



## Final Evaluation under the Sub-project

Transforming Traditional Farming Practice to Safe and Natural Farming Practices of Beef Fattening Enterprises in the Padma Riverine Area



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## 1. Acronyms:

SDS- Shariatpur Development Society

SEP- Sustainable Enterprise Project

PKSF- Palli Karma-Sahayak Foundation

ME- Micro- Enterprise

FGD- Focus Group Discussion

KII- Key Informant Interview

IDI- In Depth Interview

HH- Households

GoB- Government of Bangladesh

DoE- Department of Environment

NGO- Non-Governmental Organization

UP- Union Perished

HES- Health and Environmental Safety

WHO- World Health Organization

IEDCR- Institute of Epidemiology Disease Control and Research

ToC- Table of Contents

WQ- Water Quality

DSPP- Detailed Subproject proposals

ICT- Information and Communications Technology

CLSP- Community Livestock Service Provider

ToR- Terms of Reference

MoU- Memorandum of Understanding

VC- Value Chain



## 2. Executive Summary:

The executive summary is furnished below including key issues of investigation, major findings, and concluding remarks with key policy recommendations-

- The total sample: ME interviewed-309, Control HH interviewed-62, Conducted FGD-11, KII-09, IDI-10 and collected success case story- 04;
- 83% (309) of MEs and 17% (62) of control households participated in the assessment;
- 93% of respondents were female and 7% were male;
- 97% of respondents are engaged in beef fattening, and less than 1% are engaged separately with dairy, poultry, and rickshaw/van/auto driving activities;
- 72% of MEs are male owners and 28% of respondents are female owners of the enterprises among the interviewee;
- 87% respondent received training and 13% didn't receive training;
- 90% of respondents have a tin shed house, 7% of respondents have a brick house and 2% of respondents have a straw with bamboo housing;
- 58% of respondents have brick-made floor, 37% respondents have a concrete floor, 4% have a kacha floor and less than 1% respondents have a tiles floor;
- 38% of respondents have a cannel/concrete drain, 62% of respondents have a kacha drainage system and less than 1% have no sewerage option;
- 65% of respondents use fans to get wind, 33% of respondents have a natural ventilation system and less than 1% have closed ventilation system;
- 45% respondents have a shallow tube well water supply, 54% of respondents have a pipe line water supply with a deep tube well, and less than 1% respondents have a pond/river water supply system;
- 88% of respondents said increased income (BDT.82,000-150,000/year) and 12% said not increased;
- 78% of respondents said that they assess infrastructure and environmental issues and 22% doesn't assess;
- 84% of respondents said that they have adequate resilience to withstand extreme weather and 16% have no resilient capacity;
- 13% practice bathing cattle every day, 17% don't know, 4% ME ensuring feeds, 4% use more drinking water, 70% made window and ensure ventilation, 2% MEs use Mosquito nets, clean shelter and raise the living place;
- 90% of respondents said that they don't use for biogas and 10% MEs use waste for Biogas production;



- 5% MEs use slurry in both of improved and traditional methods, 5% improved method and 90% use as traditional method;
- 83% of respondents have a proper drainage system in cattle shed and 17% have no proper drainage system;
- 74% of respondents said women are working in enterprises less than 50% of total workers and 26% said more than 50% women of total worker involved in enterprise;
- 87% of respondents said that they the health safety equipment in the farm and 13% said, they have no the equipment in the Farm
- 85% of respondents use Gloves, 25% MEs use Safety Glasses, 83% of respondents use Mask 9% ME use Apron an 41% of respondents use Boots;
- 81% of respondents said that they have First Aid Box in farm and 19% said no box available in farm;
- 66% of respondents said that they keep & manage the fire safety equipment in the farm and 34% said they have no fire safety equipment;
- 91% of respondents said that they have safe drinking water, hygienic toilet and safe hand washing facility in the farm and 9% said no facilities over there;
- 90% of respondents said that they Air circulation system with ventilation and sufficient lighting facilities in the farm and 10% said they have no such facilities;
- 80% of respondents said that they energy saving lights in the Farm and 13% said no such light;
- 72% of respondents said that are they using transparent roof sheets, or installation of insulator with roof but 28% don't use such insulators for day light;
- 69% of respondents said that they remove the overhead storage of works from the farm but 31% said they don't remove properly;
- 73% of respondents said that they arranged separate resting places & feeding areas for workers males & females worker respectively but 27% don't do the same arrangement;
- 42% of respondents said that they arranged the renewal energy facilities for the farm but 58% said they don't establish the facility;
- 78% of respondents said that they e.g. making water containing pits, chambers, filtration system, improved drainage system etc. but 22% don't perform the same things;
- 67% of respondents said that they followed safe production process, inputs, packaging, transportation system, quarantine for sick or contaminated products/ animals, and inputs but 33% said they didn't do similar activity;
- 75% of respondents said that they maintain safe production process 62% ensure safe inputs, 54% ensure quarantine for sick animals, 44% arrange safe transportation, 35% followed safe packaging and 5% maintain safe storage of inputs / products.

- 78% of respondents said that they arrange organic inputs but 22% said they didn't do it
- 78% of respondents said that they adopted activities for reducing pollution but 22% said they are doing the similar activity;
- 78% of respondents said that they ensure activities like tree plantation, installed barrier besides generator etc. to reduce noise pollution but 22% don't do the practice;
- 63% of respondents said that the farm has signage, notice board, symbol or posters on awareness to reduce air, water, noise etc. pollution including fire safety management, no smoking, first aid box, safe drinking water, use of PPE etc.;
- 69% of respondents said that the Owner regular checkup health for the workers after joining the project and 31% don't check up health of worker regularly;
- 76% of respondents farm owner taken measures to protect workers against infection from parasites/viruses from livestock after joining the project and 24% don't take action;
- 93% of respondents said that the farm owner made adequate drinking water available for animals at farm after joining the project and 7% don't practice the same arrangement;
- 87% of respondents said that the farm owner made animal feed storage facility for animals at farm after joining the project and 13% don't have the arrangement;
- To adopt climate change impact 79% farm owner Changes in feeding practices, 43% in feeding time and modifying the composition of the diets, 24% made Cattle tolerance to heat stress and diseases;
- satisfaction level of farm owners for receiving loan 93% satisfied, 7% unsatisfied and below 1% very satisfied;
- Low-rate interest loans may continue and may facilitate affordable loan products of other sources for eco-friendly sustainable Beef fattening business growth;
- Beef fattening value chain to crowding in and copping in of market actors for supporting business and employment generation;
- Still required different training like production & sales plan development, Enterprise development and management, Business Communication, business promotion, access to finance and fund management etc.;
- Cooperative Approach may promote better business support, branding, wider market access, linkage, networking, etc
- There is potential scope for further expanding the time period of the project operation which will obviously contribute to improving the livelihood of rural communities at the same time act as a driving force of the local as well as national economy.

### 3. Introduction:

#### **Context:**

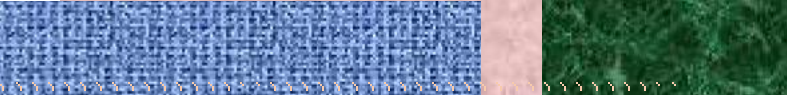
SDS (Shariatpur Development Society) is a non-governmental, non-profitable, and non-political organization established with a view to empowering disadvantaged people and bringing about an overall change in the life of the rural poor, especially women. The establishment of SDS took shape from an initiative of some benevolent people who were united to respond to the humanitarian crisis in the shariatpur district caused by the massive flood devastation in 1988. The aftermath was formally launched on the 1st of September 1991 and was legally established in 1992 under the Social Welfare Department of the Government of Bangladesh. Over the years, SDS reached a milestone of directly serving 4.3 million people in 33 Upazilla of 10 Districts with its blended approach of service delivery and rights-based program. At present SDS is working in the field of Disaster Management, Poverty elevation, Training, Education, Agriculture, Health & Nutrition, Advocacy, Arbitration and Legal Support, Environment, Water and Sanitation (WATSAN), Climate Change Adaptation, HIV/AIDS, Micro Finance, Women & Child Rights.

Sustainable Enterprise Project (SEP) project is jointly financed by Palli Karma-Sahayak Foundation (PKSF) and World Bank. SEP aims to increase the adoption of environmentally sustainable practices by targeted microenterprises. SEP has selected 30 lead districts as the project working area to demonstrate the project impact on different sub-sectors. The project prioritizes a selected number of polluting microenterprise business clusters and supports the expansion of innovative economic activities conducive to a more sustainable environment.

SDS implementing the sub-project activities to ensure improved eco-friendly practices among the targeted MEs through the facilitation and motivation to construct environment-friendly farmhouses. Improved cow-dung management. Support in high-yielding fodder cultivation, awareness building training of the MEs about eco-friendly beef fattening. The project will also work on proper drainage; arranging a disposable site, controlling odor, insects, and mosquito breeding, proper vaccination, availability of veterinary services, purchasing medicine from authentic sources, medical waste management, and ensuring quarantine facilities for newly purchased animals.

#### **Project Background:**

SDS implemented this sub-project in Sreenagar, Sirajdikhan, and Louhajang upazila under the Munshigonj districts of Bangladesh. This 03 years January 2020 to December 2022 sub-project supported to achieve global goals of the main SEP project. The sub-project activities implemented in the business clusters of Beef fattening subsector to improve the overall business and environment of the microenterprises. SDS has taken the initiative to conduct a baseline survey through a consulting firm to understand the present business, economic and environmental status of microenterprises, entrepreneur, and their enterprises under the Beef fattening sub-sector in the sub-project working area as the baseline. A total of 1570 microenterprise will get different technical and financial supports through the sub-project.



Accordingly, SDS has taken initiative to conduct a final evaluation survey through a consult to understand the present business i.e improvement of the business held by MEs, economic and environmental status of microenterprises, entrepreneur, and their enterprises under Beef fattening sub-sector in the sub-project working area as the baseline. A total of 1570 microenterprises got different technical and financial supports through the sub-project. The study team has used possible best efforts to complete the assignment successfully with quality and in a timely manner.

**Funded by:** World Bank (WB)

**Supported by:** Palli Karma-Sahayak Foundation (PKSF)

**Implemented by:** SDS (Shariatpur Development Society)

#### 4. Objectives of the Sub-Project:

The project is implemented to achieve the following objectives-

1. Sustainable and eco-friendly beef fattening.
2. Improve access to premium market.
3. Creation of Mirkadim brand as a local breed.
4. Capacity building of MEs and ensure availability of quality veterinary services.
5. Improve overall environment of the project areas.

In the baseline study it was found that 63% of ME didn't perform regular veterinary check-ups for the animals on the farm and even 80% never isolated the infected animals during the epidemic the outbreak.

#### 5. Rational of the Final Evaluation:

The final evaluation will be conducted with a view to obtaining a snapshot assessment of the current business, economic, environmental, and climatic conditions 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 evaluation will establish the endline situation on a significant number of variables relevant to sales, profit, employment, asset creation, environment, and health and safety situation by the project participants.

#### 6. Specific Objectives of the Endline Study:

The following objectives are included for the endline study

1. Estimate the number of MEs operating in the survey areas, and the types of activities that are performed by these MEs;
2. Evaluate the growth rates of these firms and their potentials, identifying which types had the highest growth and the reasons behind it, to promote the future growth of the sector;

3. Identify the structure of the ME sector, regarding gender, type of ownership, and the employment generated, i.e., how many are owned by women? How many people are employed in each enterprise? Is there any causal relationship across this dimension?
4. Evaluate the contribution of the ME sector to the household income, the importance of this income in the overall household income generation, and its uses;
5. Assess the existing status of relevant adaptive environmentally sustainable indicators like air, soil, water quality (WQ), health and environmental safety (HES), waste management, and climatic problems of the project;
6. Identify the types of assistance that the MEs have received and their sources, as well as their future need for technical, managerial, and financial assistance;
7. Identify the general problems (access to inputs, output and credit markets, etc) and problems related to the common service facilities in the business clusters including existing socio-economic and environmental conditions faced by the ME sector (government regulations, tax burdens, certification, marketing and relevant problems related).
8. To provide benchmark information for measuring project achievements and impact (at the project impact, outcomes, and outputs levels based on the project proposal, result framework, and/or theory of change);
9. To identify benchmarks and indicators that can be used as a point of reference for monitoring and evaluation of the project.

## 7. Evaluation Question:

### A. Key Assessment Questions:

#### **Effectiveness**

- Is the project being implemented/was implemented as planned, and if not, why? Did the project cause a particular change in the target groups' lives? How significant was this change and how did it happen?
- What component(s) and element(s) of the project caused those changes to happen?
- What works/worked and what doesn't/didn't? What changes can be introduced for improvement? What were the particular features of the project that made a difference?
- What lessons are/were learned from the adopted approach and what recommendations are/were made?

#### **Efficiency**

- How cost-effective is/was the project or program?
- Can/Could the same results be/have been achieved with fewer resources?
- How the management and governance arrangement of the project contributed to facilitate the project implementation?

#### **Relevance**

- To what extent did the project address the needs and constraints of the target groups?
- Has the project targeting fulfilled selection criteria?
- Has the project planning included a useful monitoring and evaluation framework?

## **Sustainability**

- How is/has the project working/worked with community to increase their capacity in a sustainable way?

## **Impact**

- Did the project produce or contribute to the intended outcomes in the short, medium, and long term? For whom, in what ways, and in what circumstances?
- To what extent can changes be influenced the factors to the project for impactful achievement significantly?

## **Gender and non-discrimination**

- To what extent is/has the project integrating/integrated gender issues into the design, implementation, results, and monitoring and evaluation framework?

**Note: Please See Annex- 1** for following questionnaires

- ME/ Individual HH interview
- Focus Group Discussion
- Key informant Interview

## **8. Methodology:**

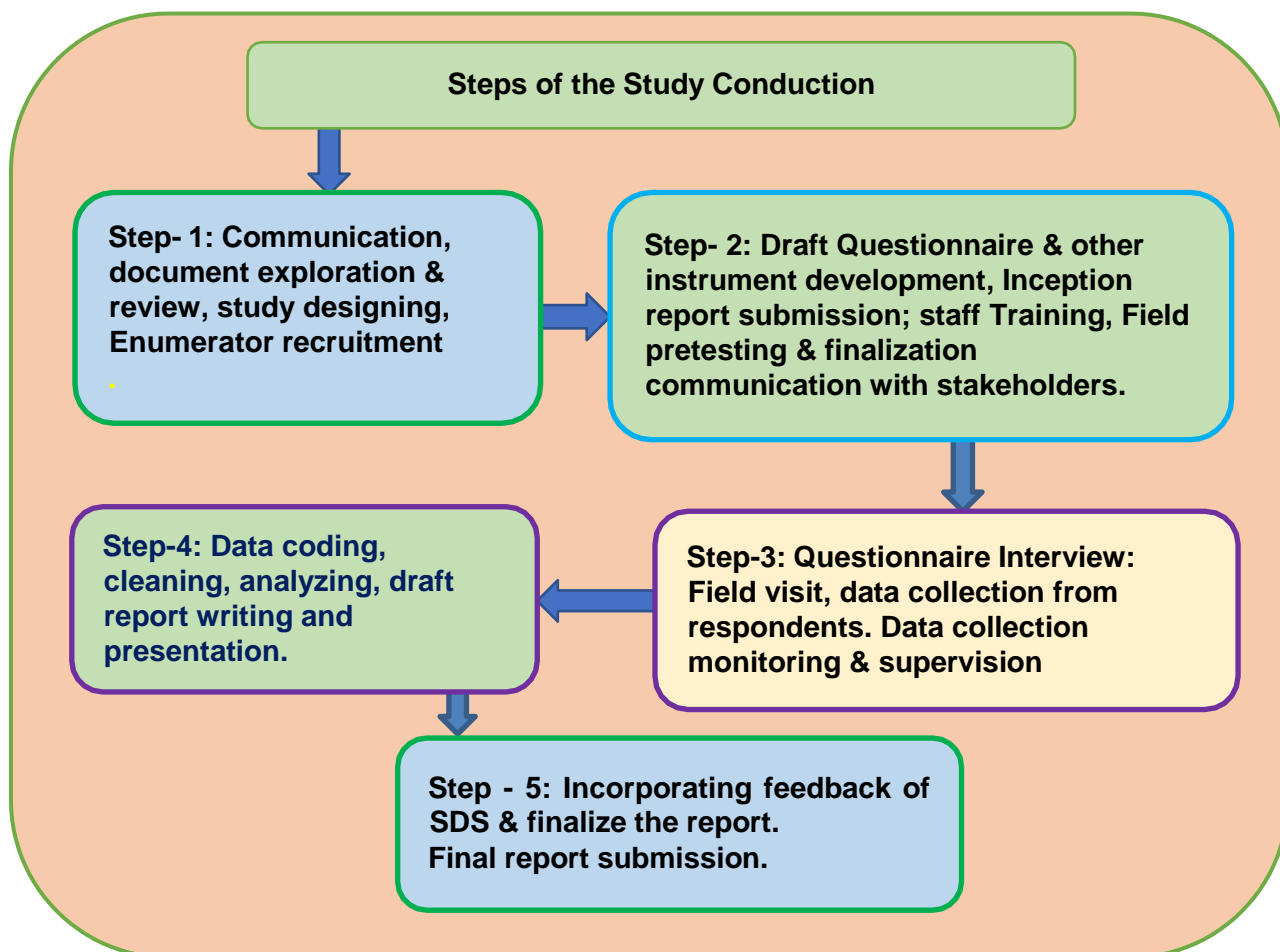
The team will develop appropriate methodology for a mixed method (qualitative & quantitative) and semi-structured questionnaires to meet the objectives of the assignment. In the methodology, the team included a statistically reliable and acceptable sampling method and its estimation for the study method. The study team will conduct Focus Group Discussions (FGD) in targeted communities, Interviews with key stakeholders, and In-depth Interviews (IDI) including the use of secondary data sources for triangulation in data collection. The methodology and relevant instruments/ tools will be adjusted in consultation with SDS and PKSf and finalized before implementation. The following methodology and research tools will be employed for the research study:

- literature compilation and desk review;
- Individual Household/ ME interviews with the targeted stakeholders;
- key Informant Interviews (KII) with key stakeholders of the project;
- In-depth Interview (IDI) with the best performers of the project and
- Case stories including best practice



### Study Design:

The whole study was performed under the following five steps sequentially to make the study in organized manner, fruitful, and have authentic information-



### Project Location:

SDS (Shariatpur Development Society) implementing this sub-project in 25 Unions Bejgaon, Gaodia, Teotia, Haludia, Boultoili, Singpara, Khidirpara Kanaksar, Kumarbhug, Medini Mandal, Sreenagar, Patavog, Atpara, Sholghor, Kola, Birtara, Kukutia, Tantor, Bhagyakul, Rarikhal, Shyamshidhi, Rashunia, Latabdi, Bashail, and Isapura under Sirajdikhan, Sreenagar and Lauhajang upazila of Munshiganj district. respectively under Sirajdikhan, Srinagar and Lauhajang upazila of Munshiganj district. The sub-project will support to achievement global goals of the project. A total of **1570 Microenterprises** (ME) have gotten different technical and financial supports through the sub-project for improving the enterprises and having increment of income as well as employment generation for family members including other peoples.





Figure 1: Location Map

### Duration of the Project:

This is a 03 year's duration of the project with the period from January 2020 to June 2023.

### Sample Size Determination

The sample size calculation for the population/HHs survey is presented below:

$$no = \frac{Z^2 \cdot p \cdot (1-p)}{e^2}$$

Where:

- e is the desired level of precision (i.e. the margin of error);
- p is the (estimated) proportion of the population which has the attribute in question.

We aimed for 95% confidence, and at least 5% —plus or minus—precision. A 95 % confidence level gives us Z values of 1.96, per the normal tables,

So, we get

$$no = \frac{Z^2 \cdot p \cdot (1-p)}{e^2}$$

$$no = \frac{(1.96)^2 (0.5) (1 - 0.5)}{(0.05)^2}$$

$$no = 384.16$$

So, the sample size determination using the finite population correction factor in below;

$$S = \frac{no \cdot N}{no + (N+1)}$$

$$S = \frac{384.16 \cdot 1570}{384.16 + (1570+1)}$$

$$S = \frac{603,131.2}{1,955.16}$$

$$S = 308.48$$

$$S = 309$$

So, the sample size is **309** Microenterprise members/ HH participants of the project

The total interview sample size for the assessment

- Microenterprise member/ HHS- 309;
- Control group- 62 (data collection from outside of the project location);
- In-depth Interview (IDI)- 10;
- Key informant Interview (KII)- 14;
- Focus group Discussion (FGD)- 11;
- Case Stories- 4.

A total of **309 MEs/ HH** interviewed covering baseline participants, and **62 control** participants of the visited from the outside of the project target area. **11 FGD** conducted at each union level where ME's community people including males, female separately participated. At the same time, **10 IDIs** with experienced ME's, **14 KIIs** with relevant stakeholders (Upazila livestock officer, Upazila Agriculture Officer, UP chairman, up women members, community leaders, market committee, association, representative of DoE, private sector and related other NGO and GoB. etc.) and **4 case stories** of the successful MEs.

So, the assessment findings are figured out to understand the project-initiated activities' performance and progress considering the indicators. The evaluation findings shown the actual scenarios in the areas to get variances with the control group those are not received support from the project. So, it can help to identify an opportunity for the community to enhance the project providing a mechanism for establishing business opportunities and income generation at the community level. Thus, the findings drive for the way forward to improve the stakeholders' further needs.

The Study team have a consultation with SDS for sample distribution for the working area based on target MEs. The baseline interviewee/MEs are also covered for direct participants and for the control same location of the baseline survey visited for the interview.

### **Sampling Strategy:**

A systematic random sampling approach was used to select the respondents of study areas. First of all, select the unions of the project area and from the total no. of MEs the samples are selected, The MTE team collected data from individual Households (ME), KII with Govt. Department, DAE, Market actor (Feed seller, Medicine seller, Hat committee, LSP, broker, end user, UP chairman/ Women UP member etc.), in-depth interview with progressive ME, FGD with some community peoples.

The number of participants in a study needs to be adequate, in order to be able to determine any important differences (outcome measures) between the study groups. For this purpose, provided all information needed to validate the calculations for sample size, and also to judge the feasibility of enrolling and following the necessary numbers of participants.

Sample design and sample size are important issues to be decided in terms of geographical areas and specific objectives of the study. The research team sit together repeatedly to analyze the

Scenario virtually to come to a precise decision on sample design and sample size. Regarding sample size, the research team consulted with representatives of SDS to define the number. Therefore, concentration is given to collect the necessary and relevant qualitative and quantitative primary information and data from the targeted samples.

The representative samples are drawn based on an appropriate sampling procedure. In designing the sample size, due consideration has also been given to the objectives of the study, scope of work, entities to be covered, duration of the study, etc., and timeframe and resource elimination for the study.

The following sampling strategy was considered for the study to accumulate the objectives of the study

- Consider the union/community under those the project implemented for direct beneficiary/ individual ME selection for interview;
- The target beneficiaries who were directly involved in Beef Fattening activities were given priority for individual interviews;
- For individual data collection, the sample size will be calculated as the total sample divided by no. of the sample size to determine the sample interval
- Based on sample interval the interviewee will be drawn from the ME list (Excel sheet);
- Consider the nearby union/ community for 62 control interviewees who were selected during the baseline survey;
- The control participant will be selected considering the same socio-economic status, the same type of intervention carried on but didn't get any project support;
- 10 advanced ME selected to conduct an in-depth interview and interact to get the ins & outs of gaining outstanding results;
- 14 KII selected to conduct interviews including the representative of Upazila Agriculture Office & Livestock office, UP chairman, UP women members, LSPs, input sellers, market actors, market committee, NGO, Association, etc.;
- 11 FGD conducted (1 in each union) including advanced ME, community leaders, LSP, teacher, male & female separately considered;
- 4 case stories documented with the information of successful MEs of this project.

### Sample Distribution:

Upazila wise sample distribution is given below-

Upazila	No. of Data	Control	No. of FGD	No. of KII	No. of IDI	Case study
Sirajdikhan	72	15	4	2	3	1
Louhajong	132	31	3	3	3	2
Shreenagar	105	16	4	4	4	1
<b>Total</b>	<b>309</b>	<b>62</b>	<b>11</b>	<b>9</b>	<b>10</b>	<b>4</b>

## 9. Methods of data collection:

Before starting field-level data collection, the Final Evaluation team organized a day-long orientation session to go into depth of each question to the recruited enumerators. A hand on training is provided to the enumerators by the research team members with distinct and proper guidelines and instructions. During the orientation session, provide instructions to enumerators on how to do a communicative interview and reach the expected point of the answer from the respondents. The given orientation enhanced confidence among the enumerators and picking up the real information based on questionnaires and guidelines. At first, The Research personnel of the team briefly introduced the project activities, objectives of the study, methodology, sample size, project implementation strategy, etc. It also explained in detail the deployment of the study team including the field coordinator, supervisors, and the role and duties of the field enumerators/data collectors who play vital roles in the field. After this, the experts analyze each of the questions which definitely helped the enumerators to understand the questions and conduct a question-answer session. And there was a practice session on the questionnaire and formed one team of two members where one played the role of enumerator and the other person respondent. The facilitator observed the role play and being confident instructed for the field test and checked the practical understanding of the enumerators.

The following methods are used for Data Collection

- **Questionnaire Interview:** Among the data collection techniques that are taken; direct interview is one of those methods. One-to-one individual interviews with the ME is one of the major techniques for collecting primary information for this study and it was conducted by the experienced & trained enumerators on the same track through a semi-structured questionnaire. Both open and close-ended questions were incorporated into the questionnaire.
- **Focus Group Discussions (FGDs):** This study was conducted for selected unions and the study team conducted FGDs from each of the selected communities. The targeted FGDs were conducted with community leaders, ME, UP members, teachers, etc. A pre-designed and approved FGD guideline was followed and used for this purpose.
- **Key Informants Interview (KIIs):** In order to get more candid and sensitive information, KIIs were conducted with individuals having extensive experiences on respective issues and who are providing the services. The study team included KII Govt. Department, DAE, Market actor (Feed seller, Medicine seller, Hat committee, LSP, broker, end user, UP chairman/ Women UP member etc.)
- **In-depth Interview:** To make much more validation of findings the MTE team also collected information through in-depth interviews with different levels of performers (ME)

e.g., high, medium & low to understand a bit of detail of impact, outcome, challenges, learnings, etc.

- **Successful Case Story:** The Data collection team talked with successful MEs to gather detail information of being so successful for the enterprises to prepare the success story

### **Data processing:**

All the collected data will be uploaded in KOBO tools for clean data, and preparation of transcript. Data punching in Microsoft Excel and analysis of data using widely recognized statistical software like SPSS or Advanced level Excel analysis.

### **Quality Control of Data:**

The study recruited qualified and experienced data collectors and provide orientation to confirm the highest understanding level. Appropriate follow-up mechanisms put in place to ensure that the data is collected, verified, and submitted according to the approved schedule. After data collection, all filled questionnaires and field notes of Key Informant Interviews (KIIs) and in-depth study is registered through the ICT platform. The collected data is exported and processed for analysis on the computers under the careful supervision of the Data Management Expert. Ensured quality of data at all levels through the following measures:

- ➔ Organized training as well as an orientation session for data collectors on principles and methods of data collection including the best possible quality data collection and measures to minimize non-sampling errors according to guidelines.
- ➔ Spot-checked the field works of Data Collectors and recall if needed and checked that all filled questionnaires (100%) by the respective experts.
- ➔ In-built mechanisms in the checklist/ schedules to cross-check the consistency of the responses.
- ➔ Organized close supervision of the work of the data collectors.
- ➔ Randomly checked on the work of the data collectors.
- ➔ Edition of filled questionnaires every evening to find out the omissions, non-responses, and irrelevant answers.
- ➔ Taken into consideration the feedback by supervisors, monitoring & follow-up as well as Project Manager (PM) and made solutions to bottlenecks, as and when arise.

## 10. Limitations of the Study:

- Few MEs shifted enterprise location which created difficulties to find the selected ME to interview
- Found the change of ownership of a few Enterprise (e.g. handed over to brother/ close relatives)
- The earlier line department personnel transferred that happened very little gap in information
- The scattered location of selected MEs made it time-consuming for data collection
- Mucha Cyclone hampers data collection and a little bit of change happened in sample size against the planned one.

## 11. Results and Discussions:

### a) Relevance:

The project initiated a need assessment to identify the specific needs, challenges, and constraints faced by the target groups and select the actual individuals involved with project interventions, and the project aimed to respond promptly to the identified needs and constraints of the target groups. Based on needs, the project designed the activities implementation plan along with MEAL approaches to know the progress and insightful impacts. The FGD and KII participants reported that the project helped to engage the relevant stakeholders for the MEs' who will be benefited from the project. Therefore, participants mentioned that the project was initiated to support the MEs by overcoming the challenges through accessing financial, technical, management, and market linkage support. Over 95% of the participants said that it is supported to alleviate their poverty and increased dignity in society as well as the community.

### b) Effectiveness:

Participants in the Focus Group Discussions (FGDs) reported multiple benefits from the project and its timely and effective implementation. They received technical training, gained access to financial services like micro-loans and grants, established market linkages, and obtained technological support. The project also emphasized networking and collaboration, enhancing management and financial literacy skills. So, 100% of participants mentioned that it was effective for them to receive loan support from the financial institutes. However, it's important to note that project effectiveness varies, necessitating rigorous monitoring and evaluation. The project assessed indicators such as business growth, income generation, employment creation, market expansion, and sustainability to measure the impact of services provided to microenterprises.



### **c) Efficiency:**

Focus Group Discussions (FGDs) & Key Informant Interviews (KII) reported that the project activities were implanted in an efficient way to improve the socio-economic condition of the MEs. The project provided training on business development, livelihood issues, financial management, and technical support. All FGDs participants shared that their income level increased through applied knowledge gathered from the project and service providers those were linked through project interventions. MEs utilized their minimum resources in well managed and gained profit by following the project and government provided guidance and advice. Like, prepared plan, linked with financial institute, received amount timely, prepared the shelter for cattle with proper facilities, maintained health, hygiene and safety issues through efficient manner.

### **d) Sustainability:**

Through Focus Group Discussions (FGDs) & Key Informant Interview (KII) focused the sustainability of the ME's. the participants reported that the around 90% of ME's extended their business through proper planning (off season & main season), utilized resources perfectly, linked up development with relevant stakeholders, maintained financial transaction, supplied quality cattle, timely vaccinated and maintained health & safety issues. So, that criteria is developed trust among the producers and buyers to continue their business for a long time.

### **e) Impact:**

According to the FGDs & KIIs, over 90% of participants reported that the project helped them to increase their income, expand business, changed livelihood pattern and enhanced their importance in the society. So, the MEs are contributing to their family members for buying foods, improving educational status, supporting health issues and provided financial support to the friends and relatives. They also created job opportunities for the community people those are working with the MEs to support and assist the cattle business.

## **12. Lessons Learned:**

- Expanded business growth of Micro and Small enterprises due to separate business plan development;
- Adoption of project activity increased Beef fattening intervention in the project area within a natural environment;
- Promotion of model housing built awareness among MEs regarding environmental issues and reduced hazards of waste;
- Awareness of MEs for timely deworming and vaccination reduced cattle diseases and risks of Beef fattening in the project area;



- Role of the “Environment Club” changed MEs’ mind-set towards skill development and better management of cattle to make enabling environment & more profit;
- Project-supported online-cattle selling website to open new business windows for ME that increased pre-sales booking, and business promotion in wider space;
- Initial Crowding in copping in of market actors for Beef fattening value chain generated diversified income sources of community people;
- Support of GoB department and private sector actors made enabling environment for project operation and new opportunities;
- Practical training is the best way of developing skills for illiterate or less educated rural people e.g. UMS preparation, model housing etc.;
- Linkage meetings with the private sector can play a vital role in online & physical cattle selling and input collection;
- Community Livestock Service Providers and Local Service Centres are essential for instant support to MEs as well as business growth;
- MEs’ participation in the relevant fairs enhances business promotion;
- Improved technology adoption by MEs bought greater impact on the project activity and drive for eco-friendly sustainable beef fattening business;
- Low-interest rate loan support created access to finance for the poor community and make them enable for business capital.

### 13. Innovations:

- Establishment of Mirkadim Cattle Breeding Farm at entrepreneur level to expand the breed
- Waste management in improved methods to reduce the environmental effect
- Establishment of Model housing for cattle as a means of safe Beef fattening
- MEs are used for safe & antibiotic free Beef fattening business
- MEs became habituated to Farm mechanization
- MEs adopted Silage production for meeting feed crises during the off-season
- MEs found a new channel of cattle marketing through Online Marketing for live cattle

## 14. Key findings, Analysis of summary tables and graphs:

### ME's Demographic Information:

**Status of respondents:** The chart shows that 83% (309) of MEs and 17% (62) of control households participated in the assessment of final evaluation.

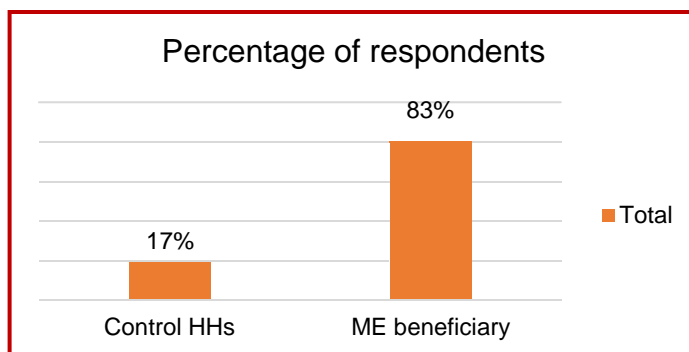


Figure 2: Status of respondent

**Respondent Sex Ratio:** The figure shows that 93% of respondents were female (ME's 81% & control HHs 12%) and 7% were male respondents (ME's 2% & control HHs 5%) who participated in the assessment

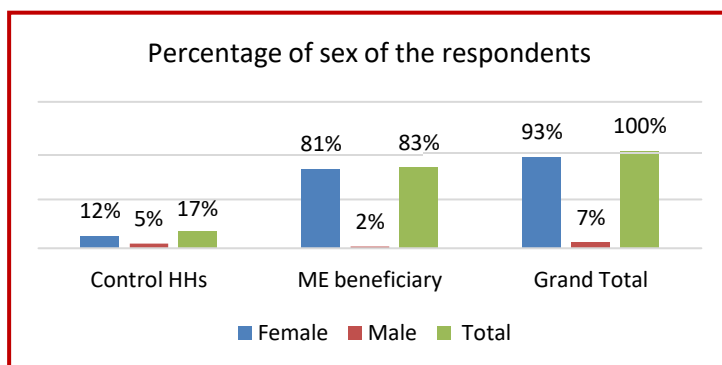


Figure 3: Respondent Sex ratio

**Educational Status:** The figure shows that around 38% of respondents completed pre-primary education, over 37% completed primary, around 12% illiterate, around 9% JSC, around 4% SSC and less than 1% of respondents completed HSC

Education level	Control HHs	ME Beneficiary
HSC	0%	0%
Illiterate/No Education	3%	8%
JSC	1%	7%
Pre-primary	4%	34%
Primary	7%	30%
SSC	1%	3%
<b>Total</b>	<b>17%</b>	<b>83%</b>

Table-1: Educational Status

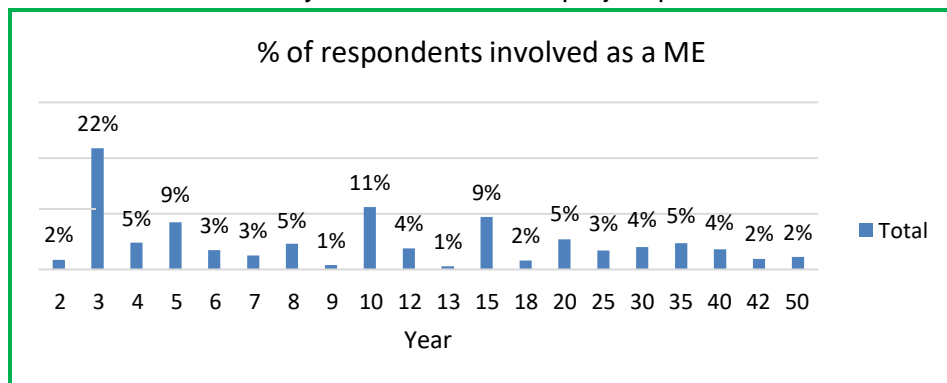
**Occupation of the respondents:** The figure shows that more than 97% of respondents are engaged in beef fattening, and less than 1% are engaged separately with dairy, poultry, and rickshaw/van/auto driver activities.

Occupation	Respondents
Beef fattening	97.84%
dairy	0.81%
poultry	0.81%
Rickshaw/van/auto driver	0.54%
<b>Grand Total</b>	<b>100%</b>

**Table-2: Occupation of respondent**

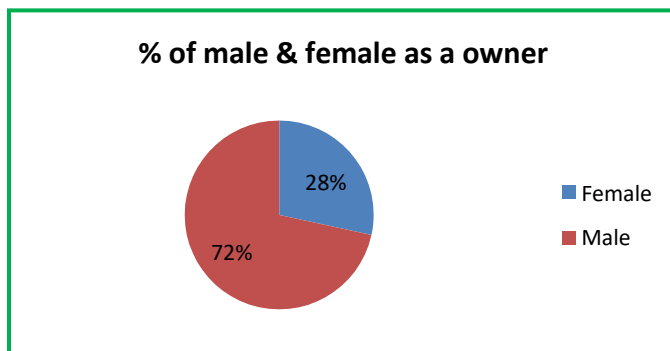
**Basic information of ME:**

**Respondents Involved Duration (Year) with ME Activity:** The above figure shows that a maximum 22% of respondents are involved 3 years i.e. under the project period as a ME and the minimum 1% were involved 9 years and the rest of the respondents were involved as a ME with many different years.



**Figure 4: Involvement duration with ME activity**

**Ownership of MEs:** The figure shows that 72% of MEs are male owners and 28% of respondents are female owners of the enterprises.



**Figure 5: Ownership of ME**

### Personnel involved with ME:

The figure shows that 51% of respondents said that number of 2 personnel involved to help them, 36% said that 3 persons, 7% said that 4 persons, 2% said that 5 persons and 4% said that 1 person involved with them

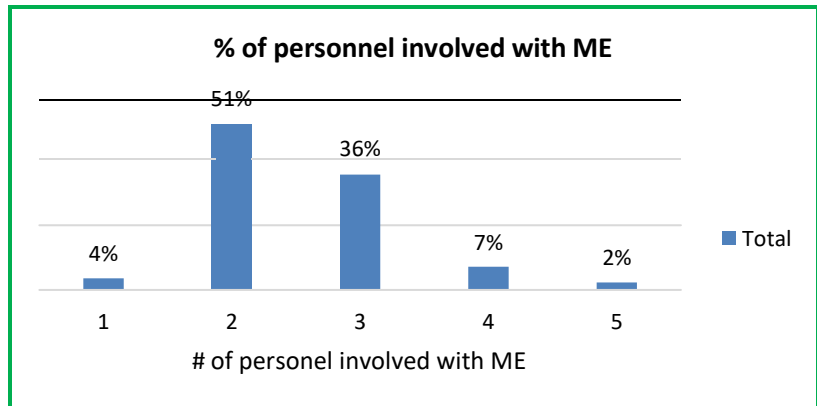


Figure 6: Personnel involvement with ME

### Training status of ME:

The figure shows that 87% (83% ME's & 4% control) respondent received training and 13% said (12% control HHs & 1% ME's) they didn't receive

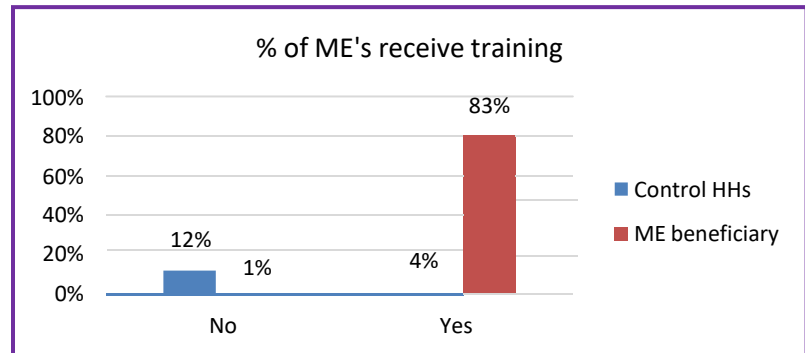


Figure 7: Training status of ME

### Existing Infrastructure Type:

**Housing Pattern:** The figure shows that 90% of respondents have a tin shed house (MEs 76% & control 14%), 7% of respondents have a brick house (MEs 6% & control 2%) and 2% of respondents have a straw with bamboo housing

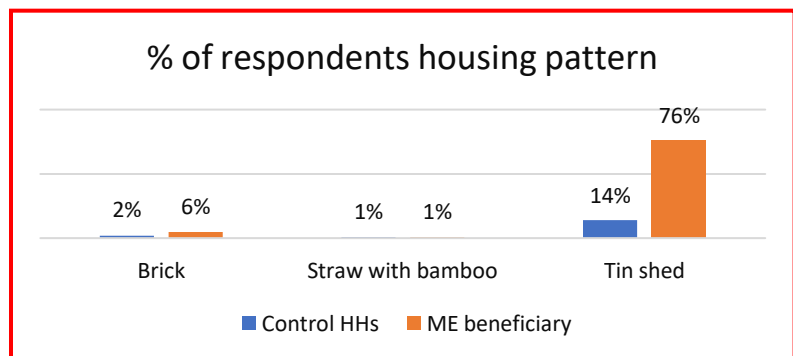
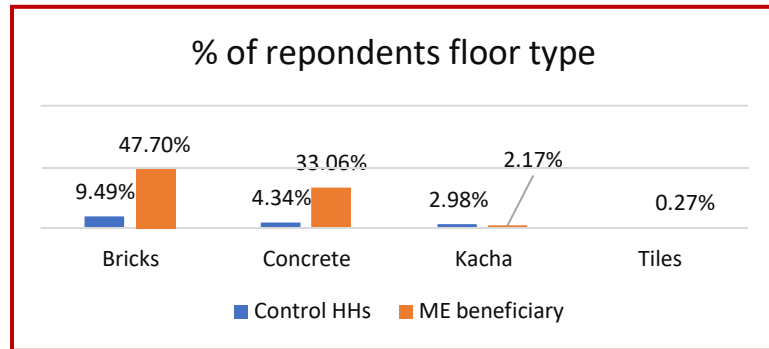


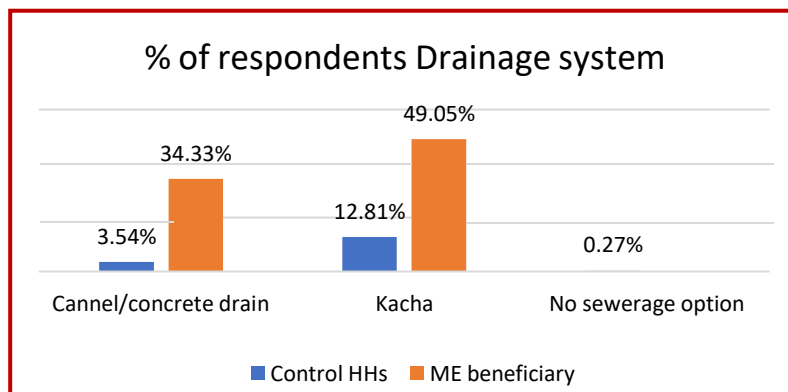
Figure 8: Housing Pattern

**Floor Type:** The figure shows that 57% of respondents have brick-type floor (ME's 48% & control 9%), 3 of 7% respondents have a concrete floor (ME's 33% & control 4%), 4% have a kacha floor and less than 1% respondents have a tiles floor



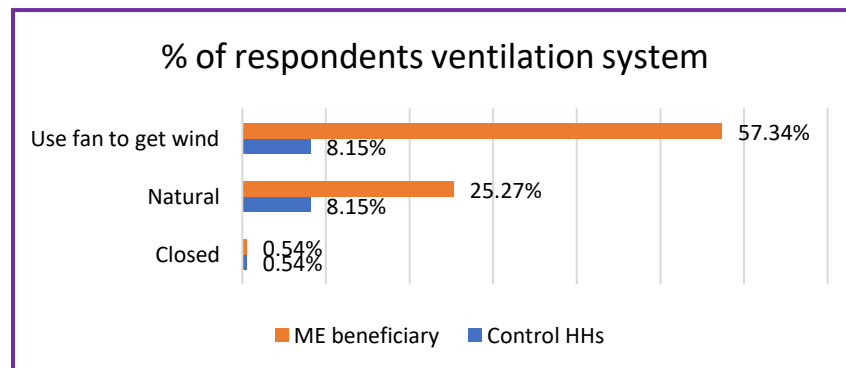
**Figure 9: Floor type**

**Drainage System:** The figure shows that over 38% of respondents have a cannel/concrete drain (MEs 34% & control 4%), 62% of respondents have a kacha drainage system (MEs 49% & control 13%) and less than 1% have no sewerage option.



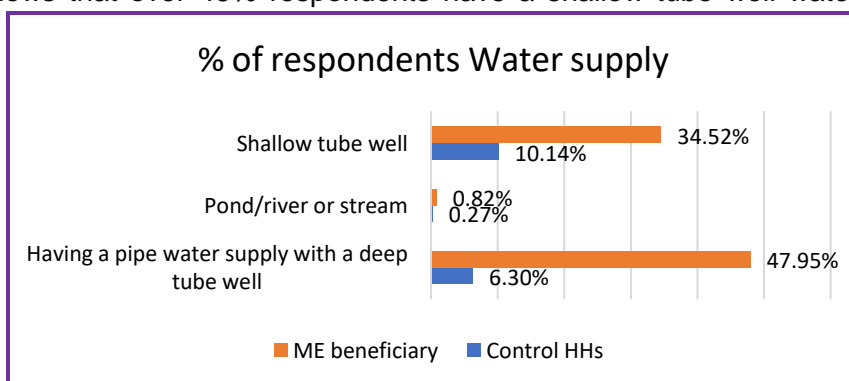
**Figure 10: Drainage System**

**Ventilation:** The figure shows that over 65% of respondents use fans to get wind (MEs 57% & control 8%), 33% of respondents have a natural ventilation system (MEs 25% & control 8%) and less than 1% have closed ventilation system



**Figure 11: Ventilation**

**Water Supply:** The figure shows that over 45% respondents have a shallow tube well water supply (MEs 35% & control 10%), 54% of respondents have a pipe line water supply with a deep tube well (MEs 48% & control 6%) and less than 2% respondents have a pond/river water supply system.



**Figure 12:** Water Supply

**MEs Profit Analysis:** The following table indicated that 88% (Control-8% and ME- 80%) of respondents said that their income level increased and 12% (Control-9 and ME- 3%) said no. The below table states the respondents' answers about the income increase. So, before being involved with the project their average income increased by around BDT 82000.00, and after being involved, their income average income increased by more than BDT 150000.00. Therefore, they used their income/money to buy food, the expense for education & health, savings, purchased land, and other families.

Responses	Control HHs	ME beneficiary	Total
No	9%	3%	12%
Yes	8%	80%	88%

**Table-3:** MEs Profit analysis

**Assess infrastructure and environmental issues:** The following table indicated that 78% (Control-5% and ME-73 %) of respondents said that they assess infrastructure and environmental issues after joining the project and 22% (Control-11% and ME-11%) said no, they didn't do it.

Respondent response	Control HHs	ME beneficiary	Total
No	11%	11%	22%
Yes	5%	73%	78%

**Table-4:** Assessment of Infrastructure and environmental issues

**What Kind of extreme weather are prominent:** The following table indicated the comments of the respondents regarding What Kind of extreme weather is prominent after joining the project. 8% (Control-2% and ME-6 %) of respondents said they don't know about it, 88% (Control-14% and ME-74%) of

Respondents' response	Control HHs	ME beneficiary	Total
Don't know	2%	6%	8%
High temperature	14%	74%	88%
Less rainfall	1%	1%	2%
river erosion		1%	1%
Unknown disease		1%	1%

**Table-5:** Extreme weather are prominent

respondents said high temperature, 2% (Control-1% and ME-1%) of respondents said low temperature and 1% ME talked about the unknown disease.

**ME have adequate resilience to withstand extreme weather events:** The following table indicated that 84% (Control-13% and ME-71%) of respondents said that they have adequate resilience to withstand extreme weather events after joining the project and 16% (Control-4% and ME-12%) said no, they don't have the capability.

Respondents' response	Control HHs	ME beneficiary	Total
No	4%	12%	16%
Yes	13%	71%	84%

**Table-6:** Resilient to extreme weather

**Respondent's options for resilient the MEs practicing:** The following table indicated options for resilient are practicing by MEs. 13% (Control-3% and ME-10%) practice bathing every day, 17% (Control-2% and ME-4%) of respondents don't know, 4% ME ensuring feeds, 4% (Control-1% and ME-3%) use more drinking water, 70% (Control-10% and ME-60%) made window and ensure ventilation, 2% MEs use Mosquito nets, clean shelter and raise the living place.

Respondents' response	Control HHs	ME beneficiary	Total
Bathing everyday	3%	10%	13%
Don't know	2%	4%	7%
Ensure feed	0%	4%	4%
Ensure to reserve water & drink more water	1%	3%	4%
Make windows and provide ventilation	10%	60%	70%
Use Mosquito nets, clean shelter and raise the living place		2%	2%

**Table-7:** Practicing options for resilient

**Animal waste used for bio-gas plant:** The following table indicated that 90% (Control-17% and ME-73 %) of respondents said that they don't use waste for biogas and 10% MEs use Biogas after joining the project.

Respondents' response	Control HHs	ME beneficiary	Total
No	17%	73%	90%
Yes	0%	10%	10%

**Table-8:** Waste use for Biogas



**How was bio-gas slurry managed:** The following table indicated the management process of biogas slurry. 5% MEs use both of improved and traditional methods, 5% improved method and 90% (Control-3% and ME-87%) use as traditional method after joining the project.

Responses	Control HHs	ME beneficiary	Total
Both (improved & Traditional)		5%	5%
Improved/scientific method		5%	5%
Traditional	3%	87%	89%

**Table-9:** Slurry managed methods

**Status of animal shed floor slanted/or have a proper drainage system:** The following table indicated that 83% (Control-7% and ME-76 %) of respondents said that have a proper drainage system in cattle shed and 17% (Control-10% and ME-7%) said no, they didn't have proper drainage system in shed after joining the project.

Responses	Control HHs	ME beneficiary	Total
No	10%	7%	17%
Yes	7%	76%	83%

**Table-10:** Proper drainage system

**Status of MEs accidents in the last 3 years or after being involved with the project:** The following table indicated the status of accidents in the last 3 years or after being involved with the project. 55% (Control-12% and ME-43 %) of respondents said that they had never fall in an accident and 45% (Control-5% and ME-40%) recognizes about accident after joining the project.

Responses	Control HHs	ME beneficiary	Total
No	12%	43%	55%
Yes	5%	40%	45%

**Table-11:** Accident in last 3 years

**More than 50% of women work in the MEs:** The following table indicated the status of women working in enterprises. 74% (Control-13% and ME-62%) of respondents said that women are working in enterprises but not more than 50% of total workers and 26% (Control-4% and ME-21%) said yes more than 50% women of total worker are working in the Enterprises after joining the project and said no, they didn't do it.

Responses	Control HHs	ME beneficiary	Total
No	13%	62%	74%
Yes	4%	21%	26%

**Table-12:** More than 50% Women Work in Enterprise

**ME involved any child labour:** The following table showing the status of child labour involvement in Enterprises. It was found 95% (Control- 175% and ME-78 %) of respondents said that there is no child labour involvement in Enterprises and 5% ME recognize child labour involvement in Enterprise after joining the project.

Responses	Control HHs	ME beneficiary	Total
No	17%	78%	95%
Yes	0%	5%	5%

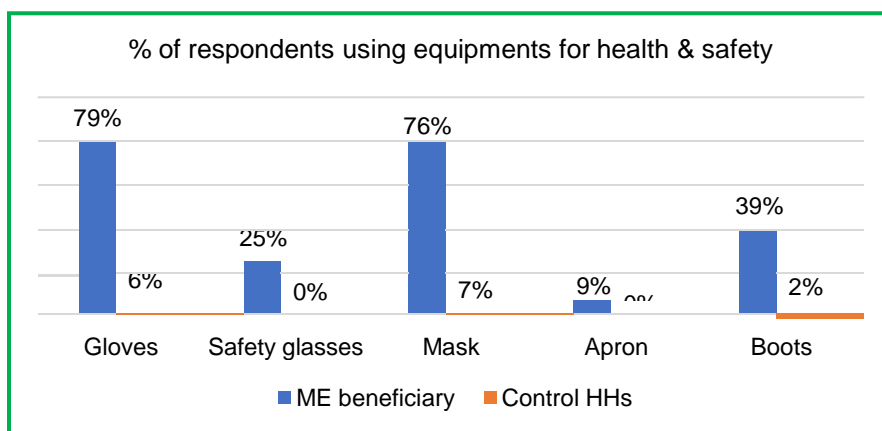
**Table-13:** Child labour involvement in enterprises

**Status of health and safety equipment in the Farm (gloves, safety glasses, mask, apron, boots) for use:** The following table indicated the status of health and safety equipment in the Farm e.g gloves, safety glasses, mask, apron, boots for use. It was found that 87% (Control-7% and ME-80%) of respondents said that they the health and safety equipment in the farm and 13% (Control-10% and ME-3%) said no they have no the equipment in the Farm after joining the project.

Responses	Control HHs	ME beneficiary	Total
No	10%	3%	13%
Yes	7%	80%	87%

**Table-14:** Status of equipment

**Types of equipment used in Farm for health & safety:** The following Graph indicated the status of different equipment for health and safety in farm. It was found 85% (Control-7% and ME-76%) of respondents use Gloves, 25% MEs use Safety Glasses, 83% (Control-6% and ME-79 %) of respondents use Mask 9% ME use Apron an 41% (Control-6% and ME-79 %) of respondents use Boots after starting.



**Figure 13:** Types of Equipment used in farm

**Status of First Aid box available in Farm:** The following table indicated the availability the First Aid Box in the Farm. It was found that 81% (Control-7% and ME-74 %) of respondents said that they have First Aid Box in farm and 19% (Control-10% and ME-9%) said no box available after starting the project.

Responses	Control HHs	ME beneficiary	Total
No	10%	9%	19%
Yes	7%	74%	81%

**Table-15:** First Aid box available in the Farm

**Status of firm about fire safety management equipment's (sand, water etc.):** The following table indicated the Status of firm about fire safety management equipment of the farm. It was identified 66% (Control-7% and ME-59 %) of respondents said that they keep & manage the fire safety equipment in the farm and 34% (Control-10% and ME-24%) said no, they don't do it.

Responses	Control HHs	ME beneficiary	Total
No	10%	24%	34%
Yes	7%	59%	66%

**Table-16: Fire safety management**

**Status of the Farm have safe drinking water, hygienic toilet and safe hand washing facility:** The following table indicated the Status of farm have safe drinking water, hygienic toilet and safe hand washing facility of the farm. It was found that 91% (Control-10% and ME-81%) of respondents said that they have the mentioned facilities in the farm and 9% (Control-7% and ME-2%) said no, they didn't have those facilities in the farm after starting the project.

Responses	Control HHs	ME beneficiary	Total
No	7%	2%	9%
Yes	10%	81%	91%

**Table-17: WASH Facilities**

**Status of farm has Air circulation system sufficient lighting:** The following table indicated the Status of farm have Air circulation system with ventilation and sufficient lighting at work place. It was found that 90% (Control-10% and ME-80%) of respondents said that they have the facilities in the farm and 10% (Control-7% and ME-3%) said no, they didn't have the facilities in the farm after joining the project.

Responses	Control HHs	ME beneficiary	Total
No	7%	3%	10%
Yes	10%	80%	90%

**Table-18: Aeration & Lighting system**

**Status of farm use of energy savings light:** The following table indicated the Status of farm use energy savings light in the farm. It was found that 80% (Control-10% and ME-77%) of respondents said that they energy saving lights in the Farm and 13% (Control-7% and ME-6%) said no, they didn't have the facilities after joining the project.

Responses	Control HHs	ME beneficiary	Total
No	7%	6%	13%
Yes	10%	77%	80%

**Table-19: Energy light use**

**Status of farm use of daylight by using transparent roof sheets, or installation of insulator with roof:** The following table indicated the Status of farm use of daylight by using transparent roof sheets, or installation of insulator with roof. It was found that 72% (Control-5% and ME-67%) of respondents said

Responses	Control HHs	ME beneficiary	Total
No	12%	17%	28%
Yes	5%	67%	72%

**Table-20: Day light/ Insulator facilities**

that they have the mentioned facilities but 28% (Control-12% and ME-17%) said no, they didn't do it in the farm after joining the project.

**Status of farm removed overhead storage of the works:** The following table indicated the Status of farm removed overhead storage of the works. It was identified that 69% (Control-7% and ME-62 %) of respondents said that they remove the overhead storage of works from the farm but 31% (Control-10% and ME-21%) said no, they didn't do it after joining the project.

Responses	Control HHs	ME beneficiary	Total
No	10%	21%	31%
Yes	7%	62%	68%

**Table-21:** Removing overhead storage

**Status of the farm has arranged separate resting places/ feeding areas for workers:** The following table indicated the Status of the farm has arranged separate resting places & feeding areas for workers males & females worker respectively. It was observed that 73% (Control-7% and ME-66%) of respondents said that they arranged the facilities for the worker of the farm but 27% (Control-10% and ME-17%) said no, they didn't do it after joining the project.

Responses	Control HHs	ME beneficiary	Total
No	10%	17%	27%
Yes	7%	66%	73%

**Table-22:** Resting / feeding place

**Status of farm use solar panels for renewable energy use:** The following table indicated the Status of farm use solar panels for renewable energy use in the farm. It was observed that 42% (Control-3% and ME-39 %) of respondents said that they arranged the renewal energy facilities for the farm but 58% (Control-14% and ME-44%) said no, they didn't do it after joining the project.

Responses	Control HHs	ME beneficiary	Total
No	14%	44%	58%
Yes	3%	39%	42%

**Table-23:** Renewal Energy use

**Status of farm reduced water pollution by different activities:** The following table indicated the Status of farm reduced water pollution by different activities e.g. making water containing pits, chambers, filtration system, improved drainage system etc.). It was observed that 78% (Control-6% and ME-72%) of respondents said that they assess infrastructure and environmental issues after joining the project and 22% (Control-11% and ME-11%) said no, they didn't do it.

Responses	Control HHs	ME beneficiary	Total
No	11%	11%	22%
Yes	6%	72%	78%

**Table-24:** Reduce water pollution

**Status of farm followed safe production process, inputs, packaging etc.:** The following table indicated the Status of farm followed safe production process, inputs, packaging in farm. It was found that 67% (Control-5% and ME-63 %) of respondents said that they followed safe production process, inputs, packaging, transportation system, quarantine for sick or contaminated products/ animals, and introduce safe storage for finished goods or inputs but 33% (Control-13% and ME-20%) said no, they didn't do it after joining the project.

Responses	Control HHs	ME beneficiary	Total
No	12%	20%	33%
Yes	5%	63%	67%

**Table-25:** Safe production, packaging etc.

**What type of safe arrangement was followed:** The following table indicated the safe arrangement was followed in the farm. It was observed that 75% (Control-10% and ME-65%) of respondents said that they maintain safe production process, 62% (Control-6% and ME-56%) of respondents said that they ensure safe inputs, 54% (Control-7% and ME-47%) of respondents said that they ensure quarantine for sick animals, 44% (Control-6% and ME-38%) of respondents said that they arrange safe transportation, 35% (Control-5% and ME-30%) of respondents said that they followed safe packaging and 5% (Control-1% and ME-4%) of respondents said that they maintain safe storage of inputs / products.

Responses	Control HHs	ME beneficiary	Total
safe production process	10%	65%	75%
safe inputs	6%	56%	62%
quarantine for ill or contaminated products/ animals	7%	47%	54%
safe transportation system	6%	38%	44%
safe packaging	5%	30%	35%
introduce safe storage for finished goods or inputs (fish or animal feeds)	1%	4%	5%

**Table-26:** Type of safe & safety arrangement

**Status of farm use of organic inputs (fertilizer/dye) for safe production:** The following table indicated the Status of farm use of organic inputs (fertilizer/dye) for safe production. It was found that 78% (Control-6% and ME-72%) of respondents said that they arrange organic inputs but 22% (Control-12% and ME-10%) said no, they didn't do it after starting the project.

Responses	Control HHs	ME beneficiary	Total
No	12%	10%	22%
Yes	6%	72%	78%

**Table-27:** Use of organic inputs

**Status of farm adopted activities to reduce air pollution/ odor:** The following table indicated the Status of farm adopted activities (installed pits etc.) those reduce air pollution/ odor. It was observed that 78% (Control-6% and ME-71 %) of respondents said that they adopted mentioned activities for reducing pollution but 22% (Control-10% and ME-12%) said no, they didn't do it after joining the project.

Responses	Control HHs	ME beneficiary	Total
No	10%	12%	22%
Yes	6%	71%	78%

**Table-28:** Activities for reducing air pollution



**Status of farm have activities to reduce noise pollution:** The following table indicated Status of farm have activities like tree plantation, installed barrier besides generator etc. that will reduce noise pollution. It was found that 78% (Control-5% and ME-73 %) of respondents said that they ensure mentioned activities to reduce noise pollution but 22% (Control-11% and ME-11%) said no, they didn't do it after joining the project.

Responses	Control HHs	ME beneficiary	Total
No	11%	11%	22%
Yes	5%	73%	78%

**Table-29:** Reduce noise pollution

**Status of farm have signage, notice board, symbol or posters on awareness:** The following table indicated that 63% (Control-2% and ME-61%) of respondents said that the farm has signage, notice board, symbol or posters on awareness (Reduce air pollution, noise pollution, water pollution, fire safety management, no smoking, first aid box, safe drinking water, reduction of water pollution, use of PPE etc.) after joining the project and 37% (Control-15% and ME-22%) said no, they didn't do it.

Responses	Control HHs	ME beneficiary	Total
No	15%	22%	37%
Yes	2%	61%	63%

**Table-30:** Use of Signage/ symbol

### Assessment of workplace safety, health and hygiene

**Status of workers exposed to natural hazards:** The following table indicated that 62% (Control-3% and ME-59 %) of respondents said that the workers exposed to natural hazards such as snake bites, insects or other plants or chemicals that is sensitive to the skin after joining the project and 38% (Control-13% and ME-25%) didn't expose any hazards.

Responses	Control HHs	ME beneficiary	Total
No	13%	25%	38%
Yes	3%	59%	62%

**Table-31:** Worker exposed to hazards

**Status of floor kept clean to prevent workers and cattle from slipping:** The following table indicated that 77% (Control-7% and ME-70 %) of respondents said that the floor kept clean to prevent workers and cattle from slipping after joining the project and 23% (Control-9% and ME-14%) didn't keep clean.

Responses	Control HHs	ME beneficiary	Total
No	9%	14%	23%
Yes	7%	70%	77%

**Table-32:** Floor clean to avoid slipping

**Status of regular health checkup for the workers:** The following table indicated that 69% (Control-6% and ME-63 %) of respondents said that the Owner regular checkup health for the workers after joining the project and 31% (Control-11% and ME-20%) don't check up health.

Responses	Control HHs	ME beneficiary	Total
No	11%	20%	31%
Yes	6%	63%	69%

**Table-33:** Worker's health check-up

**Status of available sanitary latrine for workers:** The following table indicated that 68% (Control-7% and ME-61%) of respondents said that the available sanitary latrine for workers after joining the project and 32% (Control-10% and ME-22%) said have no latrine.

Responses	Control HHs	ME beneficiary	Total
No	10%	22%	32%
Yes	7%	61%	68%
<b>Table-34: Sanitary toilet for worker</b>			

**Status of measures taken to protect workers:** The following table indicated that 76% (Control-6% and ME-70 %) of respondents said that the farm owner taken measures to protect workers against infection from parasites/viruses from livestock after joining the project and 24% (Control-11% and ME-13%) doesn't take care for protection.

Responses	Control HHs	ME beneficiary	Total
No	11%	13%	24%
Yes	6%	70%	76%
<b>Table-35: Protection for worker</b>			

**Status of animals kept free of fleas and other parasites:** The following table indicated that 91% (Control-10% and ME-81%) of respondents said that the farm owner animals kept free of fleas and other parasites after joining the project and % (Control-6% and ME-3%) said no, they didn't do it.

Responses	Control HHs	ME beneficiary	Total
No	6%	3%	9%
Yes	10%	81%	91%
<b>Table-36: Animal free from fleas</b>			

**Status of regular veterinary check-up:** The following table indicated that 89% (Control-10% and ME-79 %) of respondents said that the farm owner regular veterinary check-up does for the animals in the farm after joining the project and 11% (Control-7% and ME-4%) said no, they didn't do it.

Responses	Control HHs	ME beneficiary	Total
No	7%	4%	11%
Yes	10%	79%	89%
<b>Table-37: Regular veterinary check up</b>			

**Status of the outbreak of the epidemic, Did they isolate the infected animals:** The following table indicated that 86% (Control-8% and ME-78 %) of respondents said that the farm owner isolate the infected animals during the outbreak of epidemic, in the farm after joining the project and 14% (Control-9% and ME-5%) said no, they didn't do it.

Responses	Control HHs	ME beneficiary	Total
No	9%	5%	14%
Yes	8%	78%	86%
<b>Table-38: Infected animal isolation</b>			



## Environmental risks, exposure to occupational hazards and storage assessment

**Status of any shelters provided to the animals at farm:** The following table indicated that 84% (Control-9% and ME-75%) of respondents said that the farm owner provided any shelters to the animals at farm after joining the project but 16% (Control-8% and ME-8%) said no, they didn't do it.

Row Labels	Control HHs	ME beneficiary	Total
No	8%	8%	16%
Yes	9%	75%	84%

**Table-39: animal shelter at farm**

**Status of adequate drinking water available for animals:** The following table indicated that 93% (Control-11% and ME-82 %) of respondents said that the farm owner made adequate drinking water available for animals at farm after joining the project and 7% (Control-5% and ME-2%) said, they didn't do it.

Responses	Control HHs	ME beneficiary	Total
No	5%	2%	7%
Yes	11%	82%	93%

**Table-40: Available safe drinking water**

**Status of the farm have a water storage facility:** The following table indicated that 88% (Control-8% and ME-80 %) of respondents said that the farm owner made water storage facility for animals at farm after joining the project and 12% (Control-9% and ME-3%) said they have no such facilities.

Responses	Control HHs	ME beneficiary	Total
No	9%	3%	12%
Yes	8%	80%	88%

**Table-41: Water storage facilities**

**Status of any animal feed storage facility:** The following table indicated that 87% (Control-9% and ME-79%) of respondents said that the farm owner made animal feed storage facility for animals at farm after joining the project and 13% (Control-8% and ME-5%) said they have no such facilities

Responses	Control HHs	ME beneficiary	Total
No	8%	5%	13%
Yes	9%	79%	87%

**Table-42: Feed storage facilities**

**Status of the measure taken to prevent exposure to feed ingredients:** The following table indicated that 79% (Control-7% and ME-72 %) of respondents said that the farm owner taken measures to prevent exposure to feed ingredients which can affect worker health at farm after joining the project and 21% (Control-10% and ME-11%) said no, they didn't do it.

Responses	Control HHs	ME beneficiary	Total
No	10%	11%	21%
Yes	7%	72%	79%

**Table-43: Prevent exposer to feed ingradient**

## Climate change

**Status of understand about climate change:** The following table indicated that 95% (Control-14% and ME-81%) of respondents said that the farm owner understands about climate change after joining the project and 5% (Control-3% and ME-2%) said they no understanding about it.

Responses	Control HHs	ME beneficiary	Total
No	3%	2%	5%
Yes	14%	81%	95%

**Table-44: Understanding about CC**

**Status of climate change impact ME's business requirements or needs:** The following table indicated that 75% (Control-9% and ME-66 %) of respondents said that climate change impact ME's business requirements or needs after joining the project and 25% (Control-7% and ME-18%) said no, they didn't do it.

Responses	Control HHs	ME beneficiary	Total
No	7%	18%	25%
Yes	9%	66%	75%

**Table-45: CC impact on business**

**Status of last 5 years, have MEs noticed any changes:** The following table indicated that 82% (Control-10% and ME-72 %) of respondents said that in last 5 years MEs noticed different changes after joining the project and 18% (Control-7% and ME-11%) said, they couldn't understand it.

Responses	Control HHs	ME beneficiary	Total
No	7%	11%	18%
Yes	10%	72%	82%

**Table-46: Notice to any changes**

**Status of distribution of rainfall in the year:** The following table indicated the Period of different rainfall around the year i.e. the respondent said about less rain 84% (Control11% and ME-72%), more rain 1% ME and no change 15% (Control-5% and ME-10 %).

Responses	Control HHs	ME beneficiary	Total
Less rain	11%	72%	84%
More rain	0%	1%	1%
No change	5%	10%	15%

**Table-47: Rainfall distribution**

**Status of Period of high temperature:** The following table indicated the Period of different temperatures i.e. the respondent said about high temperature 85% (Control-12% and ME-73 %), less temperature 2% (Control-1% and ME-1 %) and no change 13% (Control-4% and ME-9 %)

Responses	Control HHs	ME beneficiary	Total
High temperature	12%	73%	85%
Less temperature	1%	1%	2%
No change	4%	9%	13%

**Table-48: High temperature**

**Status of More frequent drought:** The following table indicated that 85% (Control-12% and ME-73%) of respondents said that the more frequent drought after joining the project and 15% (Control-5% and ME-10%) said no, there is no more frequent drought.

Responses	Control HHs	ME beneficiary	Total
No	5%	10%	15%
Yes	12%	73%	85%

**Table-49:** More frequent drought

**Status of More frequent flood:** The following table indicated that 31% (Control-5% and ME-26%) of respondents said that they found more frequent flood after joining the project and 69% (Control-12% and ME-57%) said there is no more frequent flood found.

Responses	Control HHs	ME beneficiary	Total
No	12%	57%	69%
Yes	5%	26%	31%

**Table-50:** More frequent flood

**Status of Delay in the start of the rainy season:** The following table indicated that 86% (Control-11% and ME-75 %) of respondents said that they found the delay in the start of the rainy season after joining the project and 14% (Control-6% and ME-8%) said don't understand it.

Responses	Control HHs	ME beneficiary	Total
No	6%	8%	14%
Yes	11%	75%	86%

**Table-51:** Delay rainy season

**Status of Rainy season finishes earlier:** The following table indicated that 81% (Control-10% and ME-71 %) of respondents said that they found the Rainy season finishes earlier after joining the project and 19% (Control-7% and ME-11%) said the rainy season doesn't finish earlier.

Responses	Control HHs	ME beneficiary	Total
No	7%	11%	19%
Yes	10%	71%	81%

**Table-52:**

**Status of assessment of the amount of rainfall this year:** The following table indicated that the MEs can assess the degree rainfall occurrence. The 50% (Control-9% and ME-41%) respondents told about average rainfall, 1% Control don't know about it, 1% ME said that just above the average, 19% (Control-1% and ME-17%) told just below the average and 29% (Control-4% and ME-25 %) of respondents said that much below the average.

Responses	Control HHs	ME beneficiary	Total
Average	9%	41%	50%
Do not know	1%		1%
Just above the average		1%	1%
Just below the average	2%	17%	19%
Much below average	4%	25%	29%

**Table-53:** Assessment of rainfall for this year

**Status of MEs experienced in major risk to the business sector:** The following table indicated that the MEs are experiencing major risk to the business sector due to result of climate change and extreme weather events.

72% told about Changes in fodder and grass production, 57% told the reduced availability and possible increased price of animal feed, 40% told about Changes in animal health due to the presence of parasites

Responses on the issues	Percentages
Changes in fodder and grass production	72%
The reduced availability and possible increased price of animal feed	57%
Changes in animal health due to presence of parasites and infectious diseases, mastitis	40%
The emergence of heat stress for animals	39%
Government policies to reduce greenhouse gas (GH)G emissions from agriculture	16%
Less communication between MEs and environmental development forum regarding climate	12%
<b>Table-54: Major risk to Business sector</b>	

and infectious diseases, mastitis, 30% told about the emergence of heat stress for animals, 16% told about Government policies to reduce greenhouse gas (GH)G emissions from agriculture, and 12% told about Less communication between MEs and environmental development forum regarding climate.

**Status of Adaptation of cattle farming strategy due to climate change:** The following table indicated that the MEs adapted cattle farming due to result of climate change. 79% made Changes in feeding practices, 43% made Changes in feeding time and/or frequency, 41% made

Changes in Modifying the composition of the diets, 24% made Changes in Cattle increase their tolerance to heat stress and diseases,

Responses on the issues	Percentages
Changing the feeding practices	79%
Changing feeding time and/or frequency	43%
Modifying the diets composition	41%
Cattle increase their tolerance to heat stress and diseases	24%
<b>Table-55: Adaptation to Climate Change</b>	

## Assessment of sanitation, waste generation and disposal

**Status of the animals kept clean:** The following table indicated that 97% (Control-14% and ME-82%) of respondents said that they kept clean animal joining the project and 3% (Control-2% and ME-1%) said they don't kept clean regularly.

Responses	Control HHs	ME beneficiary	Total
No	2%	1%	3%
Yes	14%	82%	97%

**Table-56: Keeping clean animal**

**Status of MEs regularly clean the shelters/sheds:** The following table indicated that 93% (Control11% and ME-82 %) of respondents said that they regularly clean the shelter/ shed after joining the project and 7% (Control-5% and ME-2%) said no, they don't clean the same regularly.

Responses	Control HHs	ME beneficiary	Total
No	5%	2%	7%
Yes	11%	82%	93%

**Table-57: Clean shelter regularly**

**Status of shelters/ sheds have a proper drainage system:** The following table indicated that 92% (Control-12% and ME-80 %) of respondents said that the farm shelters/ sheds have a proper drainage system after joining the project and 8% (Control-6% and ME-2%) said no, there is no proper drainage system.

Responses	Control HHs	ME beneficiary	Total
No	6%	2%	8%
Yes	12%	80%	92%

**Table-58: Proper drainage system**

**Status of allocated disposal site:** The following table indicated that 83% (Control-7% and ME-75 %) of respondents said that the farm owner allocated a disposal site after joining the project and 17% (Control-10% and ME-7%) said no, there is no disposal site.

Responses	Control HHs	ME beneficiary	Total
No	10%	8%	17%
Yes	7%	75%	83%

**Table-59: Disposal site allocation**

**Status of awareness of practices to control odor, insects, and mosquitoes:** The following table indicated that 86% (Control-6% and ME-80 %) of respondents said that the farm owner are aware of practices to control odor, insects and mosquito breeding scope around the shelters/sheds after joining the project and 14% (Control-11% and ME-3%) said no, they are not aware about it.

Responses	Control HHs	ME beneficiary	Total
No	11%	3%	14%
Yes	6%	80%	86%

**Table-60: Control odor, mosquitoes**

**Status of waste management done onsite:** The following table indicated the Status of waste management done onsite of the farm. It was observed that 83% (Control-7% and ME-76 %) of respondents said that the farm owner used to waste management onsite but 17% (Control-10% and ME-7%) said no, they are not managing waste onsite after joining the project.

Responses	Control HHs	ME beneficiary	Total
No	10%	7%	17%
Yes	7%	76%	83%

**Table-61: waste management onsite**

**Status of ME preparing compost from slurry:** The following table indicated the Status of Status of ME prepare compost from the slurry of the farm. It was observed that 40% (Control-1% and ME-39%) of respondents said that the farm owner prepare compost from the slurry of farm but 60% (Control-16% and ME-44%) said no, they are not prepare compost from slurry after joining the project.

Responses	Control HHs	ME beneficiary	Total
No	16%	44%	60%
Yes	1%	39%	40%

**Table-62: Compost preparation from slurry**

**Revenue generating**

**Service center assessment**

**Update on livestock service cum information center nearby:** The table shows that 86% cattle farm owners have updated about the services of the nearby Livestock service centre and 14% farm owners are not update about the service centre.

Response	Control HHs	ME beneficiary	Total
No	4%	10%	14%
Yes	13%	74%	86%

**Table-63: Update on Livestock service centre**



**Status of satisfaction rate (before) level of received services from the nearest service center:** The table shows the satisfaction level of farm owners for receiving loan 93% satisfied, 7% unsatisfied and below 1% very satisfied. That means the service centre is a good initiative for local cattle farm owners as they are getting prompt services from here.

Responses	Control HHs	ME beneficiary	Total
Satisfied	13%	80%	93%
Unsatisfied	4%	3%	7%
very satisfied	0%	1%	1%

**Table-64** Satisfaction of service centre

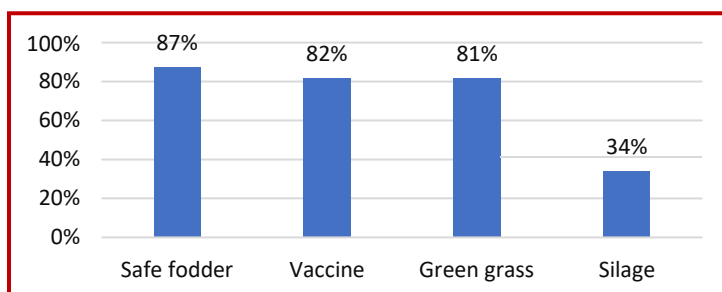
### Fodder processing

**Status of any fodder processing facilities available at the farm:** The table shows that 85% of cattle farm owners have available fodder processing facilities due to project facilitation but still 15% respondent have no available facilities.

Responses	Control HHs	ME beneficiary	Total
No	7%	8%	15%
Yes	10%	76%	85%

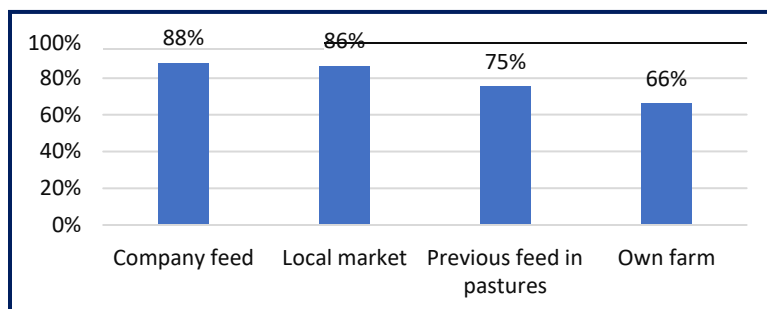
**Table-65:** Fodder processing facility

**Status of the safe input used for cattle:** 87% of respondents used safe fodder, 82% used vaccine, 81% used green grass, and 34% used silage for cattle farming.



**Figure 14:** Safe inputs

**Source of feed:** The figure indicated that 88% of respondents collected company feed, 86% collected feed from local market, 75% collected feed from previous feed in pastures and 66% from own farm.



**Figure 15:** Feed source

## Community livestock service provider (CLSP)

**The CLSP available in this area:** The table shows that 93% said yes and service providers are offered vaccine, medicine and relevant treatment to the ME and 7% said no because, distance factor, not available doctor and bought the services from private sector. Like, private veterinary doctor, pharmacy etc.

Responses	Control HHs	ME beneficiary	Total
No	5%	2%	7%
Yes	11%	81%	93%

**Table-66:** Feed source of cattle farm owner

**Status of face any challenges to obtain services from CLSP:** The above figure shows that 29% of ME's are facing problems to obtain the service. Due to high rate of service/visit charges, not available the service provider when required etc.

Responses	Control HHs	ME beneficiary	Total
No	12%	59%	71%
Yes	5%	24%	29%

**Table-67:** Challenges of CLSP

**Status of satisfaction rate on CLSP offered services:** 92% of respondents are satisfied with service of CLSP, only 7% are not satisfied. So CLSP are offering quality services. Visit charge for CLSP minimum BDT. 50.00, maximum BDT. 3000.00 and average BDT. 600.00 per visit.

Responses	Control HHs	ME beneficiary	Total
Satisfied	12%	80%	92%
Unsatisfied	5%	2%	7%
very satisfied	0.00%	0.27%	0.27%

**Table-68:** Satisfaction of CLSP services

### Fodder and compost production:

**Status of fodder production:** The table indicated that 76% of respondent produce fodder and 24% doesn't produce fodder. The cattle farm owner collect feed from char & bought company feed, and they haven't enough space to produce fodder.

Responses	Control HHs	ME beneficiary	Total
No	9%	15%	24%
Yes	8%	68%	76%

**Table-69:** Fodder production

**Purpose of this fodder production:** The table indicated that 99% respondent said that they produce fodder for own farm consumption and only 1% talked about commercial purpose they produce

Purpose	Control HHs	ME beneficiary	Total
Commercial purpose	0%	1%	1%
Own consumption only	10%	89%	99%

**Table-70:** purpose of fodder production

**Status of produce vermin-compost by MEs:** The table shows 19% of respondents producing vermin compost but 81% of respondent are not producing the compost. So there is a big scope to motivate the cattle farm owner to produce vermin compost to develop income source as well as make the environment enable for human and crops.

Responses	Control HHs	ME beneficiary	Total
No	16%	65%	81%
Yes	1%	18%	19%

**Table-71: ME involve in vermin compost production**

**Learning source of vermin compost production:** The figure indicated that 76% of respondent received training form SDS and other 24% learn from other and started by own initiative.

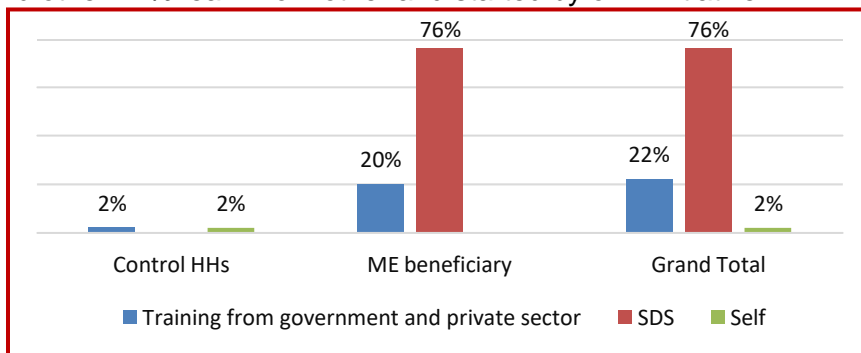


Figure 16: Vermin compost training source

**Non-revenue generating activities:**

**Eco Labelling and Access to Premium Markets**

**Satisfaction rate in terms of getting fair price of the sold Cattle:** The table indicated that 97% are satisfied, 2% unsatisfied and 1% very satisfied for getting fair price by selling their cattle though Feed price is high, long distance & low price of the products.

Responses	Control HHs	ME beneficiary	Total
Satisfied	15%	82%	97%
Unsatisfied	2%	0%	2%
very satisfied	0%	1%	1%

**Table-72: satisfaction on fair price**

**Use e-platform to sell fattened beef:** 27% of respondents said they are able to sell their cattle through e-platform. For this purpose 79% said support from SDS, 20% can use Facebook page directly, but 73% can't do that.

Responses	Control HHs	ME beneficiary	Total	Supported by	ME got support
No	17%	56%	73%	Committee	1%
Yes	0%	27%	27%	Facebook page/ online market	20%
				SDS support	79%

**Table-73: Access to e-platform**

**Access to finance:**

**Status to receive any loan:** 85% of respondents said they have access to loan but 15% said they have no easy access to loan

Responses	Control HHs	ME beneficiary	Total
No	14%	2%	15%
Yes	3%	82%	85%

**Table-74:** Status of loan receive

**Purposes to receive the loan:** The highest percentage of the loan amount is used for purchasing cattle for beef fattening and feeding purposes. Another portion of the loan is used for the treatment of cattle, land lease, shelter, transport etc.

Purposes of loan	Percentages
Buying cattle for beef fattening	69%
Buying inputs for beef fattening	62%
Cattle treatment	26%
Land buying/lease	6%
Other (to buy auto, build cattle shelter, daughter marriage purpose)	2%

**Table-75:** Purpose of Loan

**Satisfaction on loan amount:** The table shows 94% of respondents are satisfied with loan amount but due to high interest they can use poor amount for buying cattle.

Responses	Control HHs	ME beneficiary	Total
Satisfied	6%	88%	94%
Unsatisfied	4.0%	2%	6.0%
very satisfied	0.0%	0.3%	0.3%

**Table-76:** Satisfaction on loan amount

**Frequency of getting loan (Satisfaction from their Service):** The table shows 92% of respondents are satisfied for getting loan services but 8% are unsatisfied. Due to more repayment, required every year loan etc.

Responses	Control HHs	ME beneficiary	Total
Satisfied	7%	85%	92%
Unsatisfied	3%	5%	8%

**Table-77:** Satisfaction of Loan receive frequency

## Market access in relation to cattle selling

**Mode of transport to go to the market:** The above figure shows that 89% of ME's are used auto rickshaw, 76% used on foot, 37% used rickshaw, 8% used van, 4% used cycle, 2% used by bus and 1% used other mode of transport to go to the market.

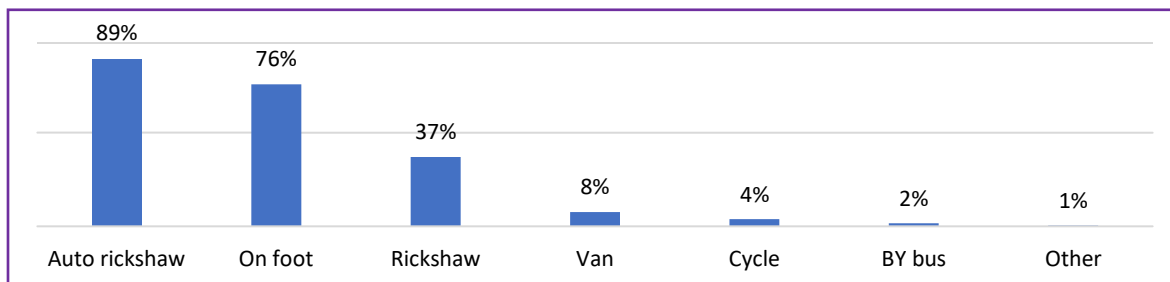


Figure17: Mode of transport to market

**Women feel convenient to go to market alone:** The above figure shows that women's are faced problems when she go to the market alone. Around 33% said lack of security and more than 28% said eve teasing. So, the participants/respondents said that required to increase the security system, ensure low & orders timely, awareness raising session among the community, ensure the available transportation for women and install women friendly toilet in the market areas.

Responses	Control HHs	ME beneficiary	Total	Problems for Women	Percentage
Does not go to the market	2%	7%	9%	Lack of security	32.5%
No	7%	28%	35%	Eve teasing	28.3%
Yes	8%	49%	57%	Others	0.3%

**Table-78:**

**Buyers of the cattle:** The following table showing the 7 categories of buyers came to buy the cattle from the MEs, i.e. they are meeting with diversified buyers and checking market price and earning good profit.

Type of buyers	Percentages
Wholesaler(s) in the same area	80%
Retail shop(s) in the same area	48%
Neighbors	37%
Traders from other regions	34%
Sale agencies	22%
Other (CNG, motor driver)	9%
Own shop	2%

**Table-79: Buyer of Cattle**

**Satisfaction with the project activities:** The below table indicating the 26% respondent are highly satisfied and 63% are satisfied i.e. the project activates demonstrated a significant contribution to MEs' livelihood.

Responses	Control HHs	ME beneficiary	Total
highly satisfied	1%	25%	26%
little satisfied	0.27%	0.27%	1%
not satisfied	4.92%	0.00%	5%
satisfied	10%	54%	63%
somewhat satisfied	1%	4%	5%

**Table-80: Satisfaction of Project Activity**

**Continuing the adopted ESP options:** The following table showing that 91% respondent expressed interest to continue environmentally sustainable practices due they got good impact of those practices.

Responses	Control HHs	ME beneficiary	Total
No	8%	1%	9%
Yes	9%	82%	91%

**Table-81: Adopted ESP option**

**Challenges faced by COVID-19 to influence the impact among value chain actors and their networks:** The below figure shows that 33% ME's said yes about they faced challenges by COVID-19 to influence the impact among value chain actors and their network. Like, transportation, communication, unavailability of medicine and capital. But they overcome through over phone communication, arranged capital from others and used savings and tried hard to maintain their commitment with the actors.

Responses	Control HHs	ME beneficiary	Total
No	15%	51%	67%
Yes	2%	32%	33%

**Table-82: Impact of COVID 19**

**Social barrier for CV actor:** The following table shows the status of value chain actors and networks faced any social barrier in the implementation of ME business. After project intervention VC actor doesn't face big problems

Responses	Control HHs	ME beneficiary	Total
No	16%	80%	96%
Yes	1%	4%	4%

**Table-83: VC Actor Barrier**



## Success Stories

### Success Story-1: Cow Dung Waste Made Source of Income

- Md. Ali Hossain

The Beef fattening farmers of the village Kandipara under the union Medenimondal in Louhajang upazila of Minshiganj district used to rear cattle in a traditional method and never think about the appropriate process to maintain environmental demands and get optimum production.

After joining the SEP project and adopting the acquired knowledge, and skills to develop the farm as an environment-friendly and productive farm. Earlier, the cattle rearers used to keep the cow dung, urine, waste feeds, etc. in very much scattered places having unmanageable forms & sites. As a result all the people especially the children and old aged people were affected by the bad smell of waste, spreading contagious diseases, crop production severely decreased, and the environment was polluted.

Later on, the SDS guided and supported the committee through SEP project to construct a Cattle-waste dumping Station and handed it over to Md. Ali Hossain to manage the waste cow dung from the cattle farm owner using a trolley/ van and sell it to the vermin compost producer, fuel producer etc. after a certain period of preservation. The Committee distributes the selling amount among all the farm owners as per the supplied quantity of Cow dung to the Waste Dumping Station. On average the farm owner supplies 8-10 (MT) cow dung per month to the dumping station.

This initiative brought a positive and meaningful result in the locality. The project initiative led the community and the cattle farm owner to manage the cow dung properly, reduced the spreading of bad odor in the surrounding area, reduced impacting the environment, and finally, waste turned into a source of income for the community people. The community people demand to keep up the initiative for the long run. So, the community people expressed their gratitude to the donor and the SDS for considering and implementing such an impactful project in the area.

**Source:** Md. Attikur Rahman, Environment Officer, SEP project, SDS.



## Success Story-

### Vermin Compost is the Means of Driving Family

- Md. Joynal Abedin.

Md. Joynal Abedin is a “**Change Maker**” of the Family as well as of the Community. He is 55 years old and lives in Kanaksar village, of Kanaksar union under Louhajang upazila in Minshiganj district. He is a farmer and always searches the new options for carrying the expenses of the family expenses. Once he found a promising opportunity- “Vermin Compost production and marketing” with guidance and support of SEP project implemented in his area by SDS.

Joynal Abedin received training from SEP project on Vermin Compost production and marketing. With the assistance of the project, he constructed low-cost vermin Compost production plant in his house. He communicated with the Cow dung sumping station and collect cow dung for producing vermin compost. At the start of his project, people were not enough of the benefit of this compost and didn't apply it in crop



fields. So, Joynal started with a little amount of vermin compost production and made aware the surrounding farmers to use it. The demand increased gradually and now he needs to produce 3-4 MT vermin compost per month which requires 5-7 MT cow dung.

Now a good no. of farmers understood that vermin compost increases soil productivity, and requires less quality chemical fertilizers. So, they are dependent on organic fertilizer day by day and making more demand to Joynal Abedin. As a result, Joynal Abedin found an alternate means of income increase to drive the expenses of his family and expressed his gratitude to the project and the donor. Joynal Abedin planned to continue and expand his business in the future.

Another Microentrepreneur, Md. Mohsin Ali said, “Nobody sold cow dung earlier and there was no buyer, But he can dump cow dung at the waste dumping station safely and also sell. Reduced environment pollution and diseases”.

**Source:** Md. Attikur Rahman, Environment Officer, SEP project, SDS

## Success Story-

### Swarna Works for Improving the Environment

-Swarna Akter

A very small ideal village Kandipara in the surrounding area of Padma Josholdia Water Treatment plant, in the union Medenimondal under Lauhojang Upazila of Muushiganj district. A diversified occupational people live here and Swarna Akter is the name of a hardworking woman in this locality and struggling from the very beginning of her life. She started cattle farming 20 years back and she used traditional methods due to having no understanding of improved technology, bad impact on the environment caused by unplanned waste keeping etc. for Beef fattening. As a result, always her family members and nearby dwellers were unhappy with the bad smell of cattle urine, and cow dung (dumping in open space) and were infected by diseases due to the unhealthy environment.

She joined the SEP project in 2020 and receive a loan TK. 80,000.00, participated in the training session on beef fattening technology, environment-friendly housing, cow urine preservation techniques, etc. She constructed a model cattle shed and set two pipes for passing urine and water (floor cleaning & Cow washing water) connecting with urine



preserving well and water collecting well separately. Then stated Beef fattening properly by maintaining improved technologies as learned from the training provided by SEP project. She brings & sells the cow dung to the nearby waste dumping station by using a trolley to make a safe & healthy environment. As a result, a new window of income source is added to her family.

Thus all the families are now safe from the polluted environment. So, Swarna's commitment saved the environment and boosting up cattle-rearing farms in a healthy manner. She is now accepted by other people, accordingly, she thanked SDS and the donor for creating such an opportunity for her. She is committed to continuing this environment-friendly framing in the future.

**Source:** Md. Attikur Rahman, Environment Officer, SEP project, SDS

## Success Story-

### SEP Changed My Family's Lifestyle

- Rashida Begum

Nowadays, Rashida's livelihood improved, and changed her family lifestyle. She lives with six kids in Dakhshin Baksha village of Kolapara union under Sreenagar Upazila of Munshiganj district. She had 4 decimal cultivable lands along with house premises. Her husband, Md. Badal Bepari, is a day labourer and worked in other farmer's houses and Rashida produced vegetables in the homestead to lead the family's expenses. They couldn't send kids to school due to having not enough money to bear educational expenses. Poverty was always behind their family but having a lack of neidea-generationon skills, it was tough to find alternate income sources.

In 2000, Rashida joined Mayer Achol Somity of SDS and got an opportunity for vermin compost production training. She started

vermin compost production with the support of SDS but the nearby people and the relatives hated them for doing such an initiative. So, she became disappointed in these circumstances but with the encouragement and suggestion of SDS staff, she produced a very small quantity of vermin compost and used it in her own vegetable field. This

application demonstrated a good result and drew the attention of the villagers. This message passed through the nurserymen and they bought 3 mounds of vermin compost from her at TK. 1200.00. Gradually she expands her business based on the demand of farmers. Now she earned TK. 15,000 monthly and uses the money for family expenses, children's education etc.

Rashida's success encouraged other farmers to start the business. Rashida said, "I am an illiterate woman, have no means to bear children's educational expenses, I spent most of the time in leisure, now I got a source of income with the support of SEP-SDS. Now I am able to bear the educational expenses of my children. Those people once hated me, now they came to me for the suggestion to start such a business".

Rashida received a loan from SEP-SDS and started beef fattening with one cattle but now she has six cattle on her farm. She uses PPE and maintains all the requirements for environment-friendly farming. She told "I am proud of SEP-SDS for changing my family lifestyle. I have a plan to expand the business in the future and also support other people for the same".

**Source:** Ashraful Bari, Monitoring & Documentation Officer, SEP project, SDS.



## 15. SWOT (Strength, Weakness, Opportunity, and Threats) Analysis

<p><b><u>Strength:</u></b></p> <ul style="list-style-type: none"> <li>● 97% of MEs have the Willingness to learn and change farm practices;</li> <li>● 89% of MEs have a proven track record of consistently raising quality herd replacement;</li> <li>● Around 93% of MEs have sufficient ability to increase overall herd size</li> <li>● 90% of MEs have to receive adaptation support</li> <li>● 69% of MEs have access to insurance</li> <li>● 85% of MEs have access to credit service</li> <li>● 92% of MEs have access to training and extension service</li> <li>● 91% of MEs have access to broader market information</li> <li>● 90% of MEs have access to animal health service</li> </ul>	<p><b><u>Opportunity:</u></b></p> <ul style="list-style-type: none"> <li>● 97% respondents said Strong demand for meat/ breeds in the market</li> <li>● 94% of respondent said Local community with business support infrastructure in place</li> <li>● 92% said Good access to the premium market</li> </ul>
<p><b><u>Weakness:</u></b></p> <ul style="list-style-type: none"> <li>● 90% of MEs know low demand for products, insufficient market access, and information</li> <li>● 84% of respondents face a lack of proper working space</li> <li>● 88% MEs have a lack of management skills</li> <li>● 93% MEs face Lack of communication skills, transport facilities and high cost of transportation</li> <li>● 92% facing difficulties for restrictive laws, Business licensing, and permits</li> <li>● 90% MEs understand like Similar businesses/ no creativity</li> <li>● 89% MEs feel Lack of banking services</li> <li>● 92% said Lack of knowledge on legal issues relating to the farming system</li> </ul>	<p><b><u>Threats:</u></b></p> <ul style="list-style-type: none"> <li>● 94% respondents said animal disease</li> <li>● 89% respondents said loss of cattle/ Theft</li> <li>● 89% respondents said good/ dependable farm labor is difficult to find and keep</li> <li>● 95% respondents said availability of good rental crop land is decreasing due to area development pressures</li> <li>● 93% of respondents faces difficulty for the high cost of and shortage of inputs</li> <li>● 93% said volatility of market making difficult to maintain a viable cattle farm operation</li> <li>● 78% said climate change/ Excessive flood/ cold/ extreme rainfall</li> </ul>



## 16. Key Achievements

### Progress comparison Baseline vs Endline including Logframe

Baseline progress	Endline progress
ME respondents' highest 79% house was found Tin shed	ME respondents' highest 90% house was found Tin shed
70% of ME beneficiaries are satisfied with CLSP-offered services	92.03% of ME beneficiaries are satisfied with CLSP-offered services
89% of farms didn't have health and safety equipment (gloves, safety glasses, musk, apron, boots) for use. 99% of ME respondents mentioned they have no first aid box.	87% of farms have health and safety equipment (gloves, safety glasses, musk, apron, boots) for use. 81% of ME respondents mentioned they have a first aid box.
Around 30% ME beneficiaries sourced feed from the provision of feed in pastures, 23% ME beneficiaries sourced from inside of the farm	75 % of respondents said that their source of feed from the provision of feed in pastures, 66% said sourced from inside of the farm
27% of ME beneficiaries bought fodder from the local market.	86% of ME bought fodder from the local market.
Around 71% of ME beneficiary CLSP is not available in this area	81% of ME beneficiaries said CLSP is available in this area
53% ME said that the government and 47% said private sectors are the main service providers to get any relevant services.	11% of ME said that the government and 89% said private sectors are the main service providers to get relevant services.
98% of MEs <b>didn't receive</b> training in pollution reduction, resource efficiency, and climate change.	81% of MEs <b>received</b> training in pollution reduction, resource efficiency, and climate change.
98% of the respondent mentioned they didn't produce compost from slurry	39% of the respondents prepared compost from slurry
74% of ME beneficiaries said that no fodder processing facilities are available at the farm whereas 26% said available	85% of ME beneficiaries said that fodder processing facilities are available at the farm whereas 15% said not available
99% of ME beneficiaries and 100% of control HHs respondents said that they do not produce vermin-compost	18% of ME beneficiaries and 1% of control HHs respondents said they are producing vermin-compost
71% of ME beneficiaries said that they do not produce fodder and 29% of ME said that they produced fodder.	76% of respondents said that they produce fodder and 14% said that they are not.
66% of ME beneficiaries said that they do not maintain the environmental standard for the beef fattening process and 34% said that they are meeting the standard.	75% of respondents said that they met the environmental standard for the beef fattening process and 25% said no.
97% of ME have no legal certification from any authority for beef fattening business.	44% of respondents said they have legal certification from any authority for beef fattening business.



Baseline progress	End line progress
55% of ME respondents said that they sell products through the local market	67% of ME respondents said that they sell products through the local market
63% of ME beneficiaries were satisfied, 35% are not satisfied and around 2% are very satisfied with getting a fair/market price for selling fattened beef.	97% of respondents said that they are satisfied of getting a fair/market price for selling fattened beef.
99.5% ME beneficiaries didn't use the e-platform to sell the fattened beef	27% of ME beneficiaries are using e-platform to sell the fattened beef
52.97% ME beneficiaries received loans before March 2019	82% ME beneficiaries received loans after being involved with the project
76.80% of ME beneficiaries were satisfied and 23.20% of ME beneficiaries were unsatisfied with the loan amount	93.7% of respondents were satisfied, 6% were unsatisfied and 0.3% were very satisfied with the loan amount
The highest 33% of ME beneficiaries used on foot, 34% used foot & auto rickshaws, 17% used the Auto rickshaw and 11% said that they used Auto rickshaws, cycles & vans to go to market.	89% of MEs used auto rickshaws, 76% used on foot, 37% used rickshaws, 8% used vans, 4% used cycles, 2% used by bus, and 1% used another mode of transport to go to the market
48% of ME beneficiaries were convenient to go to market alone for women, 20% said not convenient for women to go to market alone and 32% said women don't go to the market alone.	57% of respondents said convenient to go to the market alone for women, 35% said not convenient for women to go to the market alone and 9% said women don't go to the market alone.
Over 86% MEs beneficiaries said they have a strong family desire to continue farming, and 14% responded no to continuing farming	96% MEs beneficiaries said they have a strong family desire to continue farming, and 4% responded not to continue farming
97% and 3% MEs beneficiaries said NO & YES respectively about having access to insurance	69% of MEs have access to insurance
38% and 62% MEs beneficiaries said NO & YES respectively about having access to credit services.	85% of MEs Have access to credit service
Around 95% and 5% MEs beneficiaries said NO & YES respectively about having access to a wider market information.	91% of MEs have access to broader market information
66% and 34% MEs beneficiaries said NO & YES respectively about animal health services	90% of MEs have access to animal health services

### Activity Progress

SL #	Activities	Target	Achievement	Remarks
1.	Produces vermin compost by ME	55	65	5 MEs producing commercially
2.	Develop Beef fattening ME	1,570	3,292	1,722 ME started the business as Secondary adoption
3.	Biogases plant installation	28	28	
4.	Model Cattle shed development	93	93	
5.	Mirkadim Cow Breeding Farm establishment	4	4	
6.	Demo of high-yielding fodder cultivation	1	1	56 decimal lands with a Sprinkler irrigation system
7.	Auto drinker installation	1	1	
8.	Training for MEs	54	54	Training in batches
9.	Organized workshop	11	11	
10.	Provide Agroskor loan to MEs (in BDT.)	120,000,000	474,300,000	Showing overachieved due to rolling loan
11.	Provide Common Service Loan to ME (in BDT.)	11,800,000	11,800,000	

### Progress of organizing Training

SL #	Training Name	Target	Achievement	Remarks
1	Beef fattening	375	369	<ul style="list-style-type: none"> <li>Overall Achievement 98% of the total target</li> <li>Outstanding achievement of the project</li> </ul>
2	Waste management	100	97	
3	Vermicomposting production	25	25	
4	Fodder cultivation	25	24	
5	Safe and antibiotic-free beef fattening	25	24	
6	Cow dung dumping and manure production	25	23	
7	Environment pollution	375	375	
8	Business certification	375	361	
9	Online Marketing	150	142	
<b>Total</b>		<b>1475</b>	<b>1440</b>	

### Progress of Organizing Workshop

SL #	Workshop Name	Target	Achievement	Remarks
1	Linkage development workshop with MEs and legal authority of environmental certification	120	118	<ul style="list-style-type: none"> <li>Overall Achievement 95% of the total target</li> <li>Outstanding achievement of the project</li> </ul>
2	Linkage development workshop with MEs and legal authority of product certification	120	116	
3	Linkage development workshop with MEs, Input and output market actors on business certification	120	112	
4	Conduct a workshop on Market linkage with the backward and forward market actors	120	115	
5	Learning & Sharing workshop (District level)	50	44	
<b>Total</b>		<b>530</b>	<b>505</b>	

### At A Glance of Fund Status:

SL #	Particulars	Amount (BDT.)
1.	Project Activity Fund	18,600,000
2.	Expenses for Project Activity	17,500,000
3.	Burn Rate Project Activity Fund	94%
4.	Agroshor SEP loan Fund	120,000,000
5.	Agroshor SEP Loan Disbursed	474,300,000
6.	Common Service Loan Fund	11,800,000
7.	Common Service Loan Disbursed	11,800,000

### 17. Best Practices:

- Promotion of Mirkadim Cattle in the locality with the support of the Livestock office;
- Waste management in improved methods in light of reducing environmental effects;
- Model housing is a useful tool for proper Beef fattening business;
- ME aware of safe & antibiotic-free Beef fattening;
- Promotion of high yielding variety of grass production for cattle feeds;
- Affordable Farm mechanization brought cost-effective Beef fattening;
- Silage production support for making available feeds in the crisis period and addressing feed crisis;
- Support for High yielding fodder cultivation;



- Online marketing for live cattle made it easy to sell cattle in accost effective manner and diversified options of choice;
- Market linkage opened the window of multiple opportunities in production, processing, and marketing.

### 18. Major challenges:

The following problems were found and actions were taken for addressing those during the project period-

Problems	Actions taken
<b>Environment Related Problem</b>	
Unmanaged farm wastages (Cow dung, urine, farm runoff water, leftover feed etc.)	Provided training on waste management and loan for infrastructure development
Contamination of fresh meat (antibiotics like ciprofloxacin, levofloxacin, Azithromycin etc. heavy metal lead)	Built awareness result showing positive improvement
Heavy metal contamination in livestock feed mostly from tannery by-products used as protein sources though prohibited by the government	Built awareness result showing positive improvement
The level of environmental and regulatory awareness is very poor or ignored	Built awareness among ME and they are practicing
<b>Business Related Problem (including Value Chain and others)</b>	
Lack of good quality breeding services	Established pure breed source with 4 Mirkadim restocking farms for breeding and extension purpose, but number of breeding farm need to increase.
Lack of knowledge about environment-friendly fattening	Provided training and develop awareness about environment-friendly fattening
The high price of feed, shortage of cattle feed	Supporting MEs to cultivate high-yielding fodder, silage processing, and UMS preparation to reduce cattle farming costs.
No grading system for cattle	Given technical support to the MEs
Lack of comfort in cattle shed	Provided training on housing and grant support for constructing good cattle sheds, but not for all MEs
Lack of sufficient green grass production and supply	Trained and promote grass production and provided soft loan support to the MEs
Unfair prices from intermediaries	Promote online marketing to get a fair price
No market rules and regulation	Advising to the market committee to promote rules & regulations appropriately
No business plan of MEs	The project helps to make a suitable business plan for each MEs
A good no. of ME didn't receive business certification/ trade license	Under process, need more facilitation

## 19. The way forward/recommendations:

- Low-rate interest loans may continue and may facilitate affordable loan products of other sources for the Micro and Small enterprises for eco-friendly sustainable Beef fattening business growth;
- May strengthen Beef fattening value chain to crowding in and copping in of market actors for supporting business and employment generation;
- Technical sessions and awareness-building events may arrange to promote project learning & innovations like vermin compost production & marketing, biogas plant construction, model housing construction, and waste dumping properly;
- May create scope for different training like business management skills development (refreshers), production & sales plan development, Enterprise development and management, Business Communication, business promotion, access to finance and fund management, etc., and follow up for sustainable business establishment;
- Cooperative Approach may promote better business support, branding, wider market access, linkage, networking, etc.;
- May strengthen the vermin compost business in a commercial manner including the construction of an improved shed, quality improvement, and business promotion strategy for catching wider buyers.

## 20. Conclusion:

The project achieved the objectives stated in the project document and the planned activities outlined in setting the project target. The project run in a timely manner and used the resources in a well-organized style and demonstrated effectiveness in each and every section. But still, there are some scopes to enhance MEs' business and technical capacity, wider market access, more strengthening value chain, access to finance for diversified sources, and branding of business for sustainable growth which needs more time. That's why there is potential scope for further expanding the time period of the project operation which will obviously contribute to improving the livelihood of rural communities at the same time act as a driving force of the local as well as national economy.

21. Photo Gallery:







## 22. References:

Hurst, P., Termine, P., Karl, M., 2005. Agricultural workers and their contribution to sustainable agriculture and rural development. FAO

Alam, C. M., & Miyagi, K. (2004). An approachable analysis of micro enterprises in Bangladesh. Working Paper Series 2004-8, The University of Kitakyushu, Japan.

<https://www.facebook.com/sepsds1991?mibextid=ZbWKwL>

## 23. Annex

### 1. Individual Interview questionnaire



Final\_Questionnaires\_  
ME\_SDS.pdf

### 2. Focus group Discussion Questionnaire



Focus\_Group\_Discussi  
on\_SDS.xlsx

### 3. Key Informant Interview Questionnaire



Final\_KII\_  
Questionnaire\_SDS.xls

### 4. Final dataset



Final Endline  
Database\_SDS.xlsx

### 5. Data collection guideline



General Guideline.pdf

### 6. ToR



SDS\_ToR for Final  
Evaluation.pdf