	23	22	34	28
Bottle Gourd	60	44	55	56
Sweet Gourd	22	25	30	40
<i>Korola</i> (Bitter gourd)	7	10	11	18
<i>Jinga</i> (Ribbed gourd)	39	35	37	52
Dhundul (Sponse gourd)	55	38	32	51
Okra	8	6	9	17
Cucumber	10	16	13	30
Radish	9	20	29	22
Spinach	3	2	2	5
<i>Lal Shak</i> (Red amaranth)	23	37	50	41
<i>Pui shak</i>	19	12	3	11

2.9.2 Changes in production and income of homestead gardening

Besides vegetables, some fruits are grown in the homesteads in the surveyed areas. There are three common fruits grown in the study area: banana, guava and papaya. Compared to the CDSP-IV baseline data the percentage of households growing banana, papaya and Guava has remarkably increased. Consumption of vegetables and fruits grown in homesteads is common. It is observed that on average 50-75% of the total homestead productions are consumed by the household, according to CDSP-IV baseline survey it was 40-50%. The average estimated income from homestead gardening is considerable. Income from homestead gardening has increased compared to the baseline survey but in. It is noticeable that homestead gardening is mainly done by the female members of the households.

Table 2.12 Production and income from homestead gardening

	CDSP-IV Baseline	CDSP-I &II	CDSP-III	CDSP-IV
Vegetable (% of HH)	84	86	90	94
Consumption (Taka)	1,488	2,118	2,145	3,402
Sold (Taka)	2,254	1,091	2,147	3,124
Total Income (Taka)	3,742	3,209	4,292	6,526
Banana (% of HH)	33	31	67	55
Consumption (Taka)	878	1,045	1,213	811
Sold (Taka)	1,656	722	1,166	1,993
Total Income (Taka)	2,534	1,767	2,379	2,804
Guava (% of HH)	7	8	7	7
Consumption (Taka)	346	1141	2442	2342
Sold (Taka)	479	69	530	432
Total Income (Taka)	825	1,210	2,972	2,774
Papaya (% of HH)	11	30	38	38
Consumption (Taka)	486	652	797	737
Sold (Taka)	484	187	145	338
Total Income (Taka)	970	839	942	1,065

2.10 Changes in poultry rearing status

Table 13 shows that on of 92%, 93% and 94% of the households are now rearing poultry in the CDSP-I&II, CDSP-III and CDSP-IV areas respectively. Compared to the baseline situation regarding poultry rearing in CDSP-IV area 5% increment is observed, to 94%, which is very high. The average number of chicken for each household has increased from 6 to 10 numbers and the average number of ducks has increased 7 to 9. Average egg production and meat production in CDSP older phases and in CDSP IV at present is higher than during the CDSP-IV baseline. Compared to the baseline data in the CDSP-IV area both egg and meat production has increased with 34% and 39% respectively. At the same time the consumption of egg and meat has also increased in the CDSP-IV area. The female members of the households reportedly do the rearing of poultry birds. In a few cases the male members do the task and the women assist.

Table 2.13 Poultry rearing status, production, consumption and income

	CDSP-IV Baseline	CDSP-I &II	CDSP-III	CDSP-IV
Rearing status				
HH rear poultry (%)	89	92	93	94
Average Nos. of Chicken	06	7	16	10
Average Nos. of Duck	07	6	11	9
Annual production of eggs (Nos./HH)	156	163	176	209
HH consumption of eggs (Nos./HH)	47	121	107	121
Income from eggs (Tk/HH)	817	1,060	1,144	1,358
Annual production of meat (Kg/HH)	36	55	50	50
HH consumption of meat (Kg/HH)	06	25	20	20
Income from meat (Tk/HH)	4,949	8,250	7,500	7,500

2.11 Changes in livestock rearing and aquaculture practices, production and income

Table 14 shows that 90% household from CDSP-IV area are now rearing livestock (Cow and Buffalo) which is 15% more than in the baseline situation. Highest percentage of households (94%) with rearing livestock is found

in CDSP-III, at the same time in CDSP-I & II area it is less than the CDSP-IV baseline. Production and income from milk has increased in CDSP-IV area compared to the baseline data. Remarkable change has taken place regarding the goat rearing in CDSP-IV area (17% to 30%). Highest milk production observed in CDSP-IV area (201 ltr.).

Percentage of household with pond aquaculture has remarkably increased (51% to 91%) in CDSP-IV area, here also the highest figure is observed in CDSP-I & II areas. Fish production and consumption per household has increased in CDSP-IV area remarkably (43 kg to 96 kg/HH).

Table 2.14 Livestock rearing and aquaculture status, production and income

	CDSP-IV Baseline	CDSP-I & II	CDSP-III	CDSP-IV
Nos. of HH rearing livestock (%)	75	62	94	90
Avg. milk production (Lt)	114	160	154	201
Avg. milk consumption (Lt)	64	65	70	111
Avg. income from Milk (Tk)	2,850	6,400	6,160	8,040
HH with goat (%)	17	21	30	30
Aquaculture				
HH with pond/ditch (%)	99	98	92	96
HH culture pond/ditch (%)	51	98	88	91
Average Production (kg/HH)	43	64	75	96
Production (kg/dec)	1.74	4.1	3.8	4.0
Average Consumption (kg/HH)	29	32	41	57
Average income from pond (Tk/HH)	4,515	7,680	9,000	11,520

2.12 Food security

The respondents were asked how many months of a year they can meet their basic food needs from own production, like in CDSP-IV baseline survey 2011. Table 15 shows that on average the households can meet their basic food needs from their own production during 7 months, similar to the baseline situation, except in CDSP-I&II areas, where the average period is 8 months. The respondents were also asked whether they normally face any situation during a year when the household members have to eat less than the usual quantity of food or inferior quality of food due to financial or other reasons. If they face this situation they were asked to specify the month(s) when it occurs as per *Bangla* calendar. Sixty percent of the respondents replied that they face such a situation in different months of the year in CDSP-IV area which is 22% less than the baseline situation. In CDSP-I&II and CDSP-III areas 40% and 50% respondent mentioned about the acute crisis of food in different months of the year respectively. Table 15 shows the acute crisis period by month in a year.

Table 2.15 Food security

	CDSP-IV Baseline	CDSP-I & II	CDSP-III	CDSP-IV
Average months in a year HH meet the basic food needs from own production	7	8	7	7
HH faced acute crisis (% of HH)	82	40	50	60
Crisis Months (% of HH)				
<i>Boisakh (Apr-May)</i>	05	3	3	7
<i>Joistho (May-Jun)</i>	16	3	2	7
<i>Ashar (Jun-Jul)</i>	33	17	12	11
<i>Srabon (Jul-Aug)</i>	35	14	17	17
<i>Vadro (Aug-Sep)</i>	44	45	54	43
<i>Ashin (Sep-Oct)</i>	54	52	61	51
<i>Kartik (Oct-Nov)</i>	50	35	38	30
<i>Agrohayoun (Nov-Dec)</i>	09	7	5	3
<i>Powsh (Dec-Jan)</i>	02	2	0	2

<i>Mug (Jan-Feb)</i>	03	1	0	1
<i>Falgun (Feb-Mar)</i>	04	2	0	3
<i>Chaitro (Mar-Apr)</i>	06	1	1	3

2.13 Accessibility to schools and hats/bazaars

The mobility of the household members was assessed through asking the respondents whether any member of their household needs to go to specific places: one is primary school/ madrasha and another one is local market (hat/bazaar). And if they did go, they were asked about the distances, mode(s) of transportation and time taken for the trip during rainy as well as dry season for each of the visited places.

Table 16 shows that in CDSP-IV area around 50-60% time was saved compared to the baseline situation to go to school/ Madrasha and 45-50% time saved to reach to the local market. It is also notable that due to improved communication and locally established market the distance of market has reduced.

Table 2.16 Accessibility to primary schools/ madrashas and hats/ bazaars (rural market)

	CDSP-IV Baseline	CDSP-I &II	CDSP-III	CDSP-IV
Primary Schools/Madrashas				
Average distance (km)	01	.4	.5	.4
No road (% of HH)	26	0	4	15
<i>Kancha</i> road (% of HH)	74	29	77	77
Brick (% of HH)	0	4	0	0
<i>Pacca</i> Road (% of HH)	0	67	19	8
Average time taken to reach in rainy season	38	16	14	16
Average time taken to reach in dry season	30	14	10	12
Hats /Bazaar				
Average distance (km)	16	1	2	2
No road	33		2	8
<i>Kancha</i> road	67	21	27	60
Brick	0	2	1	0
<i>Pacca</i>	0	77	70	31
Average time taken to reach in rainy season	62	20	28	32
Average time taken to reach in dry season	49	16	22	25

2.14 Shocks and crisis

Each household was asked with sufficient probing whether the household or its members faced any kind of accident, loss or problem (to call 'disaster') during last one year and if they faced they were identified using a 13 point list with provision to add. For each reported disaster the intensity of the same and coping method was gathered through appropriate questions.

From table 17 it is observed that compared to the baseline situation most of the shocks or crisis has reduced in CDSP-IV area. Some of them are remarkably reduced like displacement due to Flood/Cyclone/tornado (42% to 8%), loss of crops due to flood or draught (47% to 1%), Loss/ death/theft of livestock/poultry (15% to 2%) and Dacoity/ Theft/ Mastanies in house/business (15% to 2%). But it is notable that during baseline survey the respondents were asked to response during last five years.

Table 2.17 Type of shocks or crises faced by the HH last one year (%)

	CDSP-IV Baseline	CDSP-I &II	CDSP-III	CDSP-IV
Death/invalidity of earning member	4	4	3	2
Serious disease of any member	20	23	18	24

Displacement due to Flood/cyclone/ tornado	42	2	1	8
River erosion	8	1	1	-
Loss of crop due to flood/drought	47	1	2	1
Loss/ death/theft of livestock/poultry	15	2	2	2
Dacoity/ Theft/ Mastanies in house/business	15	3	3	2
Loss of business/investment	1	2	0	0
Divorce/separation	1	1	2	1
Dowry	3	4	2	5
Socio-political harassment, including bribe and tolls	1	2	3	1
Women harassment (Violence)	0	0	1	0
House destroyed by fire or other reason	2	2	1	0

Table 2.18 Comparison between 1st (2012) and 2nd (2013) outcome survey

Indicators	Baseline status (Oct-Nov 2011)	1 st Outcome survey result (CDSP-IV) Dec 2102	2 nd Outcome survey result (CDSP-IV) Dec 2013	Change compare to 1 st Outcome survey	Change compare to Baseline survey
Agriculture as principle occupation of household head (%)	37	45	45	no change	8% increase
Day labour as principle occupation of household head (%)	31	29	29	no change	8% increase
Straw made roof of main house (%)	82	66	55	11% decrease	27% decrease
Tin made roof of main house (%)	16	34	43	9% increase	27% increase
Average distance of drinking water source in dry season (m)	345 m	154	112	27% reduced	68% reduced
Average value of hh assets (BDT)	35,162	43,797	61,485	47% increase	75% increase
Annual hh income (BDT)	71,951	89,800	107,771	20 % increase	50% increase
Cropping intensity (%)	105	119	138	16% increase	31% increase
Rice production (MT/ha)	1.9	2.0	2.1	5% increase	11% increase
Income from homestead gardening (BDT/HH)	3,742	6,155	7,721	25% increase	106% increase
HH faced acute food crisis (%)	82	66	60	6% reduced	22% reduced

3. Summary Conclusion

In CDSP- I , II and III areas some people have settled by purchasing land from CDSP settlers, often a part of the allocated land. This issue needs further investigation; selling of newly received land is not allowed.

No change on principle occupation of household head has been observed during the second outcome survey (2013). The proportion of household heads involved with agriculture as a principle occupation has increased (First outcome survey 2012) in all the areas compare to the baseline survey, most notably in the CDSP-IV areas it has remarkably increased (from 37% to 45%).

A remarkable change is observed regarding the tin made wall and the roof: An increase with 30% and 27% respectively. No changes have been observed in all areas in the floor type of the house, which is mainly the mud floor.

The important change is that earlier the households collect drinking water on an average 345 meter and 418 meter in the dry and rainy seasons respectively. Now the average distance is 112 and 133 meter in the dry and rainy seasons respectively. It saves time for collecting drinking water specially for the women of the households.

Sixty eight percent of the households received a sanitary latrine from CDSP-IV. Compare to the first outcome survey it is 43% more.

The visit of Health Workers to the community has increased compared to the CDSP-IV baseline situation and first outcome survey situation; it is also notable that the CDSP-IV area is in a better position compared to the older phases. It is due to the intensive support from the CDSP-IV partner NGOs. It has to be noted that the visits of the health workers had an impact on the health and family planning situation, use of family planning method has increased 50% compared to the baseline and 26% compared to the first outcome survey.

Average assets value in CDSP IV increased around 74% compared to the baseline data and 40% compared to the first outcome survey data in CDSP-IV area. Major increment of the assets in CDSP-IV area is observed in case of mobile phone, solar, ornaments (gold) and trees.

Compared with the CDSP-IV baseline data the annual household income in CDSP-IV area is 50% more. It is also observed that in the CDSP-IV area the contribution of wage/ salary in the annual household income has decreased and contribution from field crops has increased compared to the baseline situation. Compared to the CCDSP-IV baseline, cropping intensity has also increased in CDSP-IV area at 31% and compared to the first outcome survey (2012) it is 17%. This is due to the more area coverage with *amon* and other cash crops during *robi* season as soil salinity reduced, less flood and increased fertility of land.

Average rice production per hectare is 2.0 MT, which is 0.2 MT more than the CDSP-IV baseline yield. It is also noticeable that sales of production are not the household surplus, they sell it to meet up the production cost, because in the food security section respondents mention that still on average 7 month in a year households can meet up the household needs from their own production.

From the study it is clear that vegetables are grown mainly in homestead areas. The main vegetables cultivated by the households in their homestead among non-leafy vegetables are Bean, Long bean, Bottle gourd, Sponge gourd etc. and among the leafy vegetables Red amaranth (*Lal Shak*) is mostly grown in the homestead. Consumption of vegetables grown in homesteads is common and it's remarkably increased (around 200%) compared to the CDSP-IV baseline.

Compared to the baseline situation regarding poultry rearing in CDSP-IV area 5% increment is observed, to 94%, which is very high. Both egg and meat production has increased with 34% and 39% respectively. At the same time the consumption of egg (157%) and meat (233%) has also remarkably increased in the CDSP-IV area.

Fish production and consumption per household has increased remarkably in CDSP-IV area compared to the baseline and also the first outcome survey (2012) which is 123% and 96% respectively.

In CDSP-IV area the acute food crisis has reduced from 82% to 60% compared to the CDSP-IV baseline survey. The month of food shortage is still same as baseline (5 months in a year).

In CDSP-IV area around 58-60% time was saved compared to the baseline situation to go to school/ Madrasha and 48-49% time saved to reach to the local market. It is also notable that due to improved communication and locally established market the distance of market has reduced.

Annual Outcome Survey Questionnaire-2013

CDSP Phase:

I	II	III	IV
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 Sample ID:

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 Baseline Sample ID:

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Name of HH Head:..... Sex: M/F

Address: Vill/Somaj:....., Char:.....

Union:..... Upazila:.....

Occupation:

	Primary	Secondary
Household Head		
Spouse		
<i>Occupation Code: Student-1, Unemployed-2, Agriculture/ Crop farming -3, Day Labor-4, Housekeeping-5, Fishing-6, Salaried Job-7, Fish drier-8, Small trade-9, Rickshaw/Van puller-10, Boat man-11, Retired person/ old man-12, Beggar-13, Disable-14, PL Catching-15, Others (Specify)-16</i>		

Family Size:

	<10 Years	11-16 years	17-60 years	Above 60 years	All
Male					
Female					

Land holding:

Did you get the land from Government under settlement program?	Yes/No	If Yes amountDeci.
If no, how do you occupy the land?	Purchase-1, Occupy by myself-2, Lease/Share taken-3, Given by landowner to live-4, Others..... 5	Deci
Land by type (in deci):			
Homestead		Pond/ditch	
		Agri. Land	
		Fallow land	

Housing Condition:

Type of House	Size (Length X Width) Feet	Type of Floor	Type of Wall	Type of Roof
Main House				
Kachari/Baithakkhana				
Kitchen				
Animal Shade				
<i>Floor Type Code: Mud-1, Bricks-2, Pacca-3, Wall Type Code: Leaf-1, Straw-2, Mud-3, Bamboo-4, Tin-5, Brick wall-6 Roof Type Code: Leaf-1, Straw-2, Tin-3, Pacca-4, Others-5</i>				

Drinking Water and Sanitation:

Sources of drinking water:	Shallow Tube Well -1, Deep Hand Tube Well-2, Dug Well-3, Rain
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	Water-4, Protected Pond Water (PSF)-5, Untreated Pond Water-6, Untreated River/Canal Water-7, Others (specify).....8.	
Ownership:	Own by HH-1, Jointly Owned-2, Neighbour-3, Govt./Natural Sources-4	
How far do you go for collecting Water:	Dry Season..... Meter	Rainy season.....Meter
Source of water for bathing and washing:	Shallow Tube Well -1, Deep Hand Tube Well-2, Dug Well-3, Pond Water-4, River/Canal Water-5, Others (specify).....8.	
Type of latrine used by HH:	No Latrine-1, Hanging/Open-2, Ring-slab (unhygienic)-3, Ring-slab (water sealed)-5, Sanitary Latrine -6.	
If the type of latrine is Ring-slab (unhygienic)/Ring-slab (water sealed)/Sanitary Latrine, where did you collect?	Buy myself from market-1, Buy through NGO/other organization-2, Donated by NGO/other organization-3	

Health and Family planning:

Do you and family members wash hand by soap before taking meal and after using latrine? Yes/No	
Do all the children of your family properly immunize? (all six) Yes/No	
If yes, how you managed it?	Upazila Health Center-1, Union Health Center-2, Local Doctor-3, From NGO/Voluntary organization-4, Through government special program-5
If no, Why?	Lack of awerness-1, Support not available Localy-2, Due to bad road communication couldn't attend in the camp/center-3
Do you use mosquito net? Yes/No	If no, why?: Not needed-1, Lack of awerness-2, Lack of money-3
Is there any Health Worker (Govt/NGO) visited regularly in your area? Yes/No	
Do you use any family planning method? Yes/No, If yes, which method: Permanent-1, Temporary-2	
If no, Why: Lack of awerness-1, Service not available localy-2, Materials are costly-3	

Household Assets:

S1	Type of Assets	Put Tick	Quantity	Present Value (Taka)
1	Cot/ Khaat			
2	Almira			
3	Chair/Table			
4	Shinduk (Wooden box)/Trunk (Tin)			
5	Alna			
6	Ceiling/Table Fan			
7	Radio/Cassette Player			
8	B&W TV			
9	Color TV			
10	Mobile Phone			
11	Sewing machine			

12	Ornaments			
13	Bicycle			
14	<i>Rickshaw</i> /Van			
15	Bullock cart			
16	Boat			
17	Mechanized boat			
18	Power tiller/Husking Machine			
19	Pump Machine			
20	Fishing net(.....)			
21	Trees			
22	Cow			
23	Buffalo			
24	Goat			
25	Sheep			
26	Chicken			
27	Duck			
28	Others (Specify).....			

Household Annual Income:

Sources of Income	Amount (Taka)	Sources of Income	Amount (Taka)
Wage/Salary		Livestock Rearing	
Field Crops		Poultry Rearing	
Petty Trading		Fishing	
Homestead Gardening		Remittance	
Rickshwa/Van Pulling		Handicrafts	
Pond Aquaculture		Others.....	

Crop Production and Income:

Field Crops: Total Cultivated Land:..... Deci

Crops	Area Cultivated (Deci)	Variety		Crops	Area Cultivated (Deci)	Variety	
		Local	HYV			Local	HYV
Aus				Long Bean			
Amon				<i>Jali Kumra</i> (Ridge gourd)			
Robi/Boro				Bottle Gourd			
<i>Keshari</i>				Sweet Gourd			
<i>Mug</i>				<i>Korola</i> (Bitter gourd)			
<i>Felon</i>				<i>Jinga</i> (Ribbed			

				gourd)			
<i>Moshuri</i>				Dhundul (Sponse gourd)			
<i>Mash Kolai</i>				Okra			
Soybean				Cucumber			
Mastered				Radish			
Ground nut				Carrot			
Water melon				Cauliflower			
Musk melon				Cabbage			
Chilli				Spinach			
Onion				<i>Lal Shak (Red amaranth)</i>			
Garlic				<i>Danta (Stem amaranth)</i>			
Coriander				<i>Pui shak</i>			
Bean							

Production and Income

Crop	Consumption		Sales	
	kg	Taka	Kg	Taka
<i>Field Crop</i>				
Paddy				
Pulse				
Oil Seeds				
Vegetable				
<i>Homestead Gardening</i>				
Leafy & other vegetable				
Banana				
Guava				
Papaya				
Lemon				
Coconut				
Others fruits.....				

Poultry and Livestock Production and Income:

Birds	Egg Production & Income (last one year)			Meat Production & Income (Last one year)		
	Sales (nos.)	Consume (Nos.)	Income from sales (Tk)	Sales (kg)	Consume (kg)	Income from sales (Tk)
Chicken						
Duck						

Animals	Milk sales (kg)	Income from Milk sales (Tk)	Milk Consume (kg)	Income from animal selling (Tk)	Present value of existing animals (Tk)

Cow					
Goat					
Buffalo					

Aquaculture Production and Income:

Nos. of pond	Water area (deci)	Cost (Tk)	Fish Sales (kg)	Fish Consume (kg)	Income from Sales (Tk)

Food Security:

1. How many months you are able to meet the basic food (Rice/Pulse) needs from your own production:.....
2. Does it happen that in certain months of the year your family members have to take less amount or low quality of food than usual? Yes/No

If Yes, please put tick below.							
Sl	Month	Severity (Put Tick)		Sl	Month	Severity (Put Tick)	
		Acute crisis	Some Crisis			Acute crisis	Some Crisis
01	Boishakh			07	Kartik		
02	Joishto			08	Agrohayon		
03	Ashar			09	Poush		
04	Srabon			10	Mag		
05	Vadro			11	Falgun		
06	Ashin			12	Chaitro		

Mobility:

<i>[Please ask the question in the 1st column for each institution. if applicable, then ask next column]</i>							
SL	Institutions	Distance from your household (Km)	Type of Road	Rainy season		Winter/dry season	
				Usual mode of transport (*code)	Usual time taken to reach..... (minutes)	Usual mode of transport (*code)	Usual time taken to reach (minutes)
01	Primary School/Madrasha						
02	Nearby Bazar/Hat						

Road Code: No Road-1, Kancha-2, Brick-3, Pacca-4
Mode of Transport Code: 1-On foot, 2- Bicycle, 3- By boat, 4- Rickshaw/van, 5- By engine boat, 6- By Taxi/ tempo, 7- By launch, 8- By motor cycle, 9- By bus

Shocks and coping strategy

1. Did your household experience any kind of shocks or crisis during the last one year?
Yes/No
2. If yes, please mention the type of shocks faced by your household or household members and how it was coped with.

List of shocks		Indicate shocks specifying magnitude (*Code)	How it was coped with (**Code)
1	Death/invalidity of earning member		
2	Serious disease of any member		
3	Displacement due to Flood/cyclone/ tornado		
4	River erosion		
5	Loss of crop due to flood/drought		
6	Loss/ death/theft of livestock/poultry		
7	Dacoity/ Theft/ Mastanies in house/business		
8	Loss of business/investment		
9	Divorce/separation		
10	Dowry		
11	Socio-political harassment, including bribe and tolls		
12	Women harassment (Violence)		
13	House destroyed by fire or other reason		
14	Others (specify)		

***Code:** 1- Severe, 2- moderate, 3-Low

****Code:** 01- By selling land, 02- By selling domestic animals/birds, 03- By selling trees
04- With own savings, 05- By mortgaging land, 06- By mortgaging other properties
07- With help from relatives, 08- By taking cash credit, 09- By taking materials in credit
10- Aid/relief, 11- Complain with police, *Salish* with the UP, By mobilization of community groups/CBO/ NGOs, 12- Did nothing, 13. Others (specify).....

Thank you for your kind cooperation

Name of data collector:.....Signature:..... Date:.....
Verified by:.....Signature:..... Date:.....