



Department of Livestock Services

Annex I: Household Survey Findings

for

Contingency Emergency Response Component (CERC) - Emergency Action Plan (EAP) Evaluation



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Center for Environmental and Geographic Information Services

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1. Introduction

1.1 Preamble

Household surveys defined as a distinct type of method for data collection. It is conducted based on the questionnaires that are given to a sample of households in a population. In conducting the CERC-EAP evaluation, household survey conducted to collect quantitative information of the sample households. This survey provided some key features about the profile of beneficiary households, impact of CERC-EAP activities on both dairy and poultry sectors. However, a total of 2037 households' survey conducted under the study. The study area covered 42 Upazila of 21 districts under the 8 divisions.

1.2 Purpose

The main purpose of the household survey was to collect quantitative information about the farm households on demographic status, impact of CERC-EAP activities and level of satisfaction of that project.

1.3 Limitation and Challenges

The activities of CERC-EAP were conducted in 465 Upazilas in 61 districts of Bangladesh. But statistically justified sample size for study area covers 42 Upazilas under the sample 21 districts of eight divisions. The study included survey of a number of samples for quantitative data collection. In course of study period, a new variant (i.e. Omicron) of COVID-19 corona virus was prevailing in the country. Study period was stipulated for three months that considered as the major limitation, and collecting data from the door steps was challenging. Having with the challenges and limitations of the study, all activities conducted following the health protocol for Covid-19 as omicron started spreading when the fieldwork started.

1.4 Procedures of Household Survey

Sample Design

The CERC-EAP implemented in 61 Districts under 8 Divisions. The objective of the CERC-EAP was to support and protect the livestock and poultry farmers for coping with the vulnerabilities due to the COVID -19 pandemic situations. A sample design was chalked out for post project evaluation to assess the relevance, effectiveness, efficiency, impacts and sustainability of emergency activities implemented by the CERC-LDDP. For conducting this evaluation study, multi-stage sampling design was followed to draw the samples for data collection. The stages were stratified by administrative hierarchy, such as: (i) Division, (ii) District and (iii) Upazila, where the CERC-EAP was implemented. Considering the sampling frame of the dairy and poultry farms, the sample number of District and Upazila were selected purposively.

Thus, sample size of Districts in eight (8) Divisions became 21 and Upazilas in each sample District became two (2). The total sample upazilas were 42. Subsequently the sample Districts and Upazilas were selected randomly considering the sample size. **Figure 1.1** shows the sample areas in the Divisions in Bangladesh. The sample farm households were selected from each of the sample Upazilas. The sample size determination of farm households is described below.

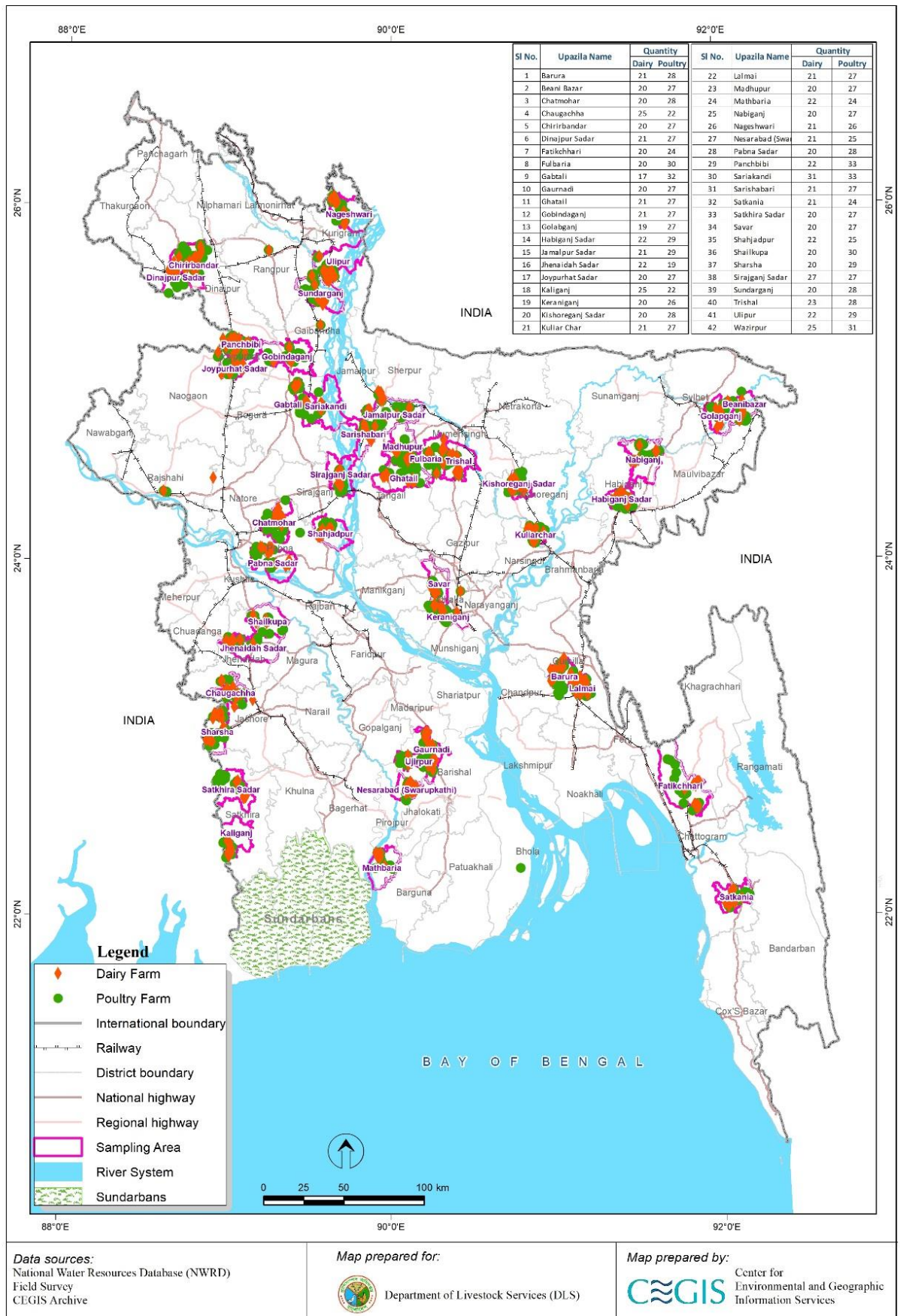


Figure 1.1 : Study Area Map for Evaluation Study

Data sources:
National Water Resources Database (NWRD)
Field Survey
CEGIS Archive

Map prepared for:
 Department of Livestock Services (DLS)

Map prepared by:
 Center for Environmental and Geographic Information Services

Determination of Sample Size of Farm Households and Adjustment

Two groups of farm households were considered in the study -

- Dairy farm households with small, medium and large farm subgroups; and
- Poultry farm households (including broiler, Sonali, layer and duck categories) with 3 different subgroups

Different sample sizes were considered for two groups as it consisted a big difference between population size of the groups as well as sub-categorization of group. However, techniques of sample size determination were similar to the groups where at least 20% (surveyed about 18.75%) of the total sample size was focused to the female representative (as per their availability).

Sample size for the household survey was determined following the formula (Cochran, 1953)

$$n = p(1 - p) \left(\frac{Z}{E} \right)^2$$

[n = sample size, P= Proportion of beneficiaries = 0.40 (assumed 0.4 as the target groups are small compare to its area coverage)

Z=1.64 (at 90% confidence level)

E = Standard error = 0.05 (or 5% is considered as standard margin of error)]

The above formula gave the acceptable total sample size as around 260. If the design effect was taken as 3 (as three subgroups), and rounding up the fraction number of upazila level sample size, it took total 840 dairy farm households in the sample as 20 households in each upazila.

In terms of sampling of the poultry farm household, similar approach was adopted while the design effect was added as 4 due to having four-(4) broader sub-groups. Thus, after rounding up the fraction number in upazila level, total sample size stood as 1134 where each upazila comprised 27 poultry farms.

Additionally, 32 beneficiary households were selected purposively considering the benefits from the activities of rental service. In this way, 2006 beneficiary households were targeted to be surveyed in 42 Upazilas of 21 Districts under 8 Divisions.

Table 1.1: Distribution of Sample Size by Farm Type for Households Surveyed

Types of Farm	Actual Quantity (in nos.)
Dairy Farm Household Survey (including small, medium and large farm subgroups)	899
Poultry Farm Household Survey (including all categories and subcategories)	1,138
Rental vehicle service receiver (all livestock farmers including women)	68
Total	2,037

It is noted that rented vehicle service receiver were 68 those were also included either in dairy or poultry surveyed farm household. Therefore, for avoiding the double counting, number rented vehicle service receivers are deemed in the total sample size.

Distribution of Sample Size

Distribution of actual surveyed sample size with the study Upazilas were given in the following **Table 1.2**

Table 1.2: Upazila wise Actual Sample Size in Livestock Category

Division	District	Upazila	C1	C2	C3	B	D	L	S	Total
Barishal	Barishal	Gournadi	14	4	2	11	3	7	6	47
		Wazirpur	17	5	3	14	3	9	5	56
	Pirojpur	Mathbaria	14	6	2	11	1	5	7	46
		Nesarabad (Swarupkati)	15	4	2	7	2	10	6	46
Chattogram	Chattogram	Fatikchhari	15	4	2	11	1	6	5	44
		Satkania	15	4	2	11	0	7	6	45
	Cumilla	Barura	15	4	2	12	2	6	8	49
		Lalmai	15	4	2	15	1	8	3	48
Dhaka	Dhaka	Keraniganj	12	5	3	11	2	7	6	46

Division	District	Upazila	C1	C2	C3	B	D	L	S	Total
	Kishoreganj	Savar	14	4	3	11	3	6	6	47
		Kishoreganj Sadar	14	4	2	11	3	7	7	48
		Kuliar Char	15	4	2	11	3	7	6	48
	Tangail	Ghatail	15	4	2	11	3	7	6	48
		Madhupur	14	4	2	11	3	7	6	47
Khulna	Jashore	Chaugachha	18	5	2	11	3	2	6	47
		Sharsha	13	4	3	11	4	7	7	49
	Jhenaidah	Jhenaidah Sadar	17	4	2	11	1	0	7	42
		Shailkupa	13	4	3	20	5	0	5	50
	Satkhira	Kaliganj	17	5	2	11	1	6	4	46
		Satkhira Sadar	14	4	2	13	3	4	7	47
Mymensingh	Jamalpur	Jamalpur Sadar	15	4	2	11	4	7	7	50
		Sarishabari	15	4	2	10	3	8	6	48
	Mymensingh	Fulbaria	14	4	2	12	3	9	6	50
		Trishal	14	7	2	12	3	7	6	51
Rajshahi	Bogura	Gabtali	12	3	2	14	3	8	7	49
		Sariakandi	20	6	5	13	3	7	10	64
	Joypurhat	Joypurhat Sadar	14	4	2	11	3	7	6	47
		Panchbibi	12	8	2	12	3	9	9	55
	Pabna	Chatmohar	13	5	2	10	3	8	7	48
		Pabna Sadar	16	4	0	12	3	7	6	48
	Sirajganj	Shahjadpur	16	5	2	10	3	3	8	47
		Sirajganj Sadar	19	7	1	11	3	7	6	54
Rangpur	Dinajpur	Chirirbandar	14	4	2	11	3	7	6	47
		Dinajpur Sadar	14	5	2	11	3	7	6	48
	Gaibandha	Gobindaganj	16	3	2	12	3	7	5	48
		Sundarganj	14	4	2	11	3	8	6	48
	Kurigram	Nageshwari	14	5	2	12	3	7	4	47
		Ulipur	16	4	2	13	3	7	6	51
Sylhet	Habiganj	Habiganj Sadar	15	4	3	11	7	8	3	51
		Nabiganj	14	4	2	11	5	5	6	47
	Sylhet	Beani Bazar	15	4	1	10	3	6	8	47
		Golabganj	15	3	2	11	3	7	5	46
Total			623	187	89	486	120	274	258	2037

Note: C1= 2-5 Cows, C2= 6-9 Cows, C3 = 10-20 Cows, B = Broiler (B1= 500-1000 birds, B2 = 1001 - 2000 Birds & B3= 2001+ birds), D= Duck (D1 = 100-300 birds, D2=301-500 birds & D3 = 501 birds, L= layer (L1= 200-500 birds, L2= 501-1000 birds & L3= 1001+ birds) and S- Sonali (S1= 100-500 birds, S2= 501-1000 birds & S3= 1001+ birds).

Due to saving times, all types of surveys were conducted in same Upazilas. All those poultry farm sub-categories were reflected in the overall analysis. Ensuring the female participation in the surveys, overall, about 18.75% of the total sample size (382) was surveyed for female farmers (as per availability). Although there were the subgroups distribution by the female farm HHs, but number of this distribution was changed as per the availability while total number remained unchanged.

1.4.1 Research Associate Recruitment, Training and Field Test

For collecting necessary data from field 42, Research Associates were recruited. A detailed process was followed in recruitment where the Research Associates were short listed according to their relevant experiences, they were interviewed and finally called for 3 days long training session. Training modules used in the training for better understanding. After the completion field test conducted for clearing their concept and validated the prepared all sets of questionnaires and checklist. After getting the feedback from the training some changes made and got approval from the PMU. According to the performance of the trainee Research Associates, field team and location were designed/selected by the expert evaluation team.



Figure 1.2: Training Session on Data Collection



Figure 1.3: FGD Conducted during Field Test

1.4.2 Data Collection

A total of 2037 sample households were surveyed by the research associate in collecting data on the impacts of the project and respondents' satisfaction on the activities performed and the utilization of the support received through the CERC-EAP activities. During the quantitative survey, dairy and poultry farm categories and women farm households were also considered.

1.4.3 Quality Checking and Control

Since the mobile based data collection 'KoBo Toolbox' was applied for data collection involving several techniques in the tool to monitor and track the activities of the Field Associates, monitoring team was formed headed by the officials of CEGIS to oversee the data collection activities. The team regularly checked the activities of the Research Associates and their Mentors/Supervisors. Any mistake in data collection process was corrected for validation. This team ensures the quality of data and time-barred performances.

1.4.4 Data Stocktaking, Cleaning and Compilation

The data collected through HH survey required cleaning. The data collected by PMU by using mobile based techniques of data collection known as 'KoBo Toolbox' were cross checked and corrected. After verification, the data were analysed and finally the outcomes of the analysis were interpreted in the evaluation report.

In addition, 4 mentors of CEGIS office were engaged (one is responsible for 2 Divisions) to mentor their respective teams of Research Associates and regularly check the outputs of HH survey. Information collected through household survey were also exposed through interpretation and compiled in the final report. Checking, cleaning, and compilation of data were done by the responsible research associates under the supervision of the mentors.

1.4.5 COVID- 19 Protocol

Health Protocol during In-Person Interview

Field staffs were advised to maintain the following health protocol for COVID- 19 during data collection through face to face interview:

Health Protocol for COVID- 19

- Data collection through HH survey was carried out without any physical contact.
- Both the Research Associate and the respondent used face masks.
- All of field staff carried hand sanitizers and disinfectant spray with them and used them when required.

Maintaining the Health Protocol

All persons involved in data collection and supervision were instructed to maintain all the health protocol as per national guideline for community circulated from the Director General of Health Services (DGHS) to protect themselves and others from the transmission of COVID-19. However, in addition, the staff involved in field work were advised to avoid hand shaking, wearing of face mask properly, maintaining the norms of social distancing, avoiding mass gathering, avoiding interview of any suspected person for COVID-19 infection such as fever, sneezing, nasal discharge, coughing, etc. Each and every person involved in data collection were responsible for their safety protection from COVID-19 and maintained safety protocol accordingly.

2. Findings of the Household Survey

The Household Survey conducted to collect quantitative data to understand the impact of CERC-EAP activities (to combat the situation of Covid 19) on Dairy and Poultry farmers. In this aspect, a total of 2037 Households surveyed and findings of that survey analysed in the following section. Here, N determines as the number of households/responded who were actually surveyed and responded according to the structured questionnaire.

2.1 Profile of the Farm Households

2.1.1 Distribution of Households

A total number of 2,037 households have been surveyed whereas 908 dairy farm households were surveyed in eight divisions to conduct the CERC-EAP evaluation. Following table 2.1 shows the distribution of dairy farm households (male and female) by divisions. The survey findings depicted that among the 908 farm households, 702 nos. households were owned by the male farmers which amount to 76.7% and 206 nos. households' farms owned by female farmers which is about 23.3%.

Table 2.1: Ownership of Dairy Farm by Division

Divisions	Dairy Farm Households				
	Male		Female		Total
	N	%	N	%	N
Barishal	69	77.53	20	22.47	89
Chattogram	57	67.86	27	32.14	84
Dhaka	99	79.84	25	20.16	124
Khulna	111	84.73	20	15.27	131
Mymensingh	67	74.44	23	25.56	90
Rajshahi	139	76.37	43	23.63	182
Rangpur	98	79.03	26	20.97	124
Sylhet	62	73.81	22	26.19	84
Grand Total/Average	702	76.70 (avg)	206	23.30 (avg)	908

Following table 2.2 shows the division wise distribution of the ownership of the poultry farmers. It is illustrated that a total of 1,129 poultry farm households surveyed in this study. Among the total farm households 953 poultry farmers were male (83.85%) and 176 were female (16.15%).

Table 2.2: Ownership of Poultry Farm by Division

Division	Poultry farm Households				
	Male		Female		Total
	N	%	N	%	N
Barishal	80	75.47	26	24.53	106
Chattogram	83	81.37	19	18.63	102
Dhaka	129	80.63	31	19.38	160
Khulna	130	86.67	20	13.33	150
Mymensingh	89	81.65	20	18.35	109
Rajshahi	203	88.26	27	11.74	230
Rangpur	142	86.06	23	13.94	165
Sylhet	97	90.65	10	9.35	107
Grand Total/Average	953	83.85	176	16.15	1129

2.1.2 Average Age Structure of the HH Owners

Following table 2.3 shows the average age structure of surveyed farm households in both dairy and poultry sectors. It was found that in dairy sector, average age structure for males were 44 and female were 41. On the other hand, in Poultry sector, the average age structure of male farmer found as 41 whereas female age was 39. Among the farm owners from both sectors, males are comparatively elder than females. Division wise average structure of HH owners is presented in the following table 2.3

Table 2.3: Age Structure of the Farm Owners

Division	Dairy				Poultry				Total N
	N	Male	N	Female	N	Male	N	Female	
Barishal	69	45	20	45	80	41	26	41	195
Chattogram	57	43	27	39	83	40	19	39	186
Dhaka	99	44	25	38	129	42	31	40	284
Khulna	111	46	20	39	130	40	20	44	281
Mymensingh	67	44	23	41	89	41	20	35	199
Rajshahi	139	45	43	44	203	42	27	41	412
Rangpur	98	44	26	41	142	41	23	35	289
Sylhet	62	43	22	40	97	41	10	38	191
Grand Total/Average	702	44	206	41	953	41	176	39	2037

2.1.3 Religion of the Surveyed Farm Owners

From the religious point of view (table 2.4), most of the farmers are Muslim. Around 87.07% in the dairy sector are Muslims whereas 12 % is Hindus as the second highest religious group. The 3rd largest religious population is Buddhists who occupy 0.30% where Christian being the lowest one.

Table 2.4: Religion of the Dairy Farm Owners

	1. Dairy								Total N
	N Value	Islam (%)	N Value	Hinduism (%)	N Value	Christian (%)	N Value	Buddhist (%)	
Barishal	69	77.53	19	21	1	1.1		0.0	89
Chattogram	79	94.05	3	4	0	0.0	2	2.4	84
Dhaka	117	94.35	7	6	0	0.0	0	0.0	124
Khulna	93	70.99	38	29	0	0.0	0	0.0	131
Mymensingh	89	98.89	1	1	0	0.0	0	0.0	90
Rajshahi	157	86.26	25	14	0	0.0	0	0.0	182
Rangpur	119	95.97	5	4	0	0.0	0	0.0	124
Sylhet	66	78.57	18	21	0	0.0	0	0.0	84
Grand Total/Average	789	87.07	116	12	1	0.14	2	0.30	908

From the following table 2.5, it can be observed that Muslims occupy 93.75% of poultry farming whereas Hindus do of 6.13%. Following these two groups, Christians also are involved about 0.12% of poultry farm business.

Table 2.5: Religion of the Poultry Farm Owners

	2. Poultry								Total N
	N Value	Islam (%)	N Value	Hinduism (%)	N Value	Christian (%)	N Value	Buddhist (%)	
Barishal	87	82.08	18	16.98	1	0.94	0	0	106
Chattogram	98	96.08	4	3.92	0	0	0	0	102
Dhaka	159	99.38	1	0.625	0	0	0	0	160
Khulna	135	90	15	10	0	0	0	0	150
Mymensingh	108	99.08	1	0.92	0	0	0	0	109
Rajshahi	223	96.96	7	3.04	0	0	0	0	230
Rangpur	155	93.94	10	6.06	0	0	0	0	165
Sylhet	99	92.52	8	7.48	0	0	0	0	107
Grand Total/Average	1064	93.75	64	6.13	1	0.12	0	0	1129

2.1.4 Educational Status

Almost every farm owner from both sectors is found literate. Only a few farmers about 2.7% and 1.52% from dairy and poultry respectively are found illiterate. The highest educational qualification is primary for both dairy (16.84%) and poultry (19.0%) farmers followed by secondary education. It is observed that a

number of highly educated people with graduate and post-graduate degrees are also involved in the farming business. Division wise data is presented in tables 2.6 & 2.7

The following table 2.6 informs that Khulna division has the highest primary participation which is about 51.15% in the dairy sector. But Rajshahi makes the lowest number in this regard. The table further adds that overall farmers of the dairy sector earned 38.41% of primary, 16.79% of secondary, 8.21% of higher secondary, 8.09% of graduation.

Table 2.6: Educational Status of Dairy Farm Holders

Divisions	Primary		Secondary		Higher Secondary		Graduate		Post Graduate		Literate (only can write)		Literate (only can read)		9. Literate (read & Write both)		Illiterate	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Barishal	42	47.19	16	17.98	7	7.87	4	4.49	1	1.12	14	15.73	0	0	3	3.37	2	2.25
Chattogram	33	39.29	23	27.38	5	5.95	5	5.95	3	3.57	11	13.1	1	1.19	1	1.19	2	2.38
Dhaka	41	33.06	14	11.29	12	9.68	7	5.65	3	2.42	26	20.97	1	0.81	6	4.84	1	11.29
Khulna	67	51.15	20	15.27	14	10.69	9	6.87	3	2.29	14	10.69	1	0.76	0	0	3	2.29
Mymensingh	27	30	10	11.11	8	8.89	7	7.78	7	7.78	17	18.89	1	1.11	3	3.33	1	11.11
Rajshahi	55	30.22	30	16.48	17	9.34	18	9.89	10	5.49	23	12.64	0	0	11	6.04	1	9.89
Rangpur	43	34.68	21	16.94	12	9.68	21	16.94	7	5.65	17	13.71	0	0	0	0	3	2.42
Sylhet	35	41.67	15	17.86	3	3.57	6	7.14	1	1.19	15	17.86	0	0	6	7.14	3	3.57
Total	343	38.41	149	16.79	78	8.21	77	8.09	35	3.69	137	15.45	4	0.48	30	3.24	55	5.65

In case of poultry farming (see table 2.7), it seems that 34.28% in primary, 21.17% in secondary, 14.68% in higher secondary, 10.45% in graduate, and 5.58% in post-graduate education. Only 2.75% of farmers is illiterate.

Table 2.7: Educational Status of Poultry Farm Holders

	Primary		Secondary		Higher Secondary		Graduate		Post Graduate		Literate (only can write)		Literate (only can read)		9. Literate (read & write both)		Illiterate	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Barishal	42	39.62	34	32.08	13	12.26	8	7.55	2	1.89	5	4.72	1	0.94	1	0.94	0	0.00
Chattogram	40	39.22	19	18.63	18	17.65	13	12.75	5	4.90	3	2.94	1	0.98	2	1.96	1	0.98
Dhaka	54	33.75	20	12.50	18	11.25	13	8.13	11	6.88	22	13.75	1	0.63	10	6.25	11	6.88
Khulna	69	46.00	33	22.00	20	13.33	9	6.00	10	6.67	6	4.00	2	1.33	1	0.67	0	0.00
Mymensingh	36	33.03	21	19.27	21	19.27	11	10.09	5	4.59	8	7.34	0	0.00	5	4.59	2	1.83
Rajshahi	65	28.26	54	23.48	39	16.96	26	11.30	8	3.48	22	9.57	0	0.00	8	3.48	8	3.48
Rangpur	43	26.06	35	21.21	21	12.73	28	16.97	16	9.70	15	9.09	0	0.00	2	1.21	5	3.03
Sylhet	38	35.51	23	21.50	15	14.02	10	9.35	6	5.61	6	5.61	3	2.80	2	1.87	4	3.74
Grand Total	387	34.28	239	21.17	165	14.68	118	10.45	63	5.58	87	7.71	8	0.71	31	2.75	31	2.75

2.1.5 Occupational Status

Out of the total farmers, about 51.76% are involved in multiple occupations from dairy sector whereas 48.24% farmers have the single occupation. It is found that the majority of the farmers' alternative source of income is from agriculture. Moreover, they are also involved in the business and services sector as a means of livelihood. The scenario is briefed in table 2.8.

Table 2.8: Division-wise Occupational Distribution of the Dairy Farmers.

Division	Dairy					
	Multiple (N)	Multiple (%)	Single (N)	Single (%)	Total (N) of Dairy	Total % of Dairy
Barishal	34	38.20	55	61.80	89	45.64
Chattogram	20	23.81	64	76.19	84	43.08
Dhaka	66	53.23	58	46.77	124	63.59
Khulna	88	67.18	43	32.82	131	67.18
Mymensingh	48	53.33	42	46.67	90	46.15
Rajshahi	107	58.79	75	41.21	182	93.33
Rangpur	72	57.60	53	42.40	125	64.10
Sylhet	52	61.90	32	38.10	84	43.08
Grand Total/ Avg	487	51.76	421	48.24	908	100.00

In case of poultry sector, it appears that 52.44% are engaged in multiple occupations where the rest are maintaining the single track of profession which amount to 47.56%. In addition to that, Rajshahi division heads in the multiple professions and Barisha division ranks the lowest position. The scenario is well captured in table 2.9 with more specific details.

Table 2.9: Division-wise Occupational Distribution of the Poultry Farmers

Division	Poultry				
	Multiple (N)	Multiple (%)	Single (N)	Single (%)	Total N of Poultry
Barishal	25	23.58	81	76.42	106
Chattogram	26	25.49	76	74.51	102
Dhaka	94	58.75	66	41.25	160
Khulna	81	54.00	69	46.00	150
Mymensingh	65	59.63	44	40.37	109
Rajshahi	155	67.39	75	32.61	230
Rangpur	103	62.42	62	37.58	165
Sylhet	73	68.22	34	31.78	107
Grand Total/ Avg	622	52.44	507	47.56	1129

2.1.6 Earning Household Member

It is observed that in Chattogram, Dhaka, and Sylhet divisions each surveyed household has two earning members while the rest divisions have one. The data is presented in the following table 2.10.

Table 2.10: Division-wise Earning Member of HHS

Division	Dairy		Poultry	
	Average	N	Average	N
Barishal	1	89	1	106
Chattogram	2	84	2	102
Dhaka	2	124	2	160
Khulna	1	131	1	150
Mymensingh	1	90	1	109
Rajshahi	1	182	1	230

Division	Dairy		Poultry	
	Average	N	Average	N
Rangpur	1	124	1	165
Sylhet	2	84	2	107
Grand Total		908		1129

2.1.7 Average Monthly Income and Expenditure

The surveyed HHs farmer's monthly income, expenditure, and savings were collected during the survey. The following data table shows that the average monthly income & expenditure are highest in Dhaka Division while Rajshahi is the lowest. But the savings are highest in Rangpur Division. The detail data are presented in the following table 2.11.

Table 2.11: Division-wise Average Monthly Income & Expenditure of the HHS

Division	Dairy				Poultry			
	N	Income	Expenditure	Savings	N	Income	Expenditure	Savings
Barishal	89	33017	22631	10385	106	65216	53573	11644
Chattogram	84	40286	29190	11095	102	46241	39373	6869
Dhaka	124	57258	45500	11758	160	204203	192428	11775
Khulna	131	35065	26073	8992	150	34400	25507	8893
Mymensingh	90	36689	27178	9511	109	39312	30954	8358
Rajshahi	182	25500	19071	6429	230	26517	20374	6143
Rangpur	124	51898	39222	12677	165	71671	58721	12950
Sylhet	84	39932	34357	5575	107	39664	33430	6235
Total	908	39371	29945	9426	1129	67242	58136	9106

2.2 Impact of Awareness Program

2.2.1 Status of Bulletin on COVID 19

Media messages were conveyed through different print and electronic media during the COVID-19 period. Field survey data shows that 83.7% of respondents received messages on COVID- 19 through different media. Among 412 people in Rajshahi Division, 328 (79.61%) of them received bulletin on Covid-19 which is the highest. On the other hand, 213 (75%) people out of 284 in Dhaka Division received the bulletin on Covid-19 making it the lowest.

Table 2.12: Status of Beneficiaries to listen to the bulletin on COVID 19

Row Labels	Received	Received %	Not Received	Not Received %	Total
Barishal	180	92.31	15	7.69	195
Chattogram	168	90.32	18	9.68	186
Dhaka	213	75.00	71	25.00	284
Khulna	266	94.66	15	5.34	281
Mymensingh	159	79.90	40	20.10	199
Rajshahi	328	79.61	84	20.39	412
Rangpur	242	83.74	47	16.26	289
Sylhet	149	78.01	42	21.99	191
Average	1705	83.70	332	16.30	2037

2.2.2 Media Coverage

The household survey data reveals that the highest percentage of respondents (54%) became aware of COVID 19 issues through television media and the lowest percentage of respondents is through radio (2.25%) as the number of radio listeners is very low nowadays in Bangladesh; on the other hand, the number of social media users is very high in the country. In the survey, 23.7% of the respondents found to become aware of the COVID-19 issues by using social media. It seems social media has played a significant role during pandemic period. The overall coverage of the awareness program through different media is shown below:

Table 2.13: Media Coverage of Awareness Program

Division	TV (N)	TV (%)	Radio (N)	Radio (%)	Newspapers (N)	Newspapers %	Social Media (N)	Social Media %	Others(N)	Others %
Barishal	169	46.69	33	9.12	49	13.54	78	21.55	33	9.12
Chattogram	143	51.62	3	1.08	17	6.14	82	29.60	32	11.55
Dhaka	166	58.25	8	2.81	14	4.91	49	17.19	48	16.84
Khulna	234	40.77	26	4.53	79	13.76	166	28.92	69	12.02
Mymensingh	151	64.53	0	0.00	7	2.99	58	24.79	18	7.69
Rajshahi	303	70.30	0	0.00	11	2.55	69	16.01	48	11.14
Rangpur	218	50.58	2	0.46	20	4.64	99	22.97	92	21.35
Sylhet	139	53.67	0	0.00	21	8.11	74	28.57	25	9.65
Average	1523	54.55	72	2.25	218	7.08	675	23.70	365	12.42

Covid-19 was the reason for high anxiety, depression, post-traumatic stress disorder and psychological disorder. Undoubtedly the awareness programs impacted positively. During the field survey, 1705 respondents out of 2037 (83.7%) responded positively about the benefits of the awareness program on COVID-19 issues. The respondents said that different awareness-building programs have changed their behavioural intentions in rearing domestic animals (cow, duck, poultry etc.)

Table 2.14 : Benefits of Awareness Program by people's perception

Division	Yes	Yes %	No	No %	Total
Barishal	180	92.31	15	7.69	195
Chattogram	168	90.32	18	9.68	186
Dhaka	213	75.00	71	25.00	284
Khulna	266	94.66	15	5.34	281
Mymensingh	159	79.90	40	20.10	199
Rajshahi	328	79.61	84	20.39	412
Rangpur	242	83.74	47	16.26	289
Sylhet	149	78.01	42	21.99	191
Average	1705	83.70	332	16.30	2037

2.2.3 Benefits of Awareness Program to understand animals and birds do not transmit the Covid-19

Different types of misconceptions arose during the COVID-19 period and people were in dilemma about taking food from animals or birds (meat, milk, eggs). According to field survey data, about 94.18% of respondents said that they have benefitted from the awareness program to understand animals and birds do not transmit the COVID-19 virus. The awareness program helped them to select the food actually they need for fighting against the virus.

Table 2.15: Benefits of Awareness Program to understand animals and birds do not transmit the Covid-19

Division	Yes	Yes %	No	No %	Total
Barishal	187	95.90	8	4.10	195
Chattogram	184	98.92	2	1.08	186
Dhaka	271	95.42	13	4.58	284
Khulna	281	100		0.00	281
Mymensingh	163	81.91	36	18.09	199
Rajshahi	380	92.23	32	7.77	412
Rangpur	274	94.81	15	5.19	289
Sylhet	180	94.24	11	5.76	191
Average	1920	94.18	117	5.82	2037

2.2.4 Benefits of Awareness Program to inform Covid-19 virus spread human to human contact

Data reveals that about 98.96% of respondents have benefitted from the awareness program to inform COVID-19 virus spread from human to human contact only. It is found highest in Khulna and Chattogram division (100%). Through this program using different media, the mass people came to know that, the virus spreads mainly among people who are in close contact with each other.

Table 2.16: Benefits of Awareness Program to inform Covid-19 virus spread human to human contact

Division	Yes	Yes %	No	No %	Total
Barishal	194	99.49	1	0.51	195
Chattogram	186	100.00	0	0.00	186
Dhaka	281	98.94	3	1.06	284
Khulna	281	100.00	0	0.00	281
Mymensingh	192	96.48	7	3.52	199

Division	Yes	Yes %	No	No %	Total
Rajshahi	411	99.76	1	0.24	412
Rangpur	285	98.62	4	1.38	289
Sylhet	188	98.43	3	1.57	191
Total	2018	98.96	19	1.04	2037

2.2.5 Impact to know that protein intake

Survey data says that about 93.61% of participants showed a positive view about the proclamation of having animal source food to increase resilience through mass media. Khulna division has the highest percentage of respondents saying 'yes' for the impact to know that protein intake from animal source food increase resilience. It has helped them to start their livestock business again. And the demand of meat, milk and eggs has increased also in the market.

Table 2.17: Impact to know that protein intake from animal source food (meat, milk, eggs) increase resilience by people's perception

Division	Yes	Yes %	No	No %	Total
Barishal	187	95.90	8	4.10	195
Chattogram	183	98.39	3	1.61	186
Dhaka	267	94.01	17	5.99	284
Khulna	279	99.29	2	0.71	281
Mymensingh	156	78.39	43	21.61	199
Rajshahi	396	96.12	16	3.88	412
Rangpur	284	98.27	5	1.73	289
Sylhet	169	88.48	22	11.52	191
Total	1921	93.61	116	6.39	2037

2.2.6 Overall Benefits of the awareness program

Data shows that, about 50.02% of the respondents developed their awareness through mass media (print and electronic). They had a misconception about rearing animals and poultry during the COVID-19 pandemic. About 25.55% and 22.89% of the respondents changed their misconceptions and changed their food habits through mass media respectively. Changes in misconceptions through awareness programs were found highest (40.78%) in Mymensingh division and lowest (9.84%) in Dhaka division during the field survey.

Table 2.18: Benefits of the awareness program (Multiple Answers)

Division	Awareness developed	Awareness developed (%)	Change in misconception	Change in misconception (%)	Change in food habit	Change in food habit (%)	Others	Others (%)
Barishal	154	42.90	106	29.53	88	24.51	11	3.06
Chattogram	150	49.50	83	27.39	55	18.15	15	4.95
Dhaka	134	52.76	25	9.84	88	34.65	7	2.76
Khulna	256	53.56	106	22.18	116	24.27	0	0.00
Mymensingh	112	54.37	84	40.78	8	3.88	2	0.97
Rajshahi	297	54.00	141	25.64	111	20.18	1	0.18
Rangpur	219	43.28	141	27.87	144	28.46	2	0.40
Sylhet	108	49.77	46	21.20	63	29.03	0	0.00
Total	1430	50.02	732	25.55	673	22.89	38	1.54

2.2.7 Level of Satisfaction on Awareness Program

Mass communication and media played a vital role during the COVID-19 period to aware the people in different ways. According to the field survey data, most of the respondents were highly satisfied (55.77%) with the awareness program taken by the government. Barishal division has the highest (78.46%) satisfaction rate. The percentage for the overall satisfaction of good and moderate level is 38.75 and respectively. The percentage of bad and very bad category found negligible during the field survey.

Table 2.19: Overall Satisfaction of Awareness Program

Division	Excellent	Excellent (%)	Good	Good (%)	Mode rate	Moderate (%)	Bad	Bad (%)	Very Bad	Very Bad (%)	Grand Total
Barishal	153	78.46	38	19.49	3	1.54	1	0.51	0	0.00	195
Chattogram	95	51.08	85	45.70	6	3.23	0	0.00	0	0.00	186
Dhaka	139	48.94	120	42.25	24	8.45	1	0.35	0	0.00	284
Khulna	136	48.40	139	49.47	6	2.14	0	0.00	0	0.00	281
Mymensingh	92	46.23	82	41.21	25	12.56	0	0.00	0	0.00	199
Rajshahi	202	49.03	199	48.30	11	2.67	0	0.00	0	0.00	412
Rangpur	192	66.44	93	32.18	3	1.04	0	0.00	1	0.35	289
Sylhet	110	57.59	60	31.41	18	9.42	3	1.57	0	0.00	191
Total	1119	55.77	816	38.75	96	5.13	5	0.30	1	0.04	2037

2.3 Cash Transfer

2.3.1 Production and Sale of Dairy Sub-Categories Before Covid

Examining Table 2.20 identifies that the highest dairy production and sales come from Dhaka, Chattogram, Khulna, and Rangpur whereas the lowest contribution comes from Barishal before the pandemic.

Table 2.20: Average Production and Sale Values of Dairy Sub-categories

Before Covid			
Dairy Categories	N Value	Avg. Production(Litre/Per day)	Avg. Sale(BDT/Per day)
Barishal			
C1	60	9	416
C2	19	12	615
C3	9	29	1577
Chattogram			
C1	59	16	809
C2	16	33	1623
C3	8	131	6190
Dhaka			
C1	84	14	784
C2	25	34	1771
C3	13	156	7341
Khulna			
C1	92	17	628
C2	26	27	1477
C3	14	149	8344
Mymensingh			
C1	58	20	1000
C2	19	41	2169
C3	8	52	2563
Rajshahi			
C1	121	21	900
C2	42	47	1896
C3	16	79	3298
Rangpur			
C1	88	20	863
C2	25	39	1781
C3	12	133	5854
Sylhet			
C1	58	17	1045
C2	15	27	1934
C3	8	57	3345

2.3.2 Milk Production and Sale of Dairy Sub-Categories during Before Cash Receive

A quick scanning of the following table 2.21 shows that the pandemic shock significantly affected the average milk production. Large dairy farmers were the main victims of the covid-19 when they incurred a 25 % decrease in production. The table further informs that Khulna, Chatogram, and Rangpur make the highest production and sales whereas Barishal has the lowest production and sales across the subcategories.

Table 2.21: Average Production (Milk) and Sale Values

During Covid			
Dairy	N Value	Production(Liter/Per day)	Sale(BDT/Per day)
Barishal			
C1	60	10	343
C2	19	11	505
C3	9	22	826
Chattogram			
C1	59	14	549
C2	16	28	1112
C3	8	104	4259
Dhaka			
C1	84	15	646
C2	25	32	1459
C3	13	86	3184
Khulna			
C1	92	13	309
C2	26	21	587
C3	14	126	5503
Mymensingh			
C1	58	18	629
C2	19	38	1494
C3	8	49	1469
Rajshahi			
C1	121	19	675
C2	42	41	1431
C3	16	64	1856
Rangpur			
C1	88	17	552
C2	25	32	1137
C3	12	117	4242
Sylhet			
C1	58	12	575
C2	15	23	1293
C3	8	44	2174

2.3.3 Milk Production and Sale of Dairy Sub-categories after Cash Receive

Reviewing table 2.22 makes the scenario that the dairy farmers thankfully managed to avoid further losses after the cash incentive. But it appears that the daily production and sales of large farmers (C3) reduced further. Additionally, the table reveals that Khulna and Chattogram make the largest production and sales when Barishal offers the lowest production and sales.

Table 2.22: Average Production and Sale Values of Dairy Sub-Categories

After Cash Received			
Dairy	N Value	Avg. Production(Liter/Per day)	Avg. Sale(BDT)(Per day)
Barishal			
C1	60	9	524
C2	19	11	613
C3	9	27	1314
Chattogram			
C1	59	14	711
C2	16	36	1846
C3	8	104	5045
Dhaka			
C1	84	14	741
C2	25	26	1334
C3	13	70	3635
Khulna			
C1	92	14	604
C2	26	26	1248
C3	14	130	9070
Mymensingh			
C1	58	17	697
C2	19	36	1812

After Cash Received			
Dairy	N Value	Avg. Production(Liter/Per day)	Avg. Sale(BDT)(Per day)
C3	8	48	3056
Rajshahi			
C1	121	18	766
C2	42	40	1674
C3	16	64	2713
Rangpur			
C1	88	18	776
C2	25	38	1613
C3	12	110	4890
Sylhet			
C1	58	16	992
C2	15	21	1538
C3	8	47	2814

2.3.4 Average Production and Sale Values for Broiler and Duck

Following table 2.23 reveals that before the pandemic, among the divisions, the average broiler production (B3) is higher in the Sylhet division but it has the lowest production in duck categories. On the other hand, Barishal division has the lowest broiler production and sales.

Table 2.23 Average Production (Nos) and Sale Values (BDT) for Poultry Sub-categories

Before Covid							
Broiler	N	Production	Sale(BDT)	Duck	N	Production	Sale(BDT)
Barishal				Barishal			
B1	20	813	132036	D1	5	180	49500
B2	15	1308	197913	D2	2	500	142000
B3	8	1856	268500	D3	2	1000	250000
Chattogram				Chattogram			
B1	27	1000	187684	D1	2	300	120000
B2	11	2000	306864	D2	1	450	180000
B3	11	2100	284636	D3	1	1200	360000
Dhaka				Dhaka			
B1	33	1000	231480	D1	7	269	61920
B2	21	1475	367315	D2	3	500	125000
B3	11	2050	701434	D3	5	1230	307000
Khulna				Khulna			
B1	38	642	137269	D1	10	267	56214
B2	19	1333	276944	D2	3	425	136250
B3	20	2865	692725	D3	4	1300	260000
Mymensingh				Mymensingh			
B1	24	1000	139065	D1	5	177	50750
B2	12	1836	198545	D2	3	500	205000
B3	9	2463	280438	D3	4	900	360000
Rajshahi				Rajshahi			
B1	51	788	178639	D1	13	294	82222
B2	23	1495	298343	D2	5	500	140000
B3	19	2850	524353	D3	5	950	266000
Rangpur				Rangpur			
B1	37	895	173198	D1	7	162	47250
B2	20	1344	243800	D2	5	412	110000
B3	13	2715	401215	D3	4	1567	493333
Sylhet				Sylhet			
B1	24	981	139250	D1	3	170	65833
B2	13	1541	276267	D2	6	410	157000
B3	6	3711	726467	D3	8	450	208100

2.3.5 Production and Sales for Eggs and Sonali and by Poultry Sub-categories

The following table 2.24 displays the daily egg production before Covid-19. It further notifies that the Dhaka division has the highest production capacity whereas the Khulna division stands as the lowest producer of eggs per day.

In the case of Sonali production it also follows that the Khulna division has the highest production and sales which amounted to 99,180, 235,000, and 596,091 BDT in S1, S2, and S3 categories respectively.

Table 2.24: Average Production (Dozen/Per Day) for Eggs and Sale Values for Poultry Sub-categories

Before Covid							
Layer	N	Egg-Dozen	Sale(BDT)	Sonali	N	Production	Sale(BDT)
Barishal				Barishal			
L1	8	40	3840	S1	10	500	105708
L2	14	80	7680	S2	7	925	210283
L3	9	116	10142	S3	7	1,243	285357
Chattogram				Chattogram			
L1	13	41	3936	S1	8	500	125000
L2	9	70	6300	S2	6	800	173833
L3	5	159	14140	S3	8	1,657	225708
Dhaka				Dhaka			
L1	6	40	3600	S1	15	500	130000
L2	7	82	6500	S2	12	900	207000
L3	28	499	41916	S3	10	2,578	399300
Khulna				Khulna			
L1	5	27	2115	S1	16	403	99180
L2	8	42	3375	S2	7	1000	235000
L3	6	136	10820	S3	12	3600	569091
Mymensingh				Mymensingh			
L1	7	41	3444	S1	12	490	138600
L2	15	82	5880	S2	8	938	262000
L3	8	270	22680	S3	5	2080	520000
Rajshahi				Rajshahi			
L1	14	40	3336	S1	24	490	122500
L2	21	78	5880	S2	21	980	245000
L3	21	331	23832	S3	13	2150	537000
Rangpur				Rangpur			
L1	16	40	3360	S1	17	480	129913
L2	15	80	5760	S2	11	1000	230000
L3	12	306	22032	S3	5	1790	447500
Sylhet				Sylhet			
L1	6	27	2268	S1	12	445	90455
L2	10	67	5619	S2	6	1500	235900
L3	10	186	15632	S3	4	1625	315750

2.3.6 Average Production and Sale Values for Broiler and Duck during Covid-19

The following table 2.25 depicts that the capital city Dhaka occupies the top position in sales though Sylhet makes the highest production during the pandemic. In the case of the Duck sub-category, it shows that Rangpur makes the highest production whereas Chattogram has the largest sales across the categories.

Table 2.25: Average Production and Sale Values of Poultry Sub-categories

During Covid							
Broiler	N	Production (nos)	Sale (BDT)	Duck	N	Production (nos)	Sale (BDT)
Barishal				Barishal			
B1	20	674	91815	D1	5	160	44000
B2	15	1283	159298	D2	2	300	60000
B3	8	3088	241875	D3	2	750	220000
Chattogram				Chattogram			
B1	27	1000	120000	D1	2	300	90000
B2	11	1650	195245	D2	1	500	150000
B3	11	2218	252891	D3	1	1200	360000
Dhaka				Dhaka			
B1	33	1000	112000	D1	7	169	38742
B2	21	1854	186984	D2	3	500	110000

During Covid							
Broiler	N	Production (nos)	Sale (BDT)	Duck	N	Production (nos)	Sale (BDT)
B3	11	2400	414027	D3	5	910	136000
Khulna				Khulna			
B1	38	558	89790	D1	10	231	39229
B2	19	1295	187694	D2	3	425	98750
B3	20	2688	446110	D3	4	900	207000
Mymensingh				Mymensingh			
B1	24	1000	85000	D1	5	133	36875
B2	12	1437	111300	D2	3	450	102500
B3	9	2300	195375	D3	4	500	110000
Rajshahi				Rajshahi			
B1	51	798	129597	D1	13	214	48500
B2	23	1519	209993	D2	5	683	136400
B3	19	2650	348176	D3	5	690	138000
Rangpur				Rangpur			
B1	37	769	118695	D1	7	239	61471
B2	20	1289	200810	D2	5	400	77500
B3	13	2622	292223	D3	4	1398	293750
Sylhet				Sylhet			
B1	24	950	99750	D1	3	168	50333
B2	13	1342	166018	D2	6	325	97500
B3	6	3240	343767	D3	8	500	150000

2.3.7 Production and Sale Values of Sonali Category during Covid -19

The following table 2.26 analyses that average egg production did not decrease much across the subcategories during the pandemic. It further notifies that both Khulna and Sylhet had the lowest production of eggs while Dhaka and Rajshahi made the largest sales in that period. Considering the production of Sonali, it has been observed that the pandemic shock brought about a 5 to 10 % decrease across the category of S1, S2, and S3 though the reduction in large farms is not much. In addition, it also depicted that both Khulna and Rangpur divisions had the highest production and sales in all three categories whereas Sylhet had the lowest contribution in production and sales.

Table 2.26: Average Production and Sale Values (BDT) for Poultry Sub-categories

During Covid							
Layer	N	Egg-Dozen/per day	Sale (BDT/per day)	Sonali	N	Production (nos)	Sale (BDT)
Barishal				Barishal			
L1	8	41	2706	S1	10	490	74000
L2	14	82	5500	S2	7	758	148167
L3	9	111	8180	S3	7	1214	269286
Chattogram				Chattogram			
L1	13	40	2880	S1	8	480	72000
L2	9	80	5760	S2	6	642	151750
L3	5	619	13190	S3	8	1200	298429
Dhaka				Dhaka			
L1	6	40	3840	S1	15	485	87300
L2	7	82	7700	S2	12	950	215000
L3	28	448	32256	S3	10	2294	269731
Khulna				Khulna			
L1	5	24	1425	S1	16	321	59750
L2	8	35	2180	S2	7	850	141600
L3	6	133	8838	S3	12	3642	450500
Mymensingh				Mymensingh			
L1	7	41	2813	S1	12	486	56577
L2	15	82	5800	S2	8	925	130000
L3	8	203	10593	S3	5	2000	249500
Rajshahi				Rajshahi			
L1	14	39	2808	S1	24	495	75000

During Covid							
Layer	N	Egg-Dozen/per day	Sale (BDT/per day)	Sonali	N	Production (nos)	Sale (BDT)
L2	21	80	5600	S2	21	960	150000
L3	21	288	20736	S3	13	2117	266000
Rangpur				Rangpur			
L1	16	41	2700	S1	17	480	70000
L2	15	82	5400	S2	11	1000	160000
L3	12	311	18660	S3	5	3540	546400
Sylhet				Sylhet			
L1	6	27	2075	S1	12	322	55545
L2	10	62	4795	S2	6	980	210000
L3	10	138	8179	S3	4	1400	280000

2.3.8 Average Production and Sale after the Cash Receive

The following table 2.27 contains the data of production and sales for broiler and duck subcategories after the cash support. Therefore, the table will be in assistance to assess the impact of cash support on the farm management and business sustenance. The result reveals that Rajshahi and Sylhet have the largest production capacity whereas Sylhet and Khulna contribute the highest portion of the sales across the categories of broilers. In the case of duck farming, it appears that the Chattogram division makes the highest production and sales. Comparing this table with the former two periods, it is further observed that both broiler and duck farmers considerably managed to sustain and continue their business after the cash support.

Table 2.27: Average Production and Sale Values of Poultry Sub-categories

After Cash Received							
Broiler	N	Production	Sale(BDT)	Duck	N	Production	Sale(BDT)
Barishal				Barishal			
B1	20	648	104816	D1	5	198	49950
B2	15	1323	212246	D2	2	450	111750
B3	8	2000	300000	D3	2	550	147500
Chattogram				Chattogram			
B1	27	1000	184888	D1	2	290	87000
B2	11	1677	252065	D2	1	500	145000
B3	11	2264	304918	D3	1	1200	375000
Dhaka				Dhaka			
B1	33	998	180486	D1	7	170	42493
B2	21	1366	245283	D2	3	480	120000
B3	11	2000	425106	D3	5	940	189500
Khulna				Khulna			
B1	38	649	137856	D1	10	197	42387
B2	19	1825	288028	D2	3	500	150000
B3	20	2763	613982	D3	4	1150	325000
Mymensingh				Mymensingh			
B1	24	1000	132169	D1	5	126	37625
B2	12	1636	176664	D2	3	300	135000
B3	9	2000	234313	D3	4	500	220000
Rajshahi				Rajshahi			
B1	51	633	153113	D1	13	219	62889
B2	23	1214	240183	D2	5	480	102200
B3	19	3753	423188	D3	5	800	240000
Rangpur				Rangpur			
B1	37	851	172405	D1	7	183	51896
B2	20	1385	331109	D2	5	490	155000
B3	13	2715	458058	D3	4	1000	323333
Sylhet				Sylhet			
B1	24	978.8	146175	D1	3	260	98917
B2	13	1245	234217	D2	6	500	150000
B3	6	3125	661767	D3	8	931	213500

2.3.9 Production and Sale of Sonali Category after Cash Receive

The following table 2.28 shows that Dhaka and Sylhet make the highest contribution to egg production after the cash support. The production of eggs increased in L1 and L3 categories while L2 production remained the same. A similar trend has been found in the production of Sonali. After the cash support, a 5 to 10 % increase has been realized. Further inspection of the table reveals that the highest production comes from the Dhaka division. In the case of Sonali, the highest production and sales appear in Rangpur whereas the lowest contribution comes from the Barishal division.

Table 2.28: Production (Egg-Dozen/Per Day) and Sale Values of Poultry Sub-Categories after the Cash Receive

After Cash Received							
Layer	N	Egg-Dozen	Sale(BDT)	Sonali	N	Production	Sale (BDT)
Barishal				Barishal			
L1	8	39	3510	S1	10	500	100000
L2	14	71	6358	S2	7	842	193200
L3	9	81	7418	S3	7	1057	261786
Chattogram				Chattogram			

After Cash Received							
Layer	N	Egg-Dozen	Sale(BDT)	Sonali	N	Production	Sale (BDT)
L1	13	40	3600	S1	8	480	118500
L2	9	82	7500	S2	6	892	227917
L3	5	118	11046	S3	8	1429	213251
Dhaka				Dhaka			
L1	6	38	3300	S1	15	490	87000
L2	7	82	6200	S2	12	960	184000
L3	28	478	28680	S3	10	2256	326114
Khulna				Khulna			
L1	5	27	1665	S1	16	407	96964
L2	8	43	3825	S2	7	888	185000
L3	6	122	8838	S3	12	2842	489167
Mymensingh				Mymensingh			
L1	7	41	3367	S1	12	372	58009
L2	15	82	6900	S2	8	823	137488
L3	8	206	12129	S3	5	1440	295200
Rajshahi				Rajshahi			
L1	14	38	2900	S1	24	490	92000
L2	21	78	5800	S2	21	950	188000
L3	21	298	10708	S3	13	1800	340183
Rangpur				Rangpur			
L1	16	35	2940	S1	17	490	89000
L2	15	82	6300	S2	11	990	189480
L3	12	237	16681	S3	5	5429	1182000
Sylhet				Sylhet			
L1	6	27	2357	S1	12	495	94795
L2	10	55	4533	S2	6	980	190000
L3	10	690	14780	S3	4	1450	287500

2.3.10 Average Production (Milk/Per Day) for Dairy Sub-categories

The average production of Dairy for the three periods is shown in table 2.29. There were 620 C1 household respondents, 187 C2 and 88 C3. The C1 category had 17 liters, C2 had 32 liters, and C3 had 98 liters a day before Covid. The daily production of C1, C2, and C3 during the Covid-19 phase was 15 liters, 28 liters, and 77 liters. Unfortunately, after the cash was received, the numbers were nearly identical.

Table 2.29: Average Production (Milk/Per Day) for Dairy Sub-categories

Sub-category	Average Production (Milk-Liter/ Per Day)					
	N	Before Covid	N	During Covid	N	After cash Receive
C1	620	17	620	15	620	15
C2	187	32	187	28	187	29
C3	88	98	88	77	88	75

2.3.11 Milk Production of Dairy Sub-categories

The average sale of dairy subcategories across three phases is shown in Table 2.30. About 620 people from C1 Category were surveyed, 187 from C2 and 88 from C3. Before Covid, C1, C2, and C3 farmers could sell 806, 1663, and 5040 BDT. of milk per day, respectively. During Covid, however, the average sale dropped to 545, 1127, and 2,939 BDT. The digits after getting the money amounted to 726, 1464, and 4,067BDT.

Table 2.30: Average Production (Milk) for Dairy Sub-categories

Average Sale (Milk-Liter/ Per Day in BDT)						
Sub-category	N	Before Covid	N	During Covid	N	After Cash Receive
C1	620	806	620	545	620	726
C2	187	1663	187	1127	187	1464
C3	88	5040	88	2939	88	4067

2.3.12 Gender Segregated Production (Milk/Per Day) of Dairy Sub-Categories

The average production of male and female dairy farmers are given separately in table 2.31. Among the 620 C1 respondents, 465 were male and 155 were female. Among 187 C2 farmers, 154 were male and 33 were female and among 88 C3 farmers, 75 were male and 13 were female. Before the Covid, male C1, C2, and C3 farmers had 22, 37, 135 liters milk production per day. Whereas the female C1, C2, and C3 had 15, 26, and 58 liters. During the Covid, the numbers collapsed to 17, 37, and 79 for male farmers and 13, 26, 54 for female farmers. After the cash receive, male C1, C2, and C3 farmers managed to produce 19, 33, and 83 liters per day and female farmers managed 13, 24, and 50 litres.

Table 2.31: Average Production (Milk/Per Day) of Dairy Sub-Categories Gender Wise

Sub-Category	C1 (Production Milk/Per Day)				C2 (Production Milk/Per Day)				C3 (Production Milk/Per Day)			
	N	Male	N	Female	N	Male	N	Female	N	Male	N	Female
Before Covid	465	22	155	15	154	37	33	26	75	135	13	58
During Covid	465	17	155	13	154	37	33	26	75	79	13	54
After Cash Received	465	19	155	13	154	33	33	24	75	83	13	50

2.3.13 Average Sale of Dairy Sub-Categories by Gender

The average sale of milk gender wise is shown in Table 2.32. Before Covid, male C1, C2, and C3 farmers were able to sell 1095, 1849, and 6320 BDT worth of milk before the pandemic, 667, 1171, and 3025 worth of milk during Covid, and 936, 1619, and 4354 BDT of milk after cash received. Female farmers C1, C2, and C3 on the other hand, were able to sell 753, 1120, and 2878 before Covid, 471, 1110, and 1612 during Covid, and 665, 1200, and 3407 worth of milk after receiving the payment.

Table 2.32: Average Sale (Milk-Liter/Per day) of Dairy Sub-Categories by gender

Sub-Category	C1 (Sale- Milk-Liter/Per day)				C2 (Sale- Milk-Liter/Per day)				C3 (Sale- Milk-Liter/Per day)			
	N	Male	N	Female	N	Male	N	Female	N	Male	N	Female
Before Covid	465	1095	155	753	154	1849	33	1120	75	6320	13	2878
During Covid	465	667	155	471	154	1171	33	1110	75	3025	13	1612
After Cash Received	465	936	155	665	154	1619	33	1200	75	4354	13	3407

2.3.14 Overall Production in Poultry Sub-categories in three Periods

The following table 2.33 appears interesting because it helps to grasp the dynamics of poultry production in twelve categories across the three periods. Analysing the table informs that the pandemic shock significantly impacted all broiler, sonali, and duck farmers whereas layer farmers remained exceptional. The table additionally tells that all the farmers were able to increase their production after the cash support which indicates the sustenance of the business.

Table 2.33: Average Production (Nos) in Poultry Sub-categories

Average Production						
Category	N	Before Covid	N	During Covid	N	After Cash Received
B1	254	890	254	844	254	846
B2	134	1542	134	1459	134	1459
B3	97	2576	97	2450	97	2577
S1	114	476	114	445	114	465
S2	78	1005	78	883	78	915
S3	64	2090	64	1975	64	2213
D1	52	227	52	202	52	205
D2	28	462	28	448	28	463
D3	33	1074	33	856	33	884
L1	75	37	75	36	75	41
L2	99	72	99	72	99	72
L3	99	250	99	250	99	279

2.3.15 Overall Sale of Poultry Sub-categories in three periods

The data on the average sale of Poultry Sub-Category across three time periods can be found in Table 2.34. The sales of B1, B2, and B3 before the Covid-19 were BDT. 165,000, 270,749, and 485,000, respectively. During the Covid-19, sales decreased to 105,830, 177,138, and 316,806 respectively. The money aided in the recovery to a certain extent. B1, B2, and B3 were sold for BDT 151,500, 247,474, and 427,666 respectively. Sonali and Duck had a similar experience with a decent sale before Covid-19 that plummeted during Covid-19 but they managed to sustain the business after cash was received. The corresponding sale values of L1, L2, and L3 stand for 3237, 5874, and 20149 respectively. The reduction of sales equals to 2656, 5342, and 15979 during Covid-19 and later the sales went up to 2955, 5927, and 26212 BDT.

Table 2.34: Average Sale (BDT) in Poultry Sub-categories

Average Sales (BDT)						
Category	N	Before Covid	N	During Covid	N	After Cash Received
B1	254	165000	254	105830	254	151500
B2	134	270749	134	177138	134	247474
B3	97	485000	97	316806	97	427666
S1	114	117669	114	68772	114	92033
S2	78	224877	78	163314	78	186000
S3	64	412463	64	328730	64	424400
D1	52	66711	52	52144	52	59145
D2	28	150000	28	104081	28	133618
D3	33	313054	33	201843	33	254229
L1	75	3237	75	2656	75	2955
L2	99	5874	99	5342	99	5927
L3	99	20149	99	15979	99	26212

2.3.16 Production of Poultry (Layer) of female farmers

The following table 2.35 holds the data of Layer productions of male and female farmers during three phases. Before Covid, the male L1, L2 and L3 farmers had 103, 132, and 352 dozen egg production each day. During Covid, the production stood at 91, 123, and 331 and after the cash receive, it stood at 90, 112, and 419. The female L1, L2, and L3 farmers had 59, 175, and 209 dozen production each day before the pandemic. During Covid, the number fell to 47, 123, and 186 and after the cash received, it has been improved to 57, 132, and 195 dozens per day.

Table 2.35: Average Production (Egg-Dozen/Per Day) of Poultry (Layer)

Sub-Category	L1 (Egg-Dozen/Per Day)				L2 (Egg-Dozen/Per Day)				L3 (Egg-Dozen/Per Day)			
	N	Male	N	Female	N	Male	N	Female	N	Male	N	Female
Before Covid	62	103	13	59	81	132	18	175	90	352	9	209
During Covid	62	91	13	47	81	123	18	123	90	331	9	186
After Cash Received	62	90	13	57	81	112	18	131	90	419	9	195

2.3.17 Sale of Poultry (Layer) by gender segregated farm households

The table 2.36 below represents the data of average sale each day of layer farmers' gender wise. The female farmers L1, L2, and L3 farmers sold 4058, 12332, and 10857 BDT worth eggs every day. During Covid they sold 2912, 8841, and 7608 and after cash receive, the sold 4418, 7213, and 10083. The male L1, L2, and L3 farmers sold 5936, 9974, and 13645 before Covid, 3564, 6134, and 10291 during Covid, and 5094, 7496, and 24153 after cash receive.

Table 2.36: Average Sale (BDT/Per Day) of Poultry (Layer)

Sub-Category	L1				L2				L3			
	N	Male	N	Female	N	Male	N	Female	N	Male	N	Female
Before Covid	62	5936	13	4058	81	9974	18	12332	90	13645	9	10857
During Covid	62	3564	13	2912	81	6134	18	8841	90	10291	9	7608
After Cash Received	62	5094	13	4418	81	7496	18	7213	90	24153	9	10083

2.3.18 Average Production of Poultry (Broiler) by gender segregated farm households

The following table 2.37 shows the data for broiler productions gender wise. The female B1 farmers had 1159 production before Covid, 783 during Covid, and 796 after cash receive. B1 male farmers had 1236 before Covid, 1159 during Covid, and 1067 after cash received. The B2 female farmers had 1530 before Covid, 1433 during Covid, and 1562 after cash received and the male B2 farmers had 1,624 before Covid, 1441 during Covid, and 1419 after cash received. Female B3 farmers had 3591, 3657, and 2,368 production before, during and after cash received. The male B3 farmers had 2719, and 3018, and 3034.

Table 2.37: Average Production (Nos) of Broiler Farming

Sub-Category	B1				B2				B3			
	N	Male	N	Female	N	Male	N	Female	N	Male	N	Female
Before	214	1236	40	1159	120	1624	14	1530	85	2719	12	3591
During	214	1159	40	783	120	1441	14	1433	85	3018	12	3657
After Cash Received	214	1067	40	796	120	1419	14	1562	85	3034	12	2368

2.3.19 Gender Wise Average Sale of Broiler category

Table 2.38 represents the average sale of broiler male and female farmers. B1, B2, and B3 male farmers had 190722, 307509, and 548898 sales before Covid, 139582, 174750, and 347342 during Covid, and 169077, 238959, and 458589 after cash receive. On the other hand, the female B1, B2, and B3 farmers had 152111, 303476, and 641541 sale before Covid, 111780, 208793, and 502014 during Covid, and 136218, 298989 during Covid, and 398733 after cash receive.

Table 2.38: Average Sale (BDT) of Poultry (Broiler)

Sub-Category	B1				B2				B3			
	N	Male	N	Female	N	Male	N	Female	N	Male	N	Female
Before	214	190722	40	152111	120	307509	14	303476	85	548898	12	641541
During	214	139582	40	111780	120	174750	14	208793	85	347342	12	502014
After Cash Received	214	169077	40	136218	120	238959	14	298989	85	458589	12	398733

Gender Wise Average Production of Sonali Category

The Following table 2.39 stands for the data of Sonali productions during three periods, gender wise. The S1 male farmers had 939 productions on average before Covid which later reduced to 776 during the Covid and later managed to increase little bit to 785. S2 farmers had 1303 before Covid, 1215 during Covid and 1262 after cash receive. The S3 farmers, had 2579 which surprisingly increased to 3359 during Covid, and 2974 after Covid. The female S1 farmers had 628 before Covid, 594 during Covid, and 584 after cash receive. The S2 farmers had 1102, 1117, and 886 before, during and after cash receive. S3 female farmers produced 2312 before Covid, 2150 during Covid, and 2000 after cash receive.

Table 2.39: Average Production (Nos) of Poultry (Sonali)

Sub-Category	S1				S2				S3			
	Gender	N	Male	N	Female	N	Male	N	Female	N	Male	N
Before	88	939	31	628	64	1303	14	1102	58	2579	6	2312
During	88	776	31	594	64	1215	14	1117	58	3359	6	2150
After Cash Received	88	785	31	584	64	1262	14	886	58	2974	6	2000

2.3.20 Gender segregated average Sale of Sonali category

The following table 2.40 describes the gender-wise average sales for sonali farmers. Gender segregation was aimed at examining whether there was any difference between these two groups. The table 2.37 notifies that the average sales of the male farmers stay larger than female farmers. In each category of Sonali, the difference has been observed from 10 to 30 % degree. The pandemic has affected both groups considerably though they were able to sustain their business after the cash support.

Table 2.40: Average Sale (BDT) of Poultry (Sonali)

Sub-Category	S1				S2				S3			
	Gender	N	Male	N	Female	N	Male	N	Female	N	Male	N
Before	88	165821	31	134977	64	232777	14	194390	58	487323	6	393750
During	88	104704	31	88894	64	178419	14	139666	58	395728	6	299000
After Cash Received	88	141502	31	117250	64	226274	14	155289	58	620188	6	347500

2.3.21 Average Production of Duck Category by Gender

The following table 2.41 explains the gender-wise production of ducks across three categories. As it suggests that the pandemic has affected both groups significantly. Surprisingly, it seems that female farmers have larger production in duck farming whereas in the D3 category, male farmers occupy the largest business extent. Besides, it is noticed that business recovery from the pandemic shock was not realized much.

Table 2.41: Average Production (Nos) of Poultry (Duck)

Sub-Category	D1				D2				D3			
	Gender	N	Male	N	Female	N	Male	N	Female	N	Male	N
Before	39	307	13	407	24	583	4	1508	27	1451	6	631
During	39	370	13	289	24	428	4	808	27	854	6	450
After Cash Received	39	241	13	181	24	435	4	508	27	894	6	592

2.3.22 Average Sale of Duck Category by Gender

The following table 2.42 describes the average sales of ducks for both genders. As usual, the pandemic shock affected the sales of both groups to the extent of 20/25 %. The male D1, D2 and, D3 were able to sell 100746, 154839, and, 273810 before Covid, 107790, 81807 and 134733 during Covid and 75501, 130823, and 189036 after cash transfer. On the other hand the female D1, D2 and D3 farmers were able to sale 150430, 419583 and 217583 before Covid, 83080, 232083, and 94438 during Covid and 55341, 202917, and 167917 after receiving the cash incentive.

Table 2.42: Average Sale (BDT) of Poultry (Duck)

Sub-Category	D1				D2				D3			
	Gender	N	Male	N	Female	N	Male	N	Female	N	Male	N
Before	39	100746	13	150430	24	154839	4	419583	27	273810	6	217583
During	39	107790	13	83080	24	81807	4	232083	27	134733	6	94438
After Cash Received	39	75501	13	55341	24	130823	4	202917	27	189036	6	167917

2.3.23 Satisfaction on Cash Transfer Program

Perception analysis for the prime activity named Cash Transfer was carried out among the respondents using five points Likert scale. The following table represents the division specific satisfaction on Cash Transfer activity. 57.68% people explained as an Excellent service and 36.18 explained as good. In **Excellent** category Barishal has the highest satisfactory perception among the respondents on the contrary Khulna has the highest perception satisfaction in **Good** category. Here **Bad** and **Very Bad** has nominal responses.

Table 2.43: Status of Beneficiary Satisfaction on Cash Transfer

Division	Excellent	%	Good	%	Moderate	%	Bad	%	Very Bad	%	Grand Total	%
Barishal	169	86.67	22	11.28	3	1.54		0.00	1	0.51	195	100.00
Chattogram	101	54.30	77	41.40	8	4.30		0.00	0	0.00	186	100.00
Dhaka	133	46.83	135	47.54	12	4.23	3	1.06	1	0.35	284	100.00
Khulna	108	38.43	151	53.74	22	7.83		0.00	0	0.00	281	100.00
Mymensingh	107	53.77	77	38.69	14	7.04	1	0.50	0	0.00	199	100.00
Rajshahi	200	48.54	173	41.99	39	9.47		0.00	0	0.00	412	100.00
Rangpur	216	74.74	62	21.45	9	3.11	1	0.35	1	0.35	289	100.00
Sylhet	141	73.82	40	20.94	8	4.19	1	0.52	1	0.52	191	100.00
Grand Total	1175	57.68	737	36.18	115	5.65	6	0.29	4	0.20	2037	100.00

2.4 Rental Vehicle Service

2.4.1 Milk Selling through Rented Vehicle

Farmers of each division more or less received this service for selling their milk during Covid pandemic situation. Average 504 liter (per day) milk by the farmers in which the lowest selling quantity was 10 liter (per day) and the highest selling quantity was 3000 liter (per day).

2.4.2 Meat Selling through Rented Vehicle

Both male and female farmers are found to be received rental vehicle support for meat selling purposes during the Covid 19 pandemic situation. As per the surveyed beneficiaries, average 1631 kg meat (Per day) were sold through the rented vehicle support. On the other hand, surveyed female farmers sold average 1330 kg meat through this rental vehicle service. Overall, the highest and lowest quantity of selling were 13,500 kg and 10 kg (per day) respectively.

2.4.3 Egg Selling through Rented Vehicle

The survey findings depicted that average the male farmers sold 303 dozens of eggs whereas the female farmer sold average 24 dozens (per day) of eggs. During this period of lockdown, it helped farmers to continue the business and managed their selling.

2.4.4 Satisfaction on Rental Service

Rental Vehicle service was another vital activity of the project. Here most of the respondents' responses in Excellent (61.2%) and Good (28.4%) Category. This service is provided for a short time period during Covid, but it was fruitful for them during the toughest time. About 90% of the respondents reported in **Excellent** and **Good** Category. No response was found in Very Bad Category, only 3% responses in Khulna Division was found in vary Bad category. This perception reflects due to respondents over expectations and other stigmatized attitude of the surrounding people.

3. Conclusion

Overall, the household survey findings depicted the CERC-EAP activity wise impact on dairy and poultry sectors to combat the situation occurred due to the Covid -19 pandemic. However, the evaluation study completed 2037 household survey based on a structured questionnaire. After collecting data using KoBo Tool Box, quantitative analysis completed regarding the indicators set for the CERC-EAP evaluation. Among the surveyed households about 44.58% HHs are from the Dairy sector and 55.42% are from Poultry. It is found that most of the farms both dairy and poultry dairy are owned by males. Only 10.12 % of dairy farms and 8.64% of Poultry farms are owned by females. There were seven (7) activities performed under the CERC-EAP, whereas awareness program was one of them. With the outbreak of the COVID-19 pandemic, a number of rumors spread through social media. People in large scale stopped to consume meat and dairy products. People thought that Covid-19 could be spread through animal contact in which they stopped consuming. As a result, the market price of dairy and poultry products disrupted the value chain of those products interrupted. About 83.7% of beneficiaries received messages on COVID-19. Messages were conveyed through different print and electronic media. The TVC Monologue, Dialogue, Documentary, Talk show, scrolling, drama and documentary broadcast to build awareness for avoiding misconception. About 94.18% of respondents said that they were benefitted from the awareness program to understand animals and birds do not transmit the COVID-19 virus. About 50% acknowledged that those programs helped to develop awareness, 25.55% people stated that it helped to avoid misconception, and about 22.89% changed their dietary habits and started consuming dairy and milk products.

The cash transfer to compensate farmers to sustain their farming because of incurred losses during the pandemic was of the major activities. There were 6.2 lakh targeted beneficiaries whereas 597,249 (including female farmers) beneficiaries from both dairy and poultry received the cash incentives. It was remarkable in the history of Bangladesh, as it was first time in this country provided cash incentives direct to the beneficiaries through Bkash and Nagad. The result depicted that farmers of C1 and C2 categories were able to increase their sales on average 25% and 23% whereas the large farmers (C3) managed to increase the sale on account of 28% approximately. On the other hand, the B1 sub-category, before Covid, they had 890 broilers on average. When Covid hit the whole country, they had 844 broilers, and after they received the incentive, they managed to sustain 846 broilers on average.

Moreover, the B2 sub-category slightly decreased during the Covid period, but they could maintain the same amount even after receiving the cash. Before Covid, they had 1,542 on average, and during and after cash was given, they managed to sustain 1,459 broilers on average.

The S1 category farmers had 476 chickens on average before the epidemic, decreasing little during Covid. Later, they squeezed the number a little higher from 445 to 465 chickens. The S2 category had ups and downs during this timeline. They had 1005 before Covid, 883 during Covid, and 915 after receiving the cash. However, the S3 category made good progress after receiving the cash. They went from 1,975 during Covid to 2213 chickens on average after receiving the cash. Before Covid, they had 2,090 chickens. The D1 sub-category was also able to sustain its stock.

The ducks went from 227 before Covid to 202 during Covid and later managed to sustain 205 ducks on average. The D2 farmers also had a similar experience. Before Covid, they had 462 ducks reduced to 448 during Covid, and later it rose a little higher to 463 ducks. The D3 category had a vast downfall during the Covid situation. They went from 1,074 ducks before Covid on average to 856 ducks during covid. Fortunately, they were able to sustain 884 ducks on average after receiving the cash.

The rented vehicle service provided a huge support in market access and sustaining the sale during the period of lockdown. About 23% farmers used this service for reducing the loss followed by 17% for managing income and 14% for getting access to the market. The overall satisfaction on project activities found about 97.4% including both good and excellent categories.