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09 The Overall Outcomes and Impacts on the Livelihoods of Coastal Communities in Blue Gold Polders

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This chapter focuses on the overall outcomes and impacts of Blue Gold Program interventions on the livelihoods of the coastal communities in BGP polders. The chapter includes the changes of demographic composition, the gender of the household head over the time of BGP, the level of education of the household head and the school enrolment of children to explore the general features of coastal households. The income flow of the households and the stock of household assets are emphasized as the important components of rural people's livelihood, in that it can be converted into other forms of capital or used for the direct achievement of livelihood outcomes. Income-earning sectors identify the income flows into the household, such as from crop cultivation and non-agricultural income sectors. The aggregate household income provides a useful indicator of economic security. This chapter also focuses on the living standard through the condition of dwelling, access to water for domestic use and sanitation and consumption pattern and food security. The income, poverty ranking and asset data offer an opportunity to cross-check the reporting bias and to examine the balance struck by households between consumption pattern, investment in agricultural and non-agricultural sectors and pursuing different livelihood strategies for a secure livelihood. As such, its availability is directly related to the capacity of a household to withstand or buffer livelihood shocks, and to achieve improvements in overall well-being. The main source of the data used in this chapter is the endline survey of 2020, as reported upon in [Technical Report 27](#), complemented with data from the household survey 2021^[Notes 11] reported in [Technical Report 29](#).

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General features of coastal households[\[edit | edit source\]](#)

Household composition[\[edit | edit source\]](#)

The average family size is 4.4, which has reduced by 2 points as compared to the baseline 2017. There is a significant difference in the average size of households among the different types of land

holding households.

Table 9.1: Household composition (n=3,969 hhs)

Zone	% of HH	Average size of household				Female headed HH
		Men	women	child*	Total	
Khulna	39.6%	1.74	1.70	0.86	4.31	4.9%
Satkhira	24.7%	1.72	1.60	0.77	4.09	4.7%
Patuakhali	35.6%	1.92	1.83	1.09	4.84	5.7%
Land- ownership						
landless	19.7%	1.47	1.52	0.98	3.97	6.8%
marginal	41.0%	1.78	1.67	0.93	4.38	5.4%
small	30.2%	1.94	1.82	0.89	4.65	4.3%
medium	7.8%	2.09	2.04	0.88	5.01	3.2%
large	1.3%	2.19	2.17	0.81	5.17	1.9%
Total	100.0%	1.80	1.72	0.92	4.44	5.1%

* upto and including 12 years;Source: Endline survey 2020

Data shows as well-being improves from the landless to the large farmer, household sizes become significantly larger from 3.9 to 5.2. The average number of male and female members within the households is very similar with a slightly higher average number of male members. The average number of children is around 1. Overall, only 5.1% of the households are female headed, which has increased 1.5 points compared to baseline 2017. Female-headed households are more prevalent (6.8%) in the landless household category while lowest (1.9%) in the large farm households. Informal interviews found that husbands of many women of the poor group in the rural areas work and reside outside their villages for a certain period within a year.

Educational status of the household members[\[edit | edit source\]](#)

Among the members of the sampled households, more than 46% completed their primary education while around 20% of members are illiterate or can sign only. Table 9.2 for the educational status of the household head also indicates the education accomplishment of the household heads with 41% having primary education while 37% of them do not have any formal education.

Table 9.2: Educational level of all members of the households

Zone	Primary	Secondar	SSC	HSC	Graduate & above	Illiterate & can sign only	Under school age	Religious education & others	Total
Khulna	42.3%	8.0%	9.2%	6.1%	4.2%	21.1%	8.7%	0.3%	100.0%
Patuakhali	48.7%	6.8%	7.0%	5.3%	3.4%	19.4%	8.9%	0.6%	100.0%
Satkhira	49.6%	5.5%	7.2%	6.4%	2.9%	16.2%	9.9%	2.4%	100.0%
Land- ownership									
landless	49.6%	5.2%	4.8%	2.5%	1.4%	26.1%	10.2%	0.3%	100.0%
marginal	48.9%	6.6%	6.8%	4.3%	2.2%	22.0%	8.5%	0.7%	100.0%
small	44.0%	8.2%	9.5%	7.8%	4.6%	16.5%	8.8%	0.6%	100.0%
medium	38.3%	9.9%	12.0%	10.4%	10.6%	10.4%	7.8%	0.6%	100.0%
large	31.2%	6.3%	15.2%	10.4%	12.6%	14.1%	10.0%	0.0%	100.0%

Total	46.3%	7.2%	7.9%	5.7%	3.7%	19.8%	8.9%	0.6%	100.0%
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source: Endline survey 2020

Table 9.3: Educational level of household head (n=3,969)

Zone	Primary	Secondary	SSC	HSC	Graduate & above	Illiterate & can sign only	Under school age	Religious education & others	Total
Khulna	37.6%	7.8%	9.3%	4.5%	4.9%	35.6%	0.0%	0.2%	100.0%
Patuakhali	44.5%	5.0%	6.4%	3.6%	2.7%	37.7%	0.0%	0.1%	100.0%
Satkhira	43.3%	7.9%	5.4%	4.4%	3.4%	35.5%	0.0%	0.0%	100.0%
Land- ownership									
landless	41.2%	4.0%	4.2%	1.3%	0.9%	48.3%	0.0%	0.1%	100.0%
marginal	43.3%	5.2%	5.2%	2.6%	1.6%	41.7%	0.1%	0.2%	100.0%
small	42.3%	8.1%	9.6%	5.9%	4.9%	29.2%	0.0%	0.1%	100.0%
medium	34.7%	10.1%	16.2%	8.8%	15.3%	14.6%	0.0%	0.3%	100.0%
large	28.8%	7.7%	30.8%	13.5%	7.7%	11.5%	0.0%	0.0%	100.0%
Total	41.7%	6.2%	7.5%	4.0%	3.6%	36.7%	0.0%	0.2%	100.0%

Source: Endline survey 2020

The level of education of the household members and household heads do not vary significantly among the zones. However, it varies considerably with the land ownership categories.

Table 9.4: Primary school student enrolment (6-14 years) (n=3,137)

Zone	Enrolled	Unenrolled	Total
Khulna	93.4%	6.6%	100.0%
Patuakhali	95.1%	4.9%	100.0%
Satkhira	98.4%	1.6%	100.0%
Land- ownership			
landless	93.8%	6.2%	100.0%
marginal	94.2%	5.8%	100.0%
small	95.6%	4.4%	100.0%
medium	96.2%	3.8%	100.0%
large	96.6%	3.4%	100.0%
Total	94.7%	5.3%	100.0%

Source: Endline survey 2020

Table 9.2 and 9.3 show that the educational attainment in terms of the level of education of the household members and head is positively correlated with the size of land ownership. The percentages of completion of secondary, SSC and HSC level education are higher for the medium and large farm households compared to the landless and marginal land holding category.

Overall, a considerable percentage (94.8%) of the school enrolment of children is visible among the zones and all types of households, while it was highest (98.4%) in Satkhira compared to the lowest 93.3% in Khulna (see Table 9.4). The trend does not vary significantly among different types of households. The percentage of sending children to school increases rapidly due to the initiatives of

government and NGOs. The school enrolment of children percentage has increased by 1% compared to the baseline survey 2017. However, the long-term closure of all schools due to COVID-19 reportedly also led to an increase in numbers of school drop-outs.

Occupation of adult male[\[edit | edit source\]](#)

Table 9.5 shows that 28.5% of adult males have agriculture as their main occupation, with a total of 37.5% having an occupation related to agriculture including livestock, poultry rearing and fisheries (4.4%), and agricultural labour (4.6%). On the other hand, around 44% of men have non-agricultural activities as their main occupation. Males from medium and large farm households are more likely to take agricultural activities as the main occupation, while the males of landless and smallholder households tend to have non-agricultural activities as the main source of their livelihoods. Approximately 20% of males are from the dependent group who are not engaged in any income-earning activities.

Table 9.5: Main occupation of adult male (n=6445)

Zone	agriculture	Livestock, poultry, fish	Agri. wage labour	sub-total agriculture	Artisan/ handicraft	Business, services	Non-agri. labour	Transport	other	sub-total non-agri.	Student	Not working	Sub total non-earning	Total
Khulna	30.4%	4.0%	5.5%	39.9%	1.4%	23.7%	11.8%	3.3%	0.4%	40.6%	10.6%	8.9%	19.5%	100.0%
Patuakhali	26.8%	5.1%	4.3%	36.2%	1.5%	21.0%	18.0%	4.9%	0.4%	45.8%	10.2%	8.0%	18.2%	100.0%
Satkhira	31.9%	0.0%	1.7%	33.6%	0.6%	24.3%	12.7%	6.5%	0.3%	44.4%	11.3%	10.7%	22.0%	100.0%
Land ownership														
landless	12.6%	4.9%	9.4%	26.9%	2.0%	17.3%	32.1%	8.3%	0.5%	60.2%	6.4%	6.4%	12.8%	100.0%
marginal	23.3%	4.0%	6.8%	34.1%	1.9%	22.0%	18.8%	5.2%	0.2%	48.1%	9.7%	8.1%	17.8%	100.0%
small	38.9%	4.1%	1.1%	44.1%	0.8%	23.2%	7.3%	2.4%	0.5%	34.2%	12.8%	8.9%	21.7%	100.0%
medium	37.8%	5.8%	0.0%	43.6%	0.2%	28.9%	1.4%	1.4%	0.7%	32.6%	12.7%	11.1%	23.8%	100.0%
large	48.1%	6.6%	0.9%	55.6%	0.0%	19.8%	0.0%	1.9%	0.0%	21.7%	7.5%	15.1%	22.6%	100.0%
Total	28.5%	4.4%	4.6%	37.5%	1.4%	22.2%	15.3%	4.4%	0.4%	43.7%	10.4%	8.5%	18.9%	100.0%

Source: Endline survey 2020

Around 35% of adult males reported that they have a secondary occupation. From them, 67% have an agriculture-related occupation. Along with agriculture, a significant percentage (26.7%) have livestock, poultry and fisheries as their second occupation. Besides, around 31% of males undertake non-agricultural activities to support their earning sources, which mainly include business or services and non-agricultural labour. In the case of adult women, the endline survey 2020 showed that women of 81% households are classified as housewives; however, the household survey 2021 showed that over 99% of the surveyed women were economically active (for more details, see chapter 8, table 8.3).

Land ownership and land tenure[\[edit | edit source\]](#)

Changes in land ownership[\[edit | edit source\]](#)

In all surveys of BGP, households have been classified according to the total amount of land owned. As poor households tend to have little or no land, this is a useful indicator of the general level of poverty. Households have been classified according to the following land ownership groups and the percentage of households in each category according to the impact survey 2020.

- Landless – owning less than 5 decimals (0.02 ha)- 20% of households
- Marginal farmer: 5 to 49 decimals (0.02 to 0.2 ha)- 41% of households
- Small farmer: 50 to 249 decimals (0.2 to 1.01 ha)- 30% of households
- Medium farmer: 250 to 749 decimals (1.01 to 3.03 ha)- 8% of households
- Large farmer: 750 decimals and above (3.04 ha and above)-1% of households

These same categories were used in the baseline surveys and are nationally recognized. Data on the landless category in Table 9.6 is further subdivided into those households who own absolutely no land at all and those who have some land but under 5 decimals. However, under 2% of project households fall into the absolutely landless category.

Table 9.6: Land ownership categories

Zone	Land ownership categories in decimals, 2020. Percentage of all households						Total
	no land	under 5	5-49	50-249	250-749	750+	
Khulna	1.0%	19.7%	43.1%	27.7%	7.7%	0.8%	100.0%
Satkhira	3.0%	32.0%	38.1%	20.5%	5.1%	1.4%	100.0%
Patuakhali	0.8%	7.1%	40.7%	39.9%	9.7%	1.8%	100.0%
total	1.4%	18.3%	41.0%	30.2%	7.8%	1.3%	100.0%

Source: Endline survey 2020

This distribution varies between the zones, most significantly in the Patuakhali zone where there are fewer farmers in the landless category, and rather more small and medium farmers. Satkhira has a higher proportion in the landless category, and fewer small and medium farmers.

The household survey 2021 showed the proportion of different types of households owning different type of land (Table 9.7). Almost all households own homestead land, but very few households in the landless category own any other type of land, while only two thirds of marginal farm households own cultivated land and 41% have ponds. The proportion of these households owning land has increased very slightly since the start of BGP. A higher proportion of households in Patuakhali own land, and rather fewer in Satkhira (Table 9.7). The average area of land owned per household is 133 decimals (0.54 ha), but households in the landless category only own an average of 3.4 decimals (138 m²) - see Table 9.8.

Table 9.7: Percentage of households owning different types of land

Land ownership	homestead land		cultivated land*		pond		fallow		other land	
	2013-14	2020-21	2013-14	2020-21	2013-14	2020-21	2013-14	2020-21	2013-14	2020-21
landless <5 decimals	92%	94%	0%	1%	1%	1%	0%	0%	0%	0%
marginal 5-49 dec.	100%	100%	66%	68%	40%	41%	3%	3%	8%	8%
small 50-249 dec	100%	100%	99%	100%	67%	67%	6%	6%	26%	26%
medium 250-749 dec.	100%	100%	100%	100%	83%	84%	10%	10%	51%	52%
large 750 decimals +	100%	100%	100%	100%	91%	92%	9%	8%	55%	55%
Zone										
Khulna	98%	99%	64%	65%	35%	36%	4%	4%	15%	15%
Satkhira	92%	95%	53%	56%	28%	28%	1%	2%	21%	20%
Patuakhali	100%	100%	77%	78%	68%	69%	5%	5%	15%	15%
Total	98%	99%	66%	67%	44%	45%	4%	4%	16%	16%

* Cultivated land includes gher;Source: HH survey 2021

Table 9.8: Average area owned per household*

Land ownership	homestead land		cultivated land		pond		fallow		other land		Total land	
	2013-14	2020-21	2013-14	2020-21	2013-14	2020-21	2013-14	2020-21	2013-14	2020-21	2013-14	2020-21
Landless	3.2	3.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.2	3.4
Marginal	9.3	9.1	18.8	19.7	2.4	2.5	0.2	0.2	0.8	0.9	31.5	32.4
Small	13.5	13.6	113.4	115.0	7.6	7.6	1.7	1.7	6.1	6.1	142.4	143.9
Medium	22.4	22.5	332.5	333.5	12.5	12.8	8.9	8.1	20.3	22.4	396.5	399.2
Large	28.9	28.9	958.1	957.3	25.7	25.7	10.3	9.6	34.9	34.0	1057.9	1055.5
Zone												
Khulna	10.3	10.3	67.8	68.7	4.2	4.3	1.3	1.2	3.8	4.0	87.4	88.5
Satkhira	8.2	8.1	55.3	56.9	2.8	2.8	0.2	0.3	6.4	6.6	72.9	74.7
Patuakhali	16.9	17.1	97.7	102.3	8.3	8.3	0.7	0.7	4.5	4.6	128.1	132.9
Total	10.3	10.3	67.8	68.7	4.2	4.3	1.3	1.2	3.8	4.0	87.4	88.5

* area in decimals. Average for all households in each category, including those who do not own each type of land.Source: HH survey 2021

Since the start of BGP more households, especially those with less land, have taken up land operation. Although the overall increase is small -from 84% to 88%, see Table 9.9 - the increase for landless households has been from 41% to 56%. More landless and marginal land owning households (and to a lesser extent small land owning households) are leasing in land, which includes sharecropping and other rental arrangements of crop and gher land, while more households in the medium and large categories are leasing out land.

Table 9.9: Percentage of households operating and leasing land

Land ownership	farm own land		lease in land		lease out land		lease in gher		lease out gher		Farm any land	
	2013-14	2020-21	2013-14	2020-21	2013-14	2020-21	2013-14	2020-21	2013-14	2020-21	2013-14	2020-21
landless	1%	1%	31%	43%	0%	0%	10%	16%	0%	0%	41%	56%
marginal	81%	84%	36%	49%	2%	4%	14%	20%	2%	3%	85%	89%
small	100%	100%	21%	30%	8%	12%	11%	19%	4%	6%	99%	99%
medium	100%	100%	8%	12%	25%	37%	6%	10%	18%	21%	98%	98%
large	100%	100%	4%	4%	52%	65%	5%	6%	22%	27%	100%	99%
Zone												
Khulna	69%	71%	24%	32%	4%	7%	19%	30%	5%	7%	81%	87%
Satkhira	60%	62%	26%	35%	4%	4%	13%	18%	7%	9%	67%	70%
Patuakhali	86%	87%	33%	46%	9%	15%	0%	0%	0%	0%	89%	91%
total	77%	78%	20%	28%	15%	22%	9%	15%	9%	11%	84%	88%

source: HH survey 2021

The average area of owned and leased in and out land is shown in Table 9.10. For those households that farm land, the average area operated is 187 decimals (0.76 ha). Since the start of BGP the average area operated by landless, marginal and small land owners has increased, while it has decreased for medium and large land owners.

The average area farmed for all households (including those who do not farm) is shown in Table 9.11. This shows that more land is being farmed - increasing from an average of 118 decimals (0.48 ha) to 135 decimals (0.55 decimals). This is largely because more land is being leased (which includes sharecropping and other rental arrangements) and less land remains fallow. In 2013-14 leased land amounted to 43% of the total area farmed, it is now 52%. The average holding size in Patuakhali is larger, with those in Satkhira being smaller.

Table 9.10: Average area operated or leased out

Land ownership	farm own land		lease in land		lease out land		lease in gher		lease out gher		Total area farmed	
	2013-14	2020-21	2013-14	2020-21	2013-14	2020-21	2013-14	2020-21	2013-14	2020-21	2013-14	2020-21
landless	2.0	17.5	102.8	110.4	0.0	0.0	83.4	90.5	0.0	0.0	99.5	111.2
marginal	25.3	25.2	124.9	122.5	27.0	41.9	120.3	120.9	28.3	21.9	95.1	115.1
small	117.9	119.9	152.6	133.5	97.2	78.6	160.2	136.0	70.5	81.1	158.8	174.0
medium	349.9	355.8	194.2	167.5	208.2	208.0	177.3	160.7	194.4	182.2	294.2	282.2
large	948.8	982.4	124.0	243.0	589.2	577.5	914.3	1033.9	478.6	473.2	590.8	564.0
Zone												
Khulna	75.1	75.4	129.3	125.6	56.5	64.7	121.7	119.0	44.8	48.0	224.7	207.1
Satkhira	59.7	71.5	72.7	64.1	37.2	30.0	168.6	152.3	46.8	38.7	217.1	219.1
Patuakhali	107.6	112.2	160.0	148.0	79.2	74.4	0.0	1.3	0.0	0.0	188.4	187.1
total	86.0	90.5	134.3	128.5	64.3	64.6	139.9	134.5	54.3	53.8	137.2	151.0

Area in decimals. Average area for those households farming / leasing each type of land.Source: HH survey 2021

Table 9.11: Average area* for all households

Land ownership	farm own land		Lease in land		lease out land		lease in gher		lease out gher		Net area farmed	
	2013-14	2020-21	2013-14	2020-21	2013-14	2020-21	2013-14	2020-21	2013-14	2020-21	2013-14	2020-21
landless	0.0	0.2	32.2	47.6	0.0	0.0	8.1	14.4	0.0	0.0	40.3	62.1
marginal	20.5	21.2	44.6	59.5	0.5	1.6	16.6	24.2	0.5	0.7	80.6	102.5
small	117.3	119.9	31.5	40.4	8.0	9.7	18.4	26.2	2.6	5.2	156.6	171.6
medium	349.9	355.8	14.8	20.1	51.6	77.4	9.9	16.7	35.8	38.6	287.1	276.6
large	948.8	982.4	4.5	10.5	305.2	373.9	46.0	66.9	103.3	125.9	590.8	560.0
total	83.4	85.5	35.3	47.7	10.6	14.5	15.3	22.8	5.1	6.5	118.4	135.0
Khulna	72.2	73.1	28.7	38.8	5.8	8.5	23.7	35.4	5.8	7.7	112.9	131.2
Satkhira	58.1	59.6	21.5	24.0	6.6	7.1	21.2	30.7	7.5	9.3	86.6	98.0
Patuakhali	106.0	110.7	49.8	66.5	17.6	25.4	0.0	0.0	0.0	0.0	138.2	151.8

* area in decimals. Average for all households in each category, including those who do not own each type of land;Source: HH survey 2021

Land leasing enables landless households, who have virtually no crop or gher land, to participate in farming. Marginal land owners, who own less than 20 decimals of cultivable land, are able to lease in land so they can farm an average of 102 decimals. On the other hand, medium and large farmers lease out some of the larger areas that they own.

Improvement in household income and asset[\[edit | edit source\]](#)

Changes in sources of income[\[edit | edit source\]](#)

Sources of household income reported by the sampled households in the household survey 2021, table 9.12 shows that almost all (94%) households reported getting income from homestead vegetables, 89% from poultry and 82% from crops. Non-agricultural sources are not so widely reported. A higher proportion of households owning little land report getting income from wage labour (both agricultural and non-agricultural), fishing and transport-related activities. More households owning larger areas of land report getting income from pond fish and, to a lesser extent, gher fish, leasing out land, agri-business, other business, jobs and pensions. Relatively few (55%) landless households report income from crops, compared with 84% for marginal land owners - with other categories being over 90%.

Table 9.12: Sources of income in 2021

Agriculture landless marginal small medium large all

Crops	55%	84%	93%	91%	91%	82%
Homestead vegetable	79%	97%	99%	99%	100%	94%
Field vegetable	17%	29%	39%	55%	55%	32%
Poultry	82%	90%	91%	89%	91%	89%
Livestock	57%	75%	80%	76%	76%	73%
pond fish	2%	40%	66%	84%	91%	44%
gher fish	17%	29%	37%	48%	44%	31%
agricultural labour	55%	40%	19%	4%	0%	33%
agricultural services	0%	0%	2%	1%	1%	1%
agric. machine rental	1%	2%	3%	8%	6%	3%
leasing out land	0%	8%	15%	52%	77%	13%
Fishing	31%	26%	16%	10%	6%	22%
other agricultural	1%	3%	4%	10%	22%	4%
agricultural business	2%	4%	10%	12%	8%	6%
Business	15%	23%	33%	34%	38%	25%
Labour	39%	32%	15%	6%	1%	26%
self-employment	4%	5%	6%	4%	4%	5%
job and pension	10%	12%	14%	27%	24%	14%
transport related	20%	12%	5%	3%	2%	10%
handicraft, tailoring etc	13%	8%	11%	8%	9%	10%
Remittance	4%	7%	3%	9%	16%	6%
other	10%	7%	5%	3%	4%	7%
n	195	210	218	250	139	1012

percentage of all households;Source: HH survey 2021

There have not been any large changes since 2013-14 in the percentages of households getting income from different sources (Table 9.13). More households now get income from homestead vegetables and livestock, and also from leasing out land. Slightly fewer households report income from field vegetables and poultry. More households are now getting income from all the non-agricultural sources, especially business and jobs or pensions.

Table 9.13: Sources of income in 2013-14

Landless marginal small medium large All change

Agricultural	Crops	49%	83%	94%	91%	94%	80%	2%
	Homestead vegetable	73%	94%	97%	96%	100%	91%	4%
	Field vegetable	19%	30%	46%	54%	55%	35%	-3%
	Poultry	82%	89%	95%	92%	94%	90%	-1%
	Livestock	51%	69%	80%	79%	81%	70%	4%
	pond fish	2%	41%	65%	83%	90%	45%	0%
	gher fish	15%	28%	39%	48%	45%	30%	0%
	agricultural labour	52%	39%	18%	4%	0%	32%	1%
	agricultural services	0%	0%	2%	0%	1%	1%	0%
	agric. machine rental	0%	2%	2%	6%	6%	2%	0%
	leasing out land	0%	5%	11%	40%	66%	10%	3%
	Fishing	30%	24%	17%	11%	6%	22%	0%
	other agricultural	1%	4%	4%	9%	17%	4%	0%
	agricultural business	2%	4%	8%	10%	6%	5%	1%
	Business	10%	20%	27%	27%	30%	20%	5%
Non-agricultural	Labour	38%	30%	13%	4%	1%	24%	2%
	self-employment	3%	4%	6%	3%	1%	4%	1%
	job and pension	6%	10%	9%	22%	21%	10%	4%
	transport related	17%	9%	4%	1%	2%	8%	2%
	handicraft, tailoring etc	10%	5%	8%	6%	7%	7%	3%
	Remittance	3%	3%	3%	4%	9%	3%	2%
	Other	3%	4%	2%	2%	3%	3%	3%
Sample	N	195	210	218	250	139	1012	

percentage of all households. Change is change for all households in percentage points, 2013-14 to 2021.Source: HH survey 2021

9.3.2 Average income by source[\[edit | edit source\]](#)

Table 9.14 shows the average income for those households earning income from each source. For the landless category, the highest amounts are earned in the agricultural sector from renting out farm machinery and agri-business, followed by gher and pond fisheries – but not many landless households have these sources. Most non-agricultural sources generate more income than agricultural sources, and overall jobs/pensions, business and transport are the most lucrative. For large land owners, gher, agribusiness and crops generate the highest income from agriculture, but more is earned by those with non-farm business, job/pension and remittances.

Table 9.14: Average income for those households reporting each source

Agriculture	landless	marginal	small	medium	large
Crops	44,520	46,925	72,384	114,846	203,303
Homestead vegetable	3,053	5,864	9,196	13,628	18,011

Field vegetable	32,197	31,462	37,134	47,164	60,126
Poultry	2,836	3,494	3,969	3,736	3,229
Livestock	13,226	14,443	23,870	41,802	42,496
pond fish	8,493	8,510	12,888	15,899	26,289
gher fish	47,324	45,176	69,797	99,071	212,475
agricultural labour	45,380	49,899	49,071	41,600	
agricultural services		15,000	93,000	114,667	180,000
agric. machine rental	79,000	43,000	37,500	33,000	72,333
leasing out land		4,569	25,745	45,300	124,540
Fishing	13,975	12,685	16,568	12,696	11,813
other agricultural	11,000	10,643	23,625	42,313	38,483
agricultural business	56,250	120,000	117,909	151,000	212,273
Non-agricultural					
Business	97,414	124,667	132,583	190,477	273,434
Labour	62,260	67,761	92,125	168,143	110,000
self-employment	73,125	86,900	93,692	123,222	140,000
job and pension	111,842	189,408	167,774	227,176	246,382
transport related	93,955	93,480	100,780	101,875	190,000
handicraft, tailoring etc	11,462	14,513	15,020	16,965	4,908
Remittance	46,750	58,800	126,286	168,391	224,091
Other	7,642	21,800	41,130	54,900	19,400

Average income per household, BDT per year;Source: HH survey 2021

Table 9.15: Average income for all households

Agriculture	landless	Marginal	small	medium	large	All
Crops	4,657	9,551	7,404	104,739	184,289	51,993
Homestead vegetable	2,427	5,696	9,111	13,464	18,011	6,849
Field vegetable	5,449	9,139	14,649	25,846	33,307	11,691
Poultry	2,327	3,128	3,623	3,332	2,950	3,134
Livestock	7,596	10,798	19,162	31,937	32,407	14,619
pond fish	131	3,404	8,454	13,355	24,020	5,328
gher fish	8,251	12,907	25,614	47,158	93,245	19,542
agricultural labour	25,133	19,960	9,454	1,664	-	16,121
agricultural services	-	71	1,706	1,376	1,295	669
agric. machine rental	810	1,024	1,032	2,508	4,683	1,147
leasing out land	-	348	3,897	23,556	95,869	4,405
Fishing	4,372	3,322	2,584	1,219	680	3,108
other agricultural	56	355	867	4,062	8,306	843
agricultural business	1,154	5,143	11,899	18,120	16,799	7,559
Non-agriculture						
Business	14,487	28,495	43,789	65,524	104,259	34,225
Labour	24,585	21,619	13,523	9,416	1,583	18,546
self-employment	3,000	4,138	5,587	4,436	5,036	4,387

job and pension	10,897	22,549	23,858	61,792	60,266	24,188
transport related	18,791	11,129	4,623	3,260	4,101	9,969
handicraft, tailoring etc	1,528	1,106	1,722	1,357	459	1,386
Remittance	1,918	4,200	4,055	15,492	35,468	4,992
Other	745	1,557	1,887	1,757	837	1,503
Total income	158,315	209,639	278,501	455,370	727,870	246,206

Average income for all sample households, BDT per year. Source: HH survey 2021

Average income across all sample households, including those who do not earn an income from individual Sources, is in Table 9.15. This shows how each Source contributes to total income for each land holding category. The percentage share of each Source is shown in Table 9.16.

For all land-owning categories, the largest single Source is crops, which contribute 21% of total income (26% if field vegetables are also included). This underlines the importance of BG interventions in water management and agriculture. Although most households report generating income from homestead vegetables and poultry, the small amount they earn mean these are not important Sources. However, consumption of homestead produce can mean that a household's expenditure is reduced, because less of their income is used to fulfil basic needs.

Table 9.16: Share of income for all households

Agriculture	Landless	Marginal	small	medium	large	All
Crops	16%	19%	24%	23%	25%	21%
Homestead vegetable	2%	3%	3%	3%	2%	3%
Field vegetable	3%	4%	5%	6%	5%	5%
poultry	1%	1%	1%	1%	0%	1%
livestock	5%	5%	7%	7%	4%	6%
pond fish	0%	2%	3%	3%	3%	2%
gher fish	5%	6%	9%	10%	13%	8%
agricultural labour	16%	10%	3%	0%	0%	7%
agricultural services	0%	0%	1%	0%	0%	0%
agric. machine rental	1%	0%	0%	1%	1%	0%
leasing out land	0%	0%	1%	5%	13%	2%
fishing	3%	2%	1%	0%	0%	1%
other agricultural	0%	0%	0%	1%	1%	0%
agricultural business	1%	2%	4%	4%	2%	3%
Non-agriculture						
business	9%	14%	16%	14%	14%	14%
labour	16%	10%	5%	2%	0%	8%
self-employment	2%	2%	2%	1%	1%	2%
job and pension	7%	11%	9%	14%	8%	10%
transport related	12%	5%	2%	1%	1%	4%
handicraft, tailoring etc	1%	1%	1%	0%	0%	1%
remittance	1%	2%	1%	3%	5%	2%
other	0%	1%	1%	0%	0%	1%
Total income	100%	100%	100%	100%	100%	100%

Share from agriculture	52%	55%	64%	64%	71%	60%
Share from other sectors	48%	45%	36%	36%	29%	40%

Source: HH survey 2021

Households involved in agribusiness, machinery rental and aquaculture generate considerable income, but as not so many households have these Sources, their overall contribution is more modest. In total agriculture contributes 60% of household income. Important non-agricultural Sources are business (contributing 14%) and jobs/pension (10%).

Crops are also the major Source of income for landless and marginal land-owning households, but for landless households agricultural labour and non-agricultural labour are each of equal importance. Jobs/pension and non-agricultural business are important Sources for households in the marginal category. Landless households get almost half (48%) of their income from non-agricultural Sources. As land ownership increases, households get a higher proportion of their income from agriculture (Table 9.16). Households in the large land holding category get 71% of their income from agriculture with crops (25%), gher fish (13%) and leasing out land (13%) being important sources.

Changes in total household income[\[edit\]](#) | [edit source](#)

Average income for each zone is shown in Table 9.17. Income for all land-owning categories is higher in Khulna than in the other two zones. The share of income from agricultural and other Sources in each zone is shown in Table 9.18. This shows that the share of income from agriculture is considerably higher in Khulna – with even landless households getting over 60% of their income from this sector. In both Satkhira and Patuakhali, most income comes from non-agricultural Sources. In Satkhira landless households only get 30% of their income from agriculture, but this increases substantially for households with more land as they are more involved in gher aquaculture. In Patuakhali, all land ownership categories get more than half of their income from non-agricultural sources.

Table 9.17: Household income by zone

		landless	marginal	small	medium	large	all
Khulna	agriculture	109,458	141,535	238,309	353,613	630,504	182,004
	non-agric	66,895	85,789	86,364	157,905	181,545	88,371
	total	176,353	227,324	324,673	511,518	812,049	270,375
Satkhira	agriculture	38,022	90,385	141,252	328,753	683,186	103,095
	non-agric	87,019	141,286	76,327	107,552	137,984	107,270
	total	125,041	231,671	217,579	436,305	821,170	210,366
Patuakhali	agriculture	48,201	69,573	90,018	149,220	241,641	86,779
	non-agric	86,014	90,341	122,379	189,070	277,057	115,641
	total	134,215	159,914	212,396	338,291	518,697	202,420
Total	agriculture	82,364	114,847	179,457	292,336	515,861	147,009
	non-agric	75,951	94,792	99,044	163,034	212,009	99,197
	total	158,315	209,639	278,501	455,370	727,870	246,206

Average income for all sample households, BDT per year; Source: HH survey 2021

Compared with the 2020 endline survey, there has been a very large rise in income from agriculture. The 2020 endline survey gathered income data from 2019 to avoid distortions due to COVID-19 and cyclone Amphan in May 2020. However, income in 2019 was affected by severe pest attacks and low

crop prices, and the 2020 survey recorded a lower average income from agriculture than the baseline survey of 2017. Income from agriculture in the 2021 household survey was double that in the endline 2020 survey (Tk147,009 compared with Tk71,564), though there has only been a small increase in non-agricultural income (Tk99,197 compared with Tk95,042). Income may also have been boosted by completion of more BGP water infrastructure works. As a result, agriculture in 2021 provided 60% of the total household income compared with only 43% in 2020. These figures are in line with statements in FGDs saying that income from farming has doubled since the start of BGP.

Table 9.18: Share of household income by zone

		Landless	marginal	Small	Medium	large	All
Khulna	agriculture	62%	62%	73%	69%	78%	67%
	non-agric	38%	38%	27%	31%	22%	33%
	total	100%	100%	100%	100%	100%	100%
Satkhira	agriculture	30%	39%	65%	75%	83%	49%
	non-agric	70%	61%	35%	25%	17%	51%
	total	100%	100%	100%	100%	100%	100%
Patuakhali	agriculture	36%	44%	42%	44%	47%	43%
	non-agric	64%	56%	58%	56%	53%	57%
	total	100%	100%	100%	100%	100%	100%
Total	agriculture	52%	55%	64%	64%	71%	60%
	non-agric	48%	45%	36%	36%	29%	40%
	total	100%	100%	100%	100%	100%	100%

Source: HH survey 2021

Improvement in assets[\[edit | edit source\]](#)

Informal interviews show that with the increase of income people of coastal areas are likely to invest their extra income to improve their housing, buying or leasing-in agricultural land and other assets for their households, next to investing in their children's education. Table 9.19 shows the average value of land for different zones and for different land owner categories. This has been increased compared to the baseline survey 2017. The unit value of land is higher in the Khulna zone, especially. As almost all the land owned by the landless category is more valuable homestead land, the value of land per decimal for this group is higher - with the lowest value for medium and large farmers who primarily own less valuable cultivable land.

Table 9.19: Value of land

Zone	Tk per HH	Tk per dec
Khulna	2,293,832	28,946
Satkhira	1,132,132	16,506
Patuakhali	1,895,802	16,616
Land ownership		
landless	133,288	50,826
marginal	624,829	32,104
small	2,296,775	20,355
medium	7,449,604	18,874
large	23,638,026	19,617

total 1,864,604 20,945

Source: Endline survey 2020

Other than their house and different types of land, people also consider their poultry and livestock as assets. The number of poultry and livestock and their price have already been presented in chapter 7. Apart from these assets, the percentage of households owning other key assets is shown in Table 9.20.

Table 9.20: Key assets - percentage of households owning

Zone	agricultural equipment	motor vehicle	non-motor vehicle	motorbike / bicycle	radio / TV	cell phone
Khulna	81%	8%	17%	50%	45%	99%
Satkhira	49%	6%	5%	60%	55%	98%
Patuakhali	73%	2%	3%	12%	15%	99%
Land ownership						
landless	48%	8%	11%	36%	34%	96%
marginal	68%	7%	10%	37%	33%	99%
small	83%	2%	8%	41%	39%	99%
medium	85%	3%	7%	50%	53%	99%
large	87%	2%	4%	50%	63%	98%
Total	70%	5%	9%	39%	37%	99%

Source: Endline survey 2020

Ownership of agricultural machinery, radio/TV and bicycles/motorbikes is correlated with land ownership, with the number of owners increasing as land ownership rises; the correlation is weaker for motorcycles and bicycles. Virtually all households own mobile phones, but relatively few own motor vehicles and non-motorised vehicles (rickshaws etc). Ownership of both motor vehicles and non-motorised vehicles is inversely correlated to land ownership, with a higher proportion of households with less land owning these assets. The reason for this may well be because some households who have little land have transport businesses that use these vehicles.

Compared to the 2017 baseline survey, there has been a considerable increase in the numbers of households owning agricultural equipment (up from 13% to 70%). There has also been a small rise in ownership of motor vehicles (2% to 5%) offsetting a fall in non-motorised vehicles (12% to 9%) as transport services become mechanized.

The average value of assets per household is shown in Table 9.21 This is the average for all households and reflects both the value of the assets and the proportion of households owning the assets. However, the last row of the table shows the average value of each type of asset only for those households that own the asset. Although motor vehicles are the highest value type of asset for those households that own the asset, only 5% of households have motor vehicles, so the most valuable type of asset for all households are bicycles / motor bikes as these are owned by 39% of all households.

Table 9.21: Value (BDT) of different types of assets - average for all households

Zone	agricultural equipment	motor vehicle	non-motor vehicle	motor / bicycle	radio / TV	Cell phone value
Khulna	5463	6080	2185	12132	2717	4658

Satkhira	2749	2425	1359	10979	2974	3949
Patukhali	3277	963	2074	6021	1159	4891
Land ownership						
landless	1178	3784	2584	3094	1461	2339
marginal	2600	3925	1901	6229	1857	3593
small	5235	1092	1728	12797	2429	5575
medium	11728	8214	1610	26970	4679	9848
large	16927	2308	423	41577	6006	13871
Total	4013	3352	1941	9670	2225	4565

Source: Endline survey 2020

Mobile phones, owned by 99% of households, are next most valuable type of asset. Although at least 96% of households own phones in all land ownership categories, the value of these phones increases sharply as land ownership increases. This is because households with more land have more phones and each of their phones is more valuable (Table 9.22).

The types of assets shown in these tables are not the only assets, or even principal assets, owned by households. The value of house and livestock are mentioned in other sections of this report. In addition, there are other valuable household assets such as gold jewellery, furniture, and solar power systems, as well as other productive assets including trees and shops, and financial assets such as savings.

Table 9.22: Mobile phones

Land ownership	% own	value (BDT)	avg. number	value (BDT)/unit
Landless	96%	2339	1.6	1483
Marginal	99%	3593	1.9	1921
Small	99%	5575	2.2	2555
Medium	99%	9848	2.6	3749
Large	98%	13871	3.0	4565
Total	99%	4565	2.0	2305

Source: Endline survey 2020

Changes in poverty ranking[\[edit | edit source\]](#)

Sample households were asked to place themselves in one of four socio-economic wealth ranks in 2013-14 and in 2021. Table 9.23 shows that overall 70% of households said they were very poor or poor in 2013-14; this has now reduced to 58%. There has especially been a significant change in the landless land ownership category. In 2013-14, 72% of households in this category were very poor, now it is 39%. Because COVID-19 caused an increase in poverty again in Bangladesh, it is likely that the poverty ranking results would have even been better without COVID-19.

Table 9.23: Poverty ranking

Land ownership category	very poor	poor	Medium	rich	total	
Landless	2013-14	72%	26%	2%	0%	100%
	2021	39%	55%	6%	0%	100%

Marginal	2013-14	18%	72%	8%	0%	100%
	2021	5%	71%	21%	0%	100%
Small	2013-14	2%	41%	52%	0%	100%
	2021	0%	28%	69%	1%	100%
Medium	2013-14	0%	9%	65%	23%	100%
	2021	0%	3%	64%	30%	100%
Large	2013-14	0%	1%	27%	68%	100%
	2021	0%	0%	11%	84%	100%
All	2013-14	22%	48%	25%	3%	100%
	2021	10%	48%	36%	4%	100%

Source: HH survey 2021

Enterprise development[[edit](#) | [edit source](#)]

Data shows that a larger cropping area, improved cropping patterns and increased yields have resulted in increased farm income. Informal interviews found that people are investing their additional income from agriculture in agricultural and non-agricultural enterprise. Over one fifth (22%) of the sampled households report having enterprises or some type of business activity other than farming (Table 9.24). This is a marginal fall on the 23% recorded in the 2017 baseline survey. Of these businesses, 23% are related to agriculture and 80% are non-agricultural; a few households have both types of business.

Table 9.24: Non-farm enterprises and businesses

Zone	Percent of all HH have a business	Percentage of all business			
		Agriculture-related business		Non-agricultural business	
		hire	labour	hire	labour
Khulna	25%	26%	7%	76%	13%
Satkhira	20%	34%	6%	71%	17%
Patuakhali	21%	12%	1%	90%	10%
Land ownership					
landless	17%	27%	0%	74%	10%
marginal	22%	23%	5%	79%	13%
small	23%	23%	6%	82%	12%
medium	32%	23%	8%	81%	17%
large	23%	17%	17%	83%	42%
Total	22%	23%	5%	80%	13%

Source: Endline survey 2020

A smaller proportion (17%) of landless households have a business, while a greater proportion (33%) of medium owner households have a business. Compared to the 2017 baseline survey, there have been small increases in the proportion of households with businesses in the landless (up from 15% to 17%), medium (31% to 32%) and large (21% to 23%) landowner categories and falls in the marginal (down 25% to 22%) and small (24% to 23%) landowner categories.

Out of the total number of businesses, 5% of agricultural related businesses hire labour as do 13% of non-agricultural businesses. Taking account of the fact that there are more non-agricultural

businesses, 22% of agricultural businesses, and 16% of non-agricultural businesses hire labour.

Table 9.25 shows the average number of family members and hired workers, and income generated per business that reports using this labour and generating income. This shows that a typical business in both sectors employs 1.2 family members, but where workers are hired, there are more in non-agricultural businesses (2.4) than in agriculture (1.8). Overall, an average business employs 1.3 household members and 0.4 hired workers. These businesses generate significant levels of income (generally more than farm enterprises), with higher incomes for non-agricultural businesses.

Table 9.25: Employment and income - average per business reporting

Zone	Agriculture business			Non-agricultural business		
	Family employ	Hired workers	Income BDT/year	Family employ	Hired workers	Income BDT/year
Khulna	1.2	1.8	109,246	1.2	2.7	133,468
Satkhira	1.1	1.7	85,911	1.2	1.4	137,561
Patuakhali	1.1	2.3	109,372	1.2	3.1	129,824
Land ownership						
landless	1.1	0.0	67,966	1.2	2.0	113,828
marginal	1.2	1.8	105,490	1.2	2.6	116,124
small	1.1	1.5	107,776	1.2	2.2	145,182
medium	1.2	2.1	110,274	1.2	2.5	158,025
large	1.0	3.5	270,000	1.4	3.2	315,200
Total	1.1	1.8	101,875	1.2	2.4	132,912

Source: Endline survey 2020

Improvements in Living Standards[\[edit\]](#) | [edit source](#)

FGD participants attribute between 30% and 100% of the increased incomes to BGP interventions – but most common is the range 40% to 60%. Participants in FGDs said that they spent their additional income on a range of items. Improving housing and sanitation seems to have been a major priority, but households have also invested in more land for good housing, livestock and different agricultural and non-agricultural endeavors. Most FGDs say expenditure on health and education also has increased, and households have acquired a range of consumer durables. Increased production of both crops and fisheries have improved food security and fulfilled nutritional needs. Improved agricultural practices not only led to increased production and employment, but also the well-being of the entire family.

Changes in housing[\[edit\]](#) | [edit source](#)

Two indicators of housing quality are shown in Table 9.26. Respondents placed the greatest value on houses in Satkhira although they had fewer rooms. Houses in Patuakhali have the most rooms, but are least valued. Moving up the landownership categories both the number of rooms and house value increase. But the increase in house value is greater than the increase in the number of rooms, so the value per room also goes up – suggesting that quality of housing increases as well as size of house. Compared with the 2017 baseline survey, the number of rooms has increased from 2.2 to 2.6 and the average value of a house has more than doubled – from BDT 74,694 to BDT 155,916.

Table 9.26: Number of rooms and house value

Zone	Number of rooms	House value BDT
Khulna	2.25	114,022
Satkhira	2.01	120,663
Patuakhali	3.26	93,624
Land ownership		
landless	1.79	77,105
marginal	2.38	112,949
small	2.93	208,197
medium	3.53	331,847
large	4.50	436,942
Total	2.55	155,916

Source: Endline survey 2020

Table 9.27 shows almost two-thirds (65%) of houses have walls made of brick and cement in Satkhira, while in Patuakhali around 92% of houses have tin, mud or wood walls. Few houses (3%) now have grass, bamboo and other non-substantial walls, which is likely to be found in households who own little land.

Table 9.27: Housing wall materials - percentage of households

Zone	grass, bamboo & similar	tin, mud & wood	brick, cement	total
Khulna	5.3%	49.1%	45.5%	100%
Satkhira	3.1%	32.2%	64.8%	100%
Patuakhali	0.1%	91.6%	8.3%	100%
Land ownership				
landless	5.2%	62.3%	32.4%	100%
marginal	3.3%	63.6%	33.2%	100%
small	1.5%	58.3%	40.2%	100%
medium	1.3%	44.8%	53.9%	100%
large	0.0%	48.1%	51.9%	100%
Total	2.9%	60.1%	37.0%	100%

Source: Endline survey 2020

There is some correlation between land ownership and more houses with brick and cement walls, but the large variations between polders suggest that local preferences are more important. House wall construction has improved since the 2017 baseline survey, when 9% had grass or similar walls, 57% had tin etc. and 34% had concrete.

Table 9.28: House roof materials- percentage of households

Zone	concrete	tin	tiles	grass etc.	other	total
Khulna	15.9%	81.6%	1.6%	0.8%	0.1%	100%
Satkhira	22.5%	32.3%	41.6%	1.0%	2.5%	100%
Patuakhali	4.8%	94.8%	0.1%	0.2%	0.1%	100%
Land ownership						
landless	7.2%	67.4%	22.9%	1.3%	1.3%	100%

marginal	9.7%	77.9%	11.1%	0.8%	0.5%	100%
small	17.8%	75.4%	5.9%	0.2%	0.7%	100%
medium	29.5%	67.9%	1.9%	0.3%	0.3%	100%
large	38.5%	61.5%	0.0%	0.0%	0.0%	100%
Total	13.6%	74.1%	11.0%	0.7%	0.7%	100%

Source: Endline survey 2020

Tiles are a popular roofing material in Satkhira (42% of houses), and also concrete (23%) is more widely used than in the other two zones, where tin is the predominant roofing material (Table 9.28). The use of grass, straw and palm leaves for roofing has almost disappeared. As land ownership increases, more houses have concrete roofs, but tile roofs are more frequently found on houses of those owning less land. Compared with the 2017 baseline survey, the use of concrete roofs has increased (10% to 14%), tin roofs are almost unchanged (75% to 74%), and tile and other materials have fallen from 15% to 12%.

Improvement in drinking water and sanitation[\[edit\]](#) | [edit source](#)

Table 9.29 shows that most water for domestic use comes from groundwater, with 32% of the households using shallow tubewells (STW) and 62% using deep tubewells (DTW). In Satkhira a significant minority use rainwater (5%) or otherSources (13%) - such as piped systems or purchasing from water vendors. In this zone there is significant contamination of groundwater by arsenic, whereas saline intrusion may also be an issue in some places. There is considerable variation between polders in both Khulna and Patuakhali in terms of the balance between STW and DTWSources - which may be due to the availability and quality of water in the deep and shallow aquifers. Households owning less land are more likely to get their water from STW, although the converse relationship (households with more land being more likely to get water from DTW) is not so strong.

Table 9.29: Sources of water for domestic uses- percentage of households

Zone	STW	pond	DTW	Rainwater	other	total
Khulna	34.8%	1.8%	62.1%	1.3%	0.0%	100%
Satkhira	39.0%	1.3%	42.0%	4.7%	13.0%	100%
Patuakhali	22.8%	0.6%	76.6%	0.0%	0.0%	100%
Land ownership						
landless	37.5%	1.8%	53.6%	3.1%	4.1%	100%
marginal	33.3%	1.2%	61.2%	1.3%	3.0%	100%
small	27.7%	1.2%	67.3%	1.3%	2.6%	100%
medium	24.7%	0.3%	69.2%	1.9%	3.9%	100%
large	19.2%	1.9%	71.2%	0.0%	7.7%	100%
Total	31.6%	1.3%	62.3%	1.7%	3.2%	100%

Source: Endline survey 2020

The 2017 baseline survey recorded 88% of households having access to “safe” drinking water - this being defined as water from a tubewell (STW or DTW). In fact, safe water can be obtained from rainwater and otherSources (piped systems, vendors etc), but anySource that is not properly installed, maintained or used can become unsafe. In comparison the endline survey recorded 94% of households using tubewell water and 98.7% havingSources that should be safe (this being allSources except ponds).

Table 9.30: Sanitation-percentage of households with type of latrine

Zone	unpaved, katcha	sanitary slab	pucca, paved	pit latrine	Unsan itary	none	total	total unsanitary *	total sanitary y
Khulna	40.3%	31.2%	26.4%	1.9%	0.0%	0.2%	100.0%	2.1%	97.9%
Satkhira	29.5%	28.3%	33.8%	7.8%	0.5%	0.0%	99.5%	8.4%	91.6%
Patuakhali	40.0%	47.7%	8.6%	3.7%	0.0%	0.0%	100.0%	3.7%	96.3%
Land ownership									
landless	51.9%	29.8%	12.9%	4.9%	0.4%	0.1%	99.6%	5.4%	94.6%
marginal	42.0%	35.8%	17.8%	4.2%	0.1%	0.1%	99.9%	4.4%	95.6%
small	29.0%	39.9%	27.0%	4.0%	0.1%	0.0%	99.9%	4.1%	95.9%
medium	15.6%	40.3%	43.2%	1.0%	0.0%	0.0%	100.0%	1.0%	99.0%
large	7.7%	50.0%	40.4%	1.9%	0.0%	0.0%	100.0%	1.9%	98.1%
Total	37.5%	36.4%	21.9%	4.0%	0.1%	0.1%	99.9%	4.2%	95.8%

Unsanitary include pit latrine, unsanitary and none. All others are defined as sanitary. Source: Endline survey 2020

Most households (88%) report that they wash their hands with soap before meals and after using toilet (Table 9.31). This compares with only 36% in the 2017 baseline survey. The huge increase in hand washing is probably -at least partially- due to the hygiene measures promoted after the start of the COVID-19 pandemic. Fewer households in Satkhira (79%) wash hands and hand washing is also quite strongly correlated with land ownership, with only 76% of landless households but 100% of large owner households washing hands.

Table 9.31: Wash hands before meal and after using toilet

Zone	% of HH Wash hands
Khulna	89%
Satkhira	79%
Patuakhali	93%
Land ownership	
landless	76%
marginal	88%
small	94%
medium	97%
large	100%
Total	88%

Source: Endline survey 2020

Improvement in food security[\[edit](#) | [edit source](#)]

The end-line survey enquired about food consumption and food shortages for the years 2019 and 2020. The reason to cover these two years was to find out to which extent the events of 2020 (cyclone Amphan and the COVID pandemic) had damaged food security (Table 9.32). Over 90% of households reported consuming fish, meat and eggs at least once in the month preceding the 2020 survey (and in the same month in 2019).

The proportion of households reporting consumption of fish was unchanged between 2019 and 2020, but there were marginal declines in the proportion of households consuming meat (0.4 percentage points) and eggs (1.0 percentage points). Sharper declines were reported in the Satkhira zone and

for landless households. However, the average number of times households consumed these foods increased between 2019 and 2020 (Table 9.33) – by 10% for fish, 15% for meat and 9% for eggs. Although there is a good correlation between land ownership and frequency of consumption of these three foods, landless and marginal owner households (who consume less) reported larger increases in the frequency of consumption between 2019 and 2020.

Table 9.32: Percentage of households reporting consumption of fish, meat and eggs

Zone	2019			2020			change		
	fish	Meat	eggs	fish	meat	Eggs	fish	Meat	eggs
Khulna	100%	96%	99%	100%	96%	99%	0.0%	0.1%	0.0%
Satkhira	100%	95%	93%	100%	93%	90%	0.0%	-2.1%	-3.4%
Patuakhali	100%	90%	98%	100%	91%	97%	0.0%	0.2%	-0.4%
Land ownership									
landless	100%	90%	94%	100%	88%	92%	0.0%	-2.2%	-2.2%
marginal	100%	92%	97%	100%	93%	96%	0.0%	1.2%	-0.9%
small	100%	97%	99%	100%	95%	98%	0.0%	-1.5%	-0.5%
medium	100%	99%	99%	100%	99%	99%	0.0%	-0.3%	-0.3%
Large	100%	98%	98%	100%	98%	98%	0.0%	0.0%	0.0%
Total	100%	94%	97%	100%	93%	96%	0.0%	-0.4%	-1.0%

Source: Endline survey 2020

Table 9.33: Frequency of consumption of foods during the preceding month

Zone	2019			2020			change		
	fish	Meat	eggs	fish	meat	eggs	fish	Meat	eggs
Khulna	16.4	2.5	8.9	18.3	2.9	9.5	12%	17%	7%
Satkhira	16.6	2.5	7.0	18.8	2.9	7.9	13%	16%	12%
Patuakhali	16.0	2.6	10.0	17.0	2.9	10.9	6%	13%	9%
Land ownership									
landless	14.2	1.8	7.0	15.9	2.1	7.6	12%	15%	9%
marginal	15.5	2.3	8.5	17.2	2.6	9.3	11%	16%	10%
small	17.6	2.9	9.5	19.2	3.3	10.4	9%	14%	9%
medium	20.0	3.8	11.1	21.3	4.3	11.9	7%	15%	7%
large	21.4	4.8	13.9	22.9	5.1	14.9	7%	5%	7%
Total	16.3	2.5	8.8	18.0	2.9	9.6	10%	15%	9%

Source: Endline survey 2020

Just over three-quarters of the households (see code 4 in Table 9.34) reported they did not suffer any food shortages in the last one month. Of households reporting food shortages, about half said it only happened once or twice (code 1 in Table 9.34). A higher proportion (about one third) of households in Satkhira reported food shortages, with fewer (just over 10%) in Patuakhali. There is a strong correlation between land ownership and food shortages, with households owning less land being more likely to report shortages.

Table 9.34: Food shortages in last one month

Zone	Not enough food 2019- % of HH				Not enough food 2020 - % of HH			
	1	2	3	4	1	2	3	4
Khulna	17.0%	8.8%	1.8%	72.5%	14.6%	7.1%	2.1%	76.2%
Satkhira	16.8%	13.7%	4.3%	65.2%	12.7%	15.2%	6.0%	66.1%
Patuakhali	3.6%	6.5%	0.8%	89.1%	4.2%	5.9%	1.1%	88.8%
Land ownership								
landless	20.5%	17.1%	5.6%	56.8%	17.6%	17.9%	6.5%	57.9%
marginal	14.5%	11.8%	2.0%	71.7%	13.1%	10.0%	3.1%	73.8%
small	6.7%	3.1%	0.3%	89.9%	4.7%	3.3%	0.5%	91.6%
medium	2.3%	0.3%	0.0%	97.4%	1.9%	0.3%	0.3%	97.4%
large	0.0%	1.9%	0.0%	98.1%	1.9%	0.0%	0.0%	98.1%
Total	12.2%	9.2%	2.0%	76.6%	10.4%	8.6%	2.7%	78.2%

Code: 1-rarely (1 to 2 times); 2=sometimes (3 to 5 times); 3=often (> 5 times); 4=never;Source: Endline survey 2020

Table 9.35: Change in food shortage in last one month

Zone	Change 2019 to 2020 in percentage points			
	1	2	3	4
Khulna	-2.4%	-1.7%	0.3%	3.8%
Satkhira	-4.1%	1.4%	1.7%	0.9%
Patuakhali	0.6%	-0.6%	0.4%	-0.3%
Land ownership				
landless	-2.8%	0.8%	0.9%	1.2%
marginal	-1.4%	-1.8%	1.0%	2.2%
small	-2.0%	0.2%	0.2%	1.7%
medium	-0.3%	0.0%	0.3%	0.0%
large	1.9%	-1.9%	0.0%	0.0%
Total	-1.7%	-0.6%	0.7%	1.6%

Source: Endline survey 2020

Table 9.34 shows data on food shortages for 2019 and 2020 and the changes between these two years are shown in Table 9.35. This shows that there has been a small increase of 1.6 percentage points in the proportion of households saying there is no food shortage but, of those reporting shortages, some more (0.6 percentage points) report these to be frequent (over 5 times in the month).

In the 2017 baseline survey slightly fewer households reported food shortages in the last month, but as these surveys collected data at different times of year, the data is not really comparable.

Table 9.36: Food shortages in last 12 months

Zone	number	Percent
Khulna	157	10.0%
Satkhira	140	14.3%
Patuakhali	28	2.0%
Land ownership		

landless	160	20.5%
marginal	149	9.2%
small	16	1.3%
medium	0	0.0%
large	0	0.0%
Total	325	8.2%

Source: Endline survey 2020

A small proportion of households (8.2%) reported in 2020 food shortages in terms of not being able to have at least two meals per day at some point in the last 12 months (Table 9.36). A higher proportion in Satkhira (14%) report these shortages, with only 2% in Patuakhali and 10% in Khulna. The shortages are highly correlated to land ownership, with over 20% of landless and 9% of marginal owner households reporting shortages compared to only 1.3% of small owners and no medium or large owners. The fact that land holdings tend to be larger in Satkhira may help explain why there are fewer food-insecure households here.

The proportion of households reporting food shortages (less than two meals per day) during the last 12 months was slightly lower in the 2017 baseline survey – 7.2% compared to 8.2% in 2020. This applies more in Khulna 7.1% to 10.0%, but also in Satkhira 13.1% to 14.3%, and Patuakhali 1.6% to 2.0%. This may be linked to the poor rice crop in 2019 and, to a lesser extent, in 2020. However, chapter 6 showed that the cropping intensity increased significantly over the years and that crop production (yield) was again very good in the year 2021, thus it is likely that in 2021 food insecurity was reduced as compared to 2019 and 2020.

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

Notes[\[edit\]](#) | [edit source](#)

1. [↑](#) Section B Introduction and Summary provides an overview of the studies conducted through the Blue Gold Program, and the studies and reports which were the mainSources of information for Section B.

See more[\[edit\]](#) | [edit source](#)

Previous chapter:

[Chapter 08: The Outcomes and Impact on the Livelihoods of Women](#)

[Blue Gold Lessons Learnt Wiki](#)
[Section B: Development Outcomes](#)

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[Chapter 10: Coastal Infrastructure](#)

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<u>Chapter 05: Outcomes and Impact from Participatory Water Management</u>	<u>Chapter 06: Outcomes and Impact from Agricultural Development</u>	<u>Chapter 07: Inclusive Development Approach: Outcomes and Impacts from Homestead Based Production</u>
<ol style="list-style-type: none">1. <u>Increased resilience against climatic variability: outcomes and impact of rehabilitation work on water management</u>2. <u>Organised coastal communities: outcomes and impact of institutional development</u>	<ol style="list-style-type: none">1. <u>Changes in crop agricultural production</u>2. <u>Change in cropping pattern and crop types</u>3. <u>Increase in Cropping intensity</u>4. <u>Increase in Crop yields</u>5. <u>Increase in employment through agricultural development</u>6. <u>Economic return of improved agriculture production</u>	<ol style="list-style-type: none">1. <u>Homestead vegetables production</u>2. <u>Homestead fruit production</u>3. <u>Commercial fruit production</u>4. <u>Poultry rearing</u>5. <u>Goats</u>6. <u>Cattle and buffalo</u>7. <u>Pond fisheries</u>8. <u>Feedback from FGDs on homestead production</u>9. <u>Problems of agricultural and homestead production</u>
<u>Chapter 08: The Outcomes and Impact on the Livelihoods of Women</u>	Chapter 09: The Overall Outcomes and Impacts on the Livelihoods of Coastal Communities in Blue Gold Polders	
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Blue Gold Wiki		

Executive summary: A Call for Action

<u>Section A: Background and context</u>	<u>Section B: Development Outcomes</u>	<u>Section C: Water Infrastructure</u>
Summary <ul style="list-style-type: none"> • Chapter 01: Overview, Purpose and Structure of Report • Chapter 02: Institutional Setting • Chapter 03: Social, Physical and Environmental Context • Chapter 04: Policy framework, history of interventions and project definition 	Summary and Introduction <ul style="list-style-type: none"> • Chapter 05: Outcomes and Impact from Participatory Water Management • Chapter 06: Outcomes and Impact from Agricultural Development • Chapter 07: Inclusive Development Approach: Outcomes and Impacts from Homestead Based Production • Chapter 08: The Outcomes and Impact on the Livelihoods of Women • Chapter 09: The Overall Outcomes and Impacts on the Livelihoods of Coastal Communities in Blue Gold Polders 	Summary <ul style="list-style-type: none"> • Chapter 10: Coastal Infrastructure • Chapter 11: Investments for Polder Safety and Water Management • Chapter 12: Survey, Design and Procurement • Chapter 13: Construction: Progress, Modalities and Lessons Learnt
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A defined set of temporary activities through which facilitators seek to effect change

A livelihood is a way of making a living. It comprises capabilities, skills, assets (including material and social resources), and activities that households put together to produce food, meet basic needs, earn income, or establish a means of living in any other way.

Blue Gold Program

A livelihood is a way of making a living. It comprises capabilities, skills, assets (including material and social resources), and activities that households put together to produce food, meet basic needs, earn income, or establish a means of living in any other way.

The strategies that people employ in order to utilize and transfer assets to produce income today and deal with problems tomorrow. These strategies change and adapt in response to various shocks, external influences, institutional norms and rules, and other factors.

Household

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

assumed in this report to operate more than 5.5 acres (2.23 ha)

hectare

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

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

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

Bangladesh Taka

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

one hundredth of an acre (0.004 ha)

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

shallow tube wells

deep tube wells

The influx of sea water into an area that is not normally exposed to high salinity levels - for example, the inflow of seawater into a fresh water wetland or a fresh water aquifer.

impermanent, unofficial; an unimproved version, eg earthen road, earth-walled house

permanent, official, an improved version: brick-paved road as opposed to an earthen road; brick-built house as opposed to earth-walled house

Cropping intensity - The number of crop harvest per unit land per year. The average cropping intensity (CI) is calculated as the total area of all crops per year divided by the area of cultivable land. In its CI calculations BGP treats fish ghers as another crop; the DAE method excludes fish ghers in its CI calculations. Hence the CI calculated by BGP is higher than as calculated by DAE.

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

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Variants

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Blue Gold Program Wiki

The wiki version of the Lessons Learnt Report of the Blue Gold program, documents the experiences of a technical assistance (TA) team working in a development project implemented by the

Bangladesh Water Development Board (BWDB) and the Department of Agricultural Extension (DAE) over an eight+ year period from March 2013 to December 2021. The wiki lessons learnt report (LLR) is intended to complement the BWDB and DAE project completion reports (PCRs), with the aim of recording lessons learnt for use in the design and implementation of future interventions in the coastal zone.

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