

Baseline Survey of
Market System development of safe poultry and
poultry products
Sub project of
Rural Micro Enterprise Transformation Project of PKSF



Submitted to

RDRS Bangladesh
House# 43, Road# 10, Sector# 6
Dhaka-1230, Bangladesh

Submitted by

MATRiX Business Development Ltd

House # 1/C, Road # 1, Shyamoli, Dhaka-1207, Bangladesh
+88- 01711762925, 01683612445, +880 2 -9102989
Email: info@matrix-bds.com, Web: matrix-bds.com

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Executive Summary

“Market system development of safe poultry and poultry products” is project of PKSf and implementing by RDRS Bangladesh at Gaibandha, Kurigram and Rangpur districts. The main focus of this project is to grow the income, ensure food security and enhance family nutrition of marginal and small farmers and poultry related backward and forward market entrepreneurs.

The baseline survey was conducted with a view to obtain a snapshot assessment of- the current production, technical knowhow, business, economic, of the micro- entrepreneurs who are likely to participate in the project activities, so that the changes related to the project interventions and their progress can be evaluated after the project period.

The study team followed mixed approach combining qualitative and quantitative method for baseline data collection and analysis. Primary data and information (qualitative and quantitative) through sample survey used Kobo Toolbox. Total 370 household were surveyed from 5 selected upazila. In addition, FGD (10), KII (30), 12 meeting and observations were applied for collecting qualitative information from project related stakeholders such as native chicken, layer poultry farmers, input and output market actors, government officials, project staff, etc.

Baseline study findings

There were 59% women and 41% male among the 370 respondents. Approximately 48% of the total population was young group 40% middle age and 12% old age of poultry farm owners. Hundred percent engaged with poultry rearing either duck, native chicken or layer farming.

The 100% utilization of hand-tube wells highlights their widespread popularity and practicality within the poultry farming community. Approximately 59.5% of respondents in the family engaged for cooking. Approximately 12.2% of respondents reported having a safe drainage system in place.

Approximately 16.2% of respondents are engaged in crop cultivation, 19.2% of respondents are involved in poultry rearing. Poultry rearing typically includes raising chickens, ducks, or other birds for meat or egg production. Around 5.4% of respondents reported being engaged in small business ventures. The majority of respondents, approximately 44.3%, identified themselves as housewives.

Based on the survey data found that annual average income of the families varies from types of poultry rearing, however lowest income found with native chicken Tk.140,580, duck farmer 148,650 and layer farmer Tk.522,408. Layer farmer found more commercial concern than others.

approximately 90.3%, indicated that they have their own land. Approximately 9.7% of the respondents reported that they do not have their own land. Among the 370 respondents, 100% reported having poultry farms. This indicates that all participants in the survey are engaged in poultry farming, reflecting a significant presence of poultry farming activities within the surveyed population.

12.2% rear ducks. Desi chickens are regional or native breeds of chicken who account for 70.5% of all poultry farmers, concentrate on growing desi chickens. Layer chickens are bred primarily to lay eggs. The 17.3% of poultry farmers in this category are mostly engaged in the production of layer chickens.

According to these percentages, tin is the most common type of housing in the supplied dataset (76.9%), followed by cane (19.9%). Concrete, net, and various material combinations account for a lesser proportion of the housings.

Approximately 41.9% collected inputs from retailer (feed, DOC, medicine etc) of the total. This suggests that a significant number of poultry farmers and businesses rely on retailers to procure feed, medicine, ducklings, chicks, and other essential supplies. approximately 17.0% from wholesalers, and 35% own prepared feed, DOCs of the total.

The majority of poultry feed 53.24%, is prepared by individuals themselves, 32.16% from local market. approximately 73.2%, indicated that they do not have access to government-verified feed.

On the other hand, a minority of respondents, around 26.8%, indicated that they do have access to government-verified feed. This suggests that a smaller portion of individuals or businesses are able to procure feed that has undergone an official verification process conducted by the government.

A significant portion (98.6%) of respondents have a limited awareness or knowledge about safe poultry products. No one having very much knowledge on this a tiny proportion of them have no knowledge on this at all. Moreover, 77.6% have no training or information on safe poultry production and handling while 22.4% are having training on safe poultry management.

In average income from duck calculated as Tk.140580 per year and from native chicken it was Tk.148650/- whereas layer farmers earned Tk.428558/- per year. Unit price of duck calculated as Tk.350 and cost was Tk.184, native chicken sold at 280 per kg and cost was Tk165 and egg price Tk.8 in average and cost around Tk.6.7 per egg

It was calculated that the mortality rate seems higher than commercial broiler farmers, however it was found that duck mortality rate (25%) is much higher than chicken (20%) and layer farms (13%)

MDD-W

Food groups that contributed significantly to the MDD-W were grains (100%); Pulses 69%, oils 71%, Dairy milk 42%, meat and/or fish 37%, eggs 25%, dark green leafy vegetables 48%, Vit-A enriched vegetables 30%, other vegetables 50%, and 34% other fruits.

Minimum Dietary Diversity MDD-W:

Only 37% of women respondents achieved the Minimum Dietary Diversity for Women (MDD-W) and consumed (at least five dietary diversified items) an adequate intake of micronutrients whereas 63% did not. Therefore, majority of the women in the family level under nutrition and did not take adequate amount of nutritious food.

Recommendation and conclusion

For making efficient value added based marketing system development needs to be initiated stopped Open market & set up structured slaughter house and Halal certified authority should be assigned instantly; Strict on implementing of existing slaughter house policy and also Law and enforcing agency should be centralized and pricing control; Strengthening monitoring & examination on food safety and quality control issues. on value added products ins and outs beneficiary effects to the end users. Finally need to strengthening mass media publicity Value added safe poultry segments needs to be vigorously promoted for boosting production to increase the domestic consumption of processed products and also for promoting their export. Family dynamics, rising income, increasing exposure to various mass media, changing food habits with preference for fast foods and heavily industrialization and urbanization will greatly enhance the demand for fresh or frozen and nutritionally superior value added products. Policy makers, meat producer cum processor, food processor, food technologist etc. have to work together to transform this sector into a more dynamic and vibrant enterprise in the long run.

From the finding of the baseline study team comes up with the following recommendations:

- **Training to be provided:** The project should provide all necessary trainings (safe poultry rearing, farm record keeping and GAP standards) to the farmers and relevant stakeholders.
- **Market Linkage to be strengthened:** To ensure good prices the project should emphasize on creating market linkage with market actors in the national, big city markets along with processors and large buyers. Linkage with good quality and accredited inputs suppliers to be strengthened.
- **Financial inclusion:** The farmers should be provided with sufficient credit so that they can utilize efficiently and earn more money.
- **Collaboration with DLS and other Government departments:** Necessary linkage to be established with DLS and department to enhance GAP and produce good quality duck/chicken/ egg.
- Linkage building with trusted inputs supplier, retailers and market traders mainly direct to the millers and large-scale traders

Whatever facts and figure represented in this report simply a sample survey not a census, perception, knowledge and practices absolutely individual issues, it may be differed from one person to another person. Though number of samples are small one answer affects to statistical analysis remarkably, however entire facts would be remaining with RDRS it is their property and responsibility to utilize as per project objectives, and logframe.

Table 1: Fact sheet as per log frame indicators

Sl. No.	Indicators	Measurement unit	Baseline status
1	Income	BDT/Month (average)	Annual household income <ul style="list-style-type: none"> • Native chicken farmers Tk.140,580 • Duck farmer Tk.148,650 • Layer Tk.522,408 Income from: <ul style="list-style-type: none"> • Native chicken farmers Tk. 12,950 • Duck farmer Tk. 13,890 • Layer Tk. 428,558
2	Nutrition (the percentage of nutritious food in participant farmers' daily diet)	%	Improve diet 37% Low intake as per MDD-W 63%
3	Mortality rate	%	<ul style="list-style-type: none"> • Duck 25% • Native chicken 20% • Layer 13%
4	The volume to sell (on average) Duck Chicken (desi) Chicken (layer)	Unit/flock Unit/flock Unit/flock	<ul style="list-style-type: none"> • Duck 12-20 • Chicken (desi) 15-20 • Chicken (layer) – 500-2500
5	The price of selling Duck Chicken (desi) Chicken (layer)	BDT/Month BDT/Month BDT/Month	Annual income <ul style="list-style-type: none"> • Native chicken farmers Tk. 12,950 • Duck farmer Tk. 13,890 • Layer Tk. 428,558
6	The profit margin of Duck Chicken (desi) Chicken (layer)	BDT/Month BDT/Month BDT/Month	Duck (cost Tk.184, sales Tk.315 profit Tk.131 per kg) Chicken (desi) (cost Tk.165, sales Tk.275 profit Tk.110 per kg) Chicken (layer) (cost Tk.6.6, sales Tk.8 profit Tk.1.4 per egg)
7	Appearance as contract farming	%	0
8	58% members under the project will adopt environment friendly smart technology	%	0
9	Mortality rate	%	<ul style="list-style-type: none"> • Duck -25% • Native chicken 20% • Layer 13%
10	Good livestock management practice <ul style="list-style-type: none"> • Application of govt. verified feed/medicine • Purchase of inputs with labels 	%	None
11	ICT based technology for livestock business will be adopted	%	0
12	Employment generation in poultry rearing	%	2 Average 2 per farm
13	Access to market	Linkage with processing plant	0 None linked with processing plant at this moment

Abbreviation Used in This Report

BBS	Bangladesh Bureau of Statistics
BDS	Business Development Services
DLS	Department of Livestock Services
DDS	Dietary diversity score
F2F	Face to Face
FAO	Food and Agricultural Organization of the United Nations
FGD	Focus Group Discussion
GAP	Good Agricultural Practices
HACCP	Hazard Analysis and Critical Control Point
HH	Households
HSC	Higher Secondary Certificate
IDI	In-depth Interview
Kg	Kilogram
KII	Key Informants Interview
MDDS	Minimum dietary diversity score
MDDW	Minimum dietary diversity for women
MFI	Micro Finance Institute
NGO	Non-Government Organization
PG	Producer Group
PSU	Primary Sampling Unit
SAAO	Sub Assistant Agricultural Officer
SD	Standard Deviation
SP	Service Providers
SPSS	Statistical Packages for Social Sciences
SSC	Secondary School Certificate
STE	Short Term Enumerator
Tk.	Bangladeshi Taka
ToR	Terms of References
VC	Value Chain
VMFH	Vulnerable, Marginal Farming Households
PKSF	Palli Karma-Sahayak Foundation
RMTF	Rural Microenterprise Transformation Project
UAO	Upazila Agriculture Officer
WRA	Women of reproductive age

Definition of the terms used in this Report

Assets: This includes productive asset i.e. livestock, land, and other equipment and tools for livelihood purpose etc.

Aratdar: An Aratdar serves as a fixed commission agent with a fixed establishment. They operate between the Bepari and retailers, charging a fixed commission for providing storage facilities

Asset / Land Ownership: Any asset including land possess by her, used for productive purpose by her and registered (if needed) on her name in a formal way.

Bepari: A professional trader who purchases agricultural products from farmers or farias in the local market or village. This group handles a larger volume of products than Farias. Beparis sell their products to Aratdars.

Business Operation: Trading of produces / product of specific value chain within the project interventions.

Data triangulation: A effective technique that facilitates validation of data through cross verification from two or more sources and particularly refers to a system of combining several different research methods to study a single subject.

Deshi Chicken: Country chicken or desi refers to the breeds of chickens native to Bangladesh that are raised for eggs and meat both.

Faria: A small trader who deals in products within three or four local markets and handles a small volume of products. A faria purchases products from farmers and sells them to either a bepari or direct to consumers. They are usually landless laborers or small farmers with no full-time work.

Food security: Is defined as the access at all times by a household to sufficient, safe and nutritious food that meets dietary needs for an active life.

Group Sales: Group based collection of the product and sales to a single customer.

Health center: Health center means locally available government recognize primary health care center e.g. Upazila Health Care Centre, Union health care center, community clinic, approved private clinic, NGO health care center, etc.

Household expenditure: Household expenditure is made up several components like food consumption expenditure, non-food consumption expenditure and other consumption expenditure. Goods and services purchased on an irregular basis during the reference period.

Household Member: Household members are all those who live within the household sharing the same resources such as food, housing and money. Household members who live elsewhere but who get support from the same household shall be recorded as household member. But household members living elsewhere independently without getting any support shall not have considered as members

Household Income: It is defined as the gain in cash or kind received in exchange of goods and services of all family members in a particular period.

LSP: Local Service Provider developed under project intervention from project beneficiaries

Sales: Individual sales of producers

Start-up Asset / Equipment: Start-up asset/equipment provided to the project beneficiaries under the project starting period of the project under specific project intervention.

Training: All sorts of training and capacity provided under the support of the project.

Union: The lowest administrative unit in Bangladesh – below Upazila.

Union Parishad: Union Council.

Upazila: Local level Administrative government structure.

Value chain: The value chain describes the full range of activities that are required to bring a product or service from conception, through the intermediary phases of production, to delivery to the final consumer, and (for physical goods) final disposal after use

I. Introduction

I.1. Introduction

RDRS Bangladesh is a development and humanitarian organization committed to change through empowering the rural poor. RDRS is the leading non-governmental organization in the northwest and presently is employing a project titled “Market system development of safe poultry and poultry products” at Gaibandha, Kurigram and Rangpur districts. This project is jointly financed by Palli Karma-Sahayak Foundation (PKSF) and the International Fund for Agricultural Development (IFAD) will be Implemented in Rangpur Sadar, Kawnia, Pirgacha, Rajarhat, and Sundorgonj upazila.

The main focus of this project is to grow the income, ensure food security and enhance family nutrition of marginal and small farmers and poultry related backward and forward market entrepreneurs. The sub-project will also work on value addition at various levels, expansion of financial services for enterprise development and strengthening of the institutional framework for the development of safe eggs, meat and meat products of the value chain. To ensure the proper implementation of this project RDRS intent to conduct a baseline survey and Matrix a consulting firm presenting this proposal to understand the current status of safe poultry and poultry products.

I.2. Objectives of the study

The baseline survey was conducted with a view to obtain a snapshot assessment of- the current production, technical knowhow, business, economic, of the micro- entrepreneurs who are likely to participate in the project activities, so that the changes related to the project interventions and their progress can be evaluated after the project period. Moreover, the survey established the baseline situation on a significant number of variables relevant to sales, profit, employment, environment and health and safety situation etc. by the project participants.

I.3. Specific objectives of the baseline study

- The objective of this analysis is to conduct a comprehensive assessment of the Poultry value chain in the respective district, including an evaluation of input, service, value chain products, and different buyers.
- The analysis aims to identify the roles that can be filled by the selected target group (including youth, persons with disabilities, older men, and women) within the value chain, and provide recommendations on how to engage them effectively.
- Additionally, the assessment will analyze the market system supporting environment, including services, policies, rules and regulations, and infrastructure, in order to identify constraints and areas for potential intervention.
- The evaluation will also consider the ongoing business of different market actors, their present situation, and roles within the value chain, with a focus on identifying areas where intervention can benefit the target groups.
- The analysis will identify the skills training needs for the target groups to effectively participate in various roles within the poultry value chain.
- Overall, the objective is to provide actionable recommendations to enhance the inclusivity, efficiency, and profitability of the poultry value chain in the district.

I.4. Project stakeholders and baseline target people

In total 9500 microenterprise will get different technical and financial supports through the project. Most of them are poultry farmers and have attachment with poultry farming process. Expected outcomes of RDRS are change in production, practice income, nutrition issues.

1.5. Scope of Work

- The study team reviewed secondary document reviewed and understood the need of the project related baseline information.
- Developed the study methodology with detailed work plan.
- Prepared necessary tools required for collection of baseline data on the expected outcomes and impacts of the sub-project.
- Matrix has deployed enumerators, training and field data collection through extensive interviews.
- Collected field data from relevant respondents both qualitative and quantitative form as sample survey (treatment and control group), KII and FGDs.
- Analyzed the collected Field data and produced report.
- Ensure the best quality of work e.g., accuracy of collected data.
- Recommendations for strengthening the value chain.

1.6. Key deliverables

- Detailed methodology and work plan
- Survey questionnaire preparation and finalization addressing feedback from authority.
- A comprehensive draft report submitted for feedback from authority.
- The final report incorporating the responses/ feedback from authority.

2. Chapter Two: Baseline study methodology

2.1. Theme of the baseline study

The study team followed mixed approach combining qualitative and quantitative method for baseline data collection and analysis. Data and information were collected from primary and secondary sources. Primary data and information (qualitative and quantitative) through sample survey used Kobo Toolbox. Total 370 household were surveyed from 5 selected upazila. In addition, FGD (10), KII (30), 12 meeting and observations were applied for collecting qualitative information from project related stakeholders such as native chicken, layer poultry farmers, input and output market actors, government officials, project staff, etc. As a part of literature review, the study team reviewed different documents by which they captured secondary information. Both primary and secondary information triangulated.

- Inception phase: Kick-off meeting, document review, survey questions finalization, data collection instruments preparation, test of DCI, details of methodology and inception report submission.
- Field exercise phase – team orientation, enumerators training, field plan, data collection (quantitative - sample survey and qualitative – FGDs, IDIs, KIIs).
- Data analysis phase: data cleaning, synchronizing, curing, database development, template preparation, analysis and triangulation;
- Reporting phase: draft report and presentation to RDRS project team; and final report with recommendation.

2.2. Methods of Final Evaluation

There were sequential interrelated processes, such as

- 1) **Inception phase:** Kick-off meeting, document review, evaluation questions finalization, data collection instruments preparation, details of methodology and inception report submission
- 2) **Field exercise phase** – team orientation, enumerators training, data collection (quantitative - sample survey through android based apps (KOBO) and qualitative -KII, and FGD.
- 3) **Data analysis phase:** data cleaning, synchronizing, curing, database development, template preparation, analysis and triangulation;
- 4) **Reporting phase:** draft report, presentation to evaluation team; and final report with recommendation.

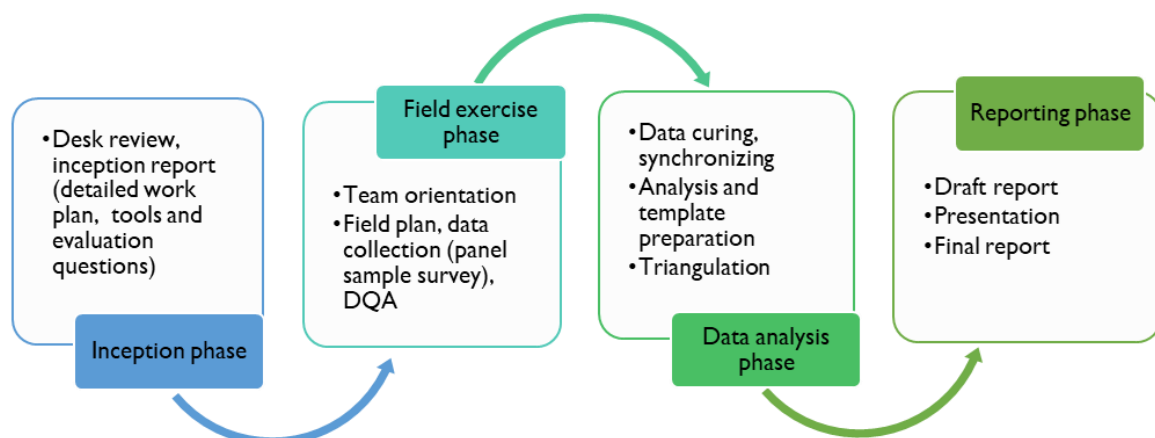


Figure 1: Methods of baseline survey

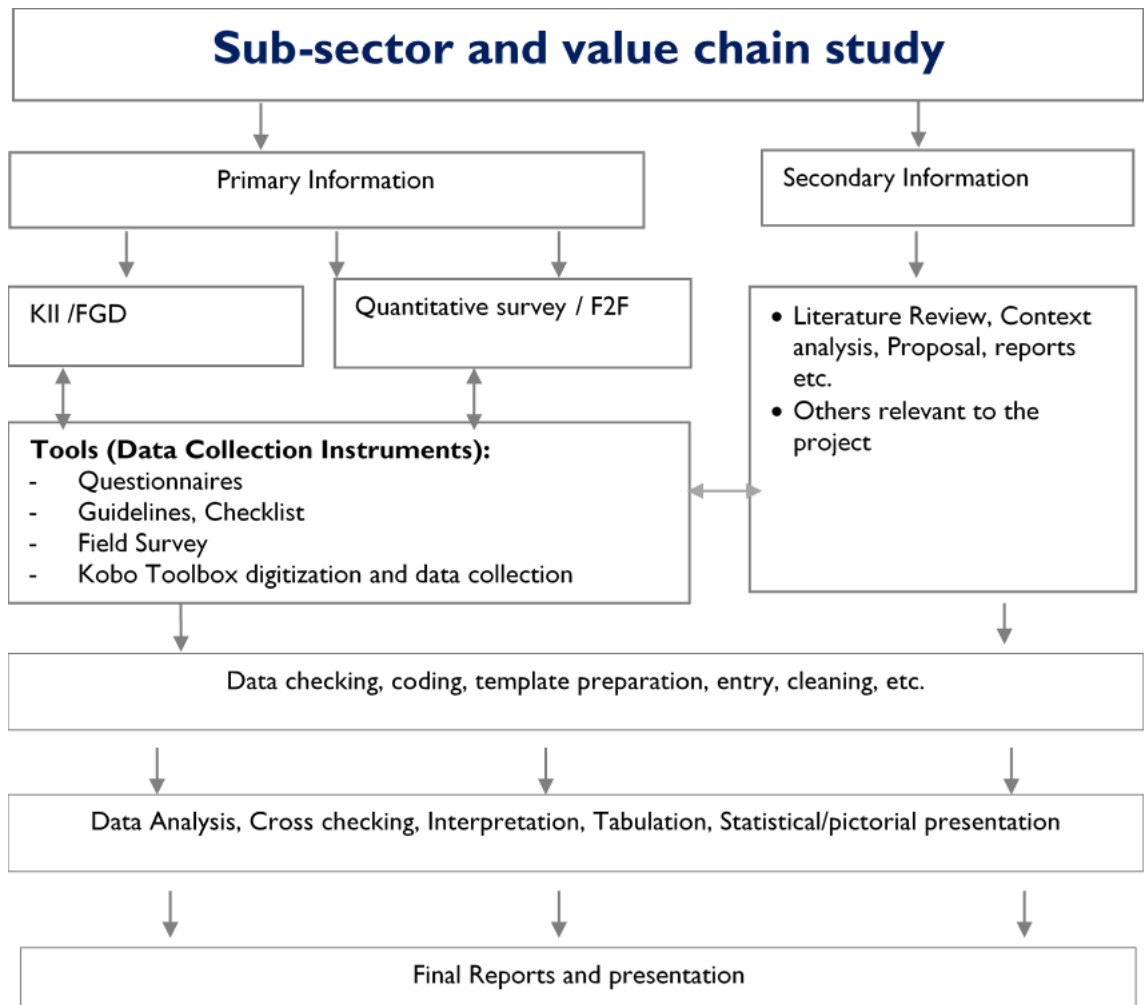


Figure 2: Methodology of the study

2.3. Location of the project and survey

Total 25 unions of five upazila from three districts namely Rangpur, Gaibandha and Kurigram were considered as survey area where project is implementing.

2.4. Quantitative sampling of the baseline study

Determination of Sample size:

The primary unit of sampling was the types of beneficiary poultry farmers as per upazila. The sample was considered at a 95% confidence level, with an accuracy rate or amount of admissible error margin of 5%. The following sampling approach and statistical formula applied for the sample design.

$$n = \frac{z^2 \cdot p \cdot q \cdot N}{z^2 \cdot p \cdot q + (N - 1)e^2}$$

Where,

n = Sample size

N = Population size

e = Precision rate or amount of admissible error in the estimate

p = Proportion of defectiveness or success for the indicator

q = $1-p$

z = Standard normal variable at the given level of significance

Therefore, quantitative sample size was 370 considering 95% confidence level and 5% margin of error and proportionate as per Table 2:

Table 2: Sample distribution of the survey

Sl. No.	Upazila	Sample	Proportion
1	Rangpur Sadar	62	17%
2	Kawnia	49	13%
3	Pirgacha	90	24%
4	Sundarganj	125	34%
5	Rajarhat	44	12%
	Total	370	100%

Table 3: Types of farmers.

Types of farmers	#	Rangpur	Gaibandha	Kurigram
Duck	45	31	14	0
Native chicken	261	170	47	44
Layer	64	0	64	0
	370	201	125	44

2.5. Secondary review

The first step of the study was the review of secondary documents to extract existing information from Proposal, previous reports, relevant statistics, indicators of the project. Then questionnaire and tools were reviewed for primary information.

2.6. Quantitative field data collection:

Ten enumerators and two supervisors were deployed for field data collection, and they have collected data as per sample through kobo toolbox. Both supervisors coordinated entire team and report to team leader daily basis.

Structured questionnaires were developed in consultation with RDRS project team through a rigorous and systematic process. Quantitative questionnaires were tested before digitization and field feedback were incorporated to finalize the questionnaire. The survey was carried out through structured questionnaire to capture quantitative information from the beneficiaries. Total 370 sample HHs (poultry farmers) from five upazila of three different districts were interviewed.

Data collection tools was developed and finalized in consultation with the RDRS project team. The questionnaire translated in Bangla for quantitative analysis uploaded in Kobo toolbox platform for field data collection.

After finalization of the questionnaire, then translate to bangla for digitization in Kobo Toolbox platform for data collection.

2.7. Team orientation

Experienced and skilled enumerators were deployed and train on data collection methodology, questionnaire, and digitized apps. Proper data collection methodology, exercise, mock test also included in the training.

2.8. Qualitative Information Collection Tools and Techniques

Qualitative data collection instruments and checklist prepared in consultation with RDRS project team KII, and FGDs.

Focus Group Discussion (FGD)

During the field visit 10 FGDs were conducted with the farmer groups, those were not included in the sample survey. An in-depth checklist was applied for collection of qualitative information to assess present condition of the beneficiaries. This information was triangulated (cross-checked with the quantitative information). The Field Coordinator from RDRS helped to manage the farmers for interview. Additionally, one note taker took notes accordingly.

KII with RDRS Representative

Key informants' interview was conducted with RDRS/RMTP representative to learn deeply about the project and assess their support and linkage with producer groups. An in-depth checklist was used for data collection.

KII with DLS and Govt. officials

From each upazila DLS representatives were interviewed to get contextual information of in the respective upzila specially for native and safe food concern.

KII with other important stakeholders

Key informant interviews were conducted with other important stakeholders of the project like Inputs suppliers (feed and medicine, maize, others), aggregator, local service providers, and livestock extension agents.

Observations:

Native chicken house, commercial farms, and layer farms, their rearing technologies and other relevant activities observed by the consultants and calculate the cost of production, production, sales, profit and social benefits of the native chicken, eggs concerning safe food issues.

Meeting

Interactive meeting was conducted with RDRS officials.



2.9. Details of the Baseline Study steps

First Step:

The **first step** of the study was the review of secondary documents to extract existing information from Proposal, previous reports, relevant statistics, indicators of the project. Then questionnaire and tools were reviewed for primary information.

Data collection Tools Development:

In-consultation with RDRS data collection tools were developed and tested to finalize the questionnaires and other data collection instruments like Kobo toolbox.

Team formation, Orientation and training

Matrix deployed skilled enumerators and field team for this survey. The team facilitated an orientation (training) on the methodology of the data collection, use of tools, and variable of the output evaluation, and data quality management.

Second Step: Field Survey

Field Data Collection:

The **second step** were collection of primary data including qualitative and quantitative information through face-to-face interview with beneficiary poultry farmer respondents. Simultaneously, KIIs and

FGDs were also conducted with key experts and traders'/market actors and service providers, NGO representatives using formatted questionnaires.

Face to Face Interview (F2F):

Face to Face Interviews (F2F) (individual interview) were conducted with 370 respondents from the field.

FGDs and KIIs:

As mentioned above, 10 Focused Group Discussions (FGD) and 15 Key Informant Interviews (KII) provided primary data and information and got clear understanding of the project. Every KIIs provided relevant information from the government officials, service providers, market traders, value chain actors, DLS, project staffs and related representatives who had knowledge and experiences on specific issues related to the project.

Dietary diversity data collection: Separate questionnaire and interview was conducted for dietary information collection exclusively from 370 women family members. Dietary intake data were collected using an interactive 24-h recall method (non-quantitative open method) during May 2023 among 370 women family members of the RMTP project beneficiaries. Initially sample survey was conducted with the head of families, afterwards Interviewer sat with the women family member separately, asked for the last 24 hours individual (herself) food intake (open recall method) and then fill-up diet types 24 hours list based 10 categories of the food items as per MDD-W checklist. Hence the evaluation team used a separate questionnaire (checklist). The plotted as per frequency of the meal and then count the selected 10 categories of food items. Out the 10 category of food items those women having at least 5 types food items taken in last 24 hours counted as MDD-W score sheet as per following formula developed by the FAO. The minimum dietary diversity for women (MDD-W) guidelines whose food groups are the following: 1) grains, white roots and tubers, and plantains; 2) pulses; 3) nuts and seeds; 4) dairy; 5) flesh foods – meat, fish; 6) eggs; 7) dark-green leafy vegetables; 8) vitamin A-rich fruits and vegetables; 9) other vegetables; and 10) other fruits. Details of methodology is given in MDD-W section.

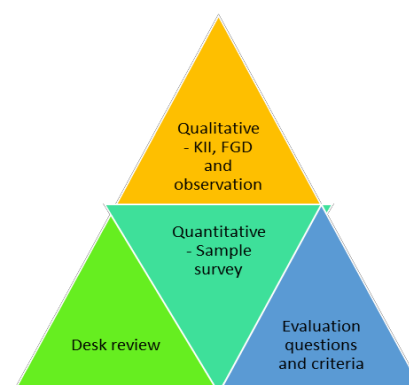
Debriefing:

At the end of the field visit, there was a debriefing meeting with RDRS project representatives.

Third Step:

Data analysis and Report writing:

All field data were exported from kobo to MS Excel, cleaned and coded for analysis through SPSS and excel for analysis. Data was triangulated with the qualitative data and the findings from secondary review. SPSS-26 and MS excel was used to process the data and tabulation, graphs for analysis and to prepare report. Descriptive analysis (frequencies, percentiles, averages) and cross tabulation analysis were applied for data analysis.



Triangulation of data sources, i.e., quantitative data from sample survey, qualitative information from KII, FGDs and secondary data (quantitative and qualitative) and secondary information was done for analyzing and report writing. The triangulation of data was conducted, based on the similar findings and information, and collected from different respondents. Triangulation process was validated the relevancies of the collected data in different manner.

Finalization of the Report:

Fourth step was draft reporting, this draft report was shared to receive feedback from RDRS representative, and then **final step** was incorporation of comments, suggestions and feedback to finalize the report.

3. Chapter 3: Baseline study findings

Field survey information (both quantitative and qualitative), secondary review, and indicator-based findings are discussed in this chapter. Detail tabular distribution and relevant charts/figures arose from findings are placed with the respective running text and paragraphs.

3.1 Demographic information

The project is implementing in 5 upazila in three districts in northern parts of Bangladesh (Rangpur, Gaibandha and Kurigram). 370 Respondents were selected from identified beneficiaries of the RDRS/RMTP project. The respondents were selected randomly.

Gender of respondents:

A survey questionnaire was distributed to poultry owners, who were asked to indicate their gender as part of the demographic information. The data obtained from the completed questionnaires were analyzed to determine the gender distribution among the respondents. According to the survey's findings, women made up 59% of all respondents, or the majority of respondents. This result shows that women are more actively involved in raising hens. On the other hand, male respondents constituted 41% of the total participants. While they represented a smaller percentage, it is essential to acknowledge their perspective and experiences in the context of raising poultry.

According to analyzed data, both males and females are reasonably represented and likely play significant roles in the household dynamics. While the slight majority of males (59%) suggests a potential numerical advantage and females were 41%.

Gender of respondents

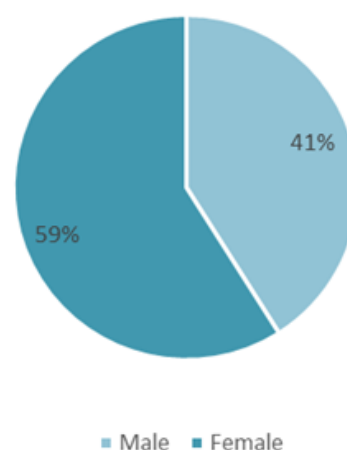


Figure 3: Gender of respondents

Age of Respondents:

The data indicates that among poultry farm owners, a significant portion falls within the young age category, comprising approximately 48% of the total population. This suggests that a considerable number of individuals entering the poultry farming industry are relatively young, potentially indicating a growing interest among the younger generation in this field. Furthermore, Middle-aged individuals make up approximately 40% of poultry farm owners. Old age individuals represent 12% of poultry farm owners. This suggests that there is still a portion of the population who continue to engage in poultry farming even as they reach their later years.

Age of respondents

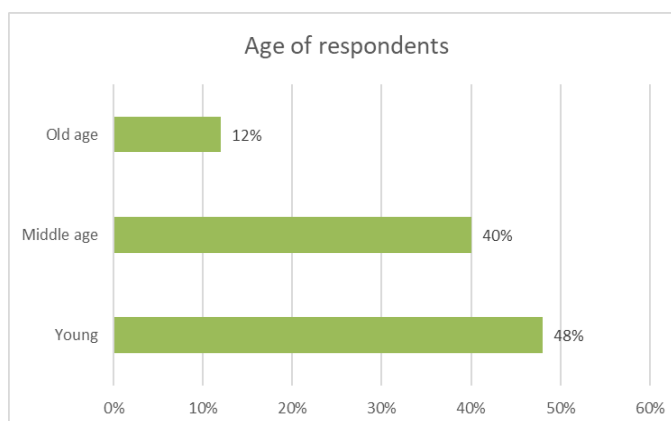


Figure 4: Age of respondents

Marital Status of respondents:

According to the data, most owners of poultry farms are married, accounting up roughly 95% of the overall population. This suggests that a significant portion of individuals engaged in poultry farming are likely to have stable family lives and potentially benefit from the support and collaboration of their partners. Only 2% of owners of poultry farms are single, which is a very small percentage. This shows that just a small number of people in this field was single. Fewer than 1% of owners of poultry farms are divorced, a small but significant portion. This indicates that although divorce is not common among this demographic, some people have still gone through a divorce and 2% of poultry farm owners are widowed.

Overall, married people constitute the majority of poultry farm owners, with only a small number being single, divorced, or widowed.

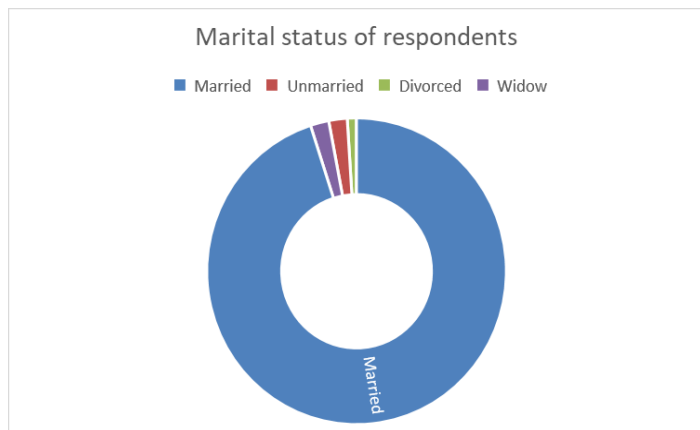


Figure 5: Marital Status of respondents

Gender comparison in a family

The data reveals that within the family being studied of poultry farm owners, the gender distribution is relatively balanced. Males constituted approximately 50.92% of the family, while females account for 49.08%. This equal distribution of gender in a family indicates a potential for a more balanced division of household tasks, decision-making processes, and the sharing of familial roles.

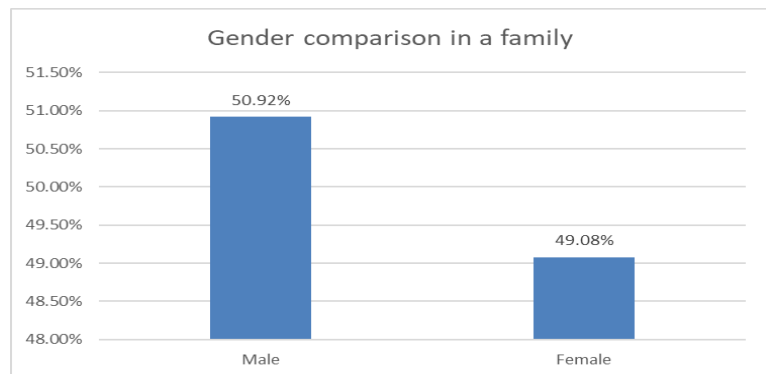


Figure 6: Gender comparison in a family

Education of respondents:

The data indicates that a considerable proportion of poultry farm owners have completed primary and lower-secondary education, with varying percentages across different class levels. This suggests that a basic educational foundation is prevalent among poultry farm owners, which can contribute to their understanding of general concepts and skills required in farm management. Moreover, a notable percentage of poultry farm owners have achieved higher levels of education, such as SSC (Secondary School Certificate), HSC (Higher Secondary Certificate), and even bachelor's degrees. This indicates that there are individuals within this profession who have pursued formal education beyond the secondary level, potentially bringing a broader range of knowledge and skills to their farm operations.

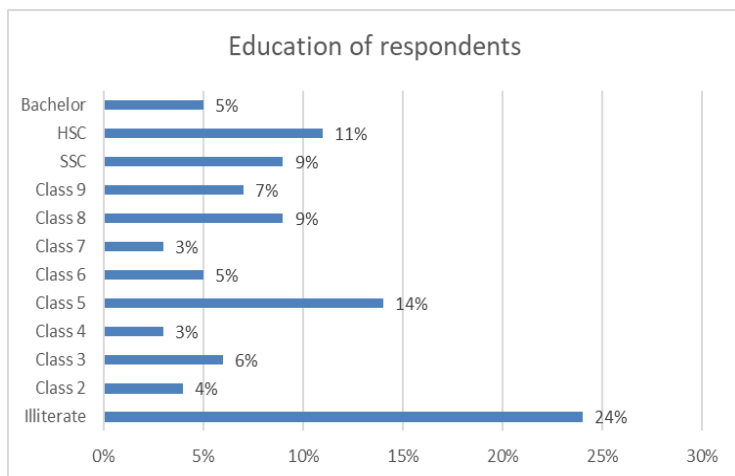


Figure 7: Education of respondents

Person with disabilities in a family:

The data reveals that within the poultry farm ownership sector, there is only 17 families found persons with disabilities among them higher representation of male disabled members, accounting for approximately 76.50% of the total disabled population. This indicates a significant proportion of disabled individuals in this profession are male.

On the other hand, female disabled members constitute approximately 23.50% of the disabled population among poultry farm owners. While the percentage is lower compared to males, it suggests that there are still females with disabilities who actively engage in poultry farming and contribute to the industry.

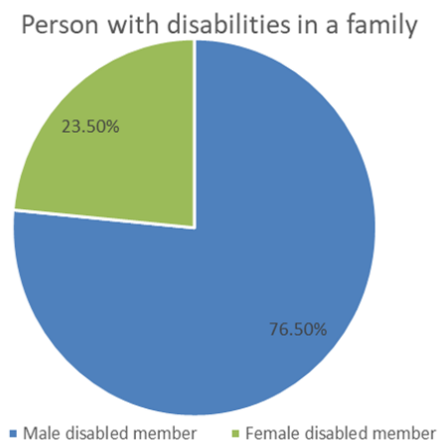


Figure 8: Person with disabilities in a family

Types of disabilities

According to the data, a significant number of respondents reported having vision problems, with 23.5% of those reporting difficulties seeing even with glasses. In terms of hearing, approximately 29.4% of respondents reported difficulties in hearing despite the use of hearing aids. This indicates that some

individuals continue to face challenges in auditory perception and communication, even with assistive devices. Mobility-related issues were also common among the respondents to the survey, with 41.2% stating that they had trouble walking or ascending stairs. This suggests that a significant number of people have physical mobility limits, which may have an impact on their daily activities and general quality of life. In contrast, a relatively smaller percentage of respondents, 5.9%, reported difficulties with memory or concentration. This suggests that cognitive challenges, such as memory retention and focus, were less frequently reported among the surveyed individuals.

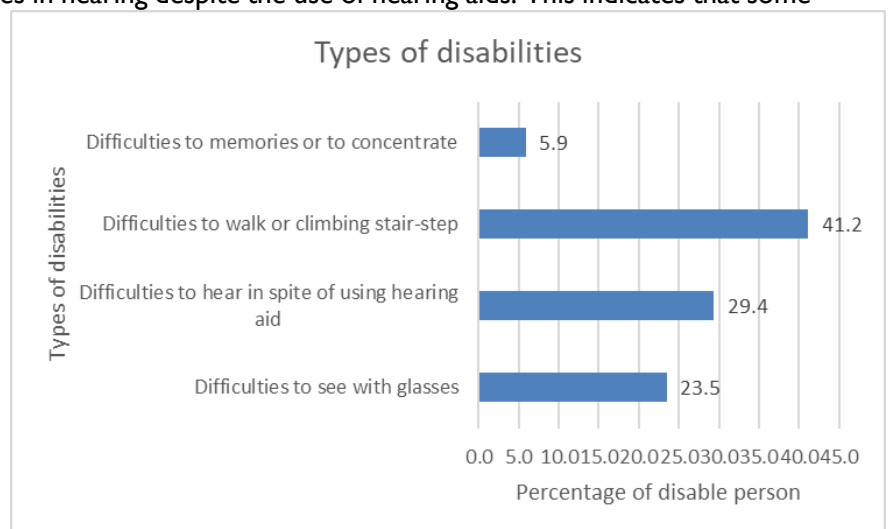


Figure 10: Types of disabilities

Status of females in a family:

According to field data, approximately 4% of females in the family are currently pregnant. This indicates that a small portion of females are in an expectant state, requiring additional care and support during this period. Furthermore, around 20% of females in the family are in the lactating phase, indicating that a significant number of women are currently breastfeeding their infants. This highlights the

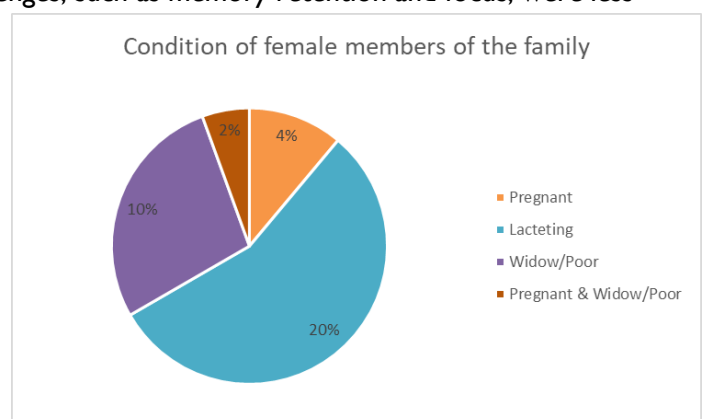


Figure 9: Status of females in a family

potential demands on their time and resources, as well as the importance of providing adequate support for their breastfeeding needs. Approximately 10% of females in the family are widows or classified as poor and 2% of females are both pregnant and classified as widows/poor.

3.2 Source of water for household activities:

The 100% utilization of hand-tube wells highlights their widespread popularity and practicality within the poultry farming community. Poultry owners may favor hand-tube wells due to their accessibility, affordability, and reliability in providing a consistent water supply for their livestock.

3.3 Cook of the family:

The quantitatively analyzed data highlights the various roles individuals assume in the cooking responsibilities within the family.

The majority of individuals prefer to cook for themselves, while a significant portion relies on other family members to prepare their meals. Approximately 59.5% of respondents in the family relied on cooking for themselves. This suggests a significant portion of family members prefer to prepare their own meals, indicating a level of independence and self-reliance in meeting their dietary needs.

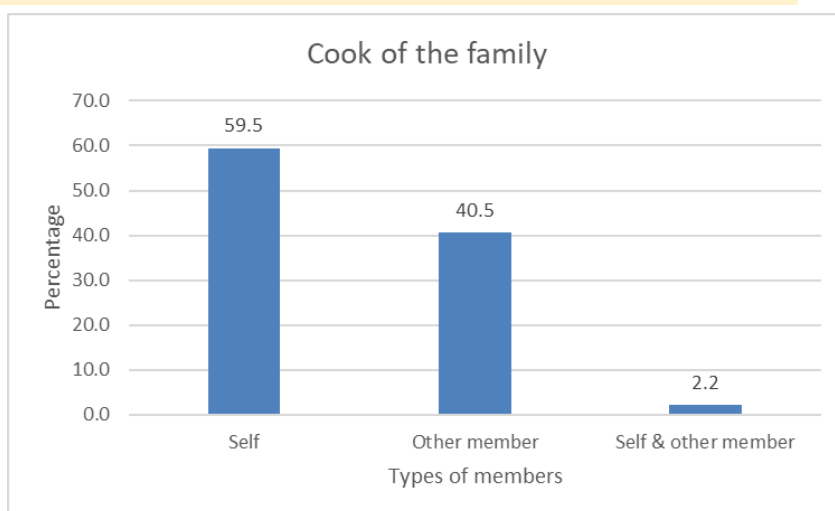


Figure 11: Cook of the family

3.4 Materials of exterior walls of main house:

According to the data, brick/cement and tin are the two most common materials utilized for exterior walls. The majority of structures, approximately 77.6%, employ tin as the primary material for their exterior walls.

Table 4: Materials of exterior wall

Materials of exterior wall	Percentage
Tin	77.6
Brick/Cement	22.4
Tin & Hut/Cane/Bamboo	1.4
Tin & Cement block	1.1

Tin is a commonly used material due to its affordability, durability, and ease of installation. Brick or cement is the primary building material for the outer walls of about 22.4% of structures. These materials provide greater durability, stability, and strength. A small amount, about 1.4%, uses tin for the outside walls along with organic materials like hut, cane, or bamboo. Combining these two elements could provide both structural stability and traditional construction and around 1.1% of structures feature a combination of tin and cement block for their exterior walls.

3.5 Power Connection Status:

A small percentage, approximately 1.1% of surveyed individuals, have solar power connections. Solar power offers a renewable and sustainable energy solution, providing independence from the grid and reducing reliance on traditional power sources.

Table 5: Types of power connection

Types of power connection	Percentage
Solar	1.1%
Grid line	98.4%
No connection of Power	0.5%

On the other hand, the majority of respondents, approximately 98.4%, have power connections through the grid line. Grid line connections typically provide access to reliable electricity from the main power supply, allowing for consistent and convenient energy usage. A minimal percentage, approximately 0.5% of individuals, do not have any power connection. This suggests that a very small number of respondents surveyed lack access to electricity, potentially indicating challenges in infrastructure development or limited access to power supply in certain areas.

3.6 Condition of sanitary system:

The quantitatively analyzed data provides insights into the condition of sanitary systems based on the reported information. While some respondents have access to safe drainage systems and pit latrines with slabs, a significant portion relies on basic and potentially unhygienic sanitation facilities such as pit latrines without slabs, open pit latrines, raw toilets, and hanging toilets.

Approximately 12.2% of respondents reported having a safe drainage system in place. A safe drainage system ensures the proper disposal of waste water and prevents contamination of water sources, contributing to improved hygiene and sanitation.

A small percentage, approximately 1.6%, reported having a drainage system that is not considered safe. Approximately 26.2% of respondents reported using pit latrines equipped with slabs. These latrines offer a more hygienic and stable platform for waste collection and disposal. Around 17.6%

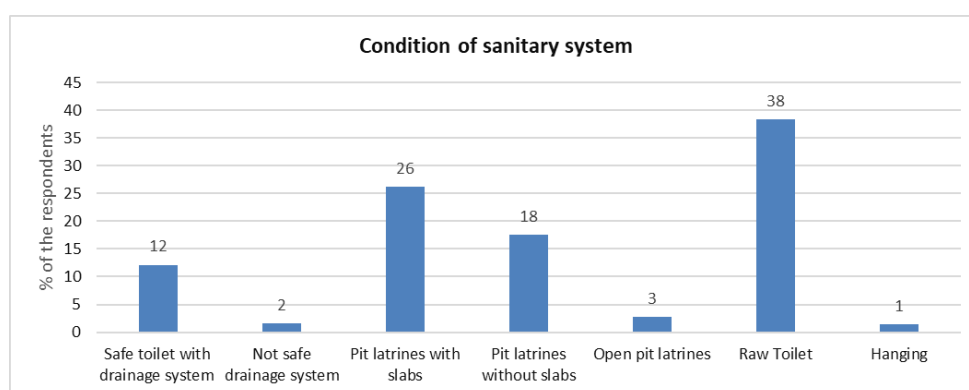


Figure 12: Condition of sanitary system

of respondents reported using pit latrines without slabs. These latrines may pose challenges in waste management and hygiene due to the absence of a stable platform for waste collection. Furthermore, approximately 2.7% of respondents reported using open pit latrines. Open pit latrines generally lack any form of enclosure, potentially leading to environmental contamination and hygiene concerns. The majority of respondents, approximately 38.4%, reported using raw toilets. Raw toilets typically refer to basic toilet facilities without any specific containment or treatment systems. This type of sanitation facility can present significant hygiene and health risks. Lastly, a small percentage, approximately 1.4%, reported using hanging toilets. Hanging toilets typically involve the use of elevated platforms or structures for waste disposal.

3.7 Primary occupation:

The quantitatively analyzed data provides insights into the primary occupations of the surveyed respondents. It indicates a range of occupations, including crop cultivation, poultry rearing, small businesses, transportation, handicrafts, agricultural labor, mechanics, village doctors, housewives, maids, government job services, and NGO/ private services. Understanding the distribution of primary occupations among respondents helps identify the diversity of livelihoods and economic activities within the surveyed population. Approximately 16.2% of respondents are engaged in crop cultivation.

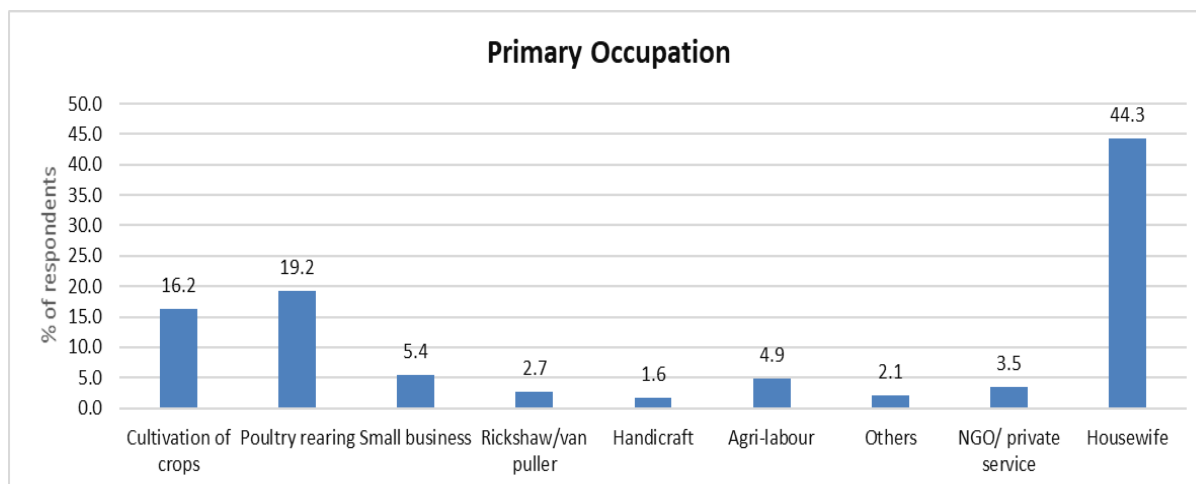


Figure 13: Primary Occupation

This occupation involves the cultivation of various crops, contributing to agricultural productivity and food production. On the other hand, around 19.2% of respondents are involved in poultry rearing. Poultry rearing typically includes raising chickens, ducks, or other birds for meat or egg production. Around 5.4% of respondents reported being engaged in small business ventures. Small businesses encompass a wide range of entrepreneurial activities, contributing to economic growth and employment generation. The majority of respondents, approximately 44.3%, identified themselves as housewives. Housewives primarily engage in household duties and caregiving responsibilities within their families.

Table 6: Secondary occupations of the respondents.

Secondary Occupation	%	Secondary occupation	%
Cultivation of crops	12.2	Goat rearing	0.3
Poultry rearing	80.8	Beef fattening	0.5
Poultry rearing & Agri-labour	15.9	Handicraft	0.3
Cultivation of crops & Poultry rearing	10.0	Agri-labour	0.3
Small business	1.9	No Second occupation	1.9
Fish farming	1.9	Cultivation of crops & Rickshaw/van puller	0.3
Cultivation of crops & Fish farming	3.5	Cultivation of crops & Tailoring	0.3
Cultivation of crops & Small business	2.2	Cultivation of crops & Village Doctor	0.3
Cultivation of crops & Beef fattening	2.7	Poultry rearing & Homestead Vegetable cultivation	1.1
Poultry rearing & Small business	4.3	Poultry rearing & Fisherman	0.3
Poultry rearing & Goat rearing	1.6	Small business & Fish farming	0.5
Poultry rearing & Beef fattening	4.3	Small business & Beef fattening	0.5
Poultry rearing & Fish farming	1.6	Poultry rearing & Tailoring	0.3
Poultry rearing & Rickshaw/van puller	1.9	Fish farming & Beef fattening	0.5
Poultry rearing & Handicraft	2.7		

3.8 Annual income of a family (in BDT)

Based on the survey data found that annual average income of the families varies from types of poultry rearing, however lowest income found with native chicken Tk. 140,580, duck farmer 148,650 and layer farmer Tk.522408. Layer farmer found more commercial concern than others.

Table 7: Annual income of the family from different sources.

Sources of Income	Native chicken farmer		Duck Farmer		Layer farmer	
Agricultural farming	68,760	49%	68,980	46%	89,350	17%
Poultry/Duck/Layer	12,950	9%	13,890	9%	428,558	82%
Other sources	58,870	42%	65,780	44%	4,500	1%
Total	140,580		148,650		522,408	

The quantitatively analyzed data highlights the sources of annual income among the surveyed families. While a small percentage relies on crop production as an income source, a significant number of families depend on poultry farming. Additionally, the majority of families derive their annual income from various other sources. Approximately 46% income comes from agriculture, and others sources like day labour, small business, or any others occupation.

3.9 Land ownership

Approximately 9.7% of the respondents reported that they do not have their own land. This suggests that a small percentage of respondents lack land ownership, potentially indicating their reliance on rented or communal land for their livelihoods. The majority of respondents, approximately 90.3%, indicated that they have their own land. This implies that a significant proportion of participants have land ownership, which can provide them with opportunities for various agricultural activities, housing, or other land-related ventures.

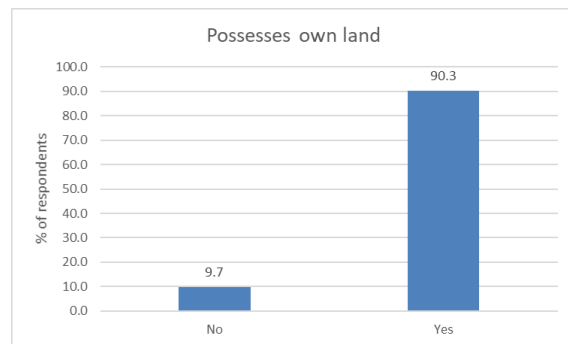


Figure 14: Land ownership

Types of land

The quantitatively analyzed data reveals the following distribution of land ownership among poultry farm owners.

Own Homestead Land: Approximately 11.40% of poultry farm owners reported owning homestead land. Homestead land refers to the portion of land where the owner's residence is situated, often including surrounding areas for personal use or small-scale agricultural activities.

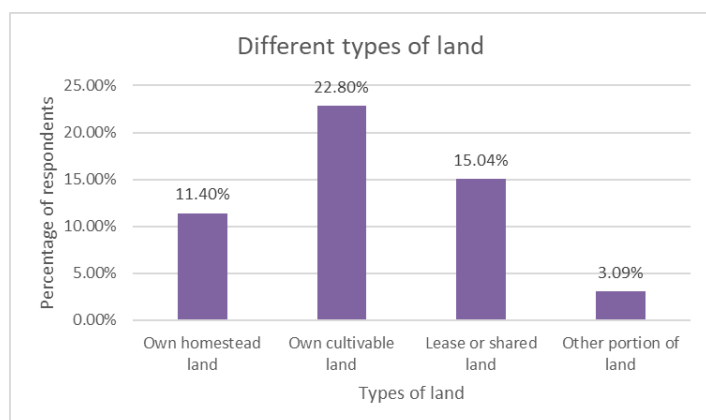


Figure 15: Types of land

Own Cultivable Land: A significant percentage, approximately 22.80%, of poultry farm owners indicated owning cultivable land. Cultivable land refers to land primarily used for agricultural purposes, including crop cultivation or fodder production.

Lease or Shared Land: Around 15.04% of poultry farm owners reported leasing or sharing land. This suggests that a portion of poultry farm owners may not possess land ownership but engage in poultry farming by leasing or sharing land from other individuals or entities.

Other Portion of Land: A small percentage, approximately 3.09%, of poultry farm owners reported having other portions of land. This category may include land used for non-agricultural purposes or land allocated for specific purposes such as infrastructure development, commercial activities, or other land-related ventures.

3.10 Poultry farm ownership:

Among the 370 respondents, 100% reported having poultry farms. This indicates that all participants in the survey are engaged in poultry farming, reflecting a significant presence of poultry farming activities within the surveyed population. The findings suggest that poultry farming plays a crucial role in the livelihoods and economic activities of the respondents.

District wise poultry farming

The percentages show the proportion of each variety of poultry in each region. As an illustration, in Rangpur, ducks make up 15.6% of the poultry, chicken (Desi) 83.9%, and chicken (Layer) only 0.5%. Ducks make up 11.6% of the poultry in Gaibandha, followed by Chicken (Desi), 37.2%, and Chicken (Layer), which is the most common at 51.2%. The only bird species present in Kurigram with 100% representation is the Chicken (Desi), and there are no Chicken (Layer) birds. The distribution of several chicken species in the designated regions is shown in this graph, illustrating regional differences in poultry availability or preferences.

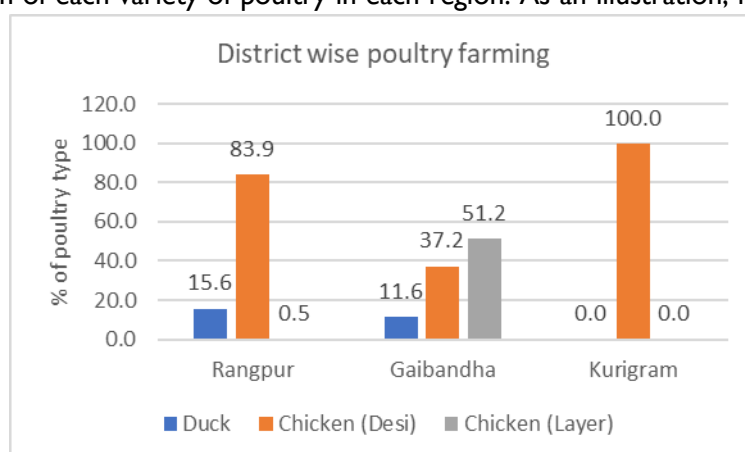


Figure 16: District wise poultry farming

These farmers, who make up 12.2% of all poultry farmers, mostly rear ducks. Desi chickens are regional or native breeds of chicken. These farmers, who account for 70.5% of all poultry farmers, concentrate on growing desi chickens. Layer chickens are bred primarily to lay eggs. The 17.3% of poultry farmers in this category are mostly engaged in the production of layer chickens.

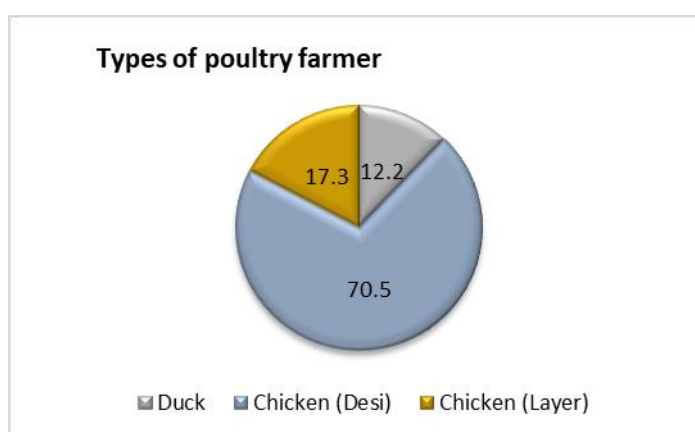


Figure 17: Types of poultry farmers

Table 8: Types of poultry farmer.

Types of farmers	#	Rangpur	Gaibandha	Kurigram
Duck	45	31	14	0
Native chicken	261	170	47	44
Layer	64	0	64	0
Total	370	201	125	44

Desi Duck: This is a term for a certain breed of duck that is categorized as "Desi," which normally denotes that it is indigenous or local to a given area. It represents 95.6% of the listed ducks. Another breed or subspecies of duck, the Khaki Kembele Duck makes up 4.4% of the listed ducks. The term "Khaki Kembele" probably refers to a particular breed or strain of duck with unique qualities and attributes. Approximately 12.2% of poultry farm owners reported rearing ducks. Ducks are a popular poultry type, known for their meat and eggs, and are commonly raised in various farming systems.

Native Chicken: "Chicken (Desi)" designates an indigenous or "Desi" breed of chicken, usually referring to regional or traditional breeds. It represents all of the chickens listed (100%), proving that all chickens described fall under this category. Approximately 70.5% of poultry farm owners reported rearing Deshi chicken. Deshi chicken, also known as indigenous or local chicken, refers to native breeds that are well adapted to local conditions and are often favored for their meat and eggs.



Chicken (layer): A hybrid breed of chicken specifically developed for egg production is referred to as a hybrid chicken (layer). It represents 96.9% of the chickens on the list. Hybrid layers are frequently employed in the production of commercial eggs because of their excellent egg-laying capacities. This particular breed or variant of chicken, known as "Sonali Chicken," is employed for egg production. 3.1% of the chickens listed are made up of it. Sonali chickens are often dual-purpose animals, which means they are good for both producing eggs and eating meat. A significant percentage, approximately 17.3%, of poultry farm owners indicated rearing chicken layers. Chicken layers are specifically bred for egg production, and these birds are known for their high egg-laying capabilities.

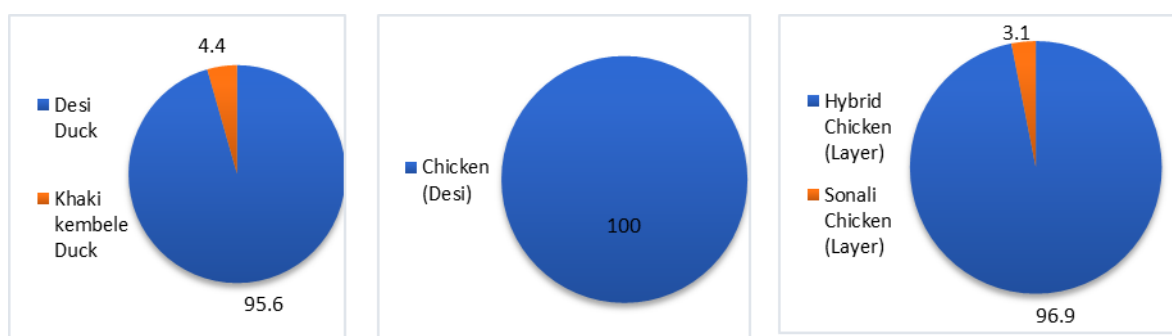


Figure 18: District wise distribution of Deshi duck, desi chicken and chicken layer

Separate housing for poultry:

The distribution of answers to a question about whether or not there are separate housings for chickens is shown in the graph. According to the survey, 93.8% of all respondents, or the majority, claimed to have separate housings for chickens. The percentage of respondents who said they did not have separate housings for poultry was lower, at 6.2% of the total.

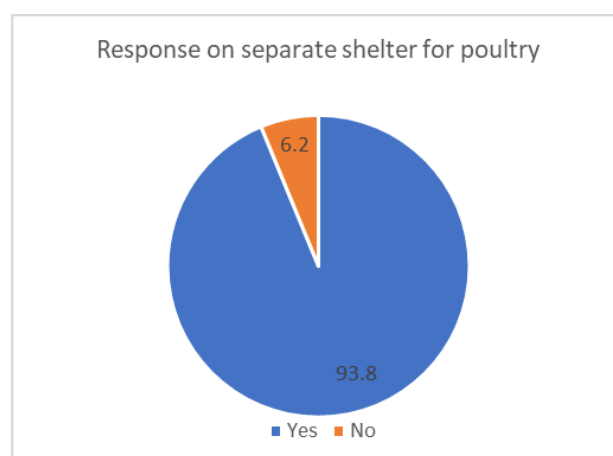


Figure 19: Separate housing for poultry

According to these percentages, tin is the most common type of housing in the supplied dataset (76.9%), followed by cane (19.9%). Concrete, net, and various material combinations account for a lesser proportion of the housings.

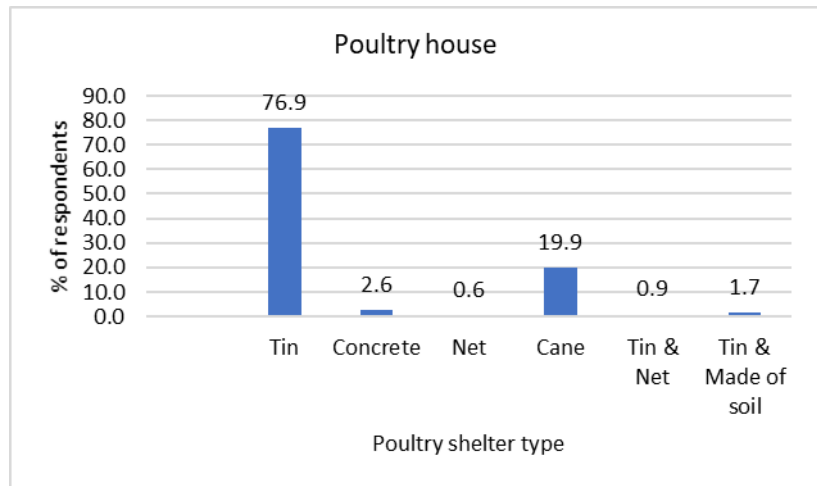


Figure 20:Poultry housing type

3.11 Source of inputs (feed, medicine, baby duck & chicks etc.) for poultry

According to the data, retailers are the most common source of input for poultry, accounting for approximately 41.9% of the total. This suggests that a significant number of poultry farmers and businesses rely on retailers to procure feed, medicine, baby ducklings, chicks, and other essential supplies.

Wholesalers constitute the second-largest source of input, making up approximately 17.0% of the total. This indicates that a considerable portion of the poultry industry prefers to obtain input materials in bulk from wholesalers, likely at discounted prices.

Traders, however, contribute minimally to the overall input supply, representing only 0.5%. This suggests that only a small number of poultry farmers and businesses engage in trading activities to acquire the necessary input materials.

Self-sourcing is another notable source, accounting for approximately 34.9% of the total. This indicates that a significant proportion of poultry farmers choose to produce or acquire their own input materials, such as growing their own feed, breeding their own baby ducklings and chicks, or utilizing existing resources.

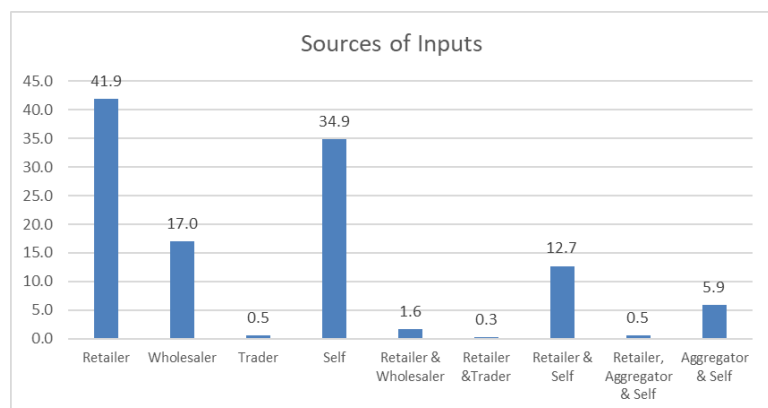


Figure 21:Source of inputs

In terms of combinations, the data indicates that 1.6% of poultry farmers and businesses utilize both retailer and wholesaler sources, suggesting a preference for diversifying their input procurement strategies.

Approximately 5.9% of poultry farmers and businesses opt for a combination of aggregator and self-sourcing, suggesting a preference for acquiring input materials through a centralized aggregator platform and supplementing it with self-sourced materials.

Quantitatively analyzed data provides an overview of the various sources of input for poultry, including retailers, wholesalers, traders, self-sourcing, aggregators, and their combinations. The data showcases the different approaches employed by poultry farmers and businesses in procuring feed, medicine, baby ducklings, chicks, and other essential supplies for their operations.

3.12 Source of Poultry feed

The majority of poultry feed, approximately 53.24%, is prepared by individuals themselves. This suggests that a significant portion of poultry farmers prefer to create their own feed, likely using a combination of grains, proteins, and other ingredients to meet their specific requirements.

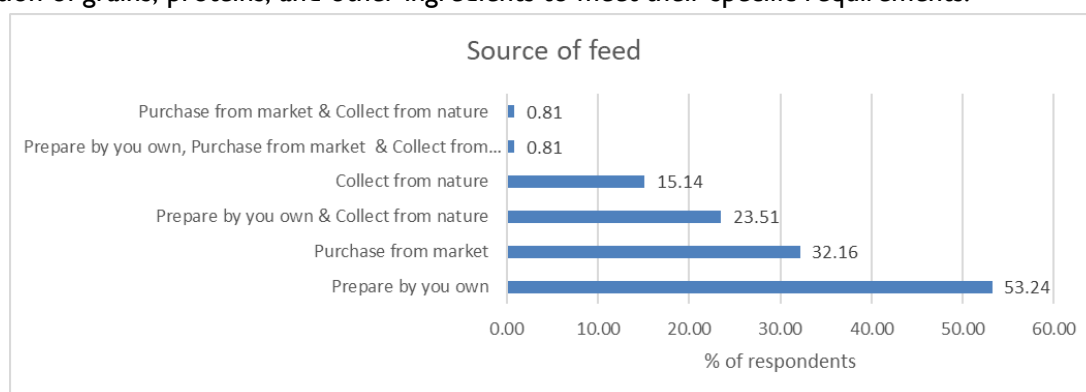


Figure 22:Source of poultry feed

Another notable source is purchasing feed from the market, accounting for approximately 32.16% of the total. This indicates that a considerable number of poultry farmers choose to save time and effort by acquiring commercially-produced feed from the market.

A smaller proportion, around 15.14%, relies on collecting feed from nature. This suggests that some poultry farmers gather natural sources of feed, such as insects, greens, or other forage options available in their surroundings.

Furthermore, the data shows that there are two combinations of sources that have the lowest proportion. Only 0.81% of poultry farmers prepare their feed on their own and also purchase from the market, while another 0.81% combine the option of purchasing from the market with collecting feed from nature. These combinations indicate a minimal preference for utilizing multiple sources simultaneously.

Lastly, the report indicates that approximately 23.51% of poultry farmers choose to prepare feed on their own and also collect feed from nature. This suggests a preference for a self-sufficient approach, where farmers supplement their own feed preparations with natural sources.

The field data highlights the different sources of poultry feed, with preparing feed by oneself being the most popular method, followed by purchasing from the market and collecting feed from nature. The data provides valuable insights into the choices made by poultry farmers in obtaining feed for their flocks.

3.13 Access to market - Medium of trade

According to the data, cash is the most common medium of trade, accounting for approximately 55.9% of total transactions. This suggests that a majority of trades are conducted using physical currency, indicating a preference for immediate payment and tangible exchange.

Table 9: The medium of trade.

Medium of trade	Percentage (%)
Cash	55.9%
Due	0.3%
Both	43.8%

On the other hand, due payments represent a minimal proportion of trades, amounting to only 0.3%. This indicates that a very small number of transactions involve deferred payment, where payment is scheduled for a later date.

3.14 Record keeping

The data reveals that a significant number of individuals (80.3%) do not maintain organized documentation or records pertaining to their purchases. It implies a potential lack of tracking or monitoring of purchase-related information. On the other hand, a minority of respondents, around 19.7%, do keep records of their purchases.

Notably, there were no respondents who indicated that they do not know whether they keep records or not.

Table 10: Responses on keeping record of purchase.

Responses on keeping record on purchase	Percentage (%)
Yes	19.7%
No	80.3%
Do not know	0%

Quantitatively analyzed data highlights the responses regarding record-keeping on purchases, with the majority of respondents indicating that they do not keep records. The data emphasizes the potential variability in practices and the importance of maintaining accurate records for effective monitoring and analysis of purchase-related information.

3.15 Verification of feed/medicine:

The data reveals that the majority of respondents, approximately 73.2%, indicated that they do not have access to government-verified feed.

Table 11: Responses on applying govt. verified inputs.

Responses on government verified feed	Percentage (%)
Yes	26.8%
No	73.2%
Do not know	0%

On the other hand, a minority of respondents, around 26.8%, indicated that they do have access to government-verified feed. This suggests that a smaller portion of individuals or businesses are able to procure feed that has undergone an official verification process conducted by the government.

3.16 Purchasing with label

According to field data, a majority of respondents, approximately 58.4%, stated that they do not have safe and product labels on their items.

Table 12: Responses on applying safe products

Responses on checking product labels	Percentage (%)
Yes	41.6%
No	58.4%
Do not know	0%

This suggests that a significant number of individuals or businesses do not have labels or markings on their products that provide information about safety standards, ingredients, usage instructions, or other relevant details. The absence of labels may indicate a potential lack of compliance with labeling regulations or a general disregard for providing necessary information to consumers.

On the other hand, a minority of respondents, around 41.6%, reported having safe and product labels on their items. This indicates that a smaller portion of individuals or businesses are actively implementing labeling practices to ensure the provision of important information to consumers.

3.17 Frequency of purchase poultry products

The majority of respondents, or about 45.1%, stated that they do not buy poultry products. This shows that a significant number of people do not regularly purchase things connected to poultry. On the other hand, approximately 18.6% reported purchasing poultry products once a week, 5.4% stated they do so twice a week, and 3.2% mentioned purchasing poultry products three times a week. It's interesting to note that the highest frequency mentioned was buying poultry products four times per week, as indicated by about 27.6% of respondents. This shows that a sizable fraction of people purchases poultry items rather frequently.

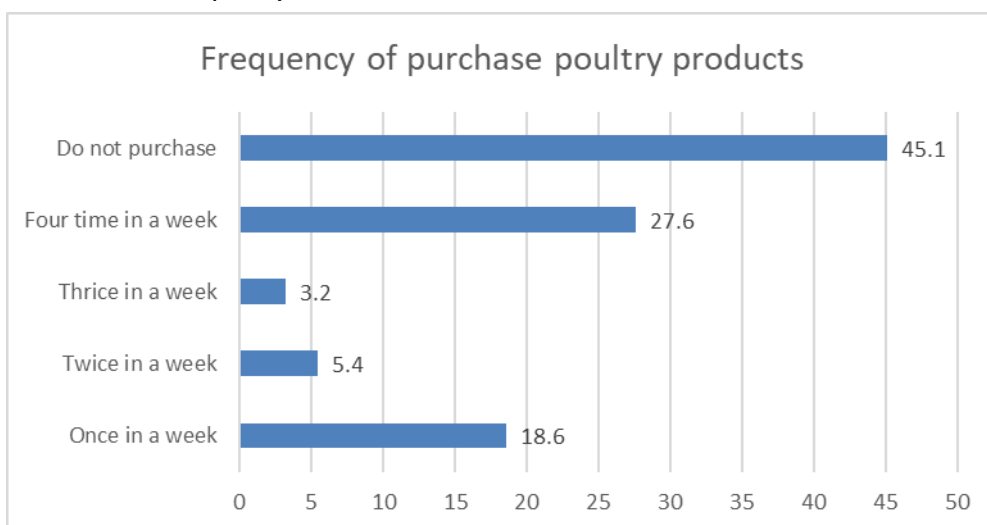


Figure 23: Frequency of purchase poultry products

3.18 Considering the factors before purchasing

According to the data, respondents take into account a variety of factors while making purchasing decisions. Among the listed factors, price and quality were the most commonly mentioned factors. Approximately 7.8% of respondents stated that price is a significant consideration, while 9.2% emphasized the importance of product quality. This suggests that individuals prioritize finding a balance between affordability and the desired level of quality when purchasing poultry products.

Table 13: Considering the factors while purchasing products for poultry.

Considering factors for purchasing poultry products	Percentage (%)
Price	7.8
Quality	9.2
Availability	3.2
Other's advice	1.6
Price & Quality	3.8
Price & Availability	1.4

Considering factors for purchasing poultry products	Percentage (%)
Quality & Availability	1.4
Quality & Other's advice	1.1
Availability & Other's advice	0.5

3.2% of respondents mentioned the products' accessibility as a contributing factor. This suggests that only a small percentage of people give availability and availability of selected poultry items any thought when making purchasing decisions.

Seeking advice from others, such as friends, family, or professionals, was indicated as a factor by 1.6% of respondents. This suggests that a few individuals rely on recommendations or guidance from others when selecting poultry products.

The data also reveals several combinations of factors influencing purchasing decisions. Approximately 3.8% of respondents consider both price and quality, indicating the significance of these two factors in tandem. Additionally, 1.4% of respondents take into account both price and availability, as well as quality and availability when making their poultry product purchases.

Furthermore, a smaller proportion of respondents consider the combination of quality and other's advice (1.1%) and availability and other's advice (0.5%). This suggests that a few individuals value the input and recommendations from others in conjunction with specific product attributes.

In conclusion, this data highlights the factors influencing the purchasing decisions of poultry products, including price, quality, availability, and advice from others.

3.19 Degree of Concern for the Safety of Poultry Products

The majority of respondents, or about 61.3%, showed a moderate level of concern regarding the safety of poultry products, according to the data. This shows that a sizable proportion of people are reasonably aware of and concerned about the safety issues related to these items.

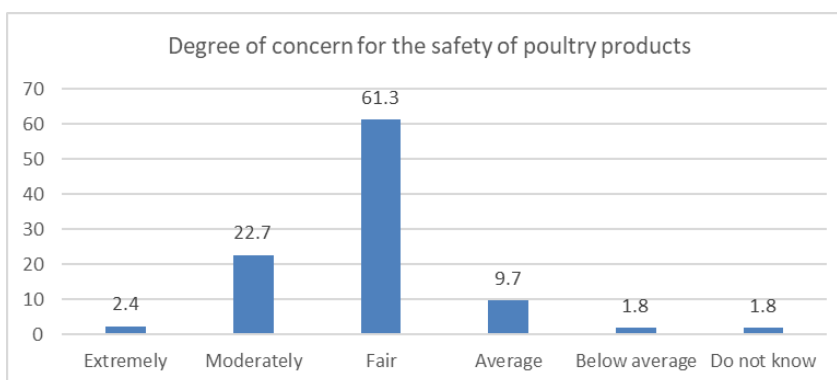


Figure 24: Degree of concern for the safety of poultry products

Around 22.7% of respondents said they had a moderate level of concern about the safety of poultry products. This shows that a sizeable fraction of people, albeit not to a great extent, show a level of caution and understanding regarding the safety elements of these products.

9.7% of respondents, a lower proportion, expressed an average level of worry about the safety of poultry products. This indicates that a small percentage of people hold an attitude that is generally neutral about safety of these products neither highly concerned nor dismissive.

3.20 Experiences and knowledge of respondents regarding the occurrence of illnesses in poultry.

According to the data, the majority of respondents, approximately 71.6%, reported that they have not experienced poultry illness. This suggests that a significant number of individuals have not encountered or witnessed illnesses affecting poultry in their specific circumstances.

Table 14: Responses on the knowledge of poultry illness.

Responses to the frequency of poultry illness	Percentage (%)
Yes	27.8%
No	71.6%
Do not know	0.5%

On the other hand, a considerable proportion of respondents, around 27.8%, indicated that they have experienced poultry illness. This implies that a minority of individuals have encountered or been aware of instances where poultry has been affected by illnesses. Notably, a small percentage of respondents, approximately 0.5%, stated that they do not know about the frequency of poultry illness. This suggests a lack of knowledge or awareness among these respondents regarding the occurrence of illnesses in poultry.

3.21 Health advice seeking behavior

The quantitatively analyzed data reveals three options that people may think about when confronted with chicken disease: asking for help, practicing self-care, or doing nothing.

Table 15: Steps taken when the poultry get sick

Steps	Percentage (%)
Receive advice	32%
Self-treatment	66%
Do nothing	2%

Seeking Advice:

Seeking advice is a proactive approach to problem-solving, involving reaching out to others for guidance, expertise, or perspective. 32% percent people think about this option often proves valuable as it provides an opportunity to tap into the knowledge and experience of others, potentially leading to better-informed decisions.

Self-Treatment:

Self-treatment refers to the act of addressing a problem or challenge independently, without professional assistance. A majority percentage (66%) of respondents utilizing own resources to find solutions when chickens become sick.

Doing Nothing:

2% of respondents decided not to take any action in response to a problem or difficulty is referred to as doing nothing. This choice is frequently made when the issue is viewed as insignificant or unimportant or when the person is unclear about how to proceed. However, choosing inaction carries certain risks.

3.22 Advice seeking Behavior:

According to quantitatively analyzed data, we have multiple options for getting advice when poultry fall sick. The survey results indicate that neighbors are the most sought-after source of advice for poultry owners when their chickens fall sick, with 45% of respondents choosing this option.

Table 16: Sources of advice

Options for advice	Percentage (%)
Department of livestock service (DLS)	15%
Neighbor	45%
Para vet	10%
Input selling retailer	35%
Company representative	15%

Paravets also emerged as a significant source of advice, with 28% of respondents opting for their guidance. Para vets are trained veterinary technicians who provide animal healthcare services in rural areas, making them accessible and knowledgeable resources for poultry farmers. Therefore, 15% of the respondents chose input selling retailers, demonstrating that some poultry owners consult the stores where they buy the goods they need for their flocks. This can be as a result of the retailers' familiarity with typical poultry diseases and available treatments.



The Department of Livestock Service (DLS) and company representatives were the least frequently chosen sources of advice, with only 8% and 4% of respondents selecting them, respectively. This suggests that these channels may not be perceived as readily available or accessible to poultry owners in need of advice during instances of poultry illness.

3.23 Knowledge and awareness about safe poultry

A significant portion (98.6%) of respondents have a limited awareness or knowledge about safe poultry products. No one having very much knowledge on this a tiny proportion of them have no knowledge on this at all. Moreover, 77.6% have no training or information on safe poultry production and handling while 22.4% are having training on safe poultry management.

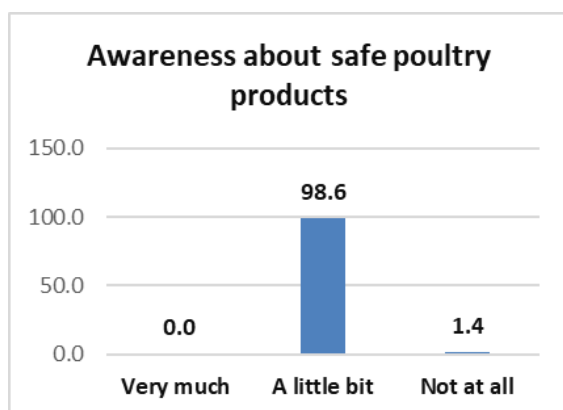


Figure 25: Awareness about safe poultry products

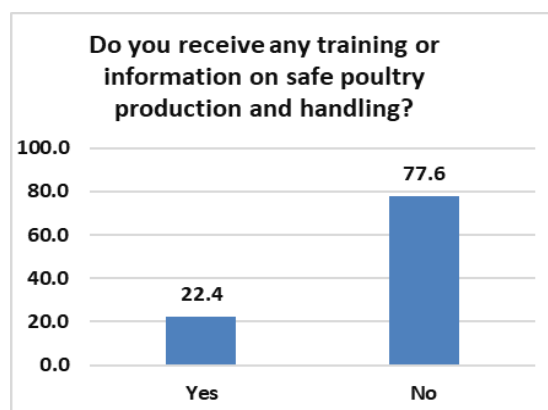


Figure 26: Training on safe poultry production and handling

Majority of them marked themselves as having adequate knowledge and awareness on safe poultry management like for safe poultry production and handling, disease management, housing management and market management. Along with this, some of them marked their knowledge and awareness from extreme to very bad on these areas as well. Additionally, respondents who don't know about their awareness and knowledge also exist. A detail of their own marking from extreme to bad and do not know as well is represented in Table 17.

Table 17: Knowledge and awareness about safe poultry of respondents.

	How would you rate your knowledge of safe poultry production and handling	How would you rate your knowledge of disease management to produce safe poultry Products?	How would you rate your knowledge of food and housing management to produce safe poultry Products?	How would you rate your knowledge of market management to produce safe poultry Products?
Extreme	3.5	5.7	4.6	8.4
Good	55.9	61.6	73.2	70.8
Fair	19.5	17.6	13.2	13.2
Bad	8.4	7.0	2.7	1.9
Very bad	3.8	0.8	0.0	0.3
Do not know	8.9	7.6	6.2	5.4

3.24 Information about nutritional value

Frequency of consuming own product

According to figure 98.6% agreed that they consumed their own poultry products frequently whenever they needed. A very insignificant portion of them 0.5% and 0.8% consume their own products on regular basis and never respectively.

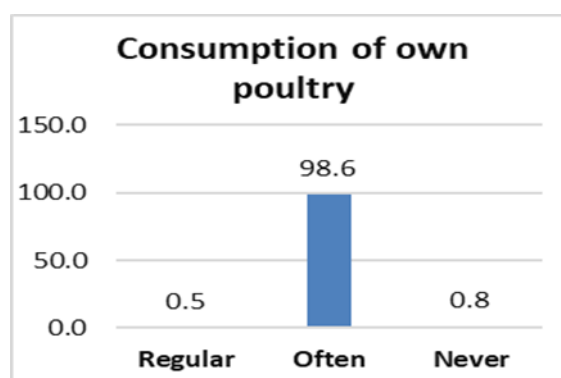


Figure 27: Consumption of own poultry

Importance of nutritional value of poultry product to respondent

The response was diverse when they asked about the importance of nutritional value of their own poultry products. Majority of them (57%) thought that the nutritional value of the poultry product is moderately important while 15.1% said its very much important to them. 9.7% marked it as fair, 0.5% have no importance for nutritional value and it's somewhat important to 17.5% of total respondent. Which means the awareness about nutrition exist among them in different range.

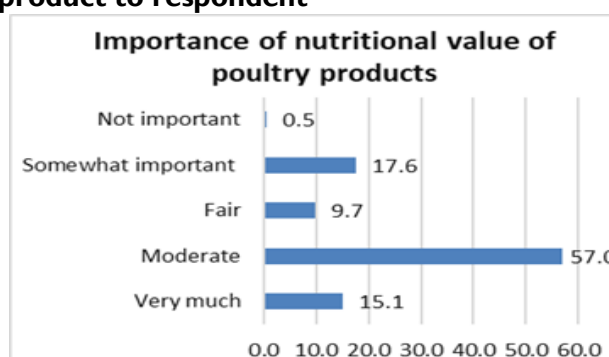


Figure 28: Importance of nutritional value of poultry products

Precautions to avoid foodborne illness

91.1% responded positively while they asked if they cook the poultry products by maintaining the time to avoid foodborne diseases, on the other hand 8.9% were negative that they do not bother about the maintenance of time or any other safeguards. From that 91.1%, 76.9% maintain the regulations always, 22% follow sometimes while 1.2% hardly follow them but there is no one who never maintain the time when cooking.

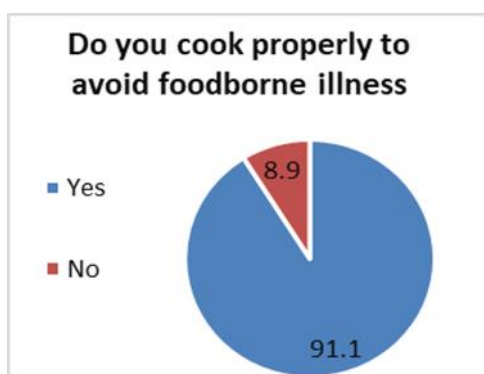


Figure 30: Avoid food borne illness

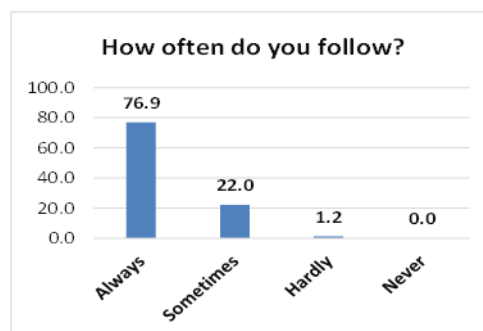


Figure 30: Frequency of following food borne illness

3.25 How do you sell your products

Among of 370 respondents 299 do not sell their products entirely commercial purpose and 71 respondents are strictly commercial. 80.8% sell their products the rest portion after meeting up their family demand. On the other side the percentage of people who are selling their products only commercially is 19.2 in Figure 31.



Figure 31: Mode of sell products

3.26 The portion of poultry products used for family or commercial purpose

95 and 90 individuals which is the majority of respondents use 40% and 50% of the product for family use. Rest of them use different portion/percentage for family use. On the other hand, the majority of respondents 91 individuals use 50% of their product for commercial aspects. Similarly, 5% (13 individuals) and 5.4% (14 individuals) utilized 20% and 30% of their resources for commercial purposes respectively.

Likewise, rest of them use different percentage of their resources for commercial aspects.

Table 18: The portion/percentage of poultry products used for different purpose.

The portion/percentage used for family			The portion/percentage used for commercial aspect		
portion/percentage	#	%	portion/percentage	#	%
up to 10%	15	5.0	up to 10%	31	11.9
20%	19	6.4	20%	13	5.0
30%	48	16.1	30%	14	5.4
35%	2	0.7	35%	1	0.4
38%	1	0.3	40%	42	16.2
40%	90	30.1	50%	91	35.0
45%	1	0.3	55%	1	0.4
50%	95	31.8	60%	41	15.8
60%	23	7.7	62%	1	0.4
70%	1	0.3	65%	2	0.8
80%	2	0.7	70%	21	8.1
90%	2	0.7	80%	2	0.8

3.27 The place where they sell their products

42.7% and 38.4% are selling their products to local market and aggregator respectively. 11.4% and 5.9% sell their product to local market & aggregator and retailer respectively. Others as a very insignificant portion selling differently and has been shown in Figure 32.

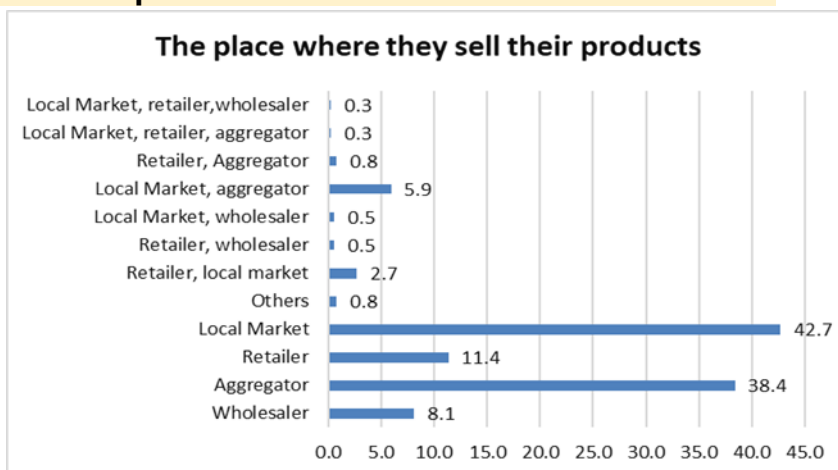


Figure 32: Place of selling poultry products

The weight of poultry while selling

The weight of chicken and duck while selling is represented. The maximum weight of layer chicken while selling is 2500 but only one person from the chicken (layer) farmer sell chicken with this weight. Maximum respondents (30 individuals of 63) sell their product with weight of 2000 gm. Similarly, for the duck farmer, maximum respondents (30 individuals of 46) sell ducks with the same weight 2000 gm. Rest of them sell their products with different weight.

However average weight of the duck calculated 1987 gm (1.9 kg) and native chicken 700-800 gm per piece.

3.28 The average annual income from poultry product

In average income from duck calculated as Tk.13890 per year and from native chicken it was Tk.12950/- whereas layer farmers earned Tk.428558/- per year.

Unit price of duck calculated as Tk.350 and cost was Tk.180, native chicken sold at 280 per kg and cost was Tk165 and egg price Tk.8 in average and cost around Tk.6.7 per egg

3.29 How do you set the price of your product

Looking at the pricing strategy at Table 19, 0.81% set their own price for their product based on the factors used in the production such as costs, profit margins and so on. 54.05% depends on the competitive price which is set based on the prevailing market conditions. 45.14% set the price while selling their products by negotiating or bargaining with customers.

Table 19: Price strategy

How do you set the price for your product?	%
Own price	0.81
Market price	54.05
Bargaining	45.14

3.30 Selling products in group

97.3% of all do not sell their products in group while only 2.7% sell in group. It's clear from the figure that group-based trading product is not that much popular in the project area.

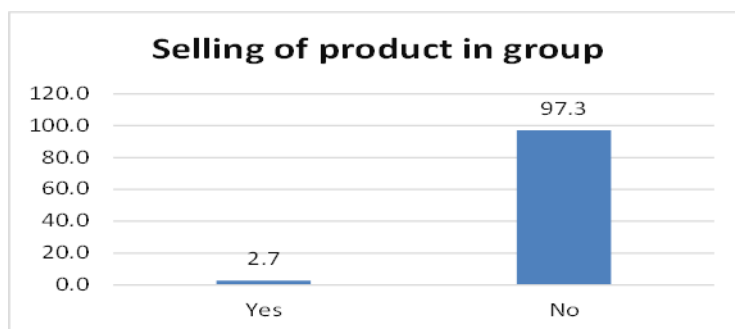


Figure 33: Selling of product in group

3.31 Women empowerment:

From the figure, it can be observed that in various aspects of poultry farming and related decisions, women respondents tend to have a higher percentage of decision-making power compared to men. For women respondent, in the case of poultry farming decisions, they have a significant majority of decision-making power. For example, when it comes to taking decisions regarding poultry farming itself, 89% of the decisions are made by the women, while only 10% is shared between both genders, and no decision-making power is allocated to men. Similarly, in purchasing chicks, women hold 60% of the decision-making power, followed by 38% for both genders, and only 2% men have involvement in decision making. In selling poultry products, 47% women have decision-making power, 51% of decisions are made by both genders while men have the lowest influence with only 1% decision-making power in this aspect.

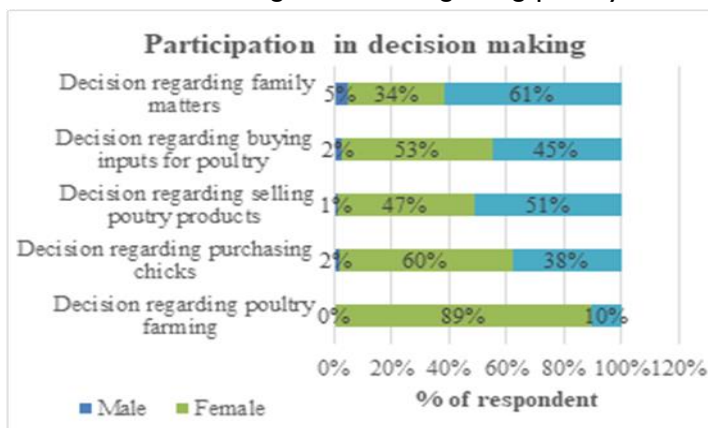


Figure 34: Participation in decision making

Table 20: Participation on decision making.

Types of decision making	Male (%)	Female (%)	Both (%)
Decision regarding poultry farming	0%	89%	10%
Decision regarding purchasing chicks	2%	60%	38%
Decision regarding selling poultry products	1%	47%	51%
Decision regarding buying inputs for poultry	2%	53%	45%
Decision regarding family matters	5%	34%	61%

Regarding buying inputs for poultry, women still have the majority of decision-making power with 53%, followed by 45% for both genders and men have a mere 2% involvement in this particular decision. Comparatively, when it comes to family matters, 5% men have decision-making power, while women have 34%. However, the majority (61%) of decisions regarding family matters are shared with both genders. Finally, women have a stronger presence and influence in decision-making related to poultry

farming, with men having significantly less involvement. Such gender-inclusive decision-making processes can lead to more balanced and effective outcomes in the context of poultry farming.

3.32 Access to micro credit:

The "Yes" category denotes people or organizations with access to microcredit. This category contains 202 entries, which makes about 55% of all the entries on the list. The "No" category refers to people or organizations without access to microcredit. This category contains 168 entries, which represents 45% of all the entries on the list.

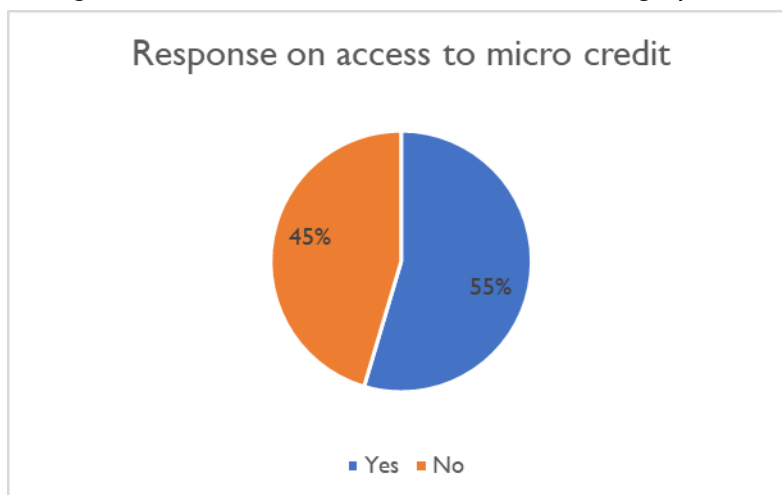


Figure 35: Access to micro credit

3.33 Source of loan:

157 occurrences fall within the NGO (Non-Governmental Organization) category, making up 42% of the total. NGOs are typically autonomous, non-governmental organizations that work to address various social or environmental challenges.

35 incidents, or 9% of all instances, fall within this category, according to the bank. Banks are institutions of finance that provide services including loans, savings accounts, and other forms of financial support. It implies that people or organizations received support from banks in this situation.

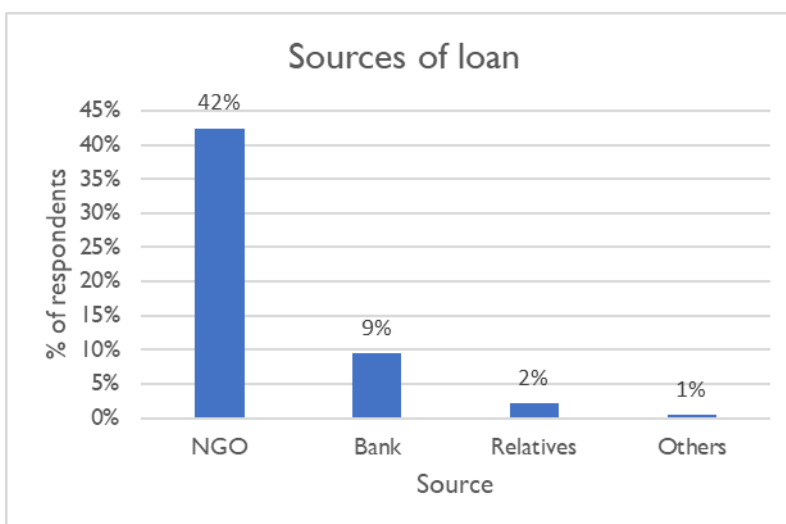


Figure 36: Sources of loan

Relatives: This category has 8 occurrences, or 2% of all occurrences. It suggests that people received support from their family or relatives, perhaps in the form of financial aid or other kinds of assistance.

Others: There are 2 cases in this category, or 1% of the total. Any sources of assistance that do not fall under one of the previously specified categories are included in this category. It might come in a variety of forms, from community groups to undisclosed sources to government aid.

Overall, the list reflects various sources of assistance received, with NGOs accounting for the bulk (42%), followed by banks (9%), family (2%), and other sources (1%).

3.34 Mortality rate:

It was calculated that the mortality rate seems higher than commercial broiler farmers, however it was found that duck mortality rate (25%) is much higher than chicken (20%) and layer farms (13%).

Table 21: Mortality Rate.

Duck	Native chicken	Layer
25%	20%	13%

3.35 Value Chain of the native chicken, duck and egg

The supply chain comparison was made based on percentage of volume that passed through each supply chain. According to the report, the poultry rarer - local customer the shortest supply chain carried the largest percentage 20 percent of the total percentage of duck, chicken or egg supplied. The following supply chain (Table 22) were recorded during the survey both qualitative and quantitative sources of information.

1. Grower – Customer (local) supply chain: This supply chain represented 20% of total duck/chicken/ egg supplied to the market during the survey period. The supply chain was found to be the second important supply chain in terms of volume sold.

2. Grower – Bepari/Faria (local) – District market – Customer (local): According to survey, this supply chain accounted for 15% of total duck/chicken/ egg supplied to the market. The supply chain was found to be fourth most important fruit supply chain in the study area.

3. Grower–Wholesaler (local)- District market – Customer (local): Represented 15% of total fruits supplied to market and found to be fourth most important litchi supply chain in the survey area.

4. Grower–Bepari/Faria (local)–Aratder (Other district market)– Retailer (Rangpur market) – Customer (Other district): This supply chain represented 18% of total fruits supplied to the customer and found to be third most important duck/chicken/ egg supply chain.

5. Grower-Wholesaler (local)-Retailer (local)-District market- Customer(local): It accounted 10% of total fruits supplied to other district market and placed fifth most important supply chain in the district.

6. Grower – Bepari/Faria – District market (Dhaka) – Retailer – Customer: This supply chain represented 22% fruits supplied in the Survey area and it placed first most important duck/chicken/ egg supply chain in the study area.

Table 22: Supply chain of poultry market in the study areas

#	Existing supply chain of fruits market in the study areas	% of total fruit supplied
1	Grower – Customer (local)	20
2	Grower – Bepari/Faria (local) – District market – Customer (local)	15
3	Grower–Wholesaler (local)- District market – Customer (local):	15
4	Grower–Bepari/Faria (local)–Aratder (Other district market)– Retailer (Rangpur market) – Customer (Other district):	18
5	Grower-Wholesaler(local)-Retailer (local)-District market- Customer(local)	10
6	Grower – Bepari/Faria – District market (Dhaka) – Retailer – Customer	22
		100

As per outcomes of the FGD and feedback of the KII, the value chain of the high value fruits shown here below:

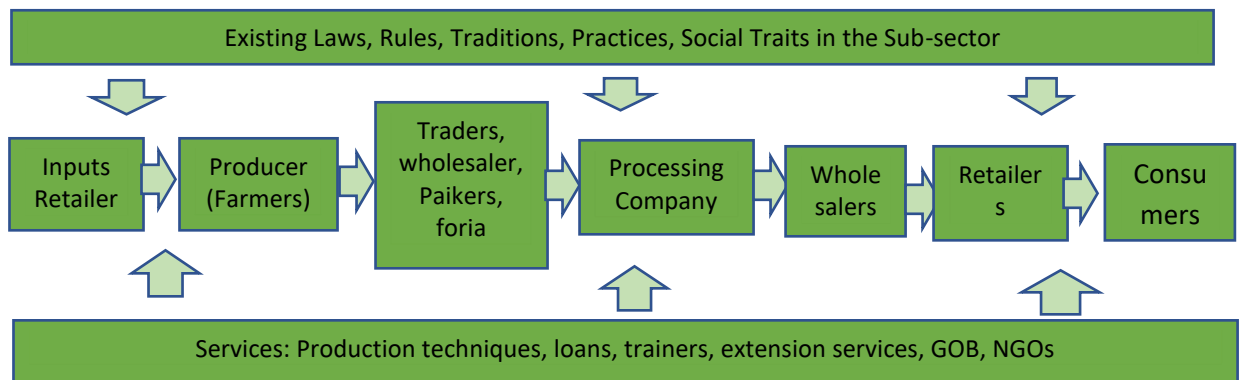


Figure 38: Value chain of safe products

Broadly speaking, the fruit value chain can be divided into four major segments: (i) farming i.e. growing, (ii) local aggregation and trading (local *faria* and *paikers*), (iii) urban wholesaling (*Aratder*) and institutional buying, and (iv) end-market retailing. In farming/growing segment, major players involved are orchard owners, longer-term leaseholders, and/or seasonal orchard buyers. Together they constitute the 'safe poultry products' segment poultry value chain. In local aggregation and trading segment, the following market actors are involved: local petty traders (*forias*), local and regional traders (*beparis*), local auctioneers (*arothdars*), distant (urban market) bulk traders (*beparis*) and representatives or commission agents of distant (urban market) auctioneers (*arothdars*), exporters and agro-processors. In urban wholesaling and institutional buying segment, the following are the major market actors: urban market wholesalers, auctioneers, retail chains, kitchen market retailers, mobile retailers, and institutional buyers or their agents. Of these, retail chain is relatively a new phenomenon in the country. However, it is also observed that the urban wholesale market has started getting 'corporate *arothdars*' that not only supplies to its retail chain stores, but also feed its competitors. In the survey areas it was found for safe poultry market many of the institutional buyers and chain shops suppliers increasing. In the final value segment, retailing, two major actors are involved - the retailers and the customers. It may however be noted that across all value segments unskilled and semi-skilled

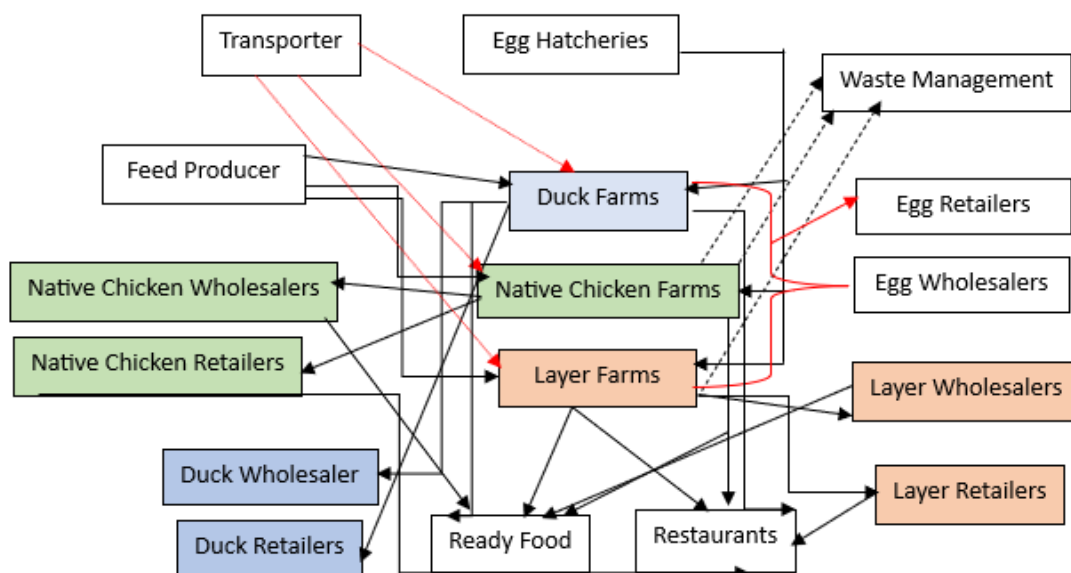


Figure 39: A Typical Value Chain of poultry products (Duck, chicken and egg)

laborers play crucial roles as farming and harvesting workers, handling workers, packaging workers, loading/unloading workers, transportation etc.

Table 23: Cost analysis

Types of products	Unit	Grower/ Producers (Tk.)				
		Cost	Price	Profit	%	%
Duck	Kg	184	315	131	71%	
Native chicken	Kg	165	275	110	67%	
Egg	pc	6.6	8	1.4	21%	
Local traders (Tk.)						
		Cost	VA	Price	Profit	%
Duck	Kg	315	5	335	15	5%
Native chicken	Kg	275	5	295	15	5%
Egg	pc	8	0.5	9	0.5	6%
Wholesaler (Tk.)						
		Cost	VA	Price	Profit	%
Duck	Kg	335	5	350	10	3%
Native chicken	Kg	295	5	315	15	5%
Egg	pc	9	0.25	9.5	0.25	3%
Retailer (Tk.)						
		Cost	VA	Price	Profit	%
Duck	Kg	350	5	375	20	6%
Native chicken	Kg	315	5	350	30	10%
Egg	pc	9.5	0.5	11	1	11%

Inputs Supplier / Retailer:

Inputs Supplier / Retailer are providing inputs to the producers / farmers. Traditionally local inputs retailers are the agent of inputs supplying large companies and sale on behalf of them as an independent business owner. Input retailers are the main key service providers for producer/ farmers and have direct linkage with them. During the survey the team could not find any exclusive bio-pesticides, bio-fertilizer retailers in the market but retailers are selling all inputs in same shop.

Farmer/ Grower/ Producer:

Farmers are the producers of fruits. Producers are the main key value chain actors in the market system. They contributed more in the value progression in the supply chain. They produce different types of poultry products to sell in their local market nearby their village areas or some time sold direct from the field. The producers do the feeding, rearing, housing, medication, day to day supervision and performed the role of a seller in the market. The farmer sells 90%-95% of their product to the local wholesaler/Faria / village collector and the remaining 5% -10% for their own consumption or local retail market to retailers. Farmers are lack of modern knowledge on good practices, modern housing, dealing with poor quality inputs and application knowledge, and limited access to market.

Village collectors / Urban assemblers: This group of chain actors has immediate contact with farmers who supply bird and egg to the market. They buy egg and bird from local market and resell urban assemblers and whole sellers for getting profit. These groups are also important performed as actors in the market value chain by transacting the product from farmers and village collectors to whole sellers and consumers in the local and regional markets or travel to nearby local markets to buy birds and egg by competing with village collectors. They have better capital and most of them are full time traders than village collectors. Even these assemblers supply their birds and egg for hotels and restaurants and retailers and whole sellers in city and regional market

Aggregators / Paikers/ Bepari:

They are the market actors; collect produces direct from farmers locally as an individual owner. Sometime they work as agent of the large wholesalers, or processing companies. They have no fixed

business premises. Bepari had no permanent shop. Usually they provide market information to the producers.

Local Aratdars purchase their products from the farmers/beparis. Basically, they fix the price paid to the farmer at spot bargaining. Sometime very occasional Faria visited farmers' field and purchase direct from the field. They deal with the paiker or outside wholesaler. Local wholesaler sends their product lot to the different division mainly Dhaka, according to the market demand and market price. They also sell their product to the local market, but a little amount. They make a market margin of 10% to 25%. Usually local faria and traders' lack of knowledge about post-harvest management, no cool chain facilities, no grading sorting, and packaging facilities always rely on irregular labor and transportation system in the market; some of them have no knowledge about additives for increasing shelf life and transportation. Due to small volume handling less power in the market to bargain for price and quality. Local traders are lack of post-harvest management infrastructures causing wastages and poor quality of the produces and sold at a lower price to wholesaler in the market.

Faria:

A small trader who deals in products within three or four local markets and handles a small volume of products. A faria purchases products from farmers and sells them to either a bepari or direct to consumers. They are usually landless laborers or small farmers with no full-time work.

Bepari: A professional trader who purchases agricultural products from farmers or farias in the local market or village. This group handles a larger volume of products than Farias. Beparis sell their products to Aratdars.

Aratdar:

Aratdar is a commission agent in a large market. The Aratdar are licensed traders. The Aratdar are relatively big traders and then handled relatively larger volume of products than that done by the other traders like Bepari, Paikers, and aggregators. They had fixed business premises. Most of the Aratdar are independently organized and self-financed. They employed both labors and other staff on daily wage and salary basis for performing various functions. The assessment team could not find any women aratdar in the market.

An Aratdar serves as a fixed commission agent with a fixed establishment. They operate between the Bepari and retailers, charging a fixed commission for providing storage facilities

Wholesalers: Whole sellers in village poultry marketing chain refer to those traders who sell large quantities of birds and egg to other traders via brokers or direct communication. In egg marketing chain whole sellers buy egg from urban assemblers and village collectors from local and regional markets and sell in bulk for shops, Hotels and Restaurants in local and regional markets. They are full time traders and travel to different areas to buy egg. These traders have strong financial resource and better information on the price and supply of egg in the source and destination markets. In bird marketing chain whole sellers are conducting important marketing functions by linking the town and regional markets with the terminal market. During value addition they consider feed, medicine, litter, house, transport, shop rent, fuel labour, interest cost also,

Retailers: Retailers in bird and egg marketing chain are those actors who perform the last marketing function by linking consumers with other traders and/or producers. The number of these traders varies according to the demand and supply condition. During value addition calculation considered feed, medicine, litter, house, transport, fuel labour, interest cost also, excluding all mentioned cost net profit is considered as value addition over collection and other management cost sold to urban assembler or whole seller

Consumers level value chain

The demand pattern, sociocultural distribution and geographic location can have influence on the entire marketing efficiency parameters along the market chain. Consumers are the final end points and are the ultimate goal of the production and marketing process. Value addition of live broilers and egg in term of percentage starting from production down to end consumers in the study areas

Processed Poultry Products Market Level Value Chain The number of actors in this category is very limited and birds are supplied to consumers in the form of processing or further processing adding market profit to the product. Surveyed data covers from chain shop, fast food shops, Chinese restaurants, hotels at the district level including few renowned restaurants, fast food shops and chain super shops namely KFC, CP outlet, Luncheon, Star Kabab, Meena Bazaar Shwapno, Agora etc.

During value addition consider raw meat or egg along with spices, utility, labor, tax. AC operated charge, place rent; transport, inspection cost, quality assurance cost, advertisement and packaging, cost etc. All these cost were accumulated and regarded as production cost. To get profit from business excluding all cost from production cost to selling cost as value added cost. Every actors make profit over selling or production cost

- **Super Market/Shops:** During these days' super shops are getting popularization and in increasing trend, e.g. Agora, Shwapno, Mina Bazar, UniMart, Prince Bazar etc, those have multiple outlets in different locations, at their own brand. Agora Shwapno have own procurement channel safe poultry collection points down to the farmers. Apart from this they have selected suppliers to sold fresh produces to the outlets. The super marketers have 32 member's association even Shwapno have 165 outlets, Agora 12, however they are selling 2-3% products to the market especially Dhaka.

Problems Embedded Processed Poultry Products at Field Level

- Indiscriminate open market practices
- Absence of safe poultry production standards
- Absence of structure poultry slaughter
- Existing policy is not properly implemented
- Burden excess vat and tax on process or further processed product
- Absence of assigned Halal and safe certified authority to convinced importer on quality assurance of exportable product
- Lack of training and awareness in every market actors to maintain quality control
- Lack of monitoring on existing marketing system
- Dominance of imported products and wet market invasion

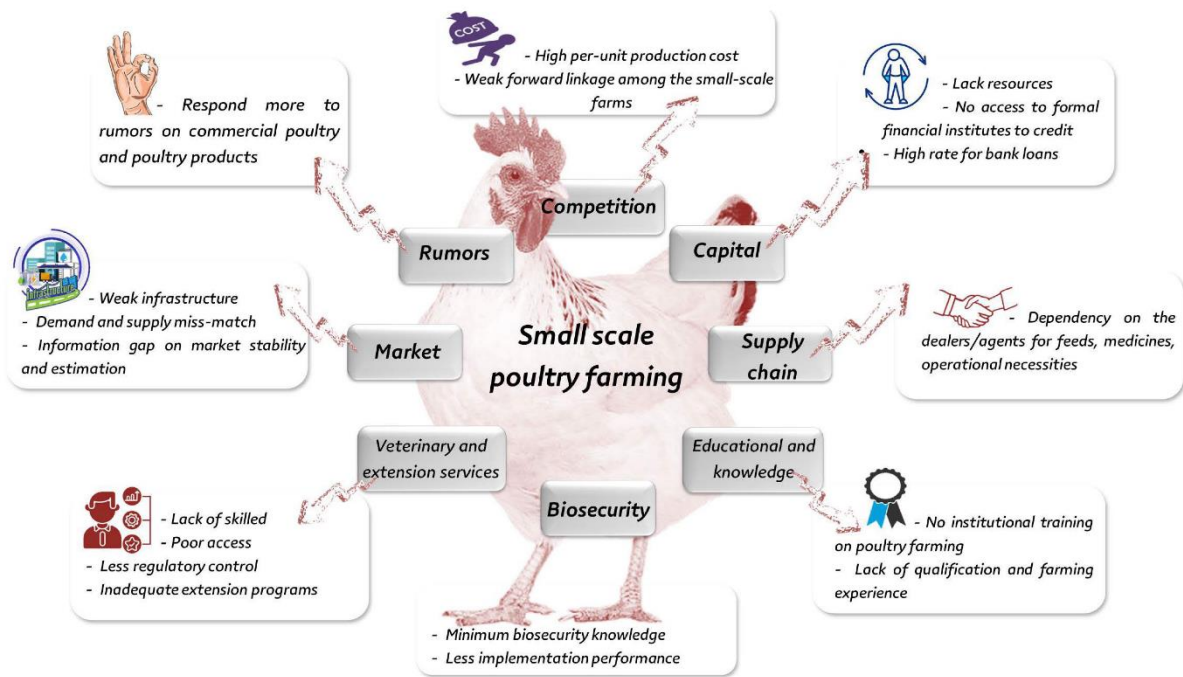


Figure 40:Problems embeded in poultry farming

Chapter Four: Dietary Diversity and Nutritional Status

4 Dietary Pattern

4.1 Minimum Dietary Diversity for Women (MDD-W)

Background

Dietary diversity is defined as the consumption of an adequate variety of food groups. Dietary diversification is important in improving micronutrient nutrition in Bangladesh. Cereals, largely rice, are the main food in Bangladesh with nearly two-thirds of the daily diet consisting of rice, some vegetables, a small amount of pulses and minimal quantities of protein. Milk, milk products and meat are consumed only occasionally and in very small amounts. As a result, traditional eating habits often do not translate into a balanced nutritious diet.

Malnutrition is a widespread phenomenon in Bangladesh, partly driven by people's imbalanced diets. Indeed, the per capita consumption of fruits and vegetables barely reaches half of the recommended minimum requirement of 400g per day. As a result, only about 2 percent of dietary energy comes from fruits and vegetables, compared to 78 percent stemming from cereals.

Regular diets in Bangladesh are heavily dependent on rice, although it has been declining in recent years with the increased consumption of fruits and vegetables. Despite this rising trend, daily consumption of fruits and vegetables is still very low in the country compared to even its South Asian comparators.

Women of reproductive age (WRA) are often nutritionally vulnerable because of the physiological demands of pregnancy and lactation. Women of reproductive age (WRA) are often nutritionally vulnerable because of the physiological demands of pregnancy and lactation (Black et al., 2013; Torheim and Arimond, 2013). Requirements for most nutrients are higher for pregnant and lactating women than for adult men (Branca et al., 2015). Insufficient micronutrient intakes before and during pregnancy and lactation can affect both women and the development of their infants, especially during the critical first 1 000 days of life (Cusick and Georgieff 2016). Yet, in many resource-scarce environments, WRA's diets are monotonous, dominated by starchy staple foods, and do not provide sufficient micronutrients (Arimond et al., 2010; Lee et al., 2013; Martin-Prevel et al., 2017).

Women are central to household (HH) food security and nutrition, as they are generally responsible for food selection, preparation and infant and young child feeding (IYCF) practices. Historically, women are often assigned as primary caregivers to children and elderly family members – even though such traditional gender roles have been challenged by the empowerment of women. For instance, women's economic advancement, increased level of education and decision-making power. These reasons, together with prevailing gender norms, continue to cause women to be more socially vulnerable, which in turn, impacts the quality of their diet (Clark et al., 2020; Kassie et al., 2020; Komakech et al., 2019; Oxfam, 2019).

It is customary for women and men to eat separately (WFP, 2019) in Asian countries. Women may eat second or last, after they have served food to other family members (den Hartog, van Staveren and Brouwer, 2006). when food is scarce women give up their share of food in favor of men and children, which is accepted practice and justified by the need to put the interest of their families first (WFP, 2019). These practices mean that other HH members consume good quality and nutritious food (e.g. animal source foods), to the detriment of women. Therefore, adequacy of HH dietary diversity within a population may mask the fact that some women are consuming diets that are monotonous and insufficient for meeting their daily nutritional needs. On the other hand, when women's diets are diverse, it is likely that the other members of the families are also consuming diverse diets, considering the priority given to them. MDD-W has been shown to be a strong predictor of HH dietary diversity, as results of MDD-W align food consumption score (FCS), a HH dietary diversity indicator.

Finally, there is a clear impact pathway that connects women's empowerment to dietary diversity. Women's empowerment is positively and significantly related to the dietary diversity of both children and women (Komakech et al., 2019). The positive effects of empowering women are multi-dimensional- her livelihood and nutrition status are improved, as well as those she provides care. This highlights again the importance of more actionable data on women's diets, such as that for the MDD-W, which could be used to inform the formulation of appropriate policies and programmes that target women. The trickle-down and inter-generational effects on women's food security, nutrition, education and health of their children and family (Clark et al., 2020) will certainly help pave the way towards promoting gender equality

Dietary diversity has been measured in many different ways, in both research and programmatic contexts. However, only a few simple food group diversity indicators have been promoted for wide population-level use in resource-poor settings. These include the Household Dietary Diversity Score (HDDS), the MDD and the Women's Dietary Diversity Score (WDDS), which are compared with the MDD-W in Table 24.

Indicators and guidelines are often confused with each other. In the case of dietary diversity indicators, this may be because many countries have developed food-based dietary guidelines (FBDG) and graphics (pyramids, plates, etc.) that provide guidance to populations about consumption of diverse diets and/or of food items from specific sets of food groups¹. National FBDG are developed through a structured process and are meant to shape policy and national programmes.

There is no global harmonisation of FBDG, and the MDD-W threshold of at least five of ten food groups may not align exactly with national recommendations. The indicator should not be confused with a dietary guideline, nor should it be used as a basis to inform the development of guidelines or programmatic, behaviour change communication or counselling messages.

The WDDS resulted from a preliminary step in the process of developing the dichotomous MDD-W. Earlier research resulted in a suggestion of several scores that reflected micronutrient adequacy; however, no single score was proposed for global use (Arimond et al., 2010). One of these scores, a WDDS based on nine food groups, was described by FAO (2011) and selected for use by the U.S. Agency for International Development (USAID) Feed the Future and Food for Peace development food assistance programmes, and others. However, demand for a dichotomous indicator grew, particularly for use in policy and advocacy contexts. Another round of research with more data sets replicated and extended the earlier study and resulted in the proposal of the MDD-W, a dichotomous indicator based on a set of ten food groups (Marti-Prével et al., 2015).

The Minimum Dietary Diversity for Women (MDD-W) indicator was developed as a proxy indicator to reflect the micronutrient adequacy of women's diets. While data are collected from individual women, the indicator cannot be used to infer diet quality or quantity for an individual, as it is based on a single recall period over one day and night (24-hours) and does not reflect day-to-day variability for individual intakes.

However, although the MDD-W food groups may not align perfectly with those recommended for consumption in national FBDG, all such guidelines do advocate consumption of diverse food groups. So, the evaluation team consider as per PKSF's suggestion follow the MDD-W with 10 categories of food items for this study.

¹ FAO compiles national FBDG, which are available at <http://www.fao.org/nutrition/nutrition-education/food-dietaryguidelines/en/>.

Table 24: Comparisons of available Dietary diversity calculation methods

Population sampled/ unit of analysis	HDDS Households	IYCF MDD Infants and young children aged 6-23 months	WDDS Women aged 15-49 years	MDD-Wd Women aged 15-49 years
Validated against	Kilocalorie availability as assessed in household-level consumption surveys	Micronutrient density compared with desirable density for complementary foods, assessed by 24-hour recall or weighed food records	Micronutrient adequacy assessed by multiple 24-hour recalls	Micronutrient adequacy assessed by multiple 24-hour recalls
Meaning	Proxy for household level access to kilocalories (Dietary energy), which is one dimension of household food security Reflects economic access to a diet with higher kilocalories per capita	Proxy for the adequacy of the micronutrient density of infant and young child diets Reflects one of several favorable infant and young child feeding practices	Proxy for the probability of micronutrient adequacy of women's diets Reflects micronutrient adequacy, which is one critical dimension of diet quality	Proxy for the probability of micronutrient adequacy of women's diets Reflects micronutrient adequacy, which is one critical dimension of diet quality
Number of foods groups	12	7	9	10
Threshold for dichotomous indicator	No dichotomous indicator	4 or more of the 7 food groups	No dichotomous indicator	5 or more of the 10 food groups
Indicator tabulation includes fats/oils, sweets, and all beverages, including alcohol	Yes	No	No	No
Foods consumed outside the home	Not included	Included	Included	Included
<p>a) HDDS = Household Dietary Diversity Score; see http://www.fantaproject.org/monitoring-and-evaluating/household-dietary-diversity-score and Food and Agriculture Organization of the United Nations (FAO) (2011).</p> <p>b) IYCF MDD = Minimum Dietary Diversity indicator, as an indicator of infant and young child feeding practices; see http://www.who.int/maternal_child_adolescent/documents/9789241596664/en/.</p> <p>c) WDDS = Women's Dietary Diversity Score; see FAO (2011).</p> <p>d) MDD-W = Minimum Dietary Diversity for Women of Reproductive Age</p> <p>e) During analytic work comparing candidate indicators to micronutrient adequacy for women, the 7-group IYCF MDD and dichotomous indicators based on the 9 groups in the WDDS were explored but did not perform as well as the 10-group MDD-W (Marti-Prével et al., 2015)</p>				

Methodology for dietary data collection from women family members:

Dietary intake data were collected using an interactive 24-h recall method (non-quantitative open method) during June 2023 among 370 women family members of the RMTP project beneficiaries. Initially sample survey was conducted with the head of families, afterwards Interviewer sat with the women family member separately, asked for the last 24 hours individual (herself) food intake (open

recall method) and then fill-up diet types 24 hours list based 10 categories of the food items as per MDD-W checklist. Hence the evaluation team used a separate questionnaire (checklist). The plotted as per frequency of the meal and then count the selected 10 categories of food items. Out the 10 category of food items those women having at least 5 types food items taken in last 24 hours counted as MDD-W score sheet as per following formula developed by the FAO. The minimum dietary diversity for women (MDD-W) guidelines whose food groups are the following: 1) grains, white roots and tubers, and plantains; 2) pulses; 3) nuts and seeds; 4) dairy; 5) flesh foods – meat, fish; 6) eggs; 7) dark-green leafy vegetables; 8) vitamin A-rich fruits and vegetables; 9) other vegetables; and 10) other fruits. The survey team did not take quantity of the items specified, it was just food taken. In the list-based method, the enumerator reads the respondent a list of predefined sentinel foods and beverages categorized under purposely ordered food groups. The enumerator informed (read-out) to the respondents that they should respond yes for each food or beverage consumed during the specified recall period (24 hours) of the previous day and night. Food intake was assessed through the use of 1 multiple-pass 24-h diet recall conducted by an enumerator team. Women were asked to describe all foods and beverages they had consumed during the preceding 24h, including time of consumption with a check list. Nutrient intakes were estimated with a multiple-pass 24-h recall and WDDS-10 was assessed through the use of a list-based method. The evaluation team estimated the performance of the MDD-W indicator using the 5 food groups cut-off to correctly identify women respondents.

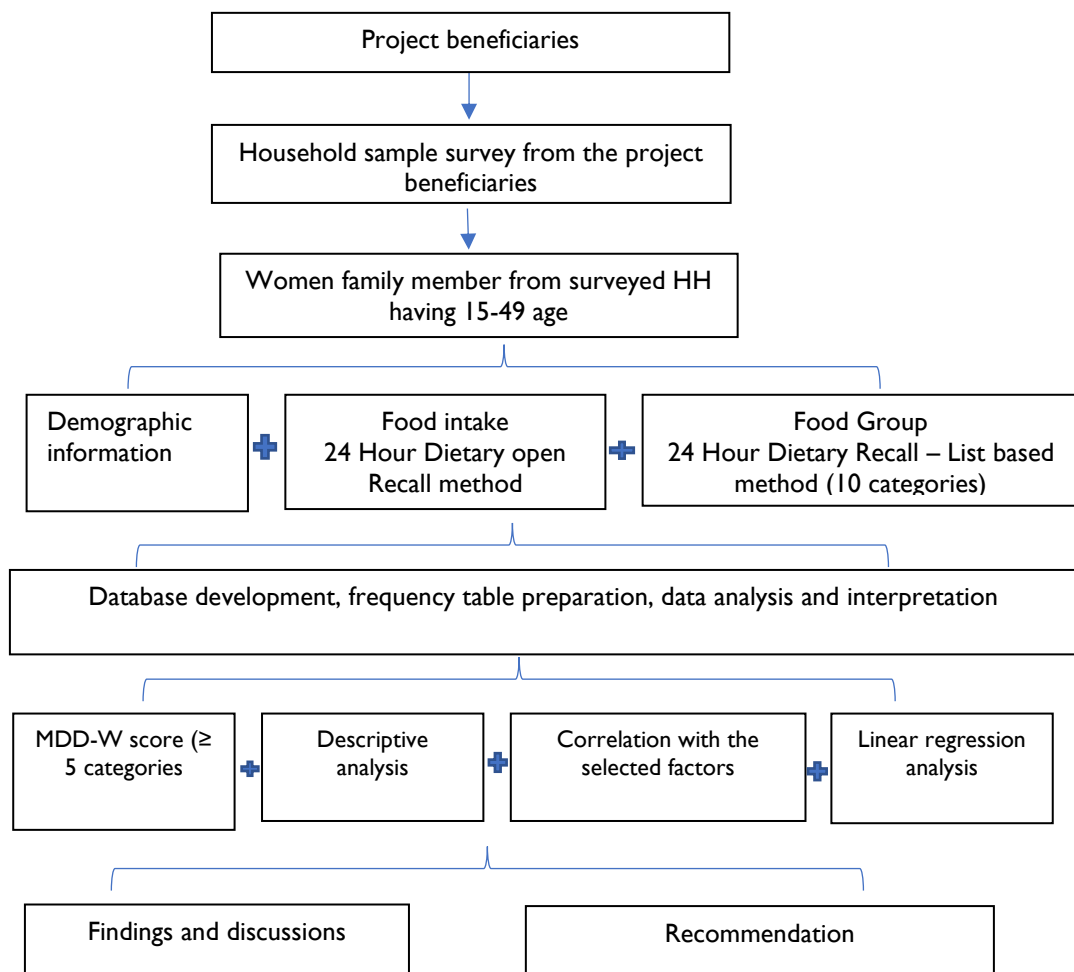


Figure 41: Methodology of the dietary data collection for MDD-W calculation from women respondents

The Minimum Dietary Diversity for Women (MDD-W) is a population-level indicator of diet diversity validated for women aged 15-49 years old. The MDD-W is a dichotomous indicator based on 10 food groups and is considered the standard for measuring population-level dietary diversity in women of

reproductive age. According to the MDD-W, women who have consumed at least 5 of the 10 possible food groups over a 24-hour recall period are classified as having minimally adequate diet diversity.

The baseline survey enumerators collected 370 respondents from 19-49 aged women considering 10 food items (shown in Table 25) was record whether the women respondent did, or did not, consume foods within each food group in last 24 hours. The total number of food groups consumed was summed and all foods are equally weighted. The population-level indicator was calculated based on the following formula:

$$\frac{\text{Women 15-49 years of age who consumed foods from 5 food groups during the previous day}}{\text{Total number of women 15-49 years of age surveyed}}$$

Definition: the percentage of WRA who consumed foods and beverages from at least (\geq) five food groups during the previous day.

Numerator: the number of respondents (Women of reproductive age – WRA) who consumed foods and beverages from at least (\geq) five food groups during the previous day.

Denominator: the total number of respondents (Women of reproductive age – WRA) surveyed.

MDD-W: 10 Intake of different food groups during the 24 h prior to the survey was collected with the use of the list-based method² in which the enumerator read a list of foods and beverages from each group to the respondent, and asked her if she had consumed them during the previous day and night. We used the 10-food group score as proposed by the MDD-W guideline that consists of: 1) starchy staple foods, 2) beans and peas; 3) nuts and seeds; 4) dairy products (milk, yogurt, and cheese); 5) flesh foods (meat, fish, poultry, and liver or organ meats); 6) eggs; 7) dark green vegetables; 8) vitamin A-rich fruits and vegetables; 9) other vegetables; and 10) other fruits. Each group was assigned a score of 1 if consumed and 0 if not consumed. The WDDS-10 was the sum of the 10 categorized food groups and thus ranged from 0 to 10. We also generated the WDDS-10 using multiple-pass 24h dietary intake data to explore if the data collection method would alter our conclusions.

Table 25: Food group

1	Grains, white roots and tubers, and plantains	Yes=1 No=0	
2	Pulses (beans, peas and lentils)	Yes=1 No=0	
3	Oils and fats, Nuts and seeds	Yes=1 No=0	
4	Dairy, milk and milk products	Yes=1 No=0	
5	Meat, poultry and fish	Yes=1 No=0	
6	Eggs	Yes=1 No=0	
7	Dark green leafy vegetables (DGLV)	Yes=1 No=0	
8	Other vitamin A-rich fruits and vegetables	Yes=1 No=0	
9	Other vegetables	Yes=1 No=0	
10	Other fruits	Yes=1 No=0	

Linear regression models and Pearson correlation model was run for the statistical assessment and to examine the association between types of food, and some of independent variable i.e. age of the respondents, education, income of the families, lactating mother or pregnant. All the respondents engaged with cooking and married.

Findings and Discussions:

Based on the survey data found that average ages of the women respondents were 36.10year, out of 305 respondents 18-13 years 70 persons, 31-40 years 117 and 41-49 years 118 persons. 96 respondents (31%) pregnant and 44 (15% lactating mother). Average family size 4.6. all live-in rural

² FAO, FHI360. Minimum Dietary Diversity for Women: a guide to measurement. Rome: FAO; 2016. <http://www.fao.org/3/a-i5486e.pdf>.

areas. Average family income from Native chicken farmers Tk.140,580, Duck farmer Tk.148,650 and layer Tk.522,408

The educational level of all 370 respondents found that 3.6% had no education, 43% primary level, 50% high school, 31% SSC and 10% HSC and 7% above than HSC.

The Minimum Dietary Diversity for Women (MDD-W) indicator based on a 10-food group women dietary diversity score (WDDS-10) has been validated to assess dietary quality.

Table 26: Dietary pattern of the respondents.

Dietary pattern / frequency	Package -1		Package-2		Package -3		Others		Nothing	
	#	%	#	%	#	%	#	%	#	%
Breakfast (morning meal)	23	6%	6	2%	339	92%	2	1%	0	0%
Middle of launch and breakfast (snacks)	19	5%	40	11%	214	58%	2	1%	95	26%
Lunch	151	41%	105	28%	114	31%	0	0%	0	0%
Evening Snacks	9	2%	43	12%	194	52%	3	1%	121	33%
Dinner	141	38%	114	31%	114	31%	1	0%	0	0%
After dinner (before sleep)	106	29%	3	1%	22	6%	0	0%	239	65%

Table 27: Packages of food.

Timing	Package -1	Package-2	Package -3
Breakfast (morning meal)	Traditional Ruti + vegetable	Khichuri + Egg	Rice + veg + dal
Middle of launch and breakfast (snacks)	Tea + Snacks	Tea + Biscuit	Fruits
Lunch	Rice + Veg + Dal + Egg	Rice + Veg + Dal + meat	Rice + Veg + Dal + Egg
Evening Snacks	Tea + fruit+ snacks	Tea + biscuit+ snacks + fruits	Tea + fruit+ snacks
Dinner	Rice + Veg + Dal + Egg	Rice + Veg + Dal + meat	Rice + Veg + Dal + Egg
After dinner (before sleep)	Milk	Biscuits	Fruits

Table 28: MDD-W by food category.

Sl. No.	Food Category	#	% of consumption (N=31)
1	Grains, white roots and tubers, and plantains	370	100%
2	Pulses (beans, peas and lentils)	255	69%
3	Oils and fats, Nuts and seeds	263	71%
4	Dairy, milk and milk products	155	42%
5	Meat, poultry and fish	137	37%
6	Eggs	93	25%
7	Dark green leafy vegetables (DGLV)	178	48%
8	Other vitamin A-rich fruits and vegetables	111	30%
9	Other vegetables	185	50%
10	Other fruits	126	34%

Food groups that contributed significantly to the MDD-W were grains (100%); Pulses 69%, oils 71%, Dairy milk 42%, meat and/or fish 37%, eggs 25%, dark green leafy vegetables 48%, Vit-A enriched vegetables 30%, other vegetables 50%, and 34% other fruits.

Minimum Dietary Diversity MDD-W:

Only 37% of women respondents achieved the Minimum Dietary Diversity for Women (MDD-W) and consumed (at least five dietary diversified items) an adequate intake of micronutrients whereas 63% did not. Therefore, majority of the women in the family level under nutrition and did not take adequate amount of nutritious food.

There was a significant positive correlation (95% confidence level) between the MDD-W score between family income, education, pregnancy, lactation, reciprocate negative correlation with age, and family members. These results are essential in visualizing the problem of insufficient consumption of micronutrients and specific food groups in reproductive women's diets. The linear regression model also found significant contribution of the family income to the multiple diets i.e. total meal. The improvements in women's incomes from agricultural products were directly related to improvement in women's nutrition. Respondents also understands that during pregnancy and lactation they need more nutrition and those families provided as much as possible. Number of family members and education did not influence significantly for the women's nutrition during the survey.

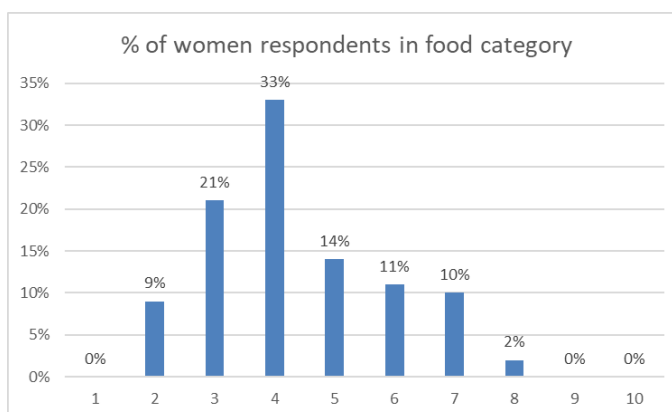


Table 29: Diversified meal.

	% of respondents having diversified meal in last 24 hours from the time of interview		%
	#	%	
Take one item from 10 categories of food)	0	0%	63%
Receive two type food or less	32	9%	
Receive three type food	76	21%	
Receive four type food	129	33%	37%
Receive five type food	50	14%	
Receive six type food	40	11%	
Receive seven type food	36	10%	
Receive eight type food	7	2%	
Receive nine type food	0	0%	
Receive ten type food	0	0%	
Total	370	100	100%

Table 30: Calculation of MDD-W score.

MDD-W score	Frequency	Percent (%)
Low MDD-W (2 to 4 categories of food items)	237	63%
Average MDD-W	5.02 items in last 24-hours	
High MDD-W (5-9 categories of food items)	133	37%
Total	370	100

5 Chapter 5: Recommendation and conclusion

According to the survey, the team discovered it is necessary to intervene methodically while considering value chain strengthening with safe food concern and climate change adaptation. The majority of respondents and interviewed stakeholders are eager to change and adopt safe chicken products and income-generating activities.

For making efficient value-added based marketing system development needs to be initiated stopped Open market & set up structured slaughter house and Halal certified authority should be assigned instantly; Strict on implementing of existing slaughter house policy and also Law and enforcing agency should be centralized and pricing control; Strengthening monitoring & examination on food safety and quality control issues. on value added products ins and outs beneficiary effects to the end users. Finally need to strengthening mass media publicity Value added safe poultry segments needs to be vigorously promoted for boosting production to increase the domestic consumption of processed products and also for promoting their export. Family dynamics, rising income, increasing exposure to various mass media, changing food habits with preference for fast foods and heavily industrialization and urbanization will greatly enhance the demand for fresh or frozen and nutritionally superior value added products. Policy makers, meat producer cum processor, food processor, food technologist etc. have to work together to transform this sector into a more dynamic and vibrant enterprise in the long run.

From the finding of the baseline study team comes up with the following recommendations:

- **Training to be provided:** The project should provide all necessary trainings (safe poultry rearing, farm record keeping and GAP standards) to the farmers and relevant stakeholders.
- Training and awareness to provide on importance and access to nutritious diversified food production, access, processing, cooking and purchase.
- **Market Linkage to be strengthened:** To ensure good prices the project should emphasize on creating market linkage with market actors in the national, big city markets along with processors and large buyers. Linkage with good quality and accredited inputs suppliers to be strengthened.
- **Financial inclusion:** The farmers should be provided with sufficient credit so that they can utilize efficiently and earn more money.
- **Develop Service providers/ entrepreneurs**
The project should develop service provider entrepreneurs for inputs like better quality feed, medicine, breed and vaccines. The availability of the inputs will allow the motivated and interested imitator farmers to adopt safe duck/chicken/ egg.
- **Collaboration with DLS and other Government departments:** Necessary linkage to be established with DLS and department to enhance GAP and produce good quality duck/chicken/ egg.
- Promote promotional activities to enhance duck/chicken/ egg production and marketing
- Arrange market sharing workshops, attend trade fairs to build awareness and market linkages
- Linkage building with trusted inputs supplier, retailers and market traders mainly direct to the millers and large-scale traders

Value Chain Development

Strengthening the value chain involve five areas of activity: (i) capacity development of producers, traders, processors and retailers to provide safe food; (ii) the establishment of modern infrastructure in collection center (iii) the use of credit to facilitate the introduction of technology to improve efficiencies and (iv) Improve competitiveness VC actors and v) financial inclusions of MSMEs.

Conclusion

The findings and information are only the sample basis not the census so there may be information gap therefore it is suggested that appropriate intervention design needs to be undertaken the project

implementing organization based on field situation. All actors along with the value chain needs to be consideration as their own role and responsibility in their respective areas of business with a win-win business enabling environment.

The baseline data would help to implement the project by integrating value chains of native chicken, duck and laying eggs, with microfinance, and climate resilient economic opportunities. As the data is retained by the project/RDRS it is necessary to compare it on a regular basis based on the log frame and indicators. The set of interventions appears to be demand-driven; if implemented in the field on time, it will achieve project goals and outcomes. The outcomes of interventions must be tracked throughout the implementation period of the project.

Annexure I: Data collection instruments

A. Quantitative Questionnaire for the baseline survey

'Market System development of safe poultry and poultry products'

আমি.....ম্যাট্রিক্স বিজনেস ডেভেলপমেন্ট লিমিটেড হতে এসেছি; আমরা RDRS এর পক্ষে 'Market System development of safe poultry and poultry products' প্রকল্পে কাজ করছি। প্রকল্পটি সঠিকভাবে বাস্তবায়নের জন্য পোল্ট্রি পন্য উৎপাদনে খামারিদের তথ্য জানা দরকার। এই তথ্য গুলো শুধু প্রকল্পের কাজের জন্য ব্যবহৃত হবে এবং অন্য কোন বাণিজ্যিক উদ্দেশ্যে ব্যবহৃত হবে না। আমরা নিশ্চয়তা দিচ্ছি যে, আমরা আপনার দেয়া তথ্য সমূহের গোপনীয়তা রক্ষা করবো। আমরা নিচের প্রশ্নমালা হতে আপনাকে কিছু প্রশ্ন করতে চাচ্ছি। আপনি অনুমতি দিলে আমরা জরিপ শুরু করতে পারি।

১.	আপনি কি উত্তরদানে আগ্রহী	হ্যাঁ = ১, না=২	যদি সম্মত না হয় তাহলে প্রশ্ন বন্ধ করুন
২.	সাক্ষাৎকার গ্রহণের বর্তমান অবস্থান		

A. ডেমোগ্রাফিক তথ্যঃ

৩.	উত্তরদাতার নাম		
৪.	জেলাঃ	রংপুর=১, গাইবান্ধা=২, কুড়িগ্রাম=৩	
৫.	উপজেলাঃ	রংপুর সদর=১, কাউনিয়া=২, পীরগাছা=৩, সুন্দরগঞ্জ=৪, রাজারহাট=৫	
৬.	ইউনিয়নঃ	রংপুর সদর=১, খলিয়া=২, মমিনপুর=৩, সদ্যা পুস্কলি=৪, হরিদেবপুর=৫, হারাগাছা=৬, টেপামধুপুর=৭, শহিদবাগা=৮, কুরশা=৯, পারুল=১০, কল্যানি=১১, কৈশুড়ি=১২, পীরগাছা=১৩, কান্দি=১৪, অন্নদানগর=১৫, সুন্দরগঞ্জ সদর=১৬, বামনডাংগা=১৭, সোনারায়=১৮, সর্বানন্দ=১৯, তাঁরাপুর=২০, ঘরিয়ালডাংগা=২১, বিদ্যানন্দ=২২, সিনাই=২৩, রাজারহাট=২৪, ওমর মজিদ=২৫	
৭.	গ্রামঃ		
৮.	মোবাইল নং		
৯.	বয়স		
১০.	লিঙ্গ/জেন্ডার	পুরুষ=১, মহিলা=২, তৃতীয় লিঙ্গ = ৩	
১১.	খানায় সদস্য সংখ্যা	পুরুষ =	নারী = মোটঃ
১২.	উত্তরদাতার বৈবাহিক অবস্থা	বিবাহিত=১, অবিবাহিত=২, তালাকপ্রাপ্ত=৩, স্বামী কর্তৃক পরিত্যক্ত = ৪, বিধবা = ৫, বিপত্তিক = ৬, অন্যান্য (অনুগ্রহ করে উল্লেখ করুন) = ৭	
১৩.	শিক্ষাগত যোগ্যতা	যত বছর পড়াশোনা করেছেন=	
১৪.	পরিবারে কোন প্রতিবন্ধী সদস্য আছে কিনা	হ্যাঁ=১, না=২	
১৫.	যদি হ্যাঁ হয়, তাহলে কোনটি? চশমা পরলেও দেখতে অসুবিধা=১, শ্রবণযন্ত্র (গুলি) ব্যবহার করলেও শুনতে অসুবিধা=২, হাঁটা বা ধাপে ওঠার অসুবিধা=৩, মনে রাখা বা মনোযোগ দিতে অসুবিধা=৪, স্ব-যত্ন করতে অসুবিধা, যেমন সারা শরীর ধোয়া বা ড্রেসিং=৫, যোগাযোগে অসুবিধা, উদাহরণস্বরূপ বুঝতে বা বুঝাতে=৬,		
১৬.	পরিবারের প্রতিবন্ধী সদস্য সংখ্যা	পুরুষ=	নারী=
১৭.	বাড়িতে কি কোন মহিলা আছে যিনি	গর্ভবতী=১, দুগ্ধদানকারী=২, বিধবা/নিঃস্ব=৩, কোনটি নয়=৪	
১৮.	পরিবারে রান্নার দায়িত্ব কে পালন করেন?		
১৯.	বসত বাড়ির ব্যবহার্য পানির উৎস কী?	ট্যাপ পাইপ/সাপ্লাই=১, হাত নলকূপ=২, খোলা কুয়া=৩, খাল/ নদী/পুকুরের পানি=৪, বৃষ্টির পানি=৫, বোতলজাত ক্রয়কৃত পানি=৬, অ-গভীর/ গভীর নলকূপ=৭, অন্যান্য=৮	
২০.	বাড়ির বাহ্যিক দেয়ালের প্রধান উপাদান কী?	কোন দেয়াল নেই=১, বেত / পাম / কাণ্ড=২, মাটি=৩ পলিথিন ও বাঁশ=৪, কাঁচা ও বাঁশ=৫, উন্মুক্ত=৬, কাঠ=৭, টিন=৮, ইট/সিমেন্ট=৯, সিমেন্ট ব্লক=১০, অন্যান্য=১১	
২১.	বাড়িতে বিদ্যুতের সংযোগ কেমন?	সোলার=১, গ্রীড লাইন=২, জেনারেটর=৩, বিদ্যুৎ সংযোগ নাই=৪, অন্যান্য=৫	

২২.	আপনার বাড়িতে পয়ঃনিষ্কাশন ব্যবস্থা কেমন?	নিরাপদ নিষ্কাশনের ব্যবস্থাসহ পাকা=১, অ-নিরাপদ নিষ্কাশনের ব্যবস্থাসহ পাকা=২, স্লাব সহ পিট ল্যাট্রিন=৩, স্লাব ছাড়া পিট ল্যাট্রিন=৪, খোলা পিট ল্যাট্রিন=৫, কাঁচা পায়খানা=৬, উন্মুক্ত স্থান=৭, বুলন্ত পায়খানা=৮, অন্যান্য=৯
২৩.	প্রধান পেশা	২য়/গৌন পেশা
	কোড: ফসলের চাষ =১, ছাগল পালন=২, হাঁস-মুরগি পালন=৩, ছোট ব্যবসা=৪, মাছ চাষ=৫, রিকশা/ভ্যান চালক=৬, গরু মোটাজাকার=৭, বসতবাড়ির সর্বাঙ্গি চাষ=৮, হস্তশিল্প=৯, দর্জি=১০, কৃষি-শ্রমিক=১১, জেলে=১২, মেকানিক=১৩, গ্রাম্য ডাক্তার=১৪, গৃহিণী=১৫, গৃহপরিচারিকা=১৬, সরকারি চাকুরী=১৭, এনজিও/বেসরকারী চাকুরী=১৮, সার্ভিস (অবসরপ্রাপ্ত)=১৯, প্রবাসী = ২০, ছাত্র = ২১, অন্যান্য (অনুগ্রহ করে উল্লেখ করুন) =২২	
২৪.	পরিবারের বাৎসরিক আয় (টাকা):	
	কৃষি জমির ফসল থেকে আয়	
	পোল্ট্রি থেকে আয়	
	অন্য সকল উৎস থেকে আয়	
	মোট আয়	

B. জমি সংক্রান্ত তথ্যাদি:

২৫.	আপনার কি নিজস্ব জমি আছে?	হ্যাঁ=১, না=২
২৬.	যদি হ্যাঁ হয় তবে	নিজস্ব বসত ভিটা (শতাংশ) নিজস্ব আবাদি জমি (শতাংশ) লিজ বা বন্দকি জমি (শতাংশ) অন্যান্য (শতাংশ)

C. পোল্ট্রি উপকরণ/ইনপুট সম্পর্কিত তথ্যাদি:

২৭.	আপনি কি হাঁস-মুরগী লালন-পালন করেন?	হ্যাঁ=১, না=২
২৮.	কোন জাতের হাঁস-মুরগী চাষ করেন?	দেশি=১, হাইব্রিড=২, ফাওমি=৩, সোনালী=৪ পাকিস্তানি=৫, খাকি কেশেল =৬, পাতিহাস =৭, মাসকোভি =৮, রানার =৯, অন্যান্য=১০
২৯.	আপনার হাঁস-মুরগী দেখাশোনার কাজ কে করেন?	নিজে=১, বাড়ির অন্য সদস্য= ২, নিয়োগকৃত শ্রমিক=৩, অন্যান্য=৪
৩০.	হাঁস-মুরগী পালনের জন্য আলাদা ঘর আছে কি?	হ্যাঁ=১, না=২
৩১.	যদি হ্যাঁ হয়, ঘরের অবস্থা কেমন?	টিন দিয়ে তৈরী=১, কনক্রিট=২, নেট=৩, খড়=৪, অন্যান্য=৫
৩২.	আপনি হাঁস-মুরগী পালনের জন্য ইনপুট/ উপকরণ (বাচ্চা, ফিড ওষধ ইত্যাদি) কোথা থেকে ক্রয় করেন?	খুচরা বিক্রেতা=১, পাইকারি বিক্রেতা=২, এগ্রিগেটর=৩, ব্যাপারী=৪, নিজের=৫, অন্যান্য=৬
৩৩.	আপনার হাঁস-মুরগীর জন্য ফিড আপনি কিভাবে সংগ্রহ করেন?	নিজে তৈরী করেন=১, বাজার থেকে ক্রয় করেন=২, প্রকৃতি থেকে গৃহিত=৩
৩৪.	আপনি কিভাবে লেনদেন করেন?	নগদ=১, বাকি=২, উভয়=৩
৩৫.	আপনি উপকরণ কেনাকাটার কোন বিল/রশিদ রাখেন?	হ্যাঁ=১, না=২
৩৬.	আপনি কি সরকার অনুমোদিত পোল্ট্রি ফিড/ ওষধ প্রয়োগ করেন?	হ্যাঁ=১, না=২
৩৭.	আপনি কি পণ্য কেনার সময়, সেগুলো নিরাপদ হিসেবে অনুমোদিত কিনা বা গায়ে লেবেল আছে কিনা দেখে কিনেন?	হ্যাঁ=১, না=২
৩৮.	আপনি কত ঘন ঘন পোল্ট্রির জন্য পণ্য কিনে থাকেন?	এক সপ্তাহে একবার=১, দুই সপ্তাহে একবার=২, তিন সপ্তাহে একবার=৩, চার সপ্তাহে একবার=৪
৩৯.	কোন কোন বিষয়গুলোর কথা ভেবে আপনি পোল্ট্রির পণ্য কেনার সিদ্ধান্ত নেন?	মূল্য=১, গুণাগুণ=২, ব্রান্ড সুপরিচিতি=৩, নিরাপত্তা নিশ্চয়তা=৪, সহজলভ্যতা=৫, প্যাকেটজাত=৬, অন্যের পরামর্শের ভিত্তিতে=৭, অন্যান্য=৮
৪০.	আপনি যে পণ্যগুলো কিনে থাকেন সেগুলো নিরাপদ কিনা তা নিশ্চিতকরণ সম্পর্কে আপনি কতটুকু সচেতন?	খুব বেশি=১, বেশি=২, মাঝামাঝি=৩, কম=৪, খুব কম=৫
৪১.	আপনার হাঁস-মুরগী কি ঘন ঘন অসুস্থ হয়ে পরে?	হ্যাঁ=১, না=২
৪২.	অসুস্থ হলে আপনি কি করেন?	পরামর্শ নিই =১, কিছুই করিনা=২,
৪৩.	হাঁস-মুরগীর অসুস্থতা সম্পর্কে পরামর্শ কার কাছে/কোথায় থেকে নিয়ে থাকেন?	লাইভস্টক এক্সটেনশান এজেন্ট=১, ফিডের দোকানদার=২, ওষধের দোকানদার=৩, অন্যান্য=৪

৪৪.	ঔষধের প্রয়োজন হলে কোথা থেকে সংগ্রহ করেন?	লাইভস্টক এক্সটেনশন এজেন্ট=১, ফিডের দোকানদার=২, ঔষধের দোকানদার=৩, কোম্পানি=৪, অন্যান্য=৫
৪৫.	আপনার হাঁস-মুরগীর মৃত্যুর হার/ মর্টালিটি রোট কত?	%=

D. হাঁস-মুরগী লালন-পালন সম্পর্কিত তথ্যাদি:

৪৬.	হাঁস-মুরগী প্রতিপালনে আপনি কোনোরকম প্রতিবন্ধকতার সম্মুখীন হয়েছেন কিনা?	হ্যাঁ=১, না=২
যদি হ্যাঁ হয় (৪২-৪৫)		
৪৭.	আপনি কি ধরনের প্রতিবন্ধকতার সম্মুখীন হয়েছেন?	অপর্যাপ্ত বাচ্চার সরবরাহ=১, ভালমানের ফিডের অভাব=২, দুর্বল ব্যবস্থাপনা=৩, মৃত্যুর হার/ মর্টালিটি বেশী=৪, ঘরের অভাব=৫, বাজারের সমস্যা=৬, দাম কম=৭, অন্যান্য=৮
৪৮.	আপনি তখন কার কাছে থেকে পরামর্শ গ্রহণ করেন?	লাইভস্টক এক্সটেনশন এজেন্ট=১, পোল্ট্রি খাদ্য বিক্রেতা=২, ঔষধ বিক্রেতা=৩, কোম্পানি=৪, প্রাণী সম্পদ অফিসে যাই=৫
৪৯.	পরামর্শের বিনিময়ে আপনাকে কোনো অর্থ দিতে হয় কিনা?	হ্যাঁ=১, না=২
৫০.	প্রাপ্ত সহযোগীতা আপনার কাছে কেমন মনে হয়েছে?	খুব ভালো=১, ভালো=২, মাঝামাঝি=৩, খারাপ=৪, খুব খারাপ=৫

E. প্রশিক্ষণ সংক্রান্ত তথ্যাদি:

৫১.	হাঁস-মুরগী পালনের ওপর আপনি কোনো প্রশিক্ষণ গ্রহণ করেছেন কি?	হ্যাঁ=১, না=২
যদি হ্যাঁ হয়, (৪৭-৪৯)		
৫২.	কোন বিষয়ের উপর প্রশিক্ষণ গ্রহণ করেছেন?	হাঁস-মুরগী লালন-পালন বিষয়ক=১, হাঁস-মুরগীর খাবার বিষয়ে=২, ঘরের বিষয়ে=৩, বর্জ্য নিষ্কাশন বিষয়ক=৪, মর্টালিটি রোট/ মৃত্যুর হার কমানো বিষয়ক=৫, রোগ ব্যবস্থাপনা বিষয়ক=৬, অন্যান্য=৭
৫৩.	প্রশিক্ষণ কোন সংস্থা পরিচালনা করেছে?	সরকারি সংস্থা=১, বেসরকারি সংস্থা =২, এনজিও=৩, অন্যান্য=৪
৫৪.	আপনার কি মনে হয় আপনার আর প্রশিক্ষণের প্রয়োজন আছে?	হ্যাঁ=১, না=২
৫৫.	যদি হ্যাঁ হয়, কোন বিষয়ের উপর প্রশিক্ষণ আপনার প্রয়োজন বলে আপনি মনে করেন?	

F. জ্ঞান এবং সতর্কতা :

৫৬.	নিরাপদ পোল্ট্রি এবং পোল্ট্রিজাত পণ্য সম্পর্কে আপনি কতটুকু অবগত?	খুব বেশি অবগত=১, সামান্য অবগত=২, একেবারেই অবগত নয়=৩
৫৭.	নিরাপদ পোল্ট্রি উৎপাদন এবং হ্যান্ডেলিং নিয়ে আপনি কি কোনো প্রশিক্ষণ বা তথ্য পেয়েছেন?	হ্যাঁ=১, না=২
৫৮.	নিরাপদ পোল্ট্রি উৎপাদন এবং হ্যান্ডেলিং নিয়ে আপনার জ্ঞানকে আপনি কিভাবে মূল্যায়ন করবেন?	খুব ভালো=১, ভালো=২, মাঝামাঝি=৩, খারাপ=৪, খুব খারাপ=৫
৫৯.	নিরাপদ হাঁস-মুরগী লালন পালনের জন্য রোগ ব্যবস্থাপনা সম্পর্কে আপনার জ্ঞানকে আপনি কিভাবে মূল্যায়ন করবেন?	খুব ভালো=১, ভালো=২, মাঝামাঝি=৩, খারাপ=৪, খুব খারাপ=৫
৬০.	নিরাপদ হাঁস-মুরগী লালন পালনের জন্য খাবার ও বাসস্থান সম্পর্কে আপনার জ্ঞানকে আপনি কিভাবে মূল্যায়ন করবেন?	খুব ভালো=১, ভালো=২, মাঝামাঝি=৩, খারাপ=৪, খুব খারাপ=৫
৬১.	নিরাপদ হাঁস-মুরগী লালন পালনের জন্য বাজার ব্যবস্থাপনা সম্পর্কে আপনার জ্ঞানকে আপনি কিভাবে মূল্যায়ন করবেন?	খুব ভালো=১, ভালো=২, মাঝামাঝি=৩, খারাপ=৪, খুব খারাপ=৫

G. পুষ্টিগুণ সংক্রান্ত তথ্যাদি:

৬২.	এক সপ্তাহের মধ্যে আপনি কত বার পোল্ট্রির পণ্য গ্রহণ করেন?	প্রতিদিন =১, সপ্তাহে ১-২ বার=২, সপ্তাহে একবার=৩, একমাসে একবার=৪
৬৩.	পোল্ট্রি বা পোল্ট্রি পণ্যের পুষ্টিগুণ আপনার কাছে কতটা গুরুত্বপূর্ণ?	অত্যন্ত গুরুত্বপূর্ণ =১, পরিমিতভাবে গুরুত্বপূর্ণ =২, মাঝামাঝি=৩, গুরুত্বপূর্ণ নয়=৫

৬৪.	খাদ্য বাহিত রোগ এড়াতে হাঁস-মুরগীর মাংস রান্নার নির্ধারিত সময়ের নিয়ম মেনে রান্না করেন কি?	হ্যাঁ=১, না=২	
৬৫.	যদি হ্যাঁ হয়, তাহলে কিভাবে মেনে চলেন-	সর্বদা=১, কখনও কখনও =২, কদাচিৎ=৩, কখনই না=৪	

ভ্যালু চেইন লিংকেজ

H. পণ্য বিক্রয় সংক্রান্ত তথ্যাদিঃ

৬৬.	আপনি আপনার পণ্য কিভাবে বিক্রি করেন?	সম্পূর্ণ বাণিজ্যিকভাবে=১, পারিবারিক চাহিদা পূরণের পর উদ্ধৃত অংশ =২, কন্ট্রাস্ট ফার্মিং=৩, অন্যান্য=৪	
৬৭.	আপনার পোল্ট্রি পণ্যের ব্যবহৃত অংশ	পারিবারিক অংশঃ _____ % বিক্রয়ের অংশঃ _____ %	
৬৮.	যদি, বাণিজ্যিকভাবে করে থাকেন তাহলে কোথায় বিক্রি করেন?	পাইকারি/ব্যাপারি=১, এগ্রিগেটর=২, খুচরা=৩, স্থানীয় বাজার=৪, অন্যান্য=৫	
৬৯.	আপনি সাধারণত কত ওজনের (গ্রাম) মুরগী বিক্রয় করেন?		
৭০.	আপনি সাধারণত কত ওজনের (গ্রাম) হাঁস বিক্রয় করেন?		
৭১.	পোল্ট্রির পণ্য থেকে আপনার বছরে গড়ে কত টাকা আয় হয়?		
৭২.	আপনি কিভাবে মূল্য নির্ধারণ করেন?	নিজস্ব মূল্য =১, বাজার মূল্য=২, দর কষাকষি=৩, অন্যান্য=৪	
৭৩.	আপনি কি গ্রুপে পণ্য বিক্রি করেন?	হ্যাঁ=১, না=২	
৭৪.	আপনি কিভাবে আপনার পণ্য বিক্রি করেন?	নগদ=১, বাকি=২, উভয়=৩	
৭৫.	পণ্যের বাজার দামে আপনি কি সন্তুষ্ট?	হ্যাঁ=১, না=২	
৭৬.	কোভিড-১৯ এর সময় আপনার ব্যবসায় কোনো রকম সমস্যার সম্মুখীন হয়েছেন কি?	হ্যাঁ=১, না=২	
৭৭.	যদি হ্যাঁ হয় তাহলে কি কি সমস্যার সম্মুখীন হয়েছেন?	হাঁস-মুরগী বাজারজাতকরণের সমস্যা=১, দাম কম=২, ইনপুটের সরবরাহ কম ছিল=৩, পরিবহন সমস্যা=৪, আয় কম হয়েছে =৫, অন্যান্য=৬	

I. ব্যয় সংক্রান্ত হিসাবঃ

৭৮.	আপনি বছরে কতটি ফ্লক (ব্যাচ) করে থাকেন?	
৭৯.	প্রতি ফ্লকে কতটি করে হাঁস/ মুরগী থাকে?	
৮০.	একটি ফ্লক সম্পন্ন হতে কতদিন সময় লাগে?	
৮১.	সর্বশেষ ফ্লকটি কতটি বাচ্চা দিয়ে শুরু করেছিলেন?	
৮২.	এই ফ্লকটি সম্পন্ন করতে কত টাকা খরচ হয়েছে?	
৮৩.	এই ফ্লক থেকে কতটি হাঁস/ মুরগী বিক্রি করেছিলেন?	
৮৪.	এই ফ্লক থেকে কতটি হাঁস/ মুরগী নিজের জন্য রেখে ছিলেন?	
৮৫.	এই ফ্লকের হাঁস/মুরগী গড়ে কত দরে বিক্রি করেছেন?	
৮৬.	এই ফ্লকের ডিম গড়ে কত দরে বিক্রি করেছেন?	
৮৭.	বছরে কতটি ফাইনাল ফ্লক বিক্রি করেন?	
৮৮.	এক বছরে কত টাকা আয় হয়?	

J. সর্বশেষ দিনে গ্রহণকৃত খাদ্যের বিস্তারিত (24 Hour Dietary Recall) তথ্য - নারী সদস্যদের জন্য

আপনি গতকাল সারাদিনে যে খাবারগুলি খেয়েছেন ও পান করেছেন (প্রধান খাবার, চা, শরবতসহ সকল খাবার) তা দয়া করে বলুন। বাড়িতে বা বাড়ির বাইরে যেখানেই যা খেয়েছেন, সব বলুন। সকালের প্রথম খাবার বা পানীয় দিয়ে বলা শুরু করুন। তথ্য সংগ্রহকারী উল্লেখকৃত সকল খাবার ও পানীয়ের নাম সঠিকভাবে লিখবেন। একাধিক তরকারি দিয়ে একটি খাদ্য প্রস্তুত করা হলে তার মধ্যে কি কি তরকারি (সবজি/ফল) ছিল তা সুস্পষ্টভাবে লিখতে হবে। উত্তরদাতা তার উত্তর শেষ করার পর একটু অপেক্ষা করুন যাতে তিনি কিছু ভুলে গেছেন কিনা বা কোন কারণে উল্লেখ না করে থাকলে তা সনাক্ত করা যায়। উত্তরদাতা গতকাল গ্রহণকৃত সকল খাবার ও পানীয়সমূহ স্মরণ করে বলার পর তথ্য সংগ্রহকারী নিজের তালিকায় উপযুক্ত খাদ্য গ্রুপের অধীন সংশ্লিষ্ট খাদ্যগুলির নীচে আন্ডারলাইন করবেন। গ্রহণকৃত কোন খাদ্য যদি এ তালিকায় না থাকে, তাহলে উক্ত খাদ্য গ্রুপের অধীন অন্যান্য কোন খাবার উত্তরদাতা গ্রহণ করেছিলো কি-না তা জিজ্ঞাসা করতে হবে। নিম্নে প্রদানকৃত তালিকায় সংশ্লিষ্ট খাদ্য গ্রুপের অন্তর্গত যে কোন একটি খাবার যদি উত্তরদাতা গ্রহণ করে থাকে, তাহলে সংশ্লিষ্ট কলামে ডানপাশে প্যাকেজের নং লিখতে হবে।

খাবারের সময়	প্যাকেজ-১	প্যাকেজ-২	প্যাকেজ-৩	উত্তর
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সকালের খাবার তালিকা	রুটি, সবজি	খিচুড়ি, ডিম	ভাত, সবজি, ডাল	
সকাল ও দুপুরের মাঝে কিছু খেয়ে থাকলে তার তালিকা	চা, নাশতা	চা, বিস্কিট	ফলমূল	
দুপুরের খাবার তালিকা	ভাত, সবজি, ডাল, ডিম	ভাত, সবজি, ডাল, মাংস, মাছ	ভাত, সবজি, ডাল	
দুপুরের- রাতের মাঝে খাবার তালিকা	চা, ফলমূল, নাশতা	চা, বিস্কিট, নাশতা, ফলমূল	চা, ফলমূল	
রাতের খাবার তালিকা	ভাত, সবজি, ডাল, ডিম	ভাত, সবজি, ডাল, মাংস, মাছ	ভাত, সবজি, ডাল	
রাতে ঘুমানোর আগে কিছু খেয়ে থাকলে তার খাবার তালিকা	দুধ	বিস্কিট	ফলমূল	

খাদ্য গ্রুপের সারণী (Table of food groups)

উত্তরদাতা গতকাল গ্রহণকৃত সকল খাবার ও পানীয়সমূহ স্মরণ করে বলার পর তথ্য সংগ্রহকারী নিম্নের তালিকায় উপযুক্ত খাদ্য গ্রুপের অধীন সংশ্লিষ্ট খাদ্যগুলির নীচে আন্ডারলাইন করবেন। গ্রহণকৃত কোন খাদ্য যদি এ তালিকায় না থাকে, তাহলে উক্ত খাদ্য গ্রুপের অধীন অন্যান্য কোন খাবার উত্তরদাতা গ্রহণ করেছিলেন কি-না তা জিজ্ঞাসা করতে হবে। নিম্নে প্রদানকৃত তালিকায় সংশ্লিষ্ট খাদ্য গ্রুপের অন্তর্গত যে কোন একটি খাবার যদি উত্তরদাতা গ্রহণ করে থাকে, তাহলে সংশ্লিষ্ট কলামে ডানপাশে 1 লিখতে হবে। তবে কোন খাবার ১৫ গ্রামের কম গ্রহণ করলে তা বিবেচনা করা যাবে না।

#	খাদ্য গ্রুপ	প্রাপ্ত খাবার	হ্যাঁ = ১, না = ০
১	খাদ্যশস্য	ভাত, গম, ভুট্টা, যব, ওটস, গমের রুটি, আটা, ময়দা, পাস্তা, ময়দা থেকে প্রস্তুত নাস্তা, পপ কর্ন, আলু, শালগম, মূলা (লাল ও সাদা)	
২	ডাল	মশুর ডাল, মুগ ডাল, মটর ডাল, লাল মটরশুটি, ছোলা, ছোলার ডাল	
৩	তেল, চর্বি, বাদাম, বীজ	তিলের বীজ, পেস্তাবাদাম, কুমড়ার বীজ, সূর্যমুখী বীজ, আখরোট, চীনাবাদাম, হ্যাজলনাট, কাঠবাদাম, চীনাবাদাম, উদ্ভিজ্জ তেল (সূর্যমুখী, জলপাই), মাখন, ভেড়ার চর্বি, মেয়নিজ, আলুর চিপস, রান্নার তেল (পাম তেল, সয়াবিন তেল, সর্ষে তেল)	
৪	দুধ ও দুগ্ধজাতীয় পণ্য	দুধ, টকদই, মিষ্টি দই, চীজ, ঘি, বাটার, ক্রিম, গুড়া দুধ, কনডেন্সড দুধ, ছাগলের দুধ, পিঠা	
৫	মাছ-মাংস	গরুর মাংস, খাসীর মাংস, ছাগলের মাংস, খরগোশ, মুরগীর মাংস, কবুতরের মাংস, ভেড়ার মাংস, হাঁসের মাংস এবং তাদের দেহের মধ্যকার গুরুত্বপূর্ণ অঙ্গ যেমন-হৃদপিণ্ড, যকৃত, কিডনী, ফুসফুস, টাটকা যে কোন স্থানীয় মাছ, চিঙড়ি মাছ, কাঁকড়া, শুটকী মাছ, বরফের মাছ ইত্যাদি।	
৬	ডিম	কোয়েল, মুরগী, হাঁস, টার্কি, রাজহাঁসের ডিম	
৭	শাক-সবজি	পালং শাক, ধনে পাতা, পুদিনা পাতা, সবুজ পেঁয়াজ, পেঁয়াজ পাতা, লাউ শাক, মূলা শাক, কলমি শাক, কুমড়া শাক	
৮	ভিটামিন এ সমৃদ্ধ ফল	পাকা আম, পাকা কাঁঠাল, পাকা পেঁপে, টমেটো, গাজর	
৯	অন্যান্য সবজি	বাঁধাকপি, ফুলকপি, শসা, টমেটো, পেঁয়াজ, রসুন, বেগুন, বাঁট, সবুজ মটরশুটি, কাঁচা মরিচ, মিষ্টি আলু, চালতা	
১০	অন্যান্য ফল	আপেল, কলা, লেবু, তরমুজ, আঁড়ুর, নাসপাতি, কিসমিস, কমলা, ডুমুর, বরই, ডালিম, জাম, আনারস, জাম্বুরা, পেয়ারা, আমলকি, গাব, নারকেল	
স্কোর MDD-W (sum of the above scores)			

মন্তব্য: কোন ধরনের প্রসেস ফুড যেমন-সিঙ্গারা, পেটিস, পটেটো ক্র্যাকার্স ইত্যাদি খেলে তার নোট আনতে হবে।

প্রকল্প সম্পর্কে কোন পরামর্শ থাকলে বলুনঃ

সাক্ষাৎকার গ্রহণকারীর নাম ও স্বাক্ষর	
মোবাইল নম্বর	
তারিখ	

B. Qualitative instruments

FGD Questionnaire

আমি.....ম্যাট্রিক্স বিজনেস ডেভেলপমেন্ট লিমিটেড হতে এসেছি; আমরা RDRS এর পক্ষে 'Market System development of safe poultry and poultry products' প্রকল্পে কাজ করছি। প্রকল্পটি সঠিকভাবে বাস্তবায়নের জন্য পোল্ট্রি পন্য উৎপাদনে খামারিদের তথ্য জানা দরকার। এই তথ্য গুলো শুধু প্রকল্পের কাজের জন্য ব্যবহৃত হবে এবং অন্য কোন বাণিজ্যিক উদ্দেশ্যে ব্যবহৃত হবে না। আমরা নিশ্চয়তা দিচ্ছি যে, আমরা আপনার দেয়া তথ্য সমূহের গোপনীয়তা রক্ষা করবো। আমরা নিচের প্রশ্নমালা হতে আপনাকে কিছু প্রশ্ন করতে চাচ্ছি। আপনি অনুমতি দিলে আমরা দলগত জরিপ শুরু করতে পারি।

ঠিকানা/Address:

গ্রাম/Village:

উপজেলা/Upazilla:

Questions and guideline

1. আপনি কোন জাতের হাঁস-মুরগী চাষ করেন? // Which type of poultry do you farm?
2. আপনি কি বাণিজ্যিক উদ্দেশ্যে হাঁস-মুরগী লালন-পালন করেন নাকি শুধু পরিবারের চাহিদা মেটানোর জন্য? //Do you farm your poultry commercially or only to meet up the family requirement?
3. হাঁস-মুরগী লালন-পালনের জন্য আপনার কি আলাদা কোন ঘর বা জায়গা/ ব্যবস্থা আছে? থাকলে সেটা কেমন ব্যবস্থা? // Do you have separate shelter for your chicken?
4. হাঁস-মুরগী পালনের জন্য প্রয়োজনীয় ইনপুট (ঔষধ, বাচ্চা, ফিড ইত্যাদি) কোথা থেকে ক্রয় করেন? // From where do you purchase your poultry inputs (medicine, feed & chicks)?
5. ইনপুট কেনাকাটার রশিদ বা রেকর্ড রাখেন? কেনার সময় সেগুলোর গায়ের লেভেল বা নিরাপদ কিনা দেখেন? //Do you keep receipts/records during purchasing the inputs? Do you check for safety certifications or labels when purchasing poultry products?
6. হাঁস-মুরগীর বাচ্চার ফিড কি নিজেই প্রস্তুত করেন নাকি অন্য উৎস থেকে সংগ্রহ করেন (যেমন প্রতিবেশি বা প্রকৃতি থেকে)? // Do you prepare the poultry feed by your own or collect from another source like neighbors or nature?
7. আপনি পোল্ট্রির জন্য কতদিন পর পর পণ্য কিনে থাকেন এবং কোন বিষয়গুলো মাথায় রেখে কেনার সিদ্ধান্ত নেন? //How often do you purchase poultry products and what factors influence your decision to purchase poultry products?
8. হাঁস-মুরগীর স্বাস্থ্য সম্পর্কিত পরামর্শ কার কাছ থেকে গ্রহন করেন? সেই পরামর্শ আপনার কতটুকু উপকারে এসেছে? //Do you take any veterinary service or advice for your poultry chicks? How beneficial were the advices to your problems?
9. আপনার নিজের পোল্ট্রির পণ্যের গুনাগুণ আপনার কাছে কতটা গুরুত্বপূর্ণ? আপনি নিজে কতবার এই পণ্য খেয়ে থাকেন? // How concerned are you about the safety of poultry products you purchase? How frequently do you consume your own poultry products?
10. আপনি পণ্য কার কাছে বিক্রি করেন? // To whom do you sell your poultry products?
11. আপনি যে দামে পণ্য বিক্রি করেন সেই দামে কি আপনি সন্তুষ্ট? //Are you satisfied with the price you sell the products?
12. হাঁস-মুরগী লালন-পালনের উপর কোন প্রশিক্ষণ পেয়েছেন? // Have you received any training on poultry farming?
13. কোন কোন বিষয়গুলোর উপর প্রশিক্ষণ হওয়া প্রয়োজন বলে আপনি মনে করেন? // On which topics do you need training, you think?