



**Impact Evaluation Study  
on  
The Construction of 1.10 Lakh MT Capacity New Food  
Godown at the Northern Region of the Country**



***Carried out by***  
**Evaluation Sector**  
**Implementation Monitoring and Evaluation Division (IMED)**  
**Ministry of Planning**  
**Government of the People's Republic of Bangladesh**

***Conducted by***  
**Development Technical Consultants Pvt. Limited (DTC)**

***June 2013***

## **Impact Evaluation Study on Construction of 1.10 Lakh MT Capacity New Food Godown at the Northern Region of the Country**

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## **Acronyms**

ADB	:	Asian Development Bank
BBS	:	Bangladesh Bureau of Statistics
BWDB	:	Bangladesh Water Development Board
CV	:	Curriculum Vitae
CSD	:	Central Storage Depot
DAE	:	Department of Agricultural Extension
DFID	:	Department for International Development
DG	:	Director General
DGOF	:	Director General of Food
DTC	:	Development Technical Consultants Pvt. Ltd.
ERD	:	Economic Relation Division
FAO	:	Food and Agriculture Organization
FFW	:	Food For Work
FGD	:	Focus Group Discussion
FPMU	:	Food Planning and Monitoring Unit
FY	:	Fiscal Year
GOB	:	Government of Bangladesh
IDA	:	International Development Agency
IFAD	:	International Fund for Agricultural Development
IGA	:	Income Generating Activities
IMED	:	Implementation Monitoring & Evaluation Division
KII	:	Key Informant Interview
LGED	:	Local Government Engineering Department
LSD	:	Local Storage Depot
MT	:	Metric Ton
NGO	:	Non Government Organization
OMS	:	Open Market Sale
PCD	:	Project Coordinating Director
PFDS	:	Public Food Distribution System
PIU	:	Project Implementation Unit
PRA	:	Participatory Rural Appraisal
PWD	:	Public Works Department
QAQC	:	Quality Assurance and Quality Control
SC	:	Steering Committee
SRS	:	Simple Random Sampling
SWOT	:	Strength Weakness Opportunity and Threat
TA	:	Technical Assistance
TR	:	Test Relief
UNO	:	Upazila Nirbahi Officer
VGD	:	Vulnerable Group Development
VGf	:	Vulnerable Group Feeding
WB	:	World Bank
WFP	:	World Food Programme

## Table of Contents

		Page
	<i>Executive Summary</i>	<i>i-ix</i>
<b>Chapter-1</b>	<b>Background and Objectives</b>	
	1.1 Background	1
	1.2 Project Summary	2
	1.3 Domestic Food Grain Production Scenario	2
	1.4 Government Food Grain Procurement, Import and Public Stock Situation	2
	1.5 Project Objectives	3
	1.6 Components of the Project	3
	1.7 Objectives of the Current Assignment	3
	1.8 Scope of Work	4
<b>Chapter-2</b>	<b>Approach and Methodology</b>	
	2.1 Approach	5
	2.2 Methodology	5
<b>Chapter-3</b>	<b>Analysis of the Physical Observation Data</b>	
	3.1 Introduction	16
	3.2 Status of Financial Management	16
	3.3 Procurement Method	17
	3.4 Implementation Status of Food Godowns	17
<b>Chapter-4</b>	<b>Analysis of Quantitative Data</b>	
	4.1 Background	31
	4.2 Information about Food Security	34
	4.3 Information about Financial Benefit	36
	4.4 Inspiration	37
	4.5 Market Management	38
	4.6 Contribution of New Godown in Women Empowerment	41
<b>Chapter-5</b>	<b>Analysis of the Qualitative Data</b>	
	5.1 Findings of the Focus Group Discussion (FGD)	44
	5.2 Findings of Key Informants Interview (KII)	47
	5.3 Assessment of the Sustainability of the Works	50
<b>Chapter-6</b>	<b>Major Findings, Recommendations and Conclusion</b>	
	6.1 Major Findings	51
	6.2 Recommendations	58
	6.3 Conclusion	58
<b>Annexure</b>		
Annex-A	Data Collection Instruments	
Annex-B	Observation/ Physical Verification on New Food Godwon	
Annex-C	Comparison of Food Godown	
Annex-D	Bulk Food Storage Silo	

## Executive Summary

Food is a basic human need and plays a crucial role in the agro-based economy of Bangladesh, where a large proportion of the income of the population is allocated to food. The first and foremost responsibility of the State is to ensure an uninterrupted supply of food to all people at all time. According to the Article-15(a) of the constitution of Bangladesh, it shall be a fundamental responsibility of the State to secure its citizens to the provision of basic necessities of food. As per Government's Allocation of Business, it is the duty of the Ministry of Food to establish a dependable food security system for the nation. The Government of Bangladesh is firmly committed to achieve food security for all, defined at the 1996 World Food Summit as: access by all people at all times to the food needed for an active and healthy life. This provision is also reflected in all the development plans of the Government. The goal of the food policy is to ensure a dependable food security system for all people of the country at all times. One of the important aspects of food security is to ensure sustained availability of food to meet all peoples' demand at prices commensurate with their income. Food security is then achieved when all people can buy adequate good quality food sufficient for maintenance of an active and healthy life. It is essential to achieve an overall development of agriculture to ensure production and marketing of food grains as well as non-food grain items, to create employment opportunities and increase real income of the poor, ultimately to improve their nutritional status. Agriculture still is the pivotal and backbone of Bangladesh in this regards. The economy of Bangladesh is enormously dependent on agriculture, which supports the vast majority of her population, and 7.65 percent of total budget (2011-2012) and employs 47 percent of the total labor force (Economic Analysis Survey 2011). According to the Department of Agricultural Extension (DAE, 2012), the northern region of Bangladesh produced total 2,67,75,381 MT Boro, T- Aman, Aus and Broadcast Aman rice during the past three seasons till December 31, 2012. About 60-70% of the targeted food grains are procured by the government for storage from the Northern Region of Bangladesh.

A significant portion of surplus food grain is produced in the northern region of the country. But the effective capacity of the existing godown in the region is about 4.00 lakh MT which is half of the actual scope of storage.

### **Considering this, the Objectives of the Project are Fixed to:**

- i. increase 1.10 lakh M.T food grain storage capacity in addition to existing capacity of the Directorate General of Food;
- ii. improve food security net of the country;
- iii. inspire farmers by procuring food grain for more food production; and
- iv. decentralize additional food storage to cater smooth supply at time of scarcity or crisis.

### **Objectives of the Impact Evaluation are to:**

- i. review the implementation status of the project in respect of; (a) financial aspect, b) food grain storage facilities and c) construction of the new godown;
- ii. assess the impact of various measures/programmes towards improved food security net, increased price incentive, aspiration and overall poverty reduction of the farmers and local community;
- iii. examine the internal strengths and weaknesses, opportunities and external threats towards project through SWOT analysis; and
- iv. recommend for more cost-effective management, improved sustainability of the present project activities and replication of its activities in similar other projects in future.

### **Methodology**

**Design of the Study:** The population size of the study was determined in using appropriate statistical formula where  $N \geq 8000$ ,  $n \approx n_0 \times d$ , equation (2), thus for our case, we get,  $n = 1840$  (*Approximately*). In order to reach such beneficiaries we had adopted two-stage

random sampling procedure. For having a round splitting in 76 Upazila, the sample size was slightly revised to 1,824. The total 1,824 beneficiaries had been selected by using simple random sampling procedure on the basis of 76 Upazila under 15 Districts of the Rajshahi and Rangpur divisions, and availability of surplus crop products. The supervisor had collected miller list from DGoF Officials then cluster group of farmers list from the miller. For selecting respondents, the cluster group of farmers and other target beneficiaries for each Upazila had been identified at the adjacent areas of the constructed godowns from where the 24 number of respondents had been selected using a Simple Random Sampling (SRS) procedure.

**Finalization of the Study Tools- Questionnaire:** Based on comments and suggestions of the Technical Committee meeting, the questionnaire had been finalized in light with the objectives and scope of work and the needs and indicators of the study.

**Recruitment and Training of Field Staff:** The consulting firm had recruited 16 enumerators and 02 supervisors for data collection. A three day training course had been organized for the data collection team.

### Implementation and Data Management Plan

- i. **Survey:** The project beneficiary had filled in a set of pre-designed questionnaire encompassing issues to assess different aspects of project benefit under the project areas.
- ii. **Focus Group Discussion:** Total 15 FGDs had been conducted in 15 districts, where each FGD was comprised with 20 participants. Therefore, 300 participants from different professional groups such as crop producers, traders, millers and community people etc and project partners had been covered under this method for opinion collection and validation of the study findings.
- iii. **Key Informant Interview (KII):** Total 76 Key Informants Interview covering concerned officials of DGoF office, of which one official had been interviewed from each project Upazila.
- iv. **Physical Visit and Observation of Food Godowns:** The consultants along with team members and supervisors had visited and observed the implementation status of the construction works of all food godowns to assess quality and functional status of the godowns.

**Data Management, Processing and Analysis:** The collected raw data was edited, coded and then entered into the MS Access and converted into the SPSS 17 version for analysis and data generation for report writing. In this regards, consultant developed data analysis plan and analytical tables for all major indicators.

**Analysis of the Quantitative Data:** A total of 1800 respondents took part in the survey from 76 upazila under 15 districts of Rajshahi and Rangpur divisions. The highest number of respondents was participated from Dinajpur (19.8%) and Bogra (19.1%) and the lowest number of respondents participated from Natore (2.2%) and Nilphamari (2.6%) districts.

**Age of Beneficiaries:** The age range of the beneficiaries was <25 to >65 years, where most (34.5%) of the respondents was ranged within 36-45 years and lowest (4.5%) was ranged more than 65 years old category.

**Sex of the Beneficiaries:** Most (96.0%) of the beneficiaries (1728) were male and only 4.0% (72) respondents were female participated in the survey.

**Educational Qualification:** The maximum (35.0%) respondents (630) were belonged to primary literacy and the minimum (8.0%) respondents (144) were illiterate.

**Household Size:** More than 60% of the households had 5 to 8 members in their families and only two percent of the families had more than 12 members.

**Occupation of the Beneficiaries:** Maximum 64.38% participants (1159) were farmers and the lowest 5.22% of the respondents (94) were van pullers, rickshaw pullers, day labors etc.

## Major Findings of the Evaluation Study

**Duration of the Project Implementation:** The project was initially planned to implement in 24 months starting from July 2009 to June 2011 with a total cost of BDT: 24100.00 lakh but later duration was increased from 24 months to 36 months starting from July 2009 to June 2012 with a reduced total budget of BDT: 21695.00 lakh.

**Procurement Method:** The construction works of the 139 food godowns had been completed under the supervision of the PWD (Public Works Department) and the project authority. The contractor of 50 packages had been selected by the Open Tendering Method (OTM).

**Status of Financial Management of the Project:** Around 90.02% (BDT 216.95 crore out of BDT 241.00 crore) budget of the original DPP of the project was utilized to complete the project works. The total construction cost of each 1000 M.T godown was 187.93 lakh taka while 500 M.T godown was 107.198 lakh taka.

**Implementation Status of the Food Godowns:** The PWD had completed the construction of 131 food godowns during December 2011 and rest 8 godowns had been completed in February 2012. In addition, 42 sites development, 139 sites internal roads, electrical works and 18,180 pieces of wooden dunnage works of the project had been completed during July 2009 to March 2012. All godowns under the project were conventional types that were found in good conditions except few godowns. However, as per the data, the completion of construction works was delayed about 12 months.

### Amount of Food Grains Stored in New Food Godown during 2012-2013 year

Total capacity of all 139 new food godowns under the project was 110,000 MT, but it had already been stored by 116,092 MT food grains in the fiscal year 2012-13. This amount of food grains was 5.54% higher than the total capacity of the newly constructed food godowns.

### Procurement of Food Grains Before and After Project

The total amount of food grains had been procured in the fiscal year of 2010-11 and 2012-13 as recorded during physical visit of all godowns that was 433,269 MT and 555,450 MT, respectively.

**Condition of the Newly Constructed Food Godown:** In general, the condition of newly constructed food godowns were more or less good condition as found during the physical visit. However, in few godowns cracks has been found on walls and floors. The main doors and ventilation windows of some godowns were found very poor quality.

**Repairing and Maintenance Work:** Cleaning and washing were being done regularly but repair and maintenance work were done very often.

**Quality and Condition of the Road:** Most of the godowns under the project had RCC internal link roads and these were found in good condition, but few godowns had no RCC roads.

**Utilization of Food Godowns:** The utilization of newly constructed food godowns was more than 100% as recorded during the physical visit. The transport owners, millers, traders, labors, van and rickshaw pullers etc were engaged in different activities related with food godowns.

### Implementation Status of Construction Works of Newly Constructed Food Godowns

- i. **Plaster of Wall:** The plaster of the walls of most (91.37%) newly constructed food godowns (127 out of 139) were found in good condition during physical visit, while the plaster of walls of remaining 8.63% (12) food godowns in different places had been found damaged and damp condition.
- ii. **Floor:** The floors of 87.05% food godowns (121 out of 139) had been found good condition, but the floors of rest 12.95% (18) food godowns had been found poor condition showed cracks, segregation of aggregates and little damage.
- iii. **Quality of Link Road:** Most 76.98% (107) of link road were found in good condition but the construction works of 23.02% of link road (32) of the godown had been found poor (lot

of crakes, holes, segregation of aggregates), which needs immediate repair and maintenance.

- iv. **Link Road:** Out of 139 food godowns, only 5 godowns had not link road which are Santaher (Bogra), Natore Sadar (Natore), Jaldhaka (Nilphamari), Kazipur (Sirajganj), Nekmorod (Thakurgaon)
- v. **Boundary Wall:** Boundary is the important part of security of the food godown. But few cases, the boundary wall have been broken or absent specifically in Santaher food godown at Bogra, Kazipur food godown at Sirajganj, and Nekmord food godown at Thakurgaon.

### **Status of Miller in the Project Area**

Total 667 number of miller had been found as new after project intervention who had engaged in the procurement system of the government.

### **Participation of Millers and Farmers in the Government Procurement System**

Considering average sell of maximum 2 MT of each farmer it can determine that at least 55,000 farmers were getting opportunities to involve (directly or indirectly) in the procurement process of food grains for the food godowns.

### **Impact of Food Godowns on Food Security Net**

**Food Security and New Food Godown:** Due to additional capacity of food grains in 139 newly constructed food godowns will further able to distribute food grains at fair price and food crisis will not be faced. This fair price will also ensure to reduce the poverty. The risk of food crisis during disaster will be reduced for adequate level of government stock at district and upazila level through internal and external procurement of food grains. This brings stability in the supply situation and acts as a food safety net for the poor.

**Construction of Food Godown and Ensured Food Security:** Most (86.1%) of the respondents (1550) expressed their opinion that the construction of food godowns had ensured the food security in the project areas.

**Contribution of the New Food Godown during Food Crisis:** Majority (83.0%) of the respondents (1494) expressed that the construction of new food godown contributed during food crisis by supplying necessary foods in the market.

**Superior Crop for Food Storage:** Majority (51.02%) of the respondents (71.02) expressed that the rice was the superior crop product for storage whereas the lowest category of crop products for storage was maize as responded by 0.14% (3) respondents.

**Annual Expenditure for Crop Production from 2009 to 2012:** More than 80% respondents said that there was an increase in the annual expenditure for crop production. On an average there 12.5% annual expenditure had been increased for crop production from the fiscal year 2009 to 2012.

**Increase of Cultivable Land:** Only 25.0% (450) respondents indicated that there was an increase of cultivable land due to construction of new food godowns, whereas most (75.0%) of the respondents expressed that the cultivable land had not been increased due to construction of new food godowns in the project areas.

**Amount of Crop Production before and after of the Project:** There was a notable increase in the production of Aman rice as well as the production of Boro rice in the project areas, but the amount of production of Aus rice had been increased a little after 2012.

**Impact on Food Security Net:** Construction of additional capacity of 1.10 lakh MT of the food godowns, the government is now more entrusted to food security net for the country.



### Increased Price Incentive

**Crop Sell in Advance:** Only 8.3% respondents (149 out of 1800) responded that they sold the crops in advance, whereas 91.7% (1651) respondents expressed their opinion that the farmers did not sell their crops in advance before harvest.

**Priority of Seasonal Crops for Sell:** Majority (49.7%) of the respondents (895) expressed that the Rabi crops had been given first priority for sell followed by Kharif-I crops as responded by 47.0% (846) respondents, whereas Kharif-II had given least priority for sell as responded by 4.2% (76) respondents.

**Mode of Transportation:** Rickshaw or van pullers were the main mode of transportation for the farmers. However, a good number of farmers carried their crops to the market manually. In few cases, engine driven vehicles were used as mode of transports.

**Source of Information about Market:** Most of the farmers informed that the first source of information about market was another farmer. However, many farmers collected market information from block supervisors, radio, newspapers or other sources as well. The producers determined the market price of the products by various ways. One third of the farmers did not grade their crops before selling.

**New Food Godown and Employment Opportunity:** Most (92.5%) of respondents (1665) expressed their opinion that the construction of new food godowns had created the employment opportunities in the project areas. The types of employment opportunities created by the construction of new food godowns were processing of crop products as responded by the majority (75.7%) of the respondents (1363) followed by the creation of transportation business of crop products trading opportunities of crop products. Other employment opportunities were daily labor, and service at godowns.

**Change in Annual Income due to Construction of New Food Godowns:** Majority (74.4%) of respondents (1339) expressed that their income had been increased by the construction of new food godowns in the project areas.

### Poverty Reduction of Farmer and the Local Community

**Impact on Poverty Reduction:** Most (79.9%) of the respondents (1438) believed that the construction of new food godowns had contribution on poverty reduction in the project areas. Construction of new food godowns created opportunities of new employment that in turn helped in reducing the poverty. Open Market Sale (OMS) of stored food grains during crisis brings price stability. As a result, the poor people can buy food grains at lower price and this brings positive impact on poverty reduction in the project areas.

**Creation of Scope to Get Sufficient Credit:** Construction of new food godown had created the greater scope for the farmers to get enough credit as responded by the 50% beneficiaries participate in the survey study.

**Creation of Problems if the Crop Products Keeping in House Instead of Selling:** The respondents mentioned various problems may occur if they keep the crop products in their house instead of selling the products just after harvest.

### Women Empowerment Opportunities: Poverty Reduction

**Contribution of New Food Godowns in Women Empowerment:** Among the women participated (72) in the survey, only 20.13% (14) of them were directly involved in crop production. The majority (60.0%) of women (44) had the left the decision for crop production on their husbands. However, it was encouraging that there were few women who has the right to make such decision independently or had the scope to make decision jointly with their husbands for crop production (29.77%).

**Type of Labor by Female Respondents for Crop Production:** Most (52.0%) of the women (37) provided medium hard labor for crop production. Only 27.0% (19) women were not directly involved in physical labor related works while 10.0% (7) women provide very hard labor for crop production and 11.0% (8) women provided low energy related works.

**Decision Making Power of Women Over the Money of Selling Crop Products:** Most (54.17%) of the cases, husband of the female respondents provided the control over the money of selling crop products produced by them, whereas 36.11% (26) female respondents took the money of selling crop products jointly with their husband or along.

**Problem Face by Women during Selling of Crop Products in Market or in Home:** All (100%) of them faced problem during the selling of their crop products in the market due to middle man.

**Kinds of Problem Face by the Women during Selling of Products:** Most (95.5%) of female (69) respondents expressed their opinion that they did not take the crop products to market or to government agent by themselves. Whereas 30.2% (22) of the women informed that they did not get the fair price of the products during selling.

**Findings of the Focus Group Discussion (FGD):** The major findings of the FGDs are briefly mentioned in the following sub-heads:

- i. **Source of Crops for Storing in the Godowns:** Mainly rice had been purchased from millers and in few cases paddy had been purchased from the farmers.
- ii. **Role of Godowns on Local Economy:** Construction of new godowns increased food grain storage capacity at the government level, which assured fair price for farmers and poor that impact on poverty reduction and employment in addition of food security net.
- iii. **Godown and Agriculture Production:** Farmers indirectly benefited due to purchase of food by the government that in turn helped the farmer to get a right price.
- iv. **Local Trade and Commerce:** The food godowns had increased a great effect on food trade. Many of the millers increased their storage area and crop trading related business activities which in turn their economic activities. Due to these local economic activities farmers were also achieved competitive price.
- v. **New Food Godown Impact on Fair Price:** Poor and pro-poor people were able to purchase food grain at local level at government fixed price that ensures fair price.
- vi. **Impact on Food Processing Mill in the Area:** Millers had been more benefited than others, because they were selling their food products in godown, open and local market.
- vii. **Impact on Employment Opportunities:** Millers continued their mill for long time which was another reason of increased work opportunity. Farmers also encouraged to grow more food and hence some employment occurs at farmer level as well.

### **Replicating its Activities in Similar other Projects**

**Construction of Food Godown under Public Private Partnership (PPP):** More details studies can be explored further with details scope of PPP for better understanding of the private sector in this regards.

### **Findings of the Key Informants Interview (KII)**

The major strengths, weaknesses, opportunities and threats (SWOT) of the project identified by the KII is discussed below:

### Strengths of the project

- i. **Building Adequate Level of Food Stock to Ensure Food Security:** The risk of food crisis during disaster had been reduced by ensuring adequate level of government stock at District-Upazila level through internal and external procurement of food grains.
- ii. **Impact on Women's Empowerment:** Food storage ensured the supply of food grains to the poor includes destitute and divorced women through local development programme like: TR, VGF, VGD, GR, FFW and employment of hard core poor. Food grains procurement at fair price and Open Market Sale (OMS) brought price stability in the market enabling destitute women to buy food grain at low price. This process increased their food security and nutrition intake and their involvement in income generating activities. During harvesting season the poor women were getting opportunity to sale food grains at government fixed price, and as a result they were getting rid of the exploitation of the middlemen.
- iii. **Stabilizing Market Price of Food Grain and Ensuring Fair Price to Farmers during Harvesting Season:** OPS brought market price stable and pro-poor marketing increased food security and nutrition of the poor. Purchasing food grain at local level at a price fixed by the government also ensured fair price for the marginal and poor farmers.
- iv. **Impact on Poverty Reduction:** Open Market Sale (OMS) of stored food grains during crisis brought price stability. As a result, the poor people can buy food grains at lower price and this brought positive impact on poverty reduction. Employment opportunity for a minimum of 0.80 lakh rural poor had been created during lean period through the implementation of TR, FFW, VGF, VGD programme and instant GR programme to absorb disaster shock. Direct supply under food based programme helped beneficiaries to get food instantly. Targeted involvement of the poor and the destitute women had created employment especially in *monga* in the northern region and increased their earnings especially the VGF programme which is targeted to women.

### Weaknesses of the Project Implementation

- i. **Delay Completion of Construction Works:** The construction works was delayed about 12 months from the schedule date of June 2011. Due to this all activities of the project delayed. Considering this delay, project need to extend about 12 months from July 2011 to June 2012.
- ii. **Scarcity/Non Availability of Land:** Due to non-availability of land, the project authority needs to construct 139 new food godowns instead of 140 food godowns.
- iii. **Regular Repair and Maintenance:** Regular repairs and maintenance is lacking in newly constructed building which need to be done without any difficulties for longevity period of the godown.
- iv. **Baseline Data:** There was no baseline information of the project which is important to assess project impact. This should be done prior commencement of the project.

### Opportunities of the Project

Considering the land scarcity of the country and advantages of the silo, MOF needs to construct silo for the following:

- i. **Storage Capacity of Multi-crops:** Simultaneous storage of different kinds of grains, such as wheat, paddy, gram, maize in the different bins at the same time.
- ii. **Mechanical Operation:** All loading, unloading, weighing etc can be done mechanically.
- iii. **Long Storage:** Long storage without deterioration or loss. There is no access to insects or rodents. Aeration and fumigation can be done when necessary to preserve the condition of grain.

- iv. **Storage Capacity and Period:** More than 10000 to 50000 grain can be stored. Grains can be stored as long as for five years.
- v. **Temperature:** There is provision for thermocouple temperature record system in the plant itself.
- vi. **Space Requirement is Less.** The area of land required for Silo storage is only about one fifth of conventional storage godown.
- vii. **Fumigants Requirement:** Consumption of fumigant is very nominal in Silo.
- viii. **Manpower:** Saving of sacks (Gunny bag) and skilled handling laborers at the time of storage.
- ix. **Cost Management:** Due to scarcity of food storage facilities at the district/local level for next season procurement, previously stored food need to transfer Dhaka or elsewhere divisional district. Again during Open Market Sell (OMS), previously stored food needs to carry back to the respective place/location which incurred double shipment, loading and unloading cost. Hence, government needs to spend 6,000 taka per MT. Construction of silo can save this type of cost.

### Threats of the Project

- i. **Limited Capacity and Storage Period:** The conventional type of godown can store 500 MT to 1000 MT food grains for 6 months to 12 months maximum with regular spray of fumigants. In addition, all loading, unloading, weighing etc need to be done manually which needs huge manpower.
- ii. **Area of Land Requirement:** The area of land required for conventional storage godown is five times more than that of modern (silo) storage godown.
- iii. **Fumigant Requirement:** Consumption of fumigant is very high compared to the modern silo type food godown.
- iv. **Manpower:** More gunny bags and skilled handling laborers are required at the time of storage.
- v. **Poor Quality of Construction Works:** So far cracks have been created in 21 godowns cracks just after few months of construction works.
- vi. **Lack of Internal Roads:** Only 32 (23.02%) godowns had no internal RCC roads which created problems for loading and unloading of grains.
- vii. **Poor Quality of Ventilation and Main Door:** So far main door and ventilation windows glass were very poor quality as such damage had occurred already in few godowns.

### Assessment of the Sustainability of the Works

- i. **Quality of the Works:** PWD and project management personnel had looked after the quality of works.
- ii. **Durability of the Works:** According to the PWD, the newly constructed food godown building is durable for maximum of 100 years subject to regular repair and maintenance.
- iii. **Sustainability of the Project:** The risk of food crisis during disaster has been reduced by ensuring adequate level of government stock at 75 Upazila of 15 administrative districts in the northern region.
- iv. **Management:** Overall achievement of the project has highly appreciated by the millers, businessman, farmers and other traders, DGOF officials and the people in and around the project area.
- v. **Cost-effectiveness of the Works:** As 139 new food godowns has ensured additional 1.10 lakh MT food grain storage capacity which will reduce food crisis at the disaster/crisis areas.

### Recommend for more Cost-effective Management

- i. **Regular Repair and Maintenance:** All repair and maintenance works need to be done regularly and these should be started immediately.
- ii. **Avoidance of Additional Time of Implementation:** Delay of the project implementation should be avoided to get the benefits from the project.
- iii. **Scarcity/Non Availability of Land:** Before taking any project for this type of conventional food godowns, land scarcity and its importance in the country need to be considered.
- iv. **Construction of Silo Food Godown:** Considering cost-effective management advantages of silo food godowns, the authority needs to construct large volume capacity like 20,000 to 50,000 MT with full automation facilities in future which will save land and increase longevity of storage up to 2-5 years from 6 months without loss.
- v. **Construction of Food Godown under PPP:** Mixed opinion has been found in this regards. More details study need to be explored further with details scope of PPP for better understanding of the private sector involvement in food godown construction.
- vi. **Baseline Information:** Project should have benchmark survey before commencement of the work so that project implementation changes can assess from the baseline information.

### Conclusion

The project has succeeded in achieving its target for ensuring food security net, price incentive, fair price and poverty reduction. Construction of new godown increased additional 1.10 lakh MT food grain storage capacity at government level which ensured price stability in the market. The project had significantly positive impact on women's empowerment and raising consciousness level of farmers on crop production.

## **CHAPTER 1 BACKGROUND AND OBJECTIVES**

### **1.1 Background**

Food is a basic human need and plays a crucial role in the agro-based economy of Bangladesh, where a large proportion of income of the population is allocated to food. The first and foremost responsibility of the State is to ensure an uninterrupted supply of food to all people at all time. According to the Article-15(a) of the constitution of Bangladesh, it shall be a fundamental responsibility of the State to secure its citizens to the provision of basic necessities of food. As per Government's Allocation of Business, it is the duty of the Ministry of Food to establish a dependable food security system for the nation. The Government of Bangladesh is firmly committed to achieve food security for all, defined at the 1996 World Food Summit as: access by all people at all times to the food needed for an active and healthy life. This provision is also reflected in all the development plans of the Government. The goal of the food policy is to ensure a dependable food security system for all people of the country at all times. One of the important aspects of food security is to ensure sustained availability of food to meet all people's demand at prices commensurate with their income. Food security is then achieved when all people can buy adequate good quality food sufficient for maintenance of an active and healthy life. It is essential to achieve an overall development of agriculture to ensure production and marketing of food grain as well as non-food grain items, to create employment opportunities and increase real income of the poor, ultimately to improve their nutritional status.

Agriculture is the backbone of Bangladesh representing crops, livestock, fisheries and forestry. The contribution of agriculture in GDP has been estimated 19.29 percent (crops) latest by 2011-2012 (BBS-2012). The economy of Bangladesh is vitally dependent on agriculture, which supports the vast majority of her population. The sector is contributing 7.65 percent of total budget (2011-2012) and 47 percent employment of the total labor force (Economic Analysis Survey 2011). Within the agriculture sector, food crop production accounts for about 78 percent of the total value addition. Bangladesh currently has 8.52 million hectares (ha) of net cultivable area with a cropping intensity of about 191 percent (Statistical Pocket Book, BBS 2012). Among crops, rice occupies about 78.52 percent of the total cropland area where wheat and vegetables occupy only 7% and 3% respectively (BBS 2010).

According to the Department of Agricultural Extension (DAE-2012), the northern region produced total 2,67,75,381 M.T. Boro, T. Aman, Aus and Broadcast Aman rice during the past three seasons till December 31, 2012. The effective capacity of the existing godowns in the region is 5,75,600 MT which is half of the actual scope of storage. About 60-70% of the targeted food grains are procured for food godown from the northern region of Bangladesh. It has been requested continuously by the farmers, millers and the people connected with food grains production and marketing to increase storage capacity of the food godown of DGoF. The large quantity of procured food grain cannot be stored within the existing storage capacity of the region. During procurement period this paucity of space creates congestion in the godowns which sometimes results in impeding procurement programme itself. Due to inadequate transport, logistics in rail, road and waterways, cost involvement for required bulk food grain transportation to different deficit region is remarkably high. It hampers not only the procurement programme but also discourages the producers in getting the incentive prices. In order to make food security system more effective, an adequate emergency stock should be maintained by local procurement from the farmers by providing incentive price during major harvesting season. For storing this procured food grain, construction of new godowns in the northern area is necessary. With this objectives a feasibility study for construction of 200 units new food godowns with

ancillary facilities having total capacity of 1,00,000 (one lakh) M. Tons was completed in 1999-2000 by the DGoF. M/S Development Design Consultant Ltd. was appointed as local consultant who submitted final report with proper suggestion based on analysis of data received from the field. In this report they recommended for construction of additional 2.15 lakh MT capacity new food godowns in the northern region of the country by 2010.

### 1.2 Project Summary

1	<b>Name of the Project</b>	Construction of New Food Godown of 1.10 lakh M.T. Capacity in the Northern Region of the Country	
2	<b>Sponsoring Ministry</b>	Ministry of Food	
3	<b>Executing Agency</b>	Directorate General of Food & Public Works Department	
4	<b>Source of fund</b>	GOB (DRGA-CF of Japan)	
5	<b>Location of the Project</b>	76 Upazila under 15 administrative districts. (7 of Rajshahi Division & 8 of Rangpur Division)	
6	<b>Estimated Cost</b>	<b>Total (figure in lakh Taka)</b>	
		Original 24,100.00	Actual 21,695.00
7	<b>Implementation Period</b>	Original	From July 2009 to June 2011
		Latest Revised	From July 2009 to June 2012
		Actual	From July 2009 to June 2012

### 1.3 Domestic Food Grain Production Scenario

The Department of Agricultural Extension (DAE) set the food grain production target for FY 2011/12 at 35.8 million MT which is 3.7 percent higher than last year's actual production of 34.5 million MT. Estimation of Aus production was finalized by BBS at 2.3 million MT which is 16.7 percent lower than the target. The BBS final estimate of Aman production was 12.798 million MT in FY 2011/12, which is almost the same in the previous fiscal year (12.792 million MT). This is 0.54 million MT less than the DAE's projection of 13.3 million MT. Given that Boro production coverage was slightly less than the last fiscal year. The Boro rice production is expected to 18.4 million MT (Grain and Feed Annual, BBS, DAE 2012).

### 1.4 Government Food Grain Procurement, Import and Public Stock Situation

The opening public stock of food grain for the FY 2012/13 is 23 percent higher than last year's. As of 3 July 2012, the public stock stood at 1.2 million MT (rice stock at 0.96 million MT and wheat stock at 0.23 million MT). In addition, as of mid-April, a total of 89,000 MT of rice and wheat was in the sea port for unloading (MoF). The total food grain import in the FY 2011/12 was 2.3 million MT of which 0.5 million MT was rice and 1.8 million MT was wheat. Due to higher opening stock, satisfactory stock situation in the government storage, as well as good domestic production, the total import of food grains for the FY 2011/12 was only 43 percent of total import in FY 2010/11. The procurement of Aman rice from the last harvest reached about 0.35 million MT which represented the highest ever quantity of aman procurement in the history of domestic procurement. The government started Boro rice and Boro paddy procurement on 3 May at 28 Taka/kg and 18 Taka/kg respectively. It aims to procure 900,000 MT of Boro rice and 150,000 MT of Boro paddy by 30 September. According to the Food Division, 477,843 MT of rice have been purchased under the running Boro collection programme as of 24 July 2013. The government planned to distribute 2.9 million MT of food grains through monetized channels (OMS, Fair price card/FPC etc) and non-monetized channels (FFW, VGD, VGF, TR etc) respectively in the FY 2012/13 under the Public Food Distribution System (PFDS); (FPMU, FSR 86). According to the FY 2013/14 budget, 38.7 million people or 8 million households will be covered under the current food security based safety net programmes such as OMS, VGD, VGF, TR, GR

food, Food Assistance in Chittagong Hill Tracts, FFW, and major employment generation and development programmes like rural employment and rural maintenance programme, employment generating programme for the ultra poor.

### **1.5 Project Objectives**

One of the important aspects of food security is to ensure sustained availability of food to meet all people's demand at prices commensurate with their income. A significant portion of surplus food grain is produced in the northern region of the country. The effective capacity of the existing godowns in the region is 5,75,600 MT which is half of the actual scope of storage.

Considering this, the objectives of the project are fixed to:

- increase 1.10 lakh MT food grain storage capacity in addition to existing capacity of the Directorate General of Food;
- improve food security net of the country;
- inspire farmers by procuring food grain for more food production; and
- decentralize additional food storage to cater smooth supply at time of scarcity or crisis.

### **1.6 Components of the Project**

The project has the following components:

#### **Component 1: Revenue Component:**

The component-1 comprises the following sub-components:

**Subcomponent 1.1: Supply and Services:** This includes salary, allowances, vehicle operation cost, stationary, stamp seal, advertisement for tender and recruitment, soil investigation, testing of materials, honorarium preparation of DPP, RDPP, tender document and structural drawing etc

**Subcomponent 1.2: Repair and Maintenance:** This includes repair and maintenance of 30 numbers of inspection vehicles for PWD and 2 numbers of vehicles for PD and DPD.

#### **Component 2: Capital Component**

Purchase of vehicles (2 Nos), quality control for equipment, computer with software, printer, table, chair etc, office furniture, construction of 80 nos. 1000 MT and 60 nos. of 500 MT food godown, site development, civil works, internal road, electric works and wooden dunnage etc.

### **1.7 Objectives of the Impact Evaluation Study**

Objectives of the impact evaluation study are to:

- review the implementation status of the project in respect of: a) financial aspect, b) food grain storage facilities and c) construction of new godowns;
- assess the impact of various measures/programmes towards improved food security net, increased price incentive, aspiration and overall poverty reduction of the farmers and local community;
- examine the internal strengths and weaknesses, opportunities and external threats towards project through SWOT analysis; and
- recommendations for cost-effective management, improve sustainability of the present project activities and replication of its activities in similar projects in future.



## **1.8 Scope of Work**

The scope of work of the study is mentioned below:

<b>Coverage of major works</b>	<b>Sample to be covered</b>
1. Construction works of new food grain godowns	100% of the project areas
2. Maintenance and repairs of both new and old godowns	
3. Project related other activities	
4. Beneficiaries	Statistical representative sample

### **Specific responsibilities of the consultants:**

- review the implementation status of the project in respect of: a) financial aspect, b) food grain storage facilities and c) construction of the new godown;
- review the project design and major activities of the programme;
- assess the intended impact of the programme as assumed in the DPP;
- review the strengths, weaknesses and external threats towards the programme implementation;
- arrange a local level workshop in any of the project areas to hold decision with stakeholders and beneficiaries during data collection;
- prepare data entry format in SPSS, data entry works, verification, processing and analysis etc;
- prepare a evaluation report based on the data collected from the project areas and get approval from the authority concerned; and
- arrange a national level workshop for dissemination of the study findings and finalize the report incorporating workshop inputs.

## CHAPTER 2 APPROACH AND METHODOLOGY

### 2.1 Approach

The consultant's approach was in line with the main objective of the study that seeks to gather information and provided the complete picture on the implementation status of the project including the construction of food godown, impact of project in respect of food security net, price inventiveness and aspiration of farmers for more food production and overall poverty reduction. In addition, the study had identified the strengths, weakness, threats and opportunities of the project and made recommendations for better food security net of the country.

### 2.2 Methodology

The methodology for impact evaluation study has been presented below:

#### 2.2.1 Design of the Study

##### 2.2.1.1 Programme Group Survey

The population under the study universe is constituted to review the different aspect of implementation status of the project and its impact regarding fair price and price incentive of food grains, aspiration of farmers for more crop production, food security net, employment and overall poverty reduction of the people of the at the project upazila, project planning, financial management, construction status of "New Godowns" etc. Thus, it is appropriate to determine a representative sample size of beneficiaries at first. For such purpose we adopted a sound statistical method as given below.

For estimating a proportion  $p$  with a  $100(1 - \alpha)\%$  intended probability of the sample value to fall within  $\pm rp$  interval around the population value, the formula for the sample size used is

$$n = \frac{n_0}{1 + \left(\frac{n_0}{N}\right)} \times d, \text{ With } n_0 = \left(\frac{1-p}{p}\right) \left(\frac{z_{\frac{\alpha}{2}}}{r}\right)^2,$$

Where;

$p$  = A reasonable pre-assumed value of the population proportion,

$z_{\frac{\alpha}{2}}$  = Value of standard normal variant allowing  $100(1 - \alpha)\%$  confidence,

$r$  = Maximum fraction of  $p$  that would be allowable margin of error,

$d$  = The design effect used for multi-stage sampling,

and  $N$  = Population size.

The variable 'whether food price increased' is taken as the key variable, since not much is known apriority about the variable for the current study, the safest value of  $p = 0.5$  was taken, hence the estimated sample size for  $p = 0.5$  would suffice situations with any other value of  $p$ . For a 90% confidence and 5% of the true value of  $p$  is considered, we have,

$z_{\frac{\alpha}{2}} = 1.64$  and  $r = 0.05$ .  $d$  is taken in the range of 1.5-2.0 for most socio-economic surveys in Bangladesh, we consider  $d = 1.7$ .

With these values the calculation of the sample size gives

$$n_0 = \left( \frac{1-p}{p} \right) \left( \frac{z_{\frac{\alpha}{2}}}{r} \right)^2 = 1082.$$

It is observed in the theory that for  $N \geq 8000$ ,  $n \approx n_0 \times d$ , equation (2), thus for our case, we get,  $n=1840$  (approximately)

In order to reach such beneficiaries we had adopted two-stage random sampling procedure. For having a round splitting in 76 Upazila, the sample size is 1,824. The total 1,824 beneficiaries had been selected by using simple random sampling procedure on the basis of areas and location considering surplus crop producers.

In order to reach stipulated beneficiaries, supervisor of the study had been contacted to the District Food Controller and Upazila Food Officer to collect registered miller list of the project district and Upazila of the study area before the study. Supervisors then collected cluster group of farmers list from the miller that is engaged to sell their paddy/rice to the millers for food godown. Such initiative was aimed at identifying targeted population in the Upazila. From this cluster sampling frame the allotted number of respondents had been deduced and adjusted to make up the total number of 1824. For selecting respondents, the cluster group of farmers and other target beneficiaries for each Upazila had been identified at the adjacent areas of the constructed godowns from where the 24 number of respondents had been selected using a Simple Random Sampling (SRS) procedure.

**Table 2.1: Allocation of Project Respondents in Study Upazila**

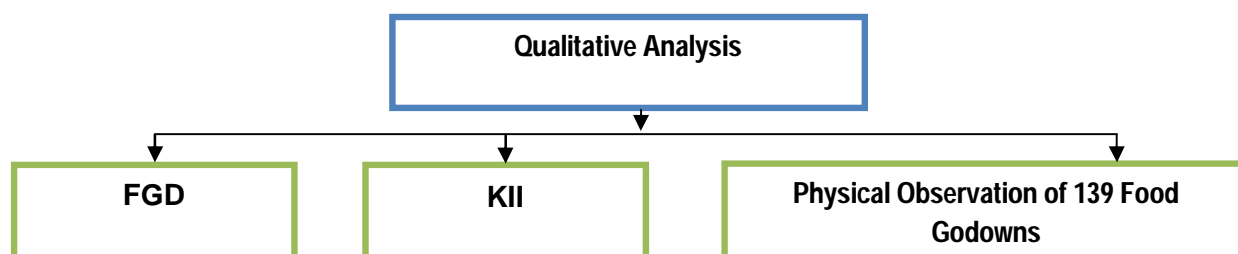
<b>Division (Program me)</b>	<b>District (100%)</b>	<b>Upazila<sup>1</sup> (100%)</b>	<b>Beneficiaries Crop Producers, Traders, Millers &amp; Community people (Statistical representative sample No)</b>
Rangpur	1. Dinajpur	12	288
	2. Thakurgaon	4	96
	3. Panchagarh	3	72
	4. Nilphamari	2	48
	5. Lalmonirhat	4	96
	6. Kurigram	5	120
	7. Gaibanda	4	96
	8. Rangpur	5	120
Rajshahi	9. Joypurhat	3	72

<sup>1</sup> Data was collected from 1824 respondents of 76 upazila but analysis has been made on 1800 beneficiaries of 75 upazilas according to the PCR latest status of food godown construction

	10. Bogra	10	240
	11. Noagaon	4	96
	12. Sirajganj	6	144
	13. Pabna	7	168
	14. Rajshahi	4	96
	15. Natore	3	72
<b>Total</b>	<b>15</b>	<b>76</b>	<b>1,824</b>

### 2.2.1.2 Qualitative Analysis

In this analysis the most appropriate tools are used as follows:



#### Instruments for data collection and Respondents:

- (a) **Programme Group:** The project beneficiary filled in a set of pre-designed questionnaire encompassing issues to assess different aspects of benefit in regards of price incentive, food availability, food security net, marketing, aspiration of farmers in for more crop production, fair price, employment, and poverty reduction etc under the project areas.
- (b) **Focus Group Discussion:** The target audiences such as crop producers, traders, millers, food control officers and project partners regarding different activities of food godowns construction and renovations activities had been participated in the FGD. One FGD had been organized with 20 participants for each of 15 districts. Thus, total 300 participants had been covered under this method of opinion collection and validation of the study findings. The FGD were conducted at a venue, which is convenient for the participants and allows them to speak freely.
- (c) **Key Informant Interview (KII):** Total 76 Key Informants Interview, one from each project Upazila with concerned officials of DGOF office were interviewed about the project activities regarding project management and implementation, including financial aspects of the project, project strengths, weakness, threats and opportunities etc.
- (d) **Physical Visit and Observation in Food Godowns:** As per instruction of TOR, the consultant visited and observed the present status and quality of construction works of 140 food godowns (100%) whether it has followed standard drawing, soil testing, structural design, construction code, site selection etc as per standard provision of DPP time and cost or not etc.

**Table 2.2: List of Food Godowns Inspected and Verified during Study**

Division	District	Upazila	Name of Godown	Number	Per Godown Capacity (M.T.)	Total Capacity (M.T.)	
Rangpur	Dinajpur	Ghorahat	Raniganj	1	1000	1000	
			Dugdugi	1	500	500	
			Ghorahat	1	500	500	
		Hakimpur	Hili	1	1000	1000	
		Fulbari	Madilahat		1000	1000	
			Fulbari		1000	1000	
		Nawabganj	Daudpur	1	500	500	
			Baduria	1	500	500	
		Parbatipur	Ambari	1	1000	1000	
			Manmathpur	1	1000	1000	
			Babanipur	1	500	500	
			Parbatipur	1	500	500	
		Chirir Bandar	Chirir Bandar	1	1000	1000	
			Ranirbandar	1	1000	1000	
		Dinajpur	Pulhat	1	500	500	
		Bochaganj	Setabganj	1	1000	1000	
		Biol	Mangalpur	1	1000	1000	
			Biol	1	1000	1000	
		Birganj	Birganj	1	1000	1000	
		Kaharol	Kaharol	1	1000	1000	
		Khansama	Packerhat	1	1000	1000	
			Khansama	1	1000	1000	
	<b>Total</b>	<b>12</b>	<b>22</b>	<b>22</b>	<b>-</b>	<b>18,500</b>	
	Thakurgaon	Thakurgaon	Garayahat		1	500	500
					1	1000	1000
			Bhulirhat	1	1000	1000	
			Shibganj	1	500	500	
			Thakurgao	1	500	500	
		Ranishankail	Ranishankail	1	1000	1000	
				1	500	500	
		Baliadangi	Baliadangi	2	1000	2000	
			Lahirihat	2	1000	2000	
		Haripur	Jadurani	1	500	500	
<b>Total</b>	<b>4</b>	<b>8</b>	<b>12</b>	<b>-</b>	<b>9,500</b>		
Panchagarh	Debiganj	Debiganj	2	1000	2000		
	Atuary	Mirzapur	1	1000	1000		
			1	500	500		
	Voda	Shakoa	1	500	500		
<b>Total</b>	<b>3</b>	<b>3</b>	<b>5</b>	<b>-</b>	<b>4,000</b>		

**Impact Evaluation Study of the Construction of New Food Godown of 1.10 lakh M.T. Capacity in the Northern Region of the Country under IMED**

Division	District	Upazila	Name of Godown	Number	Per Godown Capacity (M.T.)	Total Capacity (M.T.)	
	Nilphamari	Jaldhaka	Jaldhaka	1	1000	1000	
		Kishoreganj	Kishoreganj	1	1000	1000	
	<b>Total</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>-</b>	<b>2,000</b>	
	Lalmonirhat	Lalmonirhat	Lalmonirhat	2	500	1000	
			Tista	1	1000	1000	
		Patgram	Patgram	1	1000	1000	
			Votmari	1	1000	1000	
		Kaliganj	Kakina	1	1000	1000	
				1	500	500	
		Aditmari	Aditmari	1	500	500	
	<b>Total</b>	<b>4</b>	<b>6</b>	<b>8</b>	<b>-</b>	<b>6,000</b>	
		Kurigram	Rajarhat	Rajarhat	1	1000	1000
			Chilmari	Chilmari	1	500	500
Roumari			Moumari	1	500	500	
Rajibpur			Rajibpur	1	500	500	
Ulipur			Ulipur	1	500	500	
<b>Total</b>		<b>5</b>	<b>5</b>	<b>5</b>	<b>-</b>	<b>3,000</b>	
Rangpur		Badarganj	Badarganj	1	1000	1000	
		Pirganj		1	500	500	
		Pirganj	Pirganj	1	1000	1000	
			Bhendabari	1	500	500	
		Gangachara	Gangachara	1	1000	1000	
		Rangpur	Rangpur	1	500	500	
Kaunia		Kaunia	1	500	500		
<b>Total</b>		<b>5</b>	<b>6</b>	<b>7</b>	<b>-</b>	<b>5,000</b>	
Gaibandha		Palashbari	Palashbari	2	500	500	
		Gaibandha Sadar	Gaibandha sadar	1	1000	1000	
		Fulchari	Fulchari	1	500	500	
	Shagata	Bonarpara	1	500	500		
<b>Total</b>	<b>4</b>	<b>4</b>	<b>5</b>	<b>-</b>	<b>3,000</b>		
Rajshahi	Joypurhat	Kalai	Kalai	1	1000	1000	
			Molambari	1	500	500	
		Khetlal	Khetlal	1	1000	1000	
		Panchbibi	Panchbibi	2	1000	2000	
	<b>Total</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>-</b>	<b>4,500</b>	
	Bogra	Nandigram	Nandigram	1	1000	1000	
		Bogra sadar	Bogra sadar	1	500	500	
			Sukhanpur	1	500	500	
			Namuja	1	1000	1000	
			Betgari	1	1000	1000	
	Dhunat	Dhunat	1	1000	1000		

**Impact Evaluation Study of the Construction of New Food Godown of 1.10 lakh M.T. Capacity in the Northern Region of the Country under IMED**

Division	District	Upazila	Name of Godown	Number	Per Godown Capacity (M.T.)	Total Capacity (M.T.)	
		Sherpur	Goshaibari	1	1000	1000	
			Sherpur	1	1000	1000	
		Dupchachia	Mirjapur	1	500	500	
			Talura	2	1000	1000	
				1	500	500	
		Shibganj	Dhupchachia	2	1000	2000	
			Shibganj	1	500	500	
		Gabtali	Mokamtala	1	500	500	
			Shikpara	1	1000	1000	
		Sariakandi	Sariakandi	1	1000	1000	
		Sonatala	Sonatala	1	500	500	
		Adamdigi	Santahar	10	1000	10000	
			CSD	2	500	1000	
			Santahar	7	1000	7000	
			BADC	1	500	500	
		Nasratpur	1	1000	1000		
		<b>Total</b>	<b>10</b>	<b>18</b>	<b>40</b>	<b>-</b>	<b>35,000</b>
		Noagaon	Badalgachi	Badalgachi	1	1000	1000
				1	500	500	
	Manda		Prashadpur	1	1000	1000	
	Mohadevpur		Matjihat	1	500	500	
			Mahisbathan	2	500	1000	
	<b>Total</b>	<b>3</b>	<b>4</b>	<b>6</b>	<b>-</b>	<b>4,000</b>	
	Sirajganj	Royganj	Chandaikona	1	1000	1000	
		Ullapara	Ullapara	1	1000	1000	
		Kamarkhond	kamarkhond	1	500	500	
		Belkuchi	Belkuchi	1	500	500	
		Kazipur	Kazipur	1	500	500	
		Tarash	Tarash	1	500	500	
	<b>Total</b>	<b>6</b>	<b>6</b>	<b>6</b>	<b>-</b>	<b>4,000</b>	
	Pabna	Pabna Sadar	Pabna Sadar	2	1000	2000	
		Iswardi	Muladuli	2	1000	2000	
		Chatmohor	Chatmohor	1	500	500	
		Bera	Bera	1	500	500	
		Sathia	Sathia	1	500	500	
		Pabna	Nupur	1	500	500	
		Atghoria	Atghoria	1	500	500	
	<b>Total</b>	<b>7</b>	<b>7</b>	<b>9</b>	<b>-</b>	<b>6,500</b>	
	Rajshahi	Poba	Naohata	1	1000	1000	
		Putia	Putia	1	1000	1000	
		Bagmara	Bhabaniganj	1	500	500	
		Mohanpur	Mohanpur	1	500	500	

**Impact Evaluation Study of the Construction of New Food Godown of 1.10 lakh M.T. Capacity in the Northern Region of the Country under IMED**

Division	District	Upazila	Name of Godown	Number	Per Godown Capacity (M.T.)	Total Capacity (M.T.)
	<b>Total</b>	<b>4</b>	<b>4</b>	<b>4</b>	<b>-</b>	<b>3,000</b>
	<b>Natore</b>	Gurudaspur	Gurudaspur	2	500	1000
		Singra	Singra	1	500	500
		Natore Sadar	Natore Sadar	1	500	500
	<b>Total</b>	<b>3</b>	<b>3</b>	<b>4</b>	<b>-</b>	<b>2,000</b>
<b>Grand Total</b>		<b>76</b>	<b>103</b>	<b>140</b>	<b>1,000 M.T 80 + 500 M.T. 60</b>	<b>1.10 lakh M.T.</b>

**Table 2.3: List of Indicators used during Physical Verification**

SL	Area to be verified	Checklist Indicators
1	Preparatory works	Soil test, tender document preparation, tender evaluation, selection and signing of contract, drawings, testing of materials, contractor performance evaluation, contract period and cost, and any dispute of contractors etc
2	Site Development	Site development procedure, reasons to select the site, what problem arise to select site and mechanism to resolve it, and cost
3	Civil Works	Quality of civil works, quality assurance mechanism, lab testing, security of contractors, cost, time, delivery time: planned and actual, present condition, and internal roads.
4	Extra foundation	Reasons for extra foundation, performance and quality of extra foundation works, cost
5	Electrical Works	Internal and external electrical works, cost, performance and quality of works, and present condition etc
6	Wooden Dunnage	Quality of wooden dunnage that made of garjan wood, present condition, contractors of work, quality and overall performance.

**Summary of the data and information collection is presented below:**

**Table 2.4: Summary of Sample Size for the Study**

Division	Beneficiary	FGD participants	KII Participants	Physical Visit and Observation	Total
Rangpur	860	160	36	Physical inspection for implementation status of construction works	<b>1056</b>
Rajshahi	964	140	40		<b>1144</b>
<b>Total</b>	<b>1824</b>	<b>300</b>	<b>76</b>		<b>2,200</b>



**Table 2.5: Number and Types of Respondents**

Activity	Participants/ Respondents	No of Respondents	Respondents Category
<b>A. Quantitative Survey</b>			
<b>A 1. Survey: (Direct Interviews with Questionnaire)</b>	Beneficiaries	1,824	Beneficiaries of the project (crop producers, traders, millers and community people etc) who have received benefit due to project intervention include poor women
<b>B. Qualitative Survey</b>			
<b>B1. FGD (15 Numbers)</b>	Homogenous Group (15X20)	300	All categories of beneficiaries includes crop producers, traders, millers and community people
<b>B2. KII</b>	Project Management Personnel	76	Senior Officials related to project management and planning include financial aspects of the project
	Senior DGoF officials		Senior level of DGoF officials relevant to the project activities
<b>B3. Physical Inspection and Observation</b>	Quality and operational status of construction works of 140 numbers food godowns with capacity of 1.10 lakh M.T at 76 Upazila	-	Contractor and suppliers, contract period, completion period, tender, selection, design, and drawings, site selection, cost of works/goods, guarantee of works/goods, quality, durability, sustainability, cost-effectiveness of godowns, link road, and operational status etc.
<b>Total</b>		<b>2,200</b>	

### 2.2.1.3 Implementation and Data Management Plan

The implementation and data management plan included data collection, data management, processing, analysing and report writing including quality assurance of the data etc.

### 2.2.1.4 Quantitative Survey

**Survey:** For selecting respondents, the cluster group of farmers and other target beneficiaries for each Upazila had been identified at the adjacent areas of the constructed godowns with the support of food godown registered miller from where the 24 number of respondents had been selected using a Simple Random Sampling (SRS) procedure. After selecting the location and identifying the respondents randomly from the location, data collection had been conducted using pretested structured questionnaire to cover the required numbers of respondents, so that the representative samples of data can be obtained.

### 2.2.1.5 Qualitative Survey

**Focus Group Discussions (FGDs):** Total fifteen (15) FGDs session had been conducted comprising one for each of the fifteen districts. Each FGD session were conducted with 20

target group participants such as crop producers, traders, millers and community people etc and project partners regarding food security and storage.

**Key Informants Interview (KII):** A total of maximum 76 KII were interviewed comprising one key informant from each project Upazila. The key informants had been interviewed considering a semi structured questionnaire about the concept and design, strengths, weaknesses, threats and opportunities of the project, and suggestions for better management.

**2.2.1.6 Development of Methods, Tools, and Checklist:** The consultants collected four sets of data and feedback (i) first one through statistical data using structured questionnaire, (ii) second one through PRA using FGD methods, (iii) third through KII, (iv) fourth methods using observation checklist for physical verification of food godowns. The indicators had been prepared following the indicators mentioned in TOR.

Classification	Indicators
Demographic characteristics	Age, sex, religion, marital status, occupation, education, land/pond tenure, assets, and liabilities
Crop Producers	Land of crop production, total volume of production, consumption, sale of crop products, fair price, aspiration on production, access to sale, problems face, input support, income expenditure, poverty status, total earning, source of earning, agri-activities dependent persons, others etc
Traders/Millers	Volume of trade with government, market price, benefit of government procurement, problem encountered during sale, access and availability of products to sale, location etc
Community People	Benefit of government godowns and storage, price incentive of the poor, availability of food, food security net, fair price, employment, and overall poverty status etc

**2.2.1.7 Instruments used for the assessment and survey:** To keep similarity and consistency in the reports, the following instruments were used for the survey.

- Checklist for Collection of Secondary Data
- Questionnaire for beneficiaries
- Guidelines for Focus Group Discussion
- Checklists for Key Informants Interview
- Checklist for Physical observation

**2.2.1.8 Finalization of Questionnaire:** Based on the comments and suggestions of the Technical Committee (TC) and Steering Committee (SC) meeting, the questionnaire had been finalized in light with the objectives and scope of works of the study. Pre-testing of the questionnaire was done in Sirajganj district two locations (Belkuchi & Tarash). On the basis of pre-testing results and in consultation with the IMED, necessary modifications and improvements were incorporated into the questionnaire.

**2.2.1.9 Recruitment and Training of Field Staff:** The consulting firm had recruited 16 enumerators and 02 supervisors from among the candidates having knowledge and previous experience in conducting similar studies and data collection in the similar area. The data enumerators had at least a bachelor's degree or a master's degree in social science. A three day training course had been organized for the data collection team upon approval of questionnaire from the SC. The experts and the senior key personnel of the firm provided the training.

**2.2.1.10 Method of Data Collection:** Direct personal interview approach was adopted for collection of primary data. The field enumerators personally contacted the respondents and obtained desired information by explaining the objectives of the study to the respondents. Each enumerator was provided with an identity card (to hang outside the front pocket of the shirt), a set guideline for code and data collection system and overall administration of the study, a check list to ascertain the target beneficiary and, the designed and pre-tested questionnaire for data collection and administration of the study. The supervisors in addition to obtain data through checklist were also responsible for supervision of fieldwork, field editing of questionnaires, and management of all sorts of logistic support for the team. The supervisors collected all the filled up questionnaires from the enumerators at the end of the days and the supervisors checked the schedules and discussed with the enumerators for improvement in the following days for any deviation was observed. After collecting all the filled up questionnaires from the enumerators of a location, he/she sent them by special messenger to the project office in Dhaka for further action and punching in the computer software designed for the study. A comprehensive instruction manual on data collection was prepared for the field enumerators to help them in conducting interviews efficiently and to maintain standard procedures.

**2.2.1.11 Inspection and Supervision of Field Work:** The supervisors supervised the field works of the field enumerators. The specialists while in field visit observed the participation and cooperation of beneficiary households in survey work. In addition to the supervisors, the consultants monitored the field survey activities in selected places to oversee the survey activities to ensure quality. They also visited the field in selected areas at random to verify and confirm the survey findings with the actual situation. More importantly, the consultants participated in some Focus Group Discussion (FGD). The consultants observed, formally and non-formally, the collection of information. They visited the survey area and thoroughly observed the project intervention, effect of participation and nonparticipation of beneficiary farmers and other stakeholders and noted it down to reflect in the report. The consultant and field supervisors dealt physical verification and observation at 75 Upazila under the project.

**2.2.1.12 Project Quality Assurance Measures:** The highest possible care was taken in ensuring a high quality of collected data and information. A system of Total Quality Management (TQM) was instituted which comprised of all systematic arrangements and activities directed towards safeguarding, maintenance and promotion of quality throughout the study period. To ensure appropriate quality of the collected data/information, quality control was maintained in various steps in this study with quantitative and qualitative research endeavors. Quality was ensured in all the indicators, triangulation, analysis and reporting. A sound quality control system was developed to monitor the quality of data collection. For this purpose, experts, supervisors and quality enumerators were deployed to ensure quality data through: (i) field checking, and (ii) data monitoring. Field checking was undertaken in both 'presence' and 'absence' of the field teams. 'Checking in presence' was done through verification of the work of a field team in a sample area during the time of the questionnaire survey and qualitative studies. 'Checking in absence' was done through verification of the work of a field team in a sample area after the team leave the site, having completed its assigned work in the area. During their field checking, the expert performed re-interviews, and checked the data accuracy. 'Field checking in presence' was conducted for all field enumerators/facilitators, while 'field checking in absence' was done at randomly selected sites.

### **Data Management, Processing and Analysis**

**2.2.1.13 Data/Information Management:** As soon as the filled up questionnaires received from the field, the questionnaires were recorded in a registration book which note identification numbers. More specifically the data management comprised the following activities: (a) registration of data/data input, (b) data processing, and (c) report preparation.

Computer aided data processing and analysis technique had been employed for which a systematic approach is needed, where each and every activity had been identified properly.

**2.2.1.14 Data Origination:** The filled up questionnaires were considered as the source of raw data and for effective and accurate analysis and quality output generation. The following activities were undertaken on the collected data.

**2.2.1.15 Editing and Coding of Questionnaire:** During data collection from the respondents, there was possibility of some errors creeping in various forms such as inaccuracy, incompleteness, inconsistencies etc. Each questionnaire, was therefore, edited and coded before entry into the computer.

**2.2.1.16 Data Input to Computer:** Data input to computer included (a) developing appropriate computer program and (b) data entry operation. Keeping the objectives of the impact study in view, the consultants used SPSS 17.0 version as tool of data analysis.

**2.2.1.17 Data entry and processing:** The filled up questionnaires had been considered as the sources of raw data. For effective analysis and quality output generation, the following activities were undertaken on the collected data:

- ❖ Filing the filled up questionnaires and checklists;
- ❖ Editing and coding the questionnaires and checklists for entry into the computer; and
- ❖ Quality control and coding of open-ended responses.

**2.2.1.18 Data Analysis:** The consultants developed data analysis tools (programs) after finalization of data collection tools (questionnaire and data collection sheets) as an advance action so that data can be entered as these collected from farmers one by one. The consultants preferred MS Access and SPSS 17.0 programs for data processing. Primary data tables were generated for all major indicators.

## CHAPTER 3 ANALYSIS OF THE PHYSICAL OBSERVATION DATA

### 3.1 Introduction

This chapter describes overall implementation status and achievements of the Construction of New Food Godown of 1.10 lakh M.T. Capacity in the Northern Region of the Country which was implemented under the Food Division of the Ministry of Food (MOF). The project started from 01 July 2009 and was planned to be completed in 30, June 2011 but extended until June 2012. The objective of the project was to increase 1.10 MT food grain storage capacities to improve food security net of the country to ensure smooth supply of food at time of scarcity or crisis. As per the objectives, findings of the study have been presented herewith mainly based on the primary and secondary data.

The project was initially planned to implement in 24 months starting from July 2009 to July 2011 with a total cost of BDT: 24100.00 lakh but later duration was increased from 24 months to 36 months (from July 2009 to June 2012) with a reduced total budget of BDT: 21695.00 lakh.

### 3.2 Status of Financial Management

Based on the secondary information<sup>1</sup>, the major item-wise financial target and achievement of the project has been furnished in Table-1.1.

**Table 3.1: Major item-wise Financial Target and Achievement**

SL	Item	Unit		Cost in Lakh Taka		% of Total
		Type	No.	Total	Unit	
1	<b>Revenue Component</b>					
1.1	Salary and Allowance			30.5		0.14
1.2	Supply and Services			106.57		0.49
	Repair and Maintenance			21		0.10
2	<b>Capital Development</b>					
2.1	Vehicles (nos)	Nos	2	63.26	31.63	0.29
2.2	Quality control equipment		0			
2.3	Computer and accessories	Nos	5	4.14	0.83	0.02
2.4	Office furniture's	Set	3	2.99	1.00	0.01
2.5	<b>Construction of 80 Nos 1000 MT Food Godown (per Godown Cost BDT 187.93 lakh)</b>					
2.5.1	Site development	Sites	31	38.95	1.26	0.18
2.5.2	Civil works	Sqm	63983	12478.4	0.20	57.52
2.5.3	Cost for extra foundation					
2.5.4	Internal Road	sites	80	1321.6	16.52	6.09
2.5.5	Electrical works	sites	80	134.02	1.68	0.62
2.5.6	Wooden Dunnage	pcs	13608	1061.64	0.08	4.89
2.6	<b>Construction of 60 Nos 500 MT Food Godown (Per Godown Cost BDT 107.198 Lakh)</b>					
2.6.1	Site development	Sites	11	16.58	1.51	0.08
2.6.2	Civil works	Sqm	25137	5359.2	0.21	24.70
2.6.3	Cost for extra foundation					
2.6.4	Internal Road	sites	60	591.53	9.86	2.73
2.6.5	Electrical works	sites	60	66.48	1.11	0.31
2.6.6	Wooden Dunnage	pcs	4872	398.14	0.08	1.84
	<b>Total</b>			<b>21695.00</b>		

<sup>1</sup> RDPP, FD, MOF

It is revealed from the Table-1.1 that almost 90.02% (BDT 216.95 crore out of BDT 241.00 crore) budget of DPP of the project was utilized. The maximum fund was utilized under the line item of civil works of 80 numbers 1000 M.T godowns which was 57.52% followed by civil works of 60 numbers of 500 M.T. godowns (24.70%). The lowest budget was utilized under the office furniture (0.01%) followed by computer accessories (0.02%). The total construction cost of each 1000 M.T godown was 187.93 lakh taka while 500 M.T godown was 107.198 lakh taka.

### 3.3 Procurement Method

The construction works of 139 food godowns was completed under the supervision of the PWD and the project authority. The contractor of 50 packages had been selected by the Open Tendering Method (OTM). The contract approving authority was Head of Procurement Entity (HOPE) of PWD. But soil investigation and structural drawings of the 139 food godowns was completed through Request for Quotation (RFQ) under the Project Director.

### 3.4 Implementation Status of Food Godowns Construction Works

The implementation status regarding site development, civil works, internal roads, electrical works and wooden dunnage has been studied in the project areas through physical observations (using detailed observation checklists) at 75 upazilas of the 15 administrative districts in Rajshahi and Rangpur divisions by trained field supervisors under supervision of Civil Engineer. The visit has been conducted among project areas



Plate-3.1: New food godown at Thakurgaon

starting from Sirajganj to Panchagarh from 16 April to 06 May 2013. The data regarding the

implementation status of the construction works and its present conditions of the project godowns were collected and recorded as per design of the assignment.

Public Works Department (PWD) has completed the construction of 131 food godowns instead of 140<sup>2</sup> during March 2011 except 8 godowns that was completed in February 2012. According to the PCR one godown had been cancelled by the request of the DGOF to PWD as per his memo number *cDKw/Dbqab-88/2004 (Ask)/516, Zwi L:-14/05/2008* subsequent letter vide *cDKw/Dbqab-67/2008/1193/8 92, Zwi L:-16/10/2008* for preparation of DPP. Thus DPP has been recast with a view to construct 139 nos (each 1000 MT capacity of 81 nos and each 500 MT capacity of 58 nos) godowns with same capacity of 1.10 lakh M.T. on the land available within the existing LSD/CSD compound.

Total 42 sites development, 139 sites internal roads and electrical works and 18,180 pieces of wooden dunnage (garjan) was completed during July 2009 to March 2012. All works of the godowns have been found similar during physical visit. The status of the one-storey godown building, internal roads, design, ventilation, loading and unloading facilities, etc are same except few. All godowns are conventional types that were found in good except few where few damages have already occurred.

However, as per the data, the completion of construction work was found delay by about 9 months due to delayed of land acquisition, non-compliance and other related problems.

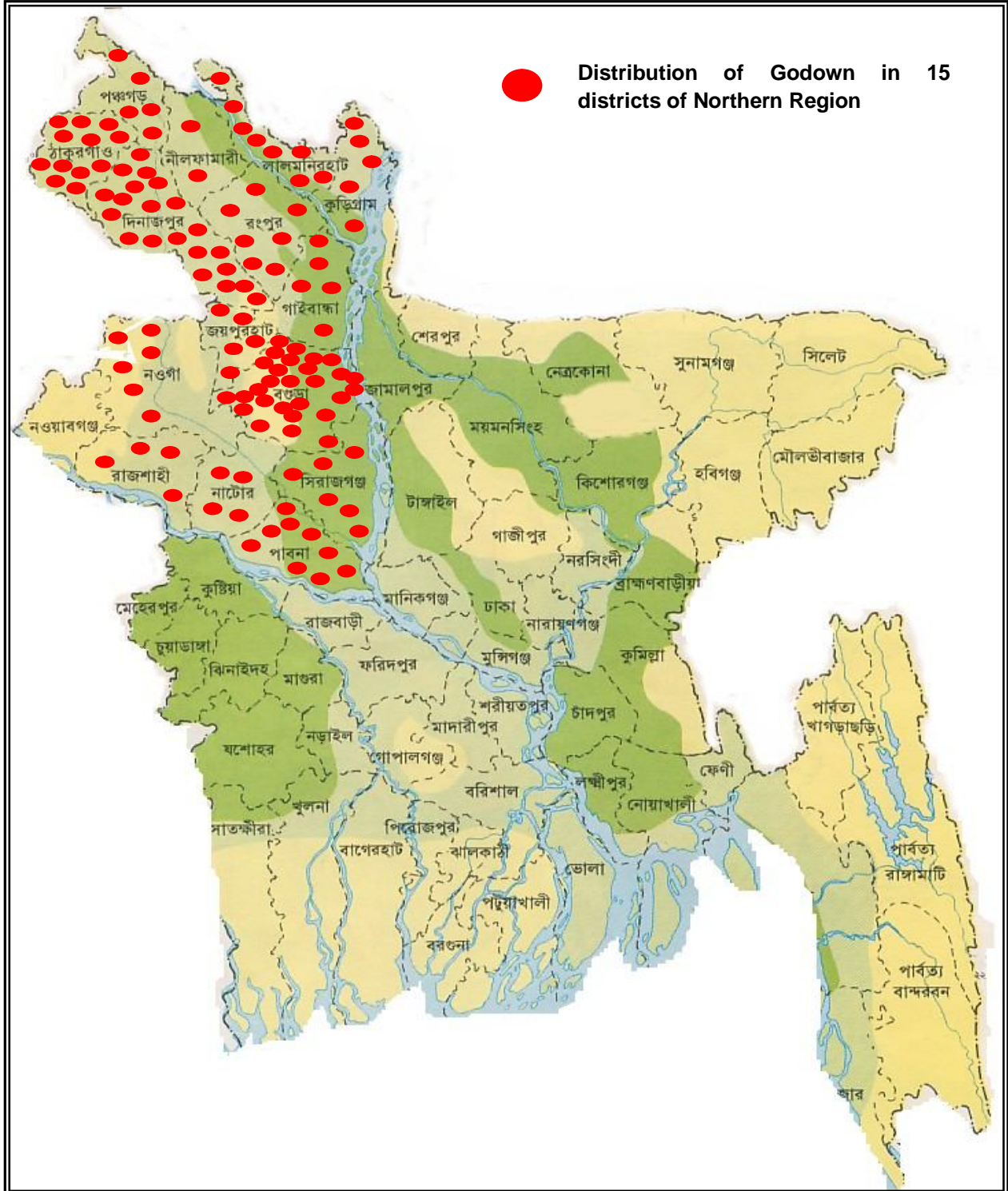
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<sup>2</sup> Due to non availability of land total number reduced from 140 to 139 godowns with same capacity of total 1.10 lakh M.T (Ref. PCR 7 & 13)

### 3.4.1 Distribution of New Food Godowns

The 139 new food godowns in 75 upazila of the 15 administrative districts of Rajshahi and Rangpur divisions have been shown in the Bangladesh map (Figure 3.2).

Figure 3.1: Food Godowns with Project Area in Bangladesh MAP



### 3.4.2. Construction and Functional Status of New Food Godowns

Most of the cases, the construction works of the food godowns has been found good during physical observation. However, cracks have been found on the walls and floors in some godowns. The summary of cost and contract period of construction works of the food godowns has been presented in Table 3.2 and the overall quality of the construction works of the new food godowns has been furnished in Table 3.3.

**Table 3.2: Cost and Contract Period for Construction Works of the Food Godowns<sup>3</sup>**

District	Unit	Quantity (MT)			Cost (Lakh Taka)	Contract Period
		1000	500	Total		
Dinajpur	Nos	15	7	22	2800.53	July'09-June'11
Thakurgaon	Nos	7	5	12	1520.98	July'09-Feb'12
Panchagarh	Nos	3	2	5	618.99	July'09-Dec'11
Nilphamari	Nos	2	-	2	296.33	July'09-June'11
Lalmonirhat	Nos	4	2	6	984.46	July'09-Dec'11
Kurigram	Nos	1	4	5	519.87	July'09-June'11
Rangpur	Nos	3	4	7	788.35	July'09-Dec'11
Gaibandha	Nos	1	4	5	512.46	July'09-June'11
Joypurhat	Nos	4	1	5	683.61	July'09-June'11
Bogra	Nos	30	10	40	5531.28	July'09-Dec'11 Twelve packages & July'09-March'12: Two packages
Naogaon	Nos	2	4	6	636.23	July'09-Dec'11
Sirajganj	Nos	2	4	6	671.39	July'09-Dec'11
Pabna	Nos	4	5	9	1108.49	July'09-Dec'11
Rajshahi	Nos	2	2	4	470.8	July'09-Dec'11
Natore	Nos	-	4	4	396.78	July'09-Dec'11
<b>Total</b>	<b>Nos</b>	<b>81</b>	<b>58</b>	<b>139</b>		

To fulfill the objectives of the current assignment, the consultant along with Civil Engineer have reviewed the RDDP, structural drawing and designs of the food godown as well as inspected all components of the project and compared the concept and design of the project with present condition of the construction works below:

**Concept of the Project:** The concept of the project has been fulfilled by the construction of 139 food godown. This project has also increased additional 1.10 lakh MT food grain storage capacity, improved food security net of the country, inspired farmers for more food production by procuring food grain and decentralized additional food storage to cater smooth supply at time of scarcity or crisis. Therefore, the targeted concept of the project has been fulfilled.

**Design of the Godown:** The design of the food godown was a conventional type where the area of land is required five times more that of modern godown. Bangladesh like densely populated country land is very vital thus we need to move for vertical expansion rather than horizontal expansion in regards of all type of infrastructure including godown. The observation found during physical visit as compared with structural design and drawings of the respective godown have been summarized as follows:

<sup>3</sup> RDDP



No visible structural deformation and cracks were found in the columns of the buildings, and the size of the columns, wooden dunnage were found same as per design during physical observation.

- Foundation is not visible, so it can't be find out the actual size and reinforcement detail as per design.
- Overall workmanship of the building is good but not up to the mark. However, the proper quality assessment of the materials can't be done because of the lack of provision for laboratory testing of the materials in this evaluation study for quality analysis.

**Impact Evaluation Study of the Construction of New Food Godown of 1.10 lakh M.T. Capacity in the Northern Region of the Country under the IMED**

**Table 3.3: Quality of the Construction Works of the Food Godown**

District	Total	Quality Status of the Construction Works		
		Wall	Floor	Link Road
Dinajpur	22	Out of 22, the wall plaster in different places of 1 food godown (Raniganj) have been automatically removed	The floor of all 22 food godown have been found visibly good	Out of 22, numbers of RCC link road, the construction works of 4 numbers of link road have been found poor (lot of crakes, holes, segregation of aggregates) which are Raniganj, Ghorahat, Fulbari, and Parbatipur
Thakurgaon	12	Out of 12, the wall plaster in different places of 02 food godown (Nekmord and Garayahat) have been automatically removed	Out of 12, the floor of 03 food godown have been found poor construction works (lot of crakes, segregation of aggregates and little damage) which are Sadar, Garayahat and Nekmord)	Out of 12 numbers of RCC link road, the construction works of 4 numbers of link road have been found poor (lot of crakes, holes, segregation of aggregates) which are Bhulirhat, Garayahat, Ranisankail and Jadurani godown
Panchagarh	5	The wall plaster of all 5 food godown have been found good	The floor of all 05 food godown have been found visibly good	All (5 nos) link road are good
Nilphamari	2	The wall plaster of all 02 food godown have been found good	The floor of all 02 food godown have been found visibly good	Out of 02 numbers of RCC link road, the construction works of 01 number of link road has been found poor (lot of crakes, holes, segregation of aggregates) which is Jaldhaka godown
Lalmonirhat	6	The wall plaster of all 5 food godown have been found good	The floor of all 06 food godown have been found visibly good	All (6 nos) link roads are good
Kurigram	5	Out of 05, the wall plaster in different places of 1 food godown (Chilmari) have been automatically removed	Out of 05, the floor of 01 food godown have been found poor construction works (lot of crakes, segregation of aggregates and little damage) which is Chilmari	All (5 nos) link roads are good
Rangpur	7	The wall plaster of all 07 food godown have been found good	Out of 07, the floor of 01 food godown have been found poor construction works (lot of crakes, segregation of aggregates and	All (7 nos) link roads are good

**Impact Evaluation Study of the Construction of New Food Godown of 1.10 lakh M.T. Capacity in the Northern Region of the Country under the IMED**

			little damage) which is Chilmari	
Gaibandha	5	The wall plaster of all 05 food godown have been found good	Out of 05, the floor of 03 food godown have been found poor construction works (lot of crakes, segregation of aggregates and little damage) which are Palasbari-2 nos and Fulchari	Out of 05 numbers of RCC link road, the construction works of 01 number of link road has been found poor (lot of crakes, holes, segregation of aggregates) which is Gaibanda Sadar godown
Joypurhat	5	Out of 05, the wall plaster in different places of 1 food godown (Panchbibi) have been automatically removed	Out of 05, the floor of 01 food godown have been found poor construction works (lot of crakes, segregation of aggregates and little damage) which is Panchabibi	All (5 nos) link roads are good
Bogra	39	Out of 39, the wall plaster in different places of 02 food godown (Santahar-2) have been automatically removed	Out of 39, the floor of 03 food godown have been found poor construction works (lot of crakes, segregation of aggregates and little damage) which are Nondigram, Mirzapur and Talura	The construction works of 13 numbers out of 39 numbers of RCC link road of the food godown have been found poor (lot of crakes, holes, segregation of aggregates) which are Mirzapur (1 no.), Santahar (11 nos), and Nasrangpur (1 no.) food godown
Noagaon	6	The wall plaster of all 06 food godown have been found good	The floor of all 06 food godown have been found visibly good	The construction works of 02 numbers of food godown RCC link road out of 06 numbers have been found poor (lot of crakes, holes, segregation of aggregates) which are Mahisbathan (2 nos) food godown
Sirajganj	6	The wall plaster of all 06 food godown have been found good	Out of 06, the floor of 01 food godown have been found poor construction works (lot of crakes, segregation of aggregates and little damage) which is Kazipur	Out of 06 numbers of RCC link road, the construction works of 01 number of link road has been found poor (lot of crakes, holes, segregation of aggregates) which is Chandaicona food godown
Pabna	9	Out of 09 the wall plaster in different places of 02 food godown (Bera and Chakmohor) have been automatically removed	Out of 06, the floor of 03 food godown have been found poor construction works (lot of crakes, segregation of aggregates and little damage) which are Muladuli, Chakmohor and Sathia	The construction works of 02 numbers of food godown RCC link road out of 09 numbers have been found poor (lot of crakes, holes, segregation of aggregates) which are Muladuli (2 nos) godown
Rajshahi	4	The wall plaster of all 04 food	The floor and corridor of all 04	Out of 04 numbers of RCC link road, the

**Impact Evaluation Study of the Construction of New Food Godown of 1.10 lakh M.T. Capacity in the Northern Region of the Country under the IMED**

		godown have been found good	food godown have been found visibly good	construction works of 01 number of link road has been found poor (lot of crakes, holes, segregation of aggregates) which is Muladuli (2 nos) godown
Natore	4	Out of 04 the wall plaster in different places of 03 food godown (Sadar-2 & Gurudaspur) have been automatically removed	Out of 04, the floor of 02 food godown have been found poor construction works (lot of crakes, segregation of aggregates and little damage) which are Gurudaspur and Sadar	Out of 04 numbers of RCC link road, the construction works of 03 numbers of link road have been found poor (lot of crakes, holes, segregation of aggregates) which are Sadar, Gurudaspur and Singra godown
Total	139	Out of 139, the wall plaster in different places of total 12 food godown have been automatically removed	Out of 139, the floor of total 18 food godown have been found poor construction works (lot of crakes, segregation of aggregates and little damage)	Most 76.98% (107) of link road are good but the construction works of 23.02% (32) of link road of the godown has been found poor (lot of crakes, holes, segregation of aggregates).

### 3.4.2.1 Summary Status of Construction Works of the Food Godowns

- **Wall Plaster:** It was observed during physical visit that the wall plaster of majority 91.37% (127) have been found good while the remaining 8.63% (12) wall plaster in different places of food godown have been automatically removed, which needs immediate repair and maintenance.
- **Floor:** The floor of 87.05% (121) have been found good but the rest of 12.95% (18) have been found poor construction works (lot of crakes, segregation of aggregates and little damage), which needs immediate repair and maintenance.
- **Quality of Link Road:** Most 76.98% (107) of link road are good but the construction works of 23.02% (32) of link road of the godown has been found poor (lot of crakes, holes, segregation of aggregates), which needs immediate repair and maintenance.
- **Link Road:** Out of 139 food godowns, only 5 godowns have not link road which are Santaher (Bogra), Natore Sadar (Natore), Jaldhaka (Nilphamari), Kazipur (Sirajganj), Nekmorod (Thakurgaon)
- **Boundary Wall:** Boundary is the important part of security of the food godown. But few cases, the boundary wall have been broken or absent specifically in Santaher food godown at Bogra, Kazipur food godown at Sirajganj, and Nekmord food godown at Thakurgaon.

Few photograph which has been taken during physical observation are presented in the following pages:



Plate 3.2: Partly removed wall plaster (left) and some cracked floor (right) of Thakurgaon Sadar food Godown



**Plate 3.3: Partly removed wall plaster of Kazipur godown, Sirajganj**



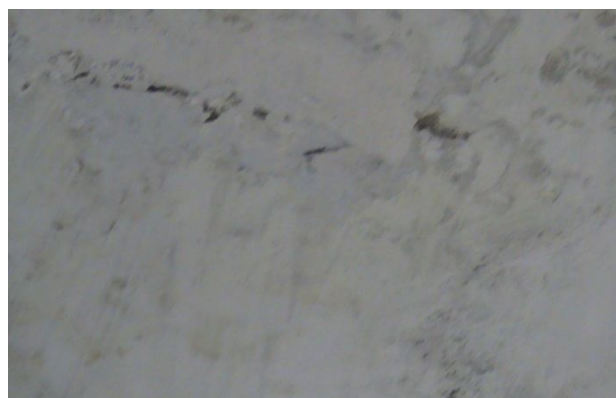
**Plate 3.4: Cracked and broken corridor of Kazipur godown**



**Plate 3.5: Deformed door unable to lock at Kazipur godown, Sirajganj**



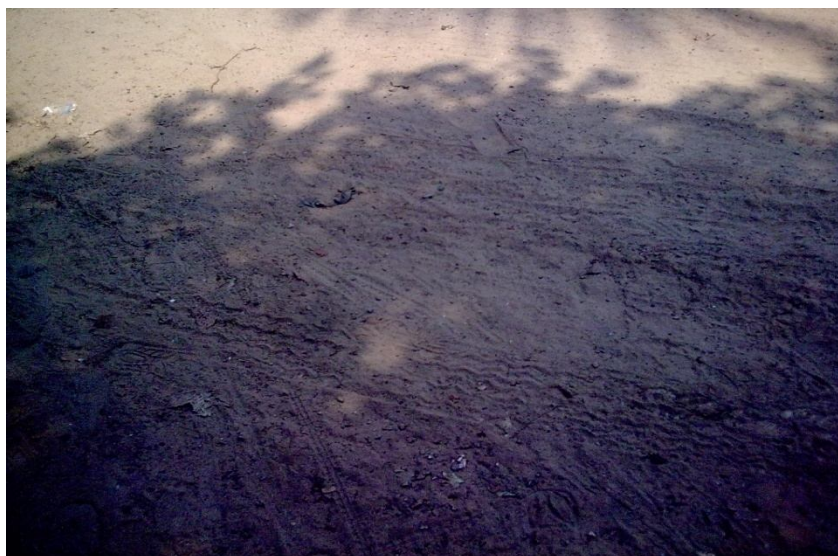
**Plate 3.6: Sporadic cracked floor of the Belkuchi food godown, Sirajganj**



**Plate 3.7: Lot of cracks, segregation of aggregates and little damage floor of Gaibandha Sadar godown**



**Plate 3.8: Broken main steel door of Natore Sadar food godown**



**Plate 3.9: Lot of crakes, holes, segregation of aggregates in link roads of Santahar food godown, Bogra**

### **3.4.3. Status of Food Grain Procurement**

All the food godowns constructed under this project are being utilized to store food grains mainly rice, wheat and paddy (Plate 3.10) and all the godowns have been found in utilization condition during physical inspection (Plate 3.11). The Directorate General of Food purchases the food grain especial husked rice from the local miller, as well as wheat and paddy from farmers and stored in the food godown. The crop products never be stored directly on the floor of the godowns, instead these are stored on the wooden dunnage in each godown (Plate 3.12 & 3.13). The transport owner, miller, trader, labor, van pullers etc is engaged in these activities. This additional storage capacity of food godown has also created new millers and traders in the area. Government used to purchase crop products seasonally from the millers and producers.



**Plate 3.10: Storage of husked rice in Sirajganj food godown**



**Plate 3.11: Inspection of food godown by MD, DTCL along with Director of IMED at Sirajganj**



**Plate 3.12: Wooden Dunnage made for storing the food products in the Sirajganj food godown**



**Plate 3.13: Use of wooden Dunnage for storage of food products in the godown of Sirajganj**

### **3.4.3.1 Amount of Food Grains Stored in New Food Godowns during 2012-13**

Total capacity of all 139 new food godowns is 1,10,000 MT those had been constructed under 15 administrative districts of Rajshahi and Rangpur division. As recorded in July 2013, the total amount of 1,16,092 MT food grains had already been stored in all godowns under the project (Table 3.4). This amount of food grains is exceeded the total capacity of the newly constructed godowns. The excess amount of food grains is around 5.54% higher than the total capacity of the newly constructed food godowns. The highest amount (38,000 MT) of food grains stored in the godowns of Bogra district against the highest (35,000 MT) capacity of the new godown. Conversely, the lowest amount (1763 MT) of crop products had already been stored in the godowns of Nilphamri district against the lowest (2,000 MT) capacity of the new godowns.

**Table 3.4: Amount of Food Grain Stored in the New Food Godown during 2012-13**

<b>Name of the District</b>	<b>Total Capacity (M.T)</b>	<b>Stored in New Godown (M.T)</b>
Dinajpur	18500	18908
Thakurgaon	9500	10936
Panchogor	4000	3850
Nilphamari	2000	1763
Lalmonirhat	6000	6000
Kurigam	3000	2050
Rangpur	5000	5946
Gaibanda	3000	2799
Joypurhat	4500	4881
Bogra	35000	38000
Noagaon	4000	4299
Sirajgong	4000	4579
Pabna	6500	6181
Rajshahi	3000	3300
Natore	2000	2600
<b>Total</b>	<b>1,10,000</b>	<b>1,16,092</b>



### 3.4.3.2 Procurement of Food Grains Before and After Project

The total amount of food grains has been procured in the fiscal year of 2010-11 and 2012-13 is 433,269 MT and 555,450 MT respectively as recorded during physical visit. This amount of food grains is also exceeded the amount procured before the project implementation. The excess amount of recent purchased food grains is average 28.20% higher than the before construction of the 1.10 MT capacity new food godown. The highest 62.30% food grains procurement has been recorded in Bogra districts followed by Lalmonirhat (55.54%) and Natore (41.25%). But the lowest 8.20% procurement has been recorded in Naogaon district followed by Kurigram (14.18%), Gaibanda (14.27%) and Pabna (17.81%) districts. The details amount of government food grains procurement has been furnished in the Table 3.5 below:

**Table 3.5: Government Procurement of Food Grains Before and After Project<sup>4</sup>**

Name of the District	Procurement of Food Grains (MT)		% increase over before project
	Before (2010-11)	After (2012-13)	
Dinajapur	78023	94710	26.51
Thakurgaon	41070	53000	29.05
Panchagar	13520	16129	32.32
Nilphamari	8012	10002	24.84
Lalmonirhat	11200	15980	55.54
Kurigram	21020	24001	14.18
Rangpur	28924	35000	21.01
Gaibandha	23629	25610	14.27
Joypurhat	21500	25479	23.26
Bogra	61000	74095	62.30
Naogaon	61000	67000	8.20
Sirajgonj	11149	13000	34.54
Pabna	38900	45827	17.81
Rajshahi	8021	10574	39.63
Natore	6301	8100	41.25
<b>Total</b>	<b>433,269</b>	<b>555,450</b>	<b>28.20% (122,181)</b>

### 3.4.3.3 Status of Miller in the Project Area

It reveals from the table 3.6 that total 667 number of miller has been found as new after project intervention who has already engaged in the procurement system of the government. The highest (300) new miller has been found in Thakurgaon district while second highest (76) has been found in Bogra district. The lowest 4 number of new miller has been recorded in Gaibanda district while second lowest have been found in Joypurhat district which is only 7. There are three types of mill in our country which are Auto Rice Mill, A Type mill and B Type mill. According to the information of the miller, average 10-12 manpower includes 3 women is needed for each type of mill operation. As such it can easily say that  $10 \times 667 = 6670$  new manpower has got employment opportunities only in the new mill that has set up after the project. However, additional manpower needs to engage in the existing 11,209 mills as their purchase and sell of food grain to the godown has increased due to new godown. The details of miller number for before and after project have been furnished in the table 3.6

<sup>4</sup> Respective District Food Controller and Upazila Food Controller

**Table 3.6: Total Number of Miller in the Project Area**

Name of the District	Number of Miller		
	Before (2010-11)	After (2012-13)	New Miller after Project
Dinajapur	2011	2067	56
Thakurgaon	1300	1600	300
Panchagar	400	412	12
Nilfamari	213	225	12
Lalmonirhat	356	386	30
Kurigram	503	537	34
Rangpur	859	871	12
Gaibandha	660	664	4
Joypurhat	502	509	7
Bogra	1703	1779	76
Naogaon	1168	1185	17
Sirajgonj	295	321	26
Pabna	833	849	16
Rajshahi	205	258	53
Natore	201	213	12
<b>Total</b>	<b>11,209</b>	<b>11,876</b>	<b>667</b>

#### 3.4.3.4 Participation of Millers and Farmers in the Government Procurement System

Storage capacity of 1.10 lakh MT of the food grains of the government has increased in the northern region of Bangladesh due to construction of 139 new food godown in 15 districts of the Rajshahi and Rangpur division. Average 30-90 MT can purchase one miller from the farmers as such as at least 30 farmers are getting opportunities to sell their products to the miller for government food godown. There are 667 new millers in the northern region who are engaged in the procurement of rice from the farmers. Considering the new miller number it can calculate that at least  $30 \times 667 = 20010$  farmers are getting opportunities to engage in the government procurement in addition of existing. If we calculate the total amount of 1.10 lakh MT food grain and each farmers average sell of maximum 2 MT then it can say that at least 55,000 farmers are getting opportunities to involve via miller in the procurement process of food grain.

**Table 3.7: Participation of Millers and Farmers in the Govt. Procurement<sup>5</sup>**

Type of Traders	Food Grains (MT)		Average MT
	Minimum	Maximum	
Auto Rice miller	50	200	125
A Type Miller	30	40	35
B Type Miller	10	20	15
Farmers	1	3	2

<sup>5</sup> District Food Controller and Upazila Food Controller

### 3.4.3.5 Direct Procurement from the Farmers: Problems and Opportunities

The major problems to purchase directly from the farmers are:

- Procurement strictly follow 12 criteria especially moisture level of 12-14% which is really difficult to maintain from farmers end due to lack of required infrastructure facilities;
- The government needs to procure bulk quantity of husked-rice which is not possible from the farmers as they used to sale small quantity of un-husked rice/paddy;
- Government usually procures bulk quantity of husked rice rather than un-husked rice as it need additional space at the godown. So far un-husked paddy requires 35% more space in the godown than husked rice (Rice : paddy ratio 1:1.53). This is another major problem in case of local purchase of rice in favour of farmer's benefit;
- Another bottleneck of government, in regards of directly purchase from the farmers, needs to engage additional manpower; and
- Government used to sale husked-rice during scarcity or crisis hence government needs to crush it from the miller which will incur huge management cost.



**Table 3.8 : Criteria to follow during Procurement of Food Grains**

Sl	Status	Condition
1	Moisture	14%
2	Large broken grain	8%
3	Small broken grain	2%
4	Admixture of another Variety	8%
5	Lost grain	1%
6	Dead grain	1%
7	Pale grain	1%
8	Paddy present in 1kg	1 Piece
9	Another material	1 Piece
10	Boil grain	Not applicable
11	Half Boil grain	1 Piece
12	Cutting	Better

**Opportunities to Purchase directly from the Farmers are:**

- Government can purchase directly from farmers via *chatal*/mill owners at fixed price so that *chatal*/mill owners can crush and maintain moisture level up to storage (12-14%). In this regards, government needs to be paid service charge or commission to *chatal*/mill owners for rendering services of drying and crushing of the rice;
- Government can increase it storage capacity to purchase more un-husked rice/paddy directly from the farmers but still need drying and crushing support from the outsider or government needs to set up its central drying and crushing unit; and
- Government can operate few pilot program with different options regarding direct purchase from farmers specially in boro rice growing areas.

## **CHAPTER 4 ANALYSIS OF QUANTITATIVE DATA**

For impact evaluation of the project, we have analyzed the changes in stock of wealth and wellbeing of the beneficiaries after the project intervention. In this chapter, we have analyzed the aspiration and pattern of changes in regards of crop production, employment and poverty, land holding, and human assets.

### **4.1 Background**

The data obtained using beneficiary questionnaire is analyzed using SPSS 17.0 and the major findings are detailed in this chapter. The questionnaire focused on different type of information regarding the beneficiaries such as:

- a) Personal information (e.g. identification of the beneficiaries, relation with the household head, family size, age, sex, educational qualification, type of employment, occupation, etc.
- b) Food safety related information (e.g. whether the food godowns ensured food security or not, whether these food godowns has any role at the time of food crisis or not, which crop is superior for food storage, is there increased employment opportunity due to the construction of the food godowns)
- c) Financial Benefit related information (whether the annual income has increased, if yes, by what amount, whether the crop production cost has increased, if yes, by what amount)
- d) Inspiration (has the cultivable land increased after the project implementation, what are the changes in different types of crop production, etc)
- e) Market Management (e.g. which crop gets priority while selling, what is the mode of transport, where did you get information about the market, how do you decide the price of your product, do you grade your crops, if yes, why, does the food godown play any role in fair price or price incentive, etc)
- f) Poverty reduction (Food godowns role in poverty reduction)
- g) Food godown (what are the problems of food godown, should there be more food godowns by government or non-government organizations, are the present godowns built in a suitable place, what type of godowns are more suitable, etc)
- h) For millers or businessmen only ( should there be any private food godown in your area, how long quality of food are maintained in a food godown, should godowns be air conditioned, do you face any difficulty to sale your food grains to a government organization, is there any advantage of selling your product to a govt. organization, etc)
- i) Women Empowerment (For women only) (are you a producer, how much cultivable land, who takes the decision for crop production, who makes the decision regarding family decision, have you faced any difficulties selling our product for being a women, etc)
- j) A total of 1800 respondents took part in the survey from different districts of Rajshahi and Rangpur division. The highest number of respondents was from Dinajpur (19.8%) and Bogra (19.1%) and the lowest number of respondents were from Natore (2.2%) and Nilphamari (2.6%).

#### 4.1.1. Age of beneficiaries

The age range of the beneficiaries was <25 to >65 years, where most (34.5%) respondents were within 36-45 years old followed by the range 46-55 years old (27.0%) and lowest (4.5%) were more than 65 years old as depicted in Figure 4.1.

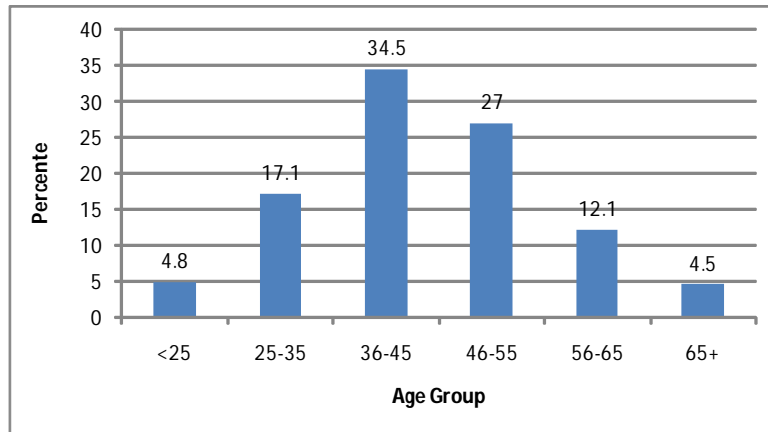


Figure 4.1: Age of beneficiaries

#### 4.1.2. Sex of the beneficiaries

Out of 1800 beneficiaries participated in the survey, most (96.0%) of them (1728) were male and only 4.0% (72) respondents were female.

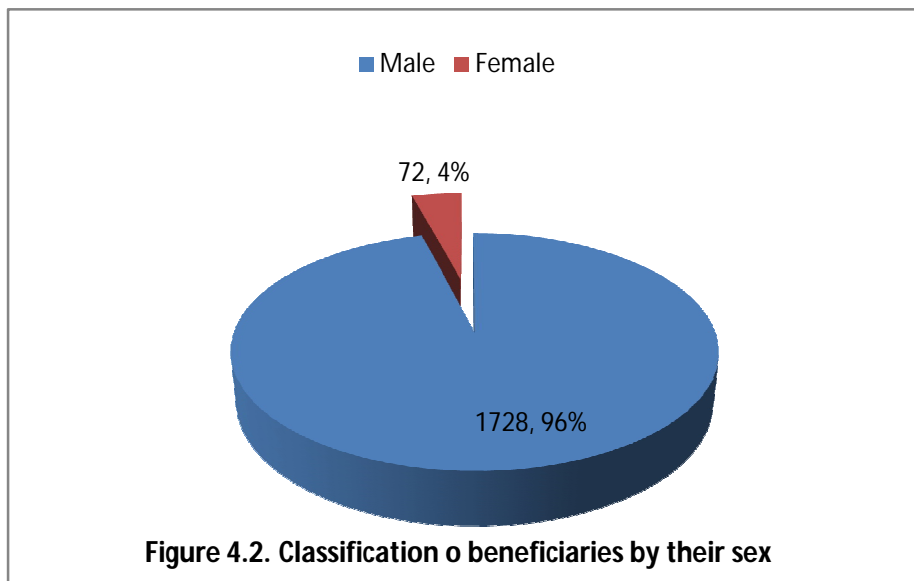
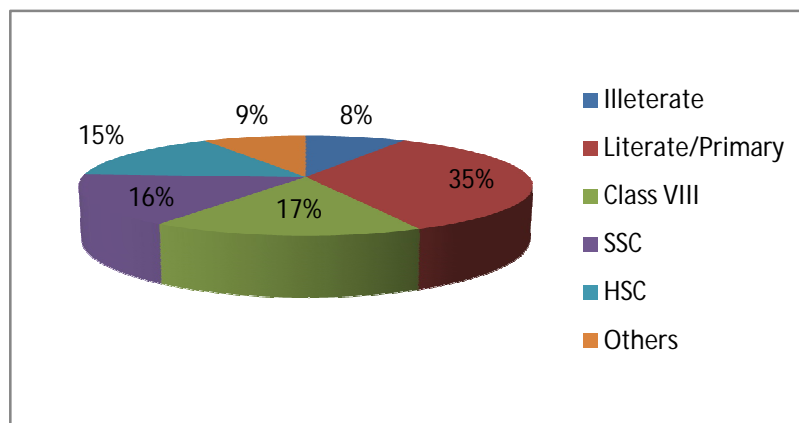


Figure 4.2. Classification of beneficiaries by their sex

### 4.1.3. Educational qualification

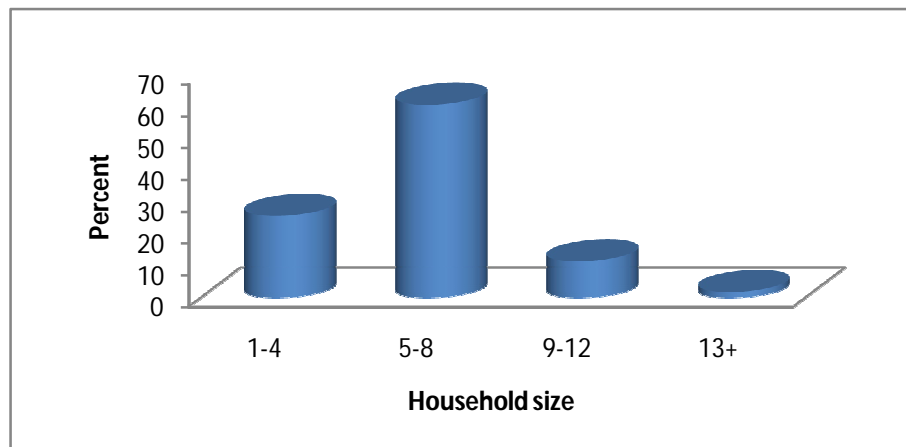
Among 1800 respondents participated in the survey, the highest (35.0%) respondents (630) were primary literacy, followed (17.0%) by class VIII pass (306), SSC (16.0%), HSC (15.0%). Whereas the lowest percentage of the respondents were illiterate 8.0% (144) followed by others (9.0%).



**Figure 4.3: Educational qualification of the beneficiaries**

### 4.1.4. Household size

On an average, the household consists of six members with a minimum number of two members and a maximum of 22 members. The following Pie chart describes the distribution of households regarding their sizes. More than 60 percent of the families have 5 to 8 members and only two percent of the families have more than 12 members.



**Figure 4.4: Size of households of the beneficiaries**

### 4.1.5. Occupation of the beneficiaries

Among 1800 respondents, maximum 64.38% participants (1159) were farmers, followed by miller (15.86%), businessmen (14.54%) and the lowest portion (5.22%) of the respondents (94) were others like van-pullers, rickshaw pullers, and day labors etc.

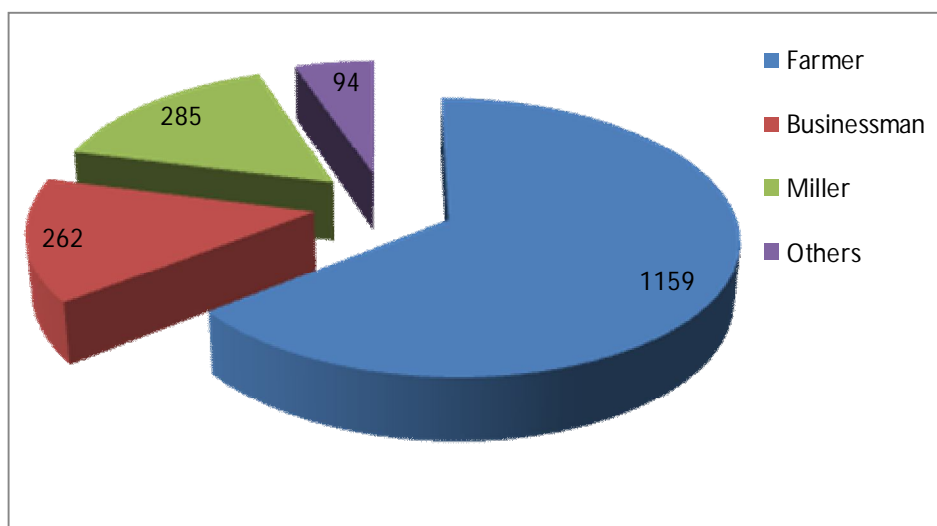


Figure 4.5: Occupation of the beneficiaries

## 4.2. Information about Food Security

### 4.2.1. Construction of Food Godown and Ensured Food Security

Out of 1800 respondents, most (86.1%) of the respondents (1550) expressed their opinion that the construction of food godown has ensured the food security in the project areas. Conversely, only 5.8% (104) respondents expressed that the food godowns have not ensured the food security net in the areas, whereas 8.1% respondents expressed that they have no idea about the effect of construction of food godowns on the food security net.

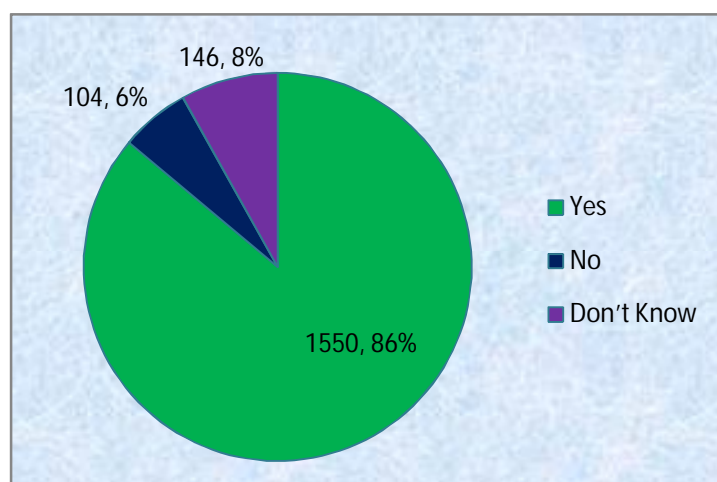
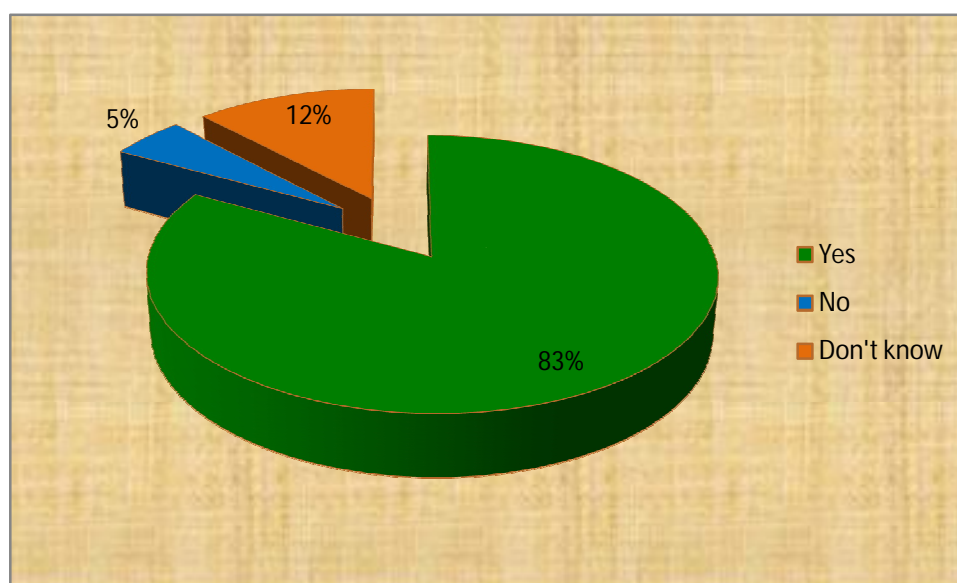


Figure 4.6: Impact of the Construction of Food Godown on Food Security Net

### 4.2.2. Contribution of the new food godown during food crisis

Majority (83.0%) of the respondents (1494) expressed their opinion that the construction of new food godown contributed during food crisis, whereas only 5.0% (90) respondents said that the food godowns do not contribute during food crisis and only 12.0% (216) respondents expressed that they have no idea about the contribution of new food godown during food crisis.



**Figure 4.7: Contribution of New Food Godown during Food Crisis**

#### 4.2.3. Superior crops for food storage

The results depicted in Table 4.1. majority (51.02%) of the respondents (71.02) expressed that the rice is the most superior crop products for storage followed (12.3%) by wheat (221) and paddy (6.08%), whereas the lowest category of crop products for storage is maize as responded by 0.14% (3) respondents followed by others (0.46%).

**Table 4.1: Response on the superior crops for storage**

Crops for storage	Number (N=1800)	Percent response
Rice	1458	81.02
Wheat	221	12.3
Paddy	109	6.08
Maize	3	0.14
Others	8	0.46
<b>Total</b>	<b>1800</b>	<b>100.0</b>

#### 4.2.4. Role of new Food Godown on Employment Opportunity

Most (92.5%) of respondents (1665) expressed their opinion that the construction of new food godowns has created the employment opportunities in the project areas, whereas only 7.5% (135) respondents expressed that the employment opportunity has not been created by the food godowns. The types of employment opportunities created by the construction of new food godowns are processing of crop products as responded by the majority (75.7%) of the respondents (1363) followed by the creation of transportation business of crop products (61.6%), and trading opportunities of crop products (54.5%). Other employment opportunities are daily labor (51.8%) and service at godown (30.5%).



**Table 4.2: Role of new food godown on employment opportunity**

Crops for storage	Number (N=1800)	Percent response
Yes	1665	92.5
No	135	7.5
<b>Total</b>	<b>1800</b>	<b>100.0</b>
<b>Types of employment opportunity</b>		
Service at godown	549	30.5
Trading of crop products	981	54.5
Processing of crop products	1363	75.7
Transportation of crop products	1109	61.6
Daily labour	932	51.8
Middleman business	333	18.5
<b>Multiple response</b>		

*Multiple response=Response of each respondents on more than one options*

### 4.3. Information About Financial Benefit

#### 4.3.1. Increase in annual income due to construction of new food godowns

The respondents were asked whether their annual income from production of crop had increased due to construction of new food godowns in the project area. Majority (74.4%) of them (1339) expressed that their income has been increased, whereas other 25.6% (461) respondents expressed that their annual income has not been increase by the construction of new food godowns in the project areas.

From this finding, it is clear that the new food godown has not only created employment opportunities but also played role in increasing the annual income of the beneficiaries.

**Table 4.3: Increase in annual income due to construction of new food godowns**

Increase annual income	Number (N=1800)	Percent response
Yes	1339	74.4
No	461	25.6
<b>Total</b>	<b>1800</b>	<b>100.0</b>

#### 4.3.2. Annual income increase by the new food godowns

The results presented in the Table 4.4 shows that maximum 60.5% annual income has been increased by the construction of new food godowns, whereas minimum 10.0% annual income has been increased by the new food godowns. Average 26.0% annual income has been increased by the construction of new food godowns in the project areas.

**Table 4.4: Annual income increase by the construction of new food godowns**

Range	Amount increase (%)
Minimum	10.0
Maximum	60.5
Average	26.0

### 4.3.3. Annual expenditure for production of crop from 2009 to 2012

Even though, the income from selling crop increased during the study period, the expenditure of crop production also increased at the same time. More than 80 percent of the respondents said that there was an increase in the annual expenditure for production of crop. On an average there was a 12.5% increase in the annual expenditure for crop production.

**Table 4.5: Increase in annual expenditure for production of crop from 2009 to 2012**

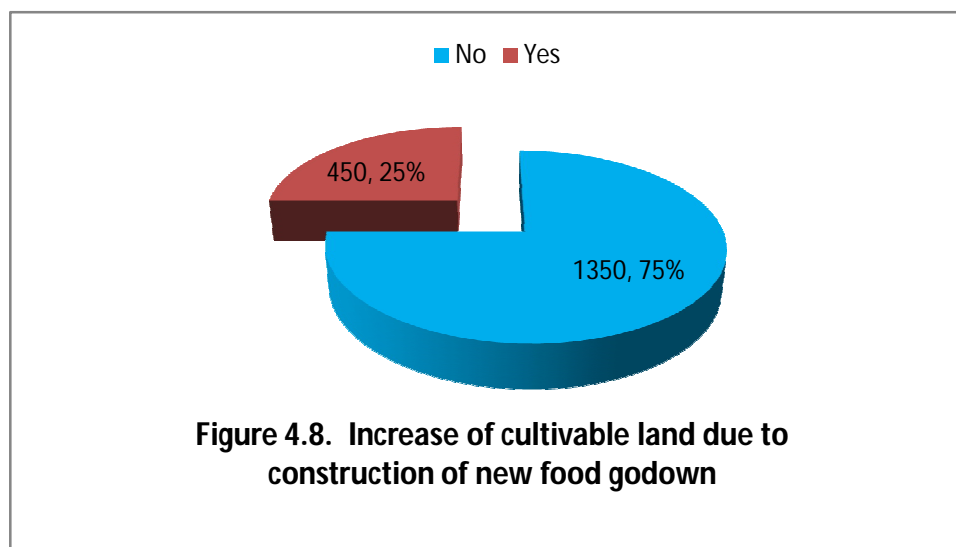
	Number (N=1800)	Percent response
<b>Increased annual expenditure</b>		
Yes	1480	82.2
No	320	17.8
<b>Total</b>	<b>1800</b>	<b>100.0</b>

## 4.4. Inspiration

### 4.4.1. Land and Major Cropping Patterns of the Beneficiary

#### 4.4.1.1. Increase of cultivable land due to construction of new food godowns

The following Figure 4.5 indicates that there was an increase of cultivable land due to construction of new food godowns as responded by 25.0% (450) respondents during the study period, where 75.0% respondents expressed that the cultivable land has not been increased due to construction of new food godowns in the project areas.



#### 4.4.1.2. Amount of crops production before and after of project

The major crops cultivated in the study area are Aman, Boro and Aus. A few people cultivate Wheat or Maize. Most of the respondents are considered Boro as the top cultivated crop. Aman was the next popular one. A very few number of respondents said that they cultivated Aus. The following table describes the amount of production (in metric ton) of different crops before 2009 and after 2012. The table clearly depicts that the project had minor impact on production of all crops. There was a notable increase in the production of Aman as well as Boro.

**Table 4.6: Crop production before 2009 and after 2012**

Name of Crops	Amount of Production (in metric ton/ha)							
	Before 2009				After 2012			
	Minimum	Maximum	Average	Standard Deviation	Minimum	Maximum	Average	Standard Deviation
Aus	4.0	5.0	4.6	0.707	5.0	6.5	6.2	0.707
Aman	3.0	4.0	3.7	0.707	5.0	6.0	5.7	0.707
Boro	5.5	7.0	6.4	2.121	6.0	10.0	8.6	2.821

#### 4.5. Market Management

##### 4.5.1. Crop sells in advance

In the project areas, farmer sells their crops in advance before harvest from the field as responded by the 8.3% (149) respondents out of 1800, whereas 91.7% (1651) respondents expressed their opinion that the farmers do not sell their crops in advance before harvest.

**Table 4.7: Crops sell in advance**

Sell crops in advance	Number (N=1800)	Percent response
Yes	149	8.3
No	1651	91.7
<b>Total</b>	<b>1800</b>	<b>100.0</b>

##### 4.5.2. Priority of seasonal crops for sell

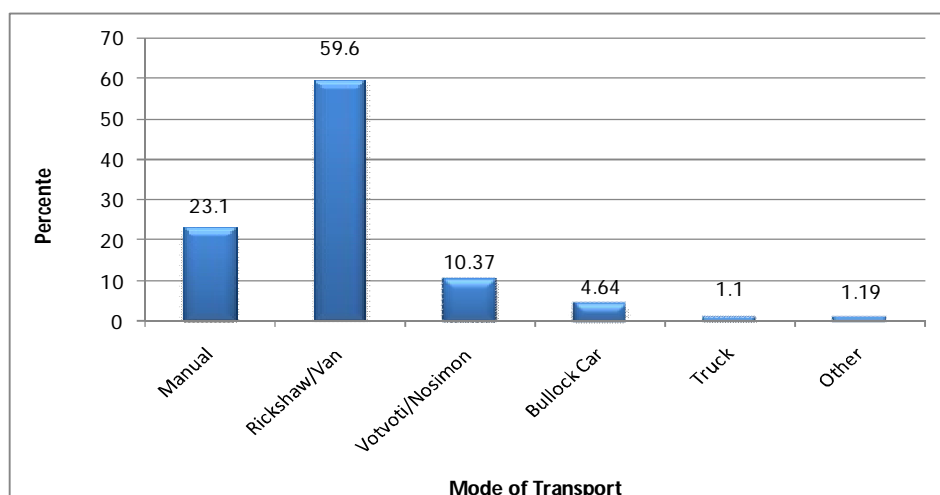
Among 1800 respondents, majority (49.7%) of them (895) expressed that Rabi crops have been given first priority for sell followed by Kharif-I crops as responded by 47.0% (846) respondents, whereas Kharif-II has given least priority for sell as responded by 4.2% (76) respondents.

**Table 4.8: Priority of seasonal crops for sell by the respondents**

Name of crops	Number (N=149)	Percent response
Rabi	895	49.7
Kharif-I	846	47.0
Kharif-II	76	4.2
Multiple response		

### 4.5.3. Mode of transportation

Rickshaw or van pullers is the main mode of transportation for the farmers as responded by more than 50% beneficiaries. However, a good number of farmers carry their crops to the market manually as responded by about 25.0% beneficiaries. In few cases, engine driven vehicles such as votvoti/Nasimon and trucks are used as mode of transports. Bullock cars are also used to carry the crops to the market.



**Figure 4.9: Mode of transport for carrying crops to market**

### 4.5.4. Source of information about market

In general, the farmers collect information about the market from other farmers as responded by 49.56% (892). But most (65.89%) of the cases farmers collect information about market from millers or businessmen. This question had multiple answers and most of the farmers informed that the first source of information about market is another farmer. Farmers also collect information from Sub-Assistant Agricultural Officer (SAAO) of DAE/block supervisors, radio, newspapers or other sources as well.

**Table 4.9: Source of information about the market**

Source of information	No. of respondents (N=1800)	Percent response
Other Farmers	892	49.56
Miller/businessmen	1186	65.89
Block supervisor (SAAO of DAE)	121	6.72
Radio	42	2.33
Newspapers	83	4.61
Others	218	12.11
<b>Multiple response</b>		

### 4.5.5. Market price determination procedure of the products

The producers determine the market price of the products by various ways. Majority (50.8%) of the producers go for open bargaining to determine the market price of the products, or sometimes the market price of products is fixed by the traders or millers or Government as responded by the 26.3% (473) beneficiaries and sometimes by a combination of the above or by current rate of the products.

**Table 4.10: Market price determination procedure of the products**

Market price determination	Number (N=1800)	Percent response
Open bargaining	914	50.8
Fixed by traders /millers /government	473	26.3
Mark up	23	1.3
Current rate	389	21.6
<b>Total</b>	<b>1800</b>	<b>100.0</b>

**4.5.6. Grading of crop products before sell**

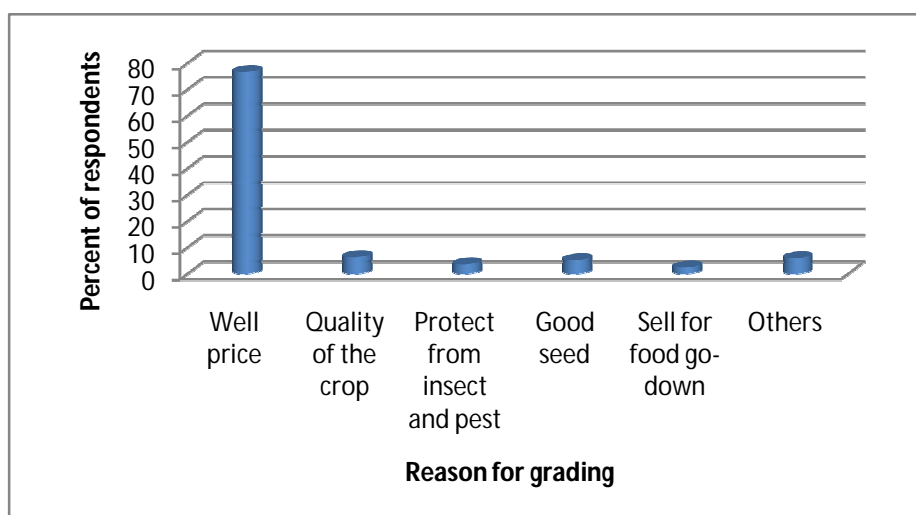
Grading of crops is an important phenomenon to assure the quality of products. However, the study shows that about one third (32.3%) of the farmers (581) do not grade their crops before selling. It is important to inform the farmers about the importance of crop grading so that quality of products can be maintained.

**Table 4.11: Grading of crop products before sell**

Types of response	Number (N=1800)	Percent of Respondents
Yes	1219	67.7
No	581	32.3
<b>Total</b>	<b>1800</b>	<b>100.0</b>

**4.5.7. Reasons for grading crop products**

Grading of crops is important from various perspectives. Grading may ensure quality of the crops as well as better price for better quality. Not only that, if grading is done before selling, a farmer can decide whether it would work as good seed or not. The study found that more than 75.0% of the respondents do grade their crops as they think that it would assure better price of their product. Other respondents grade their crop products to ensure quality of the products, to protect the products from pest, for good seed, to sell for food godown and others.



**Figure 4.10: Reason for crop grading**

**4.5.8. Contribution of food godown in ensuring fair food price**

Most (81.7%) of the respondents expressed their opinion that the construction of food godown has contributed in ensuring fair food price. This is very rational because if there is no food godown, producers have to sell their products at cheap rate at the time of harvest as

they have no option to store their products until they get a good price. In order to maintain price stability in the market the DGOF operates open market sale (OPS) and procures food grain from farmers at fair price during harvesting season. In this process market price remains stable which, in turn, help poor to get food grains in fair/incentive price.

**Table 4.12: Contribution of food godown in ensuring fair food price**

Type of response	Number (N=1800)	Percent response
Yes	1471	81.7
No	329	18.3
<b>Total</b>	<b>1800</b>	<b>100.0</b>

#### **4.5.9. Impact of food godowns and food storage on poverty reduction**

Most (79.9%) of the respondents (1438) believe that the construction of new food godowns and storage have contribution on poverty reduction in the project areas. Construction of new godowns increases food grain storage capacity at the government level. Open Market Sale (OMS) of stored food grains during crisis brings price stability. As a result, the poor people can buy food grain at lower price and this brings positive impact on poverty reduction. In addition, during harvesting season the poor women get opportunity to sale food grain at government fixed price, and as a result they get rid of the exploitation of the middlemen thus increasing storage and preservation capacity of food grain as well as getting involved in rice processing mills which in turn help them to increase their income.

**Table 4.13: Impact of newly constructed food godown on poverty reduction**

Types of response	Number (N=1800)	Percent response
Yes	1438	79.9
No	362	20.1
<b>Total</b>	<b>1800</b>	<b>100.0</b>

#### **4.5.10. Creation of problems if the crop products keeping in house instead of selling**

The respondents mentioned various problems may occur if they keep the crop products in their house instead of selling the products just after harvest. The major problems are the money crisis as responded by the 45.6% (821) beneficiaries, lack of adequate storage facilities of harvested products (24.9%) and infestation of insects and pests on the harvested crop products as responded by the 24.9% (448) beneficiaries participated in the survey study. Other problems are natural calamities.

**Table 4.14: Creation of problems if crop products keeping in house instead of selling**

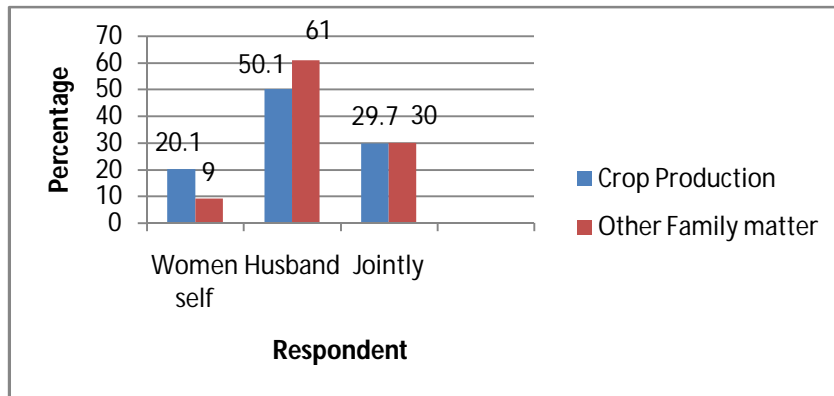
Major problems	Number (N=1800)	Percent response
Money crisis	821	45.6
Storage	446	24.8
Insect and pest	448	24.9
Environmental problem	58	3.2
Others	27	1.5
<b>Total</b>	<b>1800</b>	<b>100.0</b>

#### **4.6 Contribution of new food godowns in women empowerment**

Now a day women empowerment is a big concern all over the world including Bangladesh. In this study, women of the study area were asked about their activities related to crops

production and marketing in order to assess the empowerment of women in these particular issues. The Figure 4.2 shows that 4.0% (72) respondents of the study were women. The empowerment of women were evaluated through the decision making power of women in terms of the direct involvement of the women in crops production and family decision making.

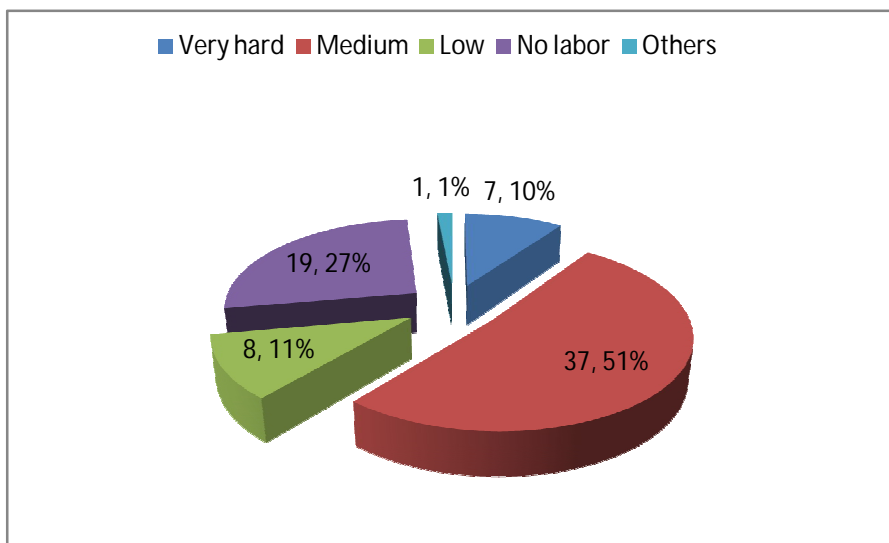
The findings depicted in the Table 4.18 indicates that and among the women participated (72) in the survey, only 20.13% (14) of them are directly involved in crops production. Whereas most (60.0%) of women (44) have left the decision to the husband. However, it was encouraging that there were few women who has the right to make such decision independently or has the scope to make decision jointly with their husbands (29.77%) or other family matters (30.0%), respectively.



**Figure 4.11: Role of women taking decision for crop production**

**4.6.1. Type of labor by female respondents for crop production**

Among the women (72) who have participated in the survey study, mostly (52.0%) women (37) provide medium hard labor for crop production while 27.0% (19) women are not directly involved in physical labor related works. Only 10.0% (7) women provide very hard labor for crops production and 11.0% (8) women provide low energy related works.



**Figure 4.12: Type of labor by female respondents in crop production**

#### 4.6.2. Decision making power of women

The following Table 4.15 clearly indicates the status of women empowerment in the study area, where only 8.33% (6) of the respondents out of 72 have the right to take the money after selling the crop products produced in their field. Most (54.17%) respondents opined that their husband take the control over the money of selling crops product produced by them, whereas 36.11% (26) female respondents take the money of selling crop products jointly with their husband or along.

**Table 4.15: Decision making power of women over the money of selling crop products**

Receiver of money of selling goods	Number (N=72)	Percent of response
Women self	6	8.33
Husband	39	54.17
Both (self and husband)	26	36.11
others	1	1.39
<b>Total</b>	<b>72</b>	<b>100</b>

#### 4.6.3. Problem face by the women during selling of crop products in market

Among the women respondents participated in the study, all (100%) of them face problem during the selling of their produced crop products in the market or in the home to the middle man.

**Table 4.16: Problem face by the women during selling of crop products**

Type of response	Number (N=72)	Percent of response
Yes	72	100.0
No	0	0.0
<b>Total</b>	<b>72</b>	<b>100</b>

#### 4.6.4 Kinds of problem face by the women during selling of products

Most (95.5%) of female (69) respondents expressed their opinion that they do not take the crops product to market or to Government agent by themselves. Whereas 30.2% (22) of the women informed that they do not get the right price of the products during selling. The major problem is low price of products due to lack of strong bargain ability like man for a better price and sometimes they are cheated by the traders as responded by the 18.0% (13) female respondents.

**Table 4.17: Kind of problem face by the women during selling of crop products**

Receiver of money of selling goods	Number (N=72)	Percent of response
Don't take to market/govt. agent	69	95.5
Do not get the right price	22	30.2
Cheated by the traders	13	18.0
Multiple response		



## CHAPTER 5

### ANALYSIS OF THE QUALITATIVE DATA

In this chapter, we have discussed the condition of the newly constructed food godown, repair and maintenance of new and old godown, quality of construction works and link road, utilization of food godown, food security net, fair price and price incentive, employment, poverty reduction, and SWOT analysis etc.

#### 5.1 Findings of the Focus Group Discussion (FGD)

The Focus Group Discussions (FGDs) for the “Impact Evaluation Study of the Construction of New Food Godown of 1.10 lakh M.T. Capacity in the Northern Region of the Country under the IMED in the project areas covering in 15 administrative districts of Rajshahi and Rangpur division supported by Development Technical Consultants Pvt. Limited, Dhaka, Bangladesh was done as per standard procedure. At least one FGD was organized for each district with 20 participants. Accordingly, covering all 15 districts under the project altogether 15 FGDs where around 300 respondents were participated to express their opinion regarding the impact of the project in food security net, quality of godown and internal roads, price incentive, aspiration and overall poverty reduction.

The FGDs were done in the study area in order to assess the major impact of the project activities, expected outputs, sustainability of the project activities as well as to assess the quality of works as per the technical specification of the project, identifying the strengths, weaknesses, threats and opportunities of the project and make recommendations for future project.

Among the participants of Focus Group Discussion (FGD) under fifteen (15) districts of the project areas, all participants opined that overall construction quality of food godown, internal RCC road is good but not up to the mark. FGDs participants were farmers, millers, traders, middleman, officials of the DGOF, and representatives of the relevant association etc. All the participants said that the construction works of 139 new food godowns in Rajshahi and Rangpur division completed up to the good standard under the supervision of PWD where officials of the DGOF were not directly involved in construction works. In fact, they didn't have any knowledge regarding testing of quality of the construction works and where it was done. Provision need to be made in future project for active involvement of construction works which will further increase quality of works. The major findings of the FGDs are briefly mentioned in the following sub-heads:

##### 5.1.1. Condition of the newly Constructed Food Godown

In general, the condition of constructed food godown is good but there were scope to improve it. However, some FGD respondents mentioned that few godowns have already some cracks on wall and floor. More importantly, some people mentioned that the condition of godown is good at present, but the quality is not up to the mark. Most of the godowns main doors and ventilation windows are good except few.

##### 5.1.2. Repairing and Maintenance work

In general, the participants of the FGDs were not concerned enough about the need of repairing or maintenance of the godowns. However, most of them said that the cleaning and washing is done regularly. Some participants said that crack floor repair is required for godowns. Nevertheless, the ventilation and windows are checked on a regular basis.

##### 5.1.3. Quality of Road

Some of the participants said that few godowns have no RCC Road. However, there were some respondents said that most of the godowns have RCC road, and the condition and the quality of the road is good.

#### **5.1.4. Condition of Link Road and Internal Road**

Overall condition of link road is not good due to poor construction works and materials. In some cases, the condition of the link road is fair but some of the godowns have no internal road. The truck/ transport cannot move normally on those roads.

#### **5.1.5. Utilization of Food Godowns**

The utilization of new food godown is more than 100%. Food godowns are mainly used for storage of paddy, wheat and rice etc. Rice is being purchased from local miller. Paddy is purchased from farmers. The transport owner, miller, trader, labor, and van pullers etc is engaged in these activities. This additional capacity of the food godown has created new miller and trader in the area. Government used to purchase crops seasonally from the millers and farmers.

#### **5.1.6. Source of Crops for Storing in the godowns**

Rice is mainly purchased from millers but few cases paddy is purchased from the farmers for food godown. There is 12 criteria to purchase rice/paddy from the millers/farmers among them most important is moisture that should be 12-14%. While purchase paddy from farmers, it is being difficult to maintain 12 criteria especially moisture which is very important for storage crops to safe from pest infestation. Sometimes political people also influences in this procurement process that hamper the interest of farmers.

#### **5.1.7. Role of Godown on Local Economy**

Participants informed that construction of new godowns increases food grain storage capacity at government level which is ensured fair price for farmers and poor. Distribution of food grain through Public Food Distribution System impact on poverty reduction, employment opportunity for a minimum of 0.80 lakh rural poor during lean period through the implementation of TR, FFW, VGF, VGD programme and instant GR programme to absorb disaster shock. Direct supply under food based programme helps beneficiaries to get food instantly. In addition, different kind of local people like farmers, millers, middleman, rickshaw/van pullers, other transport, godowns officials and staff are getting economic benefit due to construction of new godowns in addition food security net.

#### **5.1.8. Godown and Agriculture Production**

Though the farmers are not selling their product in the food godown directly but the demand of crops are increased to the miller because of the godown and that in turn helps the farmer to get a better price. However, some farmers are not very enthusiastic to food cultivation because they do not sell the food directly.

#### **5.1.9. Local trade and commerce**

The food godowns have a great effect on increasing food trade. Many of the millers increased their storage area and crop trading related business activities which turn their economic activities. In general, food trade has increased. However, in spite of high storing capacity, government purchase a little quantity of food grains directly from the farmers, which sometimes de-motivates the farmers. Nevertheless, the traders collect huge amount of crops at the peak season when usually the price of the crops is low and store them in their godown until they get a good price. Due to these local economic activities farmers are also getting competitive price.

#### **5.1.10. Food security and new food godown**

Food security has been ensured or at least improved in the project areas. Foods are distributed at fair price and food crisis are not faced. Godown also ensured to get food at fair price which reduced the poverty. The risk of food crisis during disaster is reduced by ensuring adequate level of government stock at district-upazila level through internal and

external procurement of food grains. This brings stability in the supply situation and acts as a food safety net for the poor.

#### **5.1.11. Impact on Poverty Reduction**

Construction of new food godown has created opportunities of new employment which in turn helped in reducing the poverty. Open Market Sale (OMS) of stored food grains during crisis brings price stability. As a result, the poor people can buy food grain at lower price and this brings positive impact on poverty reduction. Women are opportune to get incentive price due to construction of godown. However, the godowns alone are not playing important role in reducing the poverty but acting major role as food intake of 2231 kcl is a major indicator of poverty reduction.

#### **5.1.12. New food godown impact on Fair Price**

In order to maintain price stability in the market, the Directorate General of Food operates open market sale and procures food grain from farmers at fair price during harvesting season. In this process market price remains stable which help poor people to get food grains in incentive/fair price that increases food security net and food intake of the poor. Purchasing food grain at local level at fixed price by the government ensures fair price for the marginal and poor farmers.

In general, farmers can sale their crops at higher price immediate after start of government procurement than before. Moreover, food godown has ensured to establish the food market price seasonally in the country.

#### **5.1.13. Impact on food processing mill in the area**

In general, the trade has been increased for millers. Millers are more benefited than others, because they are selling their product in godown, open and local market. Food processing miller sell more amount of crops in the godown and getting more benefit.

#### **5.1.14. Impact on employment opportunities**

Most of the participants voted for increased employment opportunities as many people got engaged in transport, loading and unloading, processing, and packaging etc activities. Millers continued their mill for long time which is another reason of increased work opportunity. Also farmers are somehow encouraged to grow more food and hence some employment occurs at farmer level as well. People are less willing to migrate to Dhaka in search for a job. Since job opportunities are created in the locality, women are also encouraged to work in the study area.

#### **5.1.15. Impact on Food Security Net**

Government ensured the food security for the people and also ensured the fair price of rice. Fair price of the food grains is ensured by government due to additional capacity of 1.10 MT with existing 17 lakh MT storage of food. Government is now more committed with food security net for the country due to construction of new godowns.

#### **5.1.16. Construction of Food Godown under Public Private Partnership (PPP)**

Out of 300 participants of the FGDs in 15 districts less than one third (80) expressed their willingness to construct food godown under the PPP but most of the participants expressed that food godown like subsidy type of service would not be possible under PPP as private sector will look after profit of their investment. The present concept of food godown to ensure food security net and price stability will not be possible under PPP. More details studies can be explored further with details scope of PPP for better understanding of the private sector in this regards.

## 5.2 Findings of Key Informants Interview (KII)

Total 76 KII was conducted with the project and DGOF concerned officials in 75 Upazila of the 15 administrative districts. Food Division, Ministry of Food was responsible for the overall management of New Food Godown at the Head office level. PWD were entrusted with responsibility of construction works of the food godown and Project Director Office was responsible for soil test and structural drawings.

The primary focus for construction of the food godown was to ensure the food security during the natural calamity. PD office was responsible for preparation of the technical specification of the food godown. The selection criteria of the contractors were 10 years experience to build the food godown and government buildings. The work completed fulfilling all the technical specifications of the contract.

PD was responsible for implementation of the project activities. PWD engineers and other were responsible for quality control of materials, management of materials, quantity and timeliness of the construction works of food godown at the field level.

The monitoring reports contained some non-conformance by the contractor. Non-compliance resulted in replace/canceled the contract. Non-availability of land was the major constraints to implement the project in due time.

The longevity of food godown building is as per standard level. Regular repair and maintenance works of godown need to be carried out. The specific findings of the KII have been furnished below:

### 5.2.1 Strengths, Weaknesses, Opportunities and Threats (SWOT) Analysis

The SWOT analysis of the project were assessed and identified by the collection of the information from the senior level officials (**Key Informants Interview-KII**) of Directorate General of Food (DGOF), and concerns officer related to project management and implementation. The major strengths, weaknesses, opportunities and threats identified by the KII are discussed below:

#### 5.2.1.1 Strengths of the project

- **Building adequate level of food stock to ensure food security:** The risk of food crisis during disaster is reduced by ensuring adequate level of government stock at district-upazila level through internal and external procurement of food grains. This brings stability in the supply situation and acts as a food safety net for the poor.
- **Impact on Women's Empowerment:** Food grain procurement at fair price and Open Market Sale (OMS) bring price stability in the market enabling destitute women to buy food grain at low price. This increases their food security net and intake of nutrition. During harvesting season the poor women get opportunity to sale food grain at government fixed price as a result they get rid of the exploitation of the middlemen.
- **Stabilizing market price of food grain and ensuring fair price to farmers during harvesting season:** In order to maintain price stability in the market the DGOF operates open market sale and procures food grain from farmers at fair price during harvesting season. In this process market price remains stable which in turn help to increase food security net and nutrition intake of the poor. Purchasing food grain at local level at fixed price by the government ensures fair price for the marginal and poor farmers.



Plate 5.1: TL is conducting KII with UFCO at Sirajganj

- **Impact on poverty reduction:** Proper utilization of existing and new godowns of the Directorate of General of Food increases food grain storage capacity at government level. Open Market Sale (OMS) of stored food grains during crisis brings price stability. As a result, the poor people can buy food grain at lower price and this brings positive impact on poverty reduction. Employment opportunity for a minimum of 0.80 lakh rural poor has created generally during lean period through the implementation of TR, FFW, VGF, VGD programme and instant GR programme. Direct supply of food under food based programme helps poor people to get food instantly.

#### 5.2.1.2 Weaknesses of the project implementation

- **Delay completion of construction works:** The construction works was delayed about 9 months from the schedule date of July 2011. Due to this, all activities of the project was delayed. Considering this construction delay, project need to extend 12 months from July 2011 to June 2012.
- **Scarcity/Non availability of land:** Due to non-availability of land, the project authority needs to construct 139 new food godowns instead of 140 food godowns. This is one of the reasons to extend the project period.
- **Regular repair and maintenance:** Regular repairs and maintenance is lacking in old and newly constructed building which can be done without any difficulties for longevity of the food godown building.

#### 5.2.1.3 Opportunities of the Project

So far there are few silos in Bangladesh such as Ashuganj and Siddirganj etc which capacity is more than 50,000 MT of each. MOF needs to explore this type of silo in Bangladesh considering the land scarcity of the country and advantages of the silo. In this regards it need to conduct intensive research in local level to assess further its advantage so that it can compare with conventional type of godown. The advantages of the silo are below:



Plate-5.2: View of Ashuganj Food Grain Silo

- **Storage capacity of multi-crops:** Simultaneous storage of different kinds of grain, such as wheat, paddy, gram, maize in the different bins at the same time.
- **Mechanical Operation:** All loading, unloading, and weighing etc. are done mechanically
- **Long storage:** Long storage without deterioration or loss. There is no access to insects or rodents. Aeration and fumigation can be done when necessary to preserve the condition of grain.
- **Storage capacity and period:** More than 20,000 to 50,000 MT grain can store. Grain can be stored as long as five years<sup>1</sup>.
- **Temperature:** There is provision for thermocouple temperature record system in the plant itself.
- **Space requirement is less.** The area of land is required for Silo storage is only about one fifth that of conventional storage godown.
- **Fumigants requirement:** Consumption of fumigant is very nominal.
- **Manpower:** Saving of sacks (Gunny) & Skilled handling laborers at the time of storage.
- **Cost Management:** Foods are usually stored in godown for 6 months to maximum 12 months subject to regular spray of fumigant to maintain quality of food grains. But government needs to procure food grains in every season which is 6 months interval.

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<sup>1</sup> The Food Corporation of India, Bulk Food Storage Silo Elevator Plant at Hapur-Ghaziabad;Page 2

Due to scarcity of food storage facilities at the district/local level for next season procurement, previously stored food need to shift Dhaka or elsewhere divisional district. Again during Open Market Sale (OMS), previously stored food grains need to carry back to the respective place/location which incurred double shipment, loading and unloading cost. As an example, One MT or 1000 kg rice carrying cost is 2500 taka. The details are as follows:

Loading of food(MT/taka)	Carrying to Dhaka (MT/taka)	Unloading at CSD (MT/taka)	Loading of food at CSD (MT/taka)	Carrying to District (MT/taka)	Unloading at LSD (MT/taka)	Total (MT/taka)
200 Taka	2500 taka	300 Taka	300 Taka	2500 Taka	200	6,000

- ❖ For one MT rice government needs to spend extra 6000 taka. We can overcome this additional cost, if we set up new silo with more capacity and 2-5 years period storage facilities.

Number of other types of latest model silo is found in different countries of the world which will be cost-effective in terms of longevity of storage and area. Among them two has been furnished below:

(a) Hopper Bottom silo: Bottom is conical shape

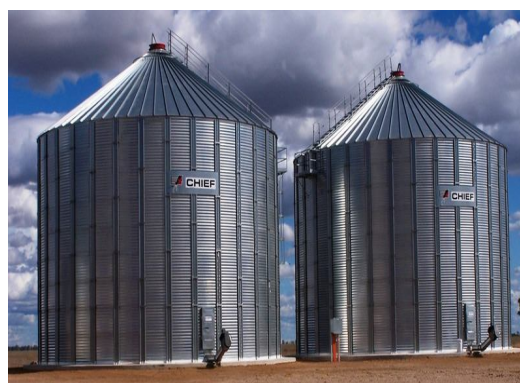
- Capacity: 10-1200 MT
- Cost:US\$ 10000-50000
- Longvity:30-50 years
- Maximum capacity : 1400 MT/silo
- Origin : China
- Easy to installation and low costs



**Plate-5.3: Hopper Bottom Steel Silo**

(b) Flat Bottom Silo: Flat type silo

- Capacity: 1000-10000 MT
- Cost: US\$ 50,000-100,000
- Longvity:30-50
- maximum capacity : 17000 MT/silo
- Origin : China
- Easy to installation and low costs
- The flat-bottom steel silos can be wide used in grain process and storage lines



**Plate-5.4: Flat Bottom Steel Silo**

#### **5.2.1.4 Threats of the project**

- **Limited capacity and storage period:** The conventional type of godown can store only 500 MT to 1000 MT food grains for 6 months to maximum 12 months period with regular spray of fumigants. In addition, all loading, unloading, and weighing etc need to be done manually which needs huge manpower.
- **Area of land requirement:** The area of land is required for conventional type of food godown is five times more that of modern (silo) storage godown. Bangladesh like densely populated small country where land is very precious need to move for vertical expansion rather than horizontal to save land and accommodate more people and things in small area.

- **Fumigant requirement:** Consumption of fumigant is very high compare to the modern silo type food godown.
- **Manpower:** More gunni bag and skilled handling laborers are required at the time of storage.
- **Quality of construction works:** Few food godowns (23) have created minor cracks in floor, wall and link road just after few months of construction work.
- **Lack of internal road:** Few (5) godowns have no internal RCC road which will create problem for loading and unloading of grains.

### **5.3 Assessment of the Sustainability of the Works**

The major findings of the assessment are discussed below:

- **Quality of the works:** PWD and project management personnel have ensured the quality of works. The soil test was done before the start of construction. All required measure was taken to ensure quality of works.
- **Durability of the works:** According to PWD, maximum 100 years durability period for newly construction godown buildings subject to regular repair and maintenance.
- **Sustainability of the Project:** The project has created a unique scope for sustainability and continuity of the project activities beyond its period. The risk of food crisis during disaster has reduced by ensuring adequate level of government additional stock of 1.10 lakh MT at 75 Upazila of 15 administrative districts of the northern region.
- **Management:** Overall achievement of the project has highly appreciated by the millers, businessman, farmers and other traders and the people in and around the project area. So far project is successful giving desired benefit to the people of the area as well as country in increasing food security net of the country.
- **Cost-effectiveness of the works:** As 139 new food godowns has ensured additional 1.10 lakh MT food grain storage capacity which in turn reduce food crisis at the disaster period or crisis of the country.

## CHAPTER- 6 MAJOR FINDINGS, RECOMMENDATIONS AND CONCLUSION

### 6.1. Major Findings

#### 6.1.1. Status of Food Godown and Project

The project was initially planned to be implemented in 24 months starting from July 2009 to July 2011 with a total cost of BDT: 24100.00 lakh but later duration was increased from 24 months to 36 months (from July 2009 to June 2012) with a reduced total budget of BDT: 21695.00 lakh.

#### 6.1.2. Status of Financial Management of the Project

Almost 90.02% (*BDT 216.95 crore out of BDT 241.00 crore*) budget of DPP of the project was utilized. The maximum fund was utilized under the line item of civil works of 80 numbers 1000 MT godowns which was 57.52% followed by civil works of 60 numbers of 500 MT godowns (24.70%). The lowest budget was utilized under the office furniture (0.01%) followed by computer accessories (0.02%). The total construction cost of each 1000 M.T godown was 187.93 lakh taka while 500 M.T godown was 107.198 lakh taka.

#### 6.1.3. Procurement Method

The construction works of 139 food godowns was completed under the supervision of the PWD and the project authority. The contractor of 50 packages had been selected by the Open Tendering Method (OTM). The contract approving authority was Head of Procurement Entity (HOPE) of PWD. But soil investigation and structural drawings of the 139 food godowns was completed through Request for Quotation (RFQ) under the Project Director.

#### 6.1.4. Implementation Status of the Food Godown

Public Works Department (PWD) has completed the construction works of 131 food godowns during March 2011 except 8 godowns that was completed in February 2012. Total 42 sites development, 139 sites internal roads and electrical works and 18,180 pieces of wooden dunnage (garjan) was completed during July 2009 to March 2012. All works of the godowns have been found similar during physical visit. All godowns are conventional types that were found in good except few where few damages have already occurred. Construction work was found to be delayed by about 9 months due to delayed of land acquisition, non-compliance and other related problems.

**Design of the Godown:** No visible structural deformation and cracks were found in the columns of the buildings. The size of the columns and wooden dunnage were found same as per design during physical observation; Foundation is not visible, so it can't be find out the actual size and reinforcement detail as per design. Overall workmanship of the building is good but not up to the mark. However, the proper quality assessment of the materials can't be done because of the lack of provision for laboratory testing of the materials in this evaluation study for quality analysis.

#### Summary Status of construction works of the food godowns

- **Wall Plaster:** It was observed during physical visit that the wall plaster of majority 91.37% (127) have been found good while the remaining 8.63% (12) wall plaster in different places of food godown have been automatically removed, which needs immediate repair and maintenance.



- **Floor:** The floor of 87.05% (121) have been found good but the rest of 12.95% (18) have been found poor construction works (lot of crakes, segregation of aggregates and little damage), which needs immediate repair and maintenance.
- **Quality of Link Road:** Most 76.98% (107) of link road are good but the construction works of 23.02% (32) of link road of the godown has been found poor (lot of crakes, holes, segregation of aggregates), which needs immediate repair and maintenance.
- **Link Road:** Out of 139 food godowns, only 5 godowns have not link road which are Santaher (Bogra), Natore Sadar (Natore), Jaldhaka (Nilphamari), Kazipur (Sirajganj), Nekmorod (Thakurgaon)
- **Boundary Wall:** Boundary is the important part of security of the food godown. But few cases, the boundary wall have been broken or absent specifically in Santaher food godown at Bogra, Kazipur food godown at Sirajganj, and Nekmord food godown at Thakurgaon.

### **Amount of food grain stored in new food godowns during 2012-13**

Total capacity of all 139 new food godowns is 1,10,000 but it had already been stored 1,16,092 MT which is 5.54% higher than the total capacity of the newly constructed food godowns.

### **Procurement of Food Grain Before and After Project**

The total amount of food grains has been procured in the fiscal year of 2010-11 and 2012-13 is 433,269 MT and 555,450 MT respectively as recorded during physical visit.

### **Status of Miller in the Project Area**

Total 667 number of miller has been found as new after project intervention who has already engaged in the procurement system of the government.

### **Participation of Millers and Farmers in the Government Procurement System**

Considering average sell of maximum 2 MT of each farmer it can determine that at least 55,000 farmers are getting opportunities to involve (directly or indirectly) in the procurement process of food grains.

#### **6.1.5. Analysis of the Quantitative Data**

A total of 1800 respondents took part in the survey from different districts of Rajshahi and Rangpur division. The highest number of respondents was from Dinajpur (19.8%) and Bogra (19.1%) and the lowest number of respondents were from Natore (2.2%) and Nilphamari (2.6%).

**Age of Beneficiaries:** The age range of the beneficiaries was <25 to >65 years, where most (34.5%) respondents were within 36-45 years and lowest (4.5%) were more than 65 years old.

**Sex of the beneficiaries:** Most (96.0%) of them (1728) were male and only 4.0% (72) respondents were female.

**Educational qualification:** The highest (35.0%) respondents (630) were primary literacy and the lowest 8.0% (144) were illiterate.

**Household Size:** More than 60% of the families have 5 to 8 members and only two percent of the families have more than 12 members.

**Occupation of the beneficiaries:** Maximum 64.38% participants (1159) were farmers and the lowest 5.22% of the respondents (94) were others like van-pullers, rickshaw pullers, day labors etc.

**Construction of food godown and ensured food security:** Most (86.1%) of the respondents (1550) expressed their opinion that the construction of food godown has ensured the food

security in the project areas. whereas 8.1% respondents expressed that they have no idea about this.

**Contribution of the new food godown during food crisis:** Majority (83.0%) of the respondents (1494) expressed that the construction of new food godown contributed during food crisis, and only 12.0% (216) respondents expressed that they have no idea about this.

**Superior Crop for food storage:** Majority (51.02%) of the respondents (71.02) expressed that the rice is the most superior crops for storage whereas the lowest category of crops for storage is maize as responded by 0.14% (3) respondents.

**Impact of new food godown on employment generation:** Most (92.5%) of respondents (1665) expressed their opinion that the construction of new food godowns has created the employment opportunities in the project areas, whereas only 7.5% (135) respondents expressed that the employment opportunity has not been created by the food godowns. The types of employment opportunities created by the construction of new food godowns are processing of crop products as responded by the majority (75.7%) of the respondents (1363) followed by the creation of transportation business of crop products (61.6%), trading opportunities of crop products (54.5%) respondents. Other employment opportunities are daily labor (51.8%) and service at godown as responded by 30.5% (549) respondents participated in the survey study.

**Change in annual income due to construction of new food godowns:** Majority (74.4%) of them (1339) expressed that their income has been increased, whereas other 25.6% (461) respondents expressed that their annual income has not been increased by the construction of new food godowns in the project areas.

**Annual expenditure for production of crop from 2009 to 2012:** More than 80% of the respondents said that there was an increase in the annual expenditure for production of crop. On an average there was a 12.5% increase in the annual expenditure for crop production.

**Increase of cultivable land due to construction of new food godowns:** 25.0% (450) respondents indicates that the there was an increase of cultivable land due to construction of new food godowns whereas 75.0% respondents expressed that the cultivable land has not been increased due to construction of new food godowns in the project areas.

**Amount of crop production before and after of project:** The project had impact on production of all crops to some extent. Even though the amount of production of Aus has increased a little after 2012 but there was a notable increase in the production of Aman and Boro.

**Crops sell in advance:** Only 8.3% (149) respondents response positive out of 1800, whereas majority of 91.7% (1651) respondents expressed their opinion that the farmers do not sell their crops in advance before harvest.

**Priority of seasonal crops for sell:** Majority (49.7%) of them (895) expressed that they Rabi crops have been given first priority for sell followed by Kharif-I crops as responded by 47.0% (846) respondents, whereas Kharif-II has given least priority for sell as responded by 4.2% (76) respondents.

**Mode of transportation:** Raickshaw or van pullers is the main mode of transportation for the farmers. However, a good number of farmers carry their crops to the market manually. In few cases, engine driven vehicles are used as mode of transports.

**Source of information about market:** Most of the farmers responded that the first source of information about market is another farmer. However, many farmers collect market information from block supervisors, radio, news papers or other sources as well. The producers determine

the market price of the products by various ways. One third of the farmers do not grade their crops before selling.

**Impact of food godowns and food storage on poverty reduction:** Most (79.9%) of the respondents (1438) stated that the construction of new food godowns and storage have contribution on poverty reduction in the project areas. Poor people can buy food grain at lower price and poor women get opportunity to sale food grain at government fixed price as a result they get rid of the exploitation of the middlemen.

**Creation of problems if the crop products keeping in house instead of selling:** The respondents mentioned various problems may occur if they keep the crop products in their house instead of selling the products just after harvest. The major problems are money, storage facilities, and pest infestation.

**Impact of new food godown on women empowerment:** Among the women participated (72) in the survey, only 20.13% (14) of them are directly involved in crop production. The majority (60.0%) women (44) have left their decisions on their husbands. However, it was encouraging that there were few women who has the right to make such decision independently or has the scope to make decision jointly with their husbands for crop production (29.77%).

**Type of labor by female respondents for crop production:** Mostly (52.0%) women (37) provide medium hard labor for crop production while 27.0% (19) women are not directly involved in physical labor related works. Only 10.0% (7) women provide very hard labor for crop production and 11.0% (8) women provide low energy related works.

**Decision making power of women:** Most (54.17%) of the cases, husband of the female respondents provide the control over the money of selling crop products produced by them, whereas 36.11% (26) female respondents either take the money of selling crop products jointly with their husband or along.

**Problem face by women during selling of crop products in market:** All (100%) of them face problem during the selling of their produced crop products in the market or in the home to the middle man.

**Kinds of problem face by the women during selling of products:** Most (95.5%) of female (69) respondents expressed their opinion that they do not take the crop products to market or to Government agent by themselves. Whereas 30.2% (22) of the women informed that they do not get the fair price of the products during selling.

#### **6.1.6. Findings of the Focus Group Discussion (FGD)**

The Focus Group Discussion were done in the study area in order to assess the major impact of the project activities, expected outputs, sustainability of the project activities as well as to assess the quality of works as per the technical specification of the project, identifying the strengths, weaknesses, threats and opportunities of the project and to make recommendations for future project.

Among the respondents participated in the FGDs under all fifteen (15) project areas, all the respondents opined that construction quality of food godowns, internal RCC road is good but no up to the mark. The major findings of the FGD are briefly mentioned the following sub-heads:

**Condition of the newly constructed food godown:** In general, the condition of constructed food godown is good but there were scope to improve it. However, some FGD respondents mentioned that few godowns have already some cracks on wall and floor. More importantly, some people mentioned that the condition of godown is good at present, but the quality is not up to the mark. Most of the godowns main doors and ventilation windows are good except few.

**Repairing and Maintenance work:** Cleaning and washing is done regularly but crack floor repair is required for godown.

**Quality of Link Road:** Only 23.02% of godowns (32) have poor RCC link road but most 76.98% of the godowns (107) have good quality RCC link road.

**Lack of RCC Link Road:** Only 5 food godowns have not RCC link road which are Santaher (Bogra), Natore Sadar (Natore), Jaldhaka (Nilphamari), Kazipur (Sirajganj), Nekmorod (Thakurgaon)

**Utilization of Food Godowns:** The utilization of new food godowns is more than 100%. The transport owner, miller, trader, labor, and van pullers etc is engaged in these activities and it has created new miller and trader in the area.

**Source of crops for storing in the godowns:** Rice is mainly purchased from millers and in few cases paddy is purchased from the farmers.

**Role of godowns on local economy:** Construction of new godowns increases food grain storage capacity at government level which is ensured fair price for farmers and poor in addition of food security net.

**Godown and agricultural production:** Farmers are getting indirect benefit due to purchase of food by the government that in turn helps the farmer to get a better price.

**Local trade and commerce:** The food godowns have a great effect on increasing food trade. Many of the millers increased their storage area and crop trading related business activities which in turn their economic activities. Due to these local economic activities farmers are also getting competitive price.

**Food security net:** Foods are distributed at fair price and food crisis are not faced. Godown also ensured to get food at fair price which reduced the poverty. The risk of food crisis during disaster is reduced by ensuring adequate level of government stock at district-upazila level through internal and external procurement of food grains. This brings stability in the supply situation and acts as a food safety net for the poor.

**Impact on poverty reduction:** Construction of new food godowns has created opportunities of new employment that in turn helped in reducing the poverty. Open Market Sale (OMS) of stored food grains during crisis brings price stability. As a result, the poor people can buy food grain at lower price and this brings positive impact on poverty reduction.

**New food godown impact on fair price:** Purchasing food grain at local level at fixed price by the government ensures fair price for the marginal and poor farmers.

**Impact on food processing mill in the area:** Millers are more benefited than others, because they are selling their product in godown, open and local market.

**Impact on employment opportunities:** Millers continued their mill for long time which is another reason of increased work opportunity. Also farmers are somehow encouraged to grow more food hence some employment occurs at farmer level as well.

### **Construction of Food Godown under Public Private Partnership (PPP)**

More details studies can be explored further with details scope of PPP for better understanding of the private sector in this regards.

### **Findings of the Key Informants Interview (KII)**

Food Division, Ministry of Food was responsible for the overall management of New Food Godown at the Head office level. PWD were entrusted with responsibility of construction works of the food godowns and PD office was responsible for soil test and structural drawings.

The longevity of the construction works are as per standard level. Regular repair and maintenance works of godown need to be carried out.

### 6.1.7. Strengths, Weaknesses, Opportunities and Threats (SWOT) Analysis

The major SWOT analysis of the project identified by the KII is discussed below:

#### 6.1.7.1. Strengths of the project

- **Building adequate level of food stock to ensure food security:** Construction of new godowns has increased capacity of additional 1.10 lakh MT food grains in addition of existing 17 lakh MT. This has reduced the risk of food crisis during disaster by ensuring adequate level of government stock at District-Upazila level through internal and external procurement of food grains. This brings stability in the supply situation and acts as a food safety net for the poor.
- **Impact on Women's Empowerment:** Food grain procurement at fair price and Open Market Sale (OMS) bring price stability in the market enabling destitute women to buy food grain at low price. This increases their food security net and intake of nutrition. During harvesting season the poor women get opportunity to sale food grain at government fixed price as a result they get rid of the exploitation of the middlemen.
- **Stabilizing market price of food grain and ensuring fair price to farmers during harvesting season:** In order to maintain price stability in the market the DGOF operates open market sale and procures food grain from farmers at fair price during harvesting season. In this process market price remains stable which in turn help to increase food security net and nutrition intake of the poor.
- **Impact on poverty reduction:** Proper utilization of existing and new godowns of the Directorate of General of Food increases food grain storage capacity at government level. Open Market Sale (OMS) of stored food grains during crisis brings price stability. As a result, the poor people can buy food grain at lower price and this brings positive impact on poverty reduction. Employment opportunity for a minimum of 0.80 lakh rural poor has created generally during lean period through the implementation of TR, FFW, VGF, VGD programme and instant GR programme. Direct supply of food under food based programme helps poor people to get food instantly.

#### 6.1.7.2. Weaknesses of the project implementation

- **Delay completion of construction works:** The construction works was delayed about 9 months from the schedule date of July 2011. Due to this, all activities of the project delayed. Considering this construction delay, project need to extend 12 months from July 2011 to June 2012.
- **Scarcity/Non availability of land:** Due to non-availability of land, the project authority needs to construct 139 new food godowns instead of 140 food godowns.
- **Regular repair and maintenance:** Regular repairs and maintenance is lacking in newly constructed building which can be done without any difficulties for longevity of the food godowns building.
- **Baseline Data:** There was no baseline information of the project which is very much needed to assess impact. This should be done prior commencement of the project.

#### 6.1.7.3. Opportunities of the Project

Considering the land scarcity of the country and advantages of the silo MOF need to move to construct silo for the following:

- **Storage capacity of multi-crops:** Simultaneous storage of different kinds of grain, such as wheat, paddy, gram, maize in the different bins at the same time.
- **Mechanical Operation:** All loading, unloading, weighing etc. are done mechanically
- **Long storage:** Long storage without deterioration or loss. There is no access to insects or rodents. Aeration and fumigation can be done when necessary to preserve the condition of grain.
- **Storage capacity and period:** More than 10,000 to 50,000 grain can store. Grain can be stored as long as five years.
- **Temperature:** There is provision for thermocouple temperature record system in the plant itself.
- **Space requirement is less.** The area of land is required for Silo storage is only about one fifth that of conventional storage godown.
- **Fumigants requirement:** Consumption of fumigant is very nominal.
- **Manpower:** Saving of sacks (Ggunni) & Skilled handling laborers at the time of storage.
- **Cost Management:** Due to scarcity of food storage facilities at the district/local level food godown for next season procurement, previously stored food need to transfer Dhaka or elsewhere divisional district. Again during Open Market Sale (OMS) previously stored food need to carry back to the respective place/location which incurred double shipment, loading and unloading cost. For this, government needs to spend 6000 taka per MT. Construction of silo can save this amount.

#### 6.1.7.4. Threats of the project

- **Limited capacity and storage period:** The conventional type of godown can store only 500 MT to 1000 MT food grains for 6 months to maximum 12 months with regular spray of fumigants. In addition, all loading, unloading, and weighing etc need manually which needs huge manpower.
- **Area of land requirement:** The area of land is required for conventional storage godown is five times more that of modern (silo) storage godown.
- **Fumigant requirement:** Consumption of fumigant is very high compare to the modern silo type food godown
- **Manpower:** More gunni bag and skilled handling laborers are required at the time of storage
- **Lack of internal road:** Few godown have no internal RCC road which is creating problem for loading and unloading of food grains.

#### 6.1.7.5. Assessment of the Sustainability of the Works

The major findings of the assessment are discussed below:

- **Quality of the works:** All the project management personnel have ensured the quality of works of godowns.
- **Durability of the works:** According to PWD, maximum 100 years durability period for newly construction godown buildings subject to regular repair and maintenance.
- **Sustainability of the Project:** The project has created a unique scope for sustainability and continuity of the project activities beyond its period. The risk of food crisis during disaster is reduced by ensuring adequate level of government stock at 75 upazila of 15 administrative districts in the northern region.
- **Management:** Overall achievement of the project has highly appreciated by the millers, businessman, farmers and other traders and the people in and around the project area.
- **Cost-effectiveness of the works:** As 139 new food godowns has ensured additional 1.10 lakh MT food grain storage capacity which in turn reduce food crisis at the disaster period or crisis of the country.

## 6.2. Recommendations

The major recommendations of the project are given below:

- **Regular Repair and Maintenance:** All repairing and maintenance works needs to be done regularly.
- **Avoidance of Additional Time of Implementation:** To get the maximum benefits from the project, delay implementation of the project should be avoided and it should be implemented within the stipulated time and work frame.
- **Scarcity/Non availability of land:** Before taking any project for conventional type of godown land scarcity and its important of the country need to be considered.
- **Construction of Silo Food Godown:** Considering cost-effective management advantages of silo food godown, the authority need to construct large volume capacity of 20,000 to 50,000 MT with full automation facilities in future which will safe land and increase longevity of storage up to 2-5 years from 6-12 months without loss.
- **Construction of food godown under PPP:** Few people are interested to construct food godown under the PPP but majority want to know more details about PPP terms and conditions for joint infrastructure development of food godowns. Thus, they emphasized to explore further with details scope of PPP for better understanding of the private sector involvement in food godown construction.
- **Baseline Survey:** Baseline survey should be done prior commencement of the project.

## 6.3. Conclusion

- The project has succeeded in achieving its target to ensure food security net of the country.
- Construction of new godowns increases additional 1.10 lakh MT food grain storage capacity at government level which ensures price stability in the market.
- The project has significantly positive impact on women's empowerment and raising awareness level of farmers on crop production.
- More specific impact can assess, if project authority can available baseline information.





**Annex-A: Data Collection Instrument  
Beneficiary Questionnaire**

**3.0 Aww R mgyav m=uuKZ Z\_`vej xl**

**3.1 2009 t\_`tK 2012 ch`ikm` t\_`tK Avcbvi ewl R Avq ewx tctqtQ uKbv?** 1= nu; 2= br

3.1.1 hri` n`v nq,Zte uK cwigvY ewx tctqtQ?

kZKi v

**3.2 2009 t\_`tK 2012 ch`ikm` Drcv` tb Avcbvi ewl R e`q ewx tctqtQ uKbv?** 1= nu; 2= br

3.2.1 hri` n`v nq,Zte uK cwigvY ewx tctqtQ

**4.0 D`yKi Yt**

**4.1 mgyav f`llh` i Rigi Ges P`lvef` i c`kuZt**

**4.1.1 c`K`i nl qvi ci Avcbvi P`tl i Rigi cwigvY uK ewx tctqtQ?** 1= nu; 2= br

4.1.2 hri` nu`nq Zte uK cwigvY ewx tctqtQ?

kZisk

**4.2 tgvU Lv` km` Drcv` b t**

**4.2.1 c`K`i nl qvi Av`M Ges c`ti Lv` km` Drcv` tbi cwigvY** 2009 c`te<sup>o</sup> 2012 c`ti

	<input type="text"/>	<input type="text"/>
AvDk	<input type="text"/>	<input type="text"/>
Avgb	<input type="text"/>	<input type="text"/>
te`ti v	<input type="text"/>	<input type="text"/>
Mg	<input type="text"/>	<input type="text"/>
Ab`vb` (D`j l Ki ab-----)	<input type="text"/>	<input type="text"/>

**5.0 evRvi e`e`lcbvt**

**5.1 Avcib** কি সংগ্রহের আগে শস্য বিক্রি করেন? 1= n`u 2= br

৫.২ কোন শস্যের বিক্রির জন্য আপনি বেশি অগ্রাধিকার দেন? 1= i`e; 2= Lwi d-1; 3= Lwi d-2

৫.৩ আপনি কি শস্য বিক্রির আগে কোন টাকা নেন? 1= n`u 2= br

**5.4 Avcib uK Dcv`q Lv` Avv` tbi qv K`tib?**

1= gv\_v/K`da, 2=wi` v/F`vb, 3= fUfUJ/bwmgb, 4=Mia`i Mvov, 5= U`K, 6= Ab`vb` (D`j l Ki ab -----)

**5.5 tKv`vq t\_`tK Avcib evR`i i Z\_` tctq`\_uKb?**

1=Ab` Drcv` bKvi x, 2=igj vi /e`emvqx, 3=eK mgyvi f`iBRvi, 4=ti`lll, 5=cw`l Kv, 6=Kw`l .ecYY, Ab`vb` (D`j l Ki ab-----)

**5.6 Lv` km` evRviRvZKi`Y Avcbvi w`fbo`l i P` t`jv D`j l Ki ab**

k`m`i big	cwi`enb (UvKv/ gb)	DVv Ges bvgv (UvKv/ gb)	c`v`K`iRs(tgvOK Kiv) (UvKv/ gb)	evOvBK`i Y (UvKv/ gb)	evRvi LvRbv (UvKv/ gb)	Ab`vb` (UvKv/ gb)	tgvU (UvKv)
AvDk							
Avgb							

**Annex-A: Data Collection Instrument  
Beneficiary Questionnaire**

teʃiʋ							
Mg							
Ab'ib''							

**5.7 Kfite Avcib Avcvi ktm'i evRvi `i tei Ktib?**

1= Dɔʃiʋ `i KlvKvl i gva'ig; 2= e'emvq/igj gviʋ K/mi Kvi ubaʃiʋ Z gʃiʋ; 3= ʋPʋyZKiY (gvKAvC); 4= Pj ʋZ gʃiʋ   
 5= Ab'ib'' (Dʃiʋ K iab-----)|

৫.৮ আপনি কি শস্য বিক্রির আগে বাছাই করেন? 1= nür; 2= bv

**5.9 hvi nünq, ʋK KviʃY Avcib km' eQvB Ktib? (GKʋaK DĒi t`qv hvte)|**

1= fʃiʋ `ig cvl qvi Rb''; 2= ctY'i ʋBMZ gvb i yvi Rb''; 3= ʃcvKv-gvKo t\_ʃK i yvi Rb''; 4= fʃiʋ exR cvl qvi Rb''   
 ৫= শস্য গুদামে বিক্রয়ের জন্য ৬= অন্যান্য (উল্লেখ করুন-----)|

**৫.১০ আপনার পছন্দের বিক্রয়ের জায়গা কোনটি?**

Awʃbv/gvV = 1; Mlg/Drcv`bKvixi evRvi = 2; DctRj vcvBKvix evRvi = 3; mi Kvi = 4; Ab'ib'' evRvi = 5; Ab'ib''=6

**5.11 Avcvii cQʃ`i evRvi ʋtʃiʋ বিক্রি করতে কী ধরনের সমস্যা হয়? (GKʋaK DĒi t`qv hvte)|**

1= PʋvewR; 2= AwZʋi 3 টোল; ৩= বাজার হয়রানি; ৪= দালাল চক্র; ৫= পরিবহন; ৬= অন্যান্য (উল্লেখ করুন-----)|

৫.১২ কৃষক বা উৎপাদনকারী হিসেবে আপনি কি খাদ্যগুদামে শস্য বিক্রি করতে পারেন? 1= n'ʋ 2= bv

**5.13 Lv'' ʋg nI qʋ `ē'gj' ʋbqʃtʃ ʋK tKv fʃvKv i vLʃQ?** 1= n'ʋ 2= bv

**5.14 b'h'gj' cvl qvi tʃiʃI Lv'' ʋg ʃjv ʋK tKv Ae`v i vLʃQ?** 1= n'ʋ 2= bv

**৫.১৫ আপনার উৎপাদিত শস্য কি পরিমাণ বিক্রি করেন এবং কত টাকা পান?**

AvDk	<input type="text"/>	gb	<input type="text"/>	UvKv
Avgb	<input type="text"/>	gb	<input type="text"/>	UvKv
teʃiʋ	<input type="text"/>	gb	<input type="text"/>	UvKv
Mg	<input type="text"/>	gb	<input type="text"/>	UvKv
Ab'ib'' (Dʃiʋ K iab-----)	<input type="text"/>	gb	<input type="text"/>	UvKv

**6.0 `wi`Zv`iKiyt**

**6.1 Lv'' ʋg ʋbqʃ I msi yʃiʋi dʃiʋ Gj vKv `wi`Zv`iKiyt ʋK tKv cʃve tʃiʃiʋ?** 1= nür; 2= bv

**6.2 Avcvii Gj vKv Lv'' ʋg ʋbqʃ nI qʋ Avcvii AwK FY cʃbi mʃfebv mʃ nʃiʃiʋ ʋK bv?** 1= nür; 2= bv

**7.0 Lv'' ʋgt**

৭.১ আপনি যদি আপনার শস্য বিক্রি না করে ঘরে রাখতেন, তাহলে কি সমস্যা হতো?

1= A\_ʃmsKU; 2= gRʃiʋ i mgm'v; 3= ʃcvKv-পাকড়ের দ্বারা আক্রান্ত; ৪= পরিবেশগত সমস্যা; ৫= অন্যান্য (উল্লেখ করুন-----)|

**7.2 mi Kvi x-ʃemi Kvi xʃh\$ Dʃiʋ ʋM A\_ʋʃicicicʃZ Avcvii Gj vKv Lv'' ʋg Kiv DʃPZ ʋKbv?** 1= nür; 2= bv

**7.3 Lv'' ʋg ʃjv Avcvii Rb'' mʃgavRbK `ʃtʃiʋ `icb Kiv nʃiʃiʋ ʋKbv?** 1= nür; 2= bv

**7.4 eZʃv mi Kvi fʃiʋ fʃte km' msi yʃiʋi Rb'' `cʃLiʃP ÷xʃiʋ %Zni Lv'' ʋg (mʃtʃiʋ) ʋbqʃiʋi mʃxʃiʋ ʃiʃiʃiʋ Avcvii ʋK gʃtʃiʋ Ktib Gʃv km' msi yʃiʋ Rb'' fʃiʋ?** 1= nür; 2= bv

**Annex-A: Data Collection Instrument  
Beneficiary Questionnaire**

<b>7.5</b> <i>Avcvii gʒZ tKvb ai tbi Lv` , `vg Dch`?</i>	1= MZvbMvZK; 2= mvBtj v	<input type="checkbox"/>
<b>8.0</b> <i>iayvj gwj K/ e`emvqx tʒtʒ c`huR`:</i>		
<b>8.1</b> <i>Avcvii Gj vKvq e`v`MZ gwj Kvab , `vg Kiv DvPZ vKbv?</i>	1= nũr; 2= bv	<input type="checkbox"/>
<b>8.2</b> <i>Lv` , `vg KZv` b ch`Lv` i vL tj Zvi , bMZ gub vK _vK?</i>		<input type="checkbox"/>
1= 6 gvm; 2= 12 gvm; 3= 18 gvm; 4= 24 gvm; 5= Ab`vb` (Dʒj L Ki ab-----)		
<b>8.3</b> <i>Lv` , `vg , tʒv kvZvZv v bqv` n l qv DvPZ vKbv?</i>	1= nũr; 2= bv	<input type="checkbox"/>
<b>8.4</b> <i>আপনি কি আপনার পণ্য সরকারী সংস্থায় বিক্রির সময় কোন সমস্যায় পড়েছেন?</i>	1= nũr; 2= bv	<input type="checkbox"/>
<b>৮.৫</b> <i>আপনার পণ্য সরকারী সংস্থায় বিক্রির ফলে আপনি কি কোন সুবিধা পান?</i>	1=nũr; 2=bv	<input type="checkbox"/>
<b>8.6</b> <i>Avcvii Gj vKvq bZb Lv` , `vg n l qv Avcvii vK tek km` mslv` Dʒ` vlv n t q t Qb?</i>	1= nũr; 2= bv	<input type="checkbox"/>
<b>৮.৭</b> <i>খাদ্য বিক্রয়ের ক্ষেত্রে Avcvii vK vK m gm`iq c t ob?</i>		<input type="checkbox"/>
1= কমিশন; 2= সরকারী প্রক্রিয়ায় টাকা পেতে বিলম্ব হওয়া; 3= চাঁদাবাজি; 8= রাজনৈতিক প্রভাব; 5= Ab`vb` (Dʒj L Ki ab-----)		
<b>9.0</b> <i>bvi xi y gZv t b figKv (iayvj v i tʒtʒ c`huR`) t</i>		
<b>9.1</b> <i>Avcvii vK km` Drcv` b K t ib?</i>	1= nũr; 2= bv	<input type="checkbox"/>
<b>9.1.1</b> <i>hv` n`v nq, Zte Lv` , `vg v b v g n l qvi, (1) AvM KZUKzRv t Z Drcv` b Ki t Zb?</i>		<input type="checkbox"/>
<b>(2) cti KZUKzRv t Z Drcv` b Ki t Zb</b>		<input type="checkbox"/>
<b>9.2</b> <i>km` Drcv` b K i t Z v l t q hv` FY M`b K i t Z n q t m t y t i t K v m v s i t b q?</i>		<input type="checkbox"/>
1= v b R; 2= v g v v c Z v / e v o x i c`h v b; 3= Dc t R j v K v l . A v c m v i; 4= t h s _ f i t e		
<b>9.3</b> <i>শস্য উৎপাদন প্রক্রিয়ায় কী হারে আপনার শ্রম দিচ্ছেন?</i>		<input type="checkbox"/>
1= L y t e k r; 2= g v S m i; 3= K g; 4= b v B; 5= A b `v b` (Dʒj L Ki ab-----)		
<b>9.4</b> <i>km` Drcv` t b t K v m v s i t b b?</i>	1= v b t R; 2= v g v v c Z v / e v o x i c`h v b; 3= Dc t R j v K v l . A v c m v i; 4= t h s _ f i t e	<input type="checkbox"/>
<b>9.5</b> <i>শস্য বিক্রির টাকা কে গ্রহণ করে?</i>	1= v b t R; 2= v g v v c Z v / e v o x i c`h v b; 3= t h s _ f i t e; 3= v R b A v j v` v	<input type="checkbox"/>
<b>9.6</b> <i>Avcvii vK Avcvii cb` v b t R e v R v i / m i K v i x m s` v i K v Q v b t q A v t m b?</i>	1= n`u; 2= bv	<input type="checkbox"/>
<b>9.7</b> <i>মহিলা হয়ে আপনি পণ্য বিক্রি করতে কোন সমস্যায় পড়ছেন কিনা?</i>	1= n`u; 2= bv	<input type="checkbox"/>
<b>9.7.1</b> <i>hv` nũnq; Zte `qv Kti m gm`v , tʒv Dʒj L Ki ab  </i>		<input type="checkbox"/>
1= K g g j ; 2= v g v` i K l v K v l i y g Z v , 3= e`emvqx v i v c Z v i Z n l q v , 4= A b `v b` (Dʒj L Ki ab-----)		

Name of Enumerator's :-----

Signature :-----

Date :-----

Address: District :----- Upazila:-----



**Appendix-A: Data Collection Instruments  
FGD Guidelines**

2.3	<p>আঁতুগি রব মবাবি বজ কব্দি কব্দি কব্দি লব্দি-কম সামগ্রী ক্রয় করা হয়</p> <p>1. -----</p> <p>2. -----</p>
2.4	<p>লব্দি-কম ক্রয় ও গুদামে সংরক্ষণের ফলে এলাকার জনগনের কৃষি উৎপাদনে কি ধরনের প্রভাব চোত, ডিজি কিঅ:</p> <p>1. -----</p> <p>2. -----</p>
2.5	<p>লব্দি, বগিবি ডিজি জব্দি রবম্দি ড্রব্দি লব্দি-কম এম্দি এম্দি কবি অ্দি চ্দি চোত, ডিজি কিঅ:</p> <p>1. -----</p> <p>2. -----</p>
2.6	<p>লব্দি, বগিবি লব্দি কম মসি য্দি ডিজি জব্দি রবম্দি লব্দি বিব্দি কবি অ্দি চ্দি চোত, ডিজি কিঅ:</p> <p>1. -----</p> <p>2. -----</p>
2.7	<p>আঁ জব্দি লব্দি, বগিবি লব্দি কম মসি য্দি ডিজি জব্দি রবম্দি বিব্দি কবি অ্দি চ্দি চোত, ডিজি কিঅ:</p> <p>1. -----</p> <p>2. -----</p>
2.8	<p>আঁ জব্দি লব্দি, বগিবি লব্দি কম মসি য্দি ডিজি আব্দি ড্রব্দি কবি অ্দি চ্দি চোত, ডিজি কিঅ:</p> <p>1. -----</p> <p>2. -----</p>
2.9	<p>লব্দি, বগিবি ডিজি জব্দি লব্দি কম্দি গ্দি ডি কবি অ্দি চ্দি চোত, ডিজি কিঅ:</p> <p>1. -----</p> <p>2. -----</p>
2.10	<p>লব্দি, বগিবি ডিজি জব্দি লব্দি কম্দি ড্রব্দি কবি অ্দি কবি অ্দি চ্দি চোত, ডিজি কিঅ:</p> <p>1. -----</p> <p>2. -----</p>
2.11	<p>আঁ জব্দি লব্দি, বগিবি ডিজি জব্দি এম্দি ডি কবি অ্দি চ্দি চোত, ডিজি কিঅ:</p> <p>1. -----</p> <p>2. -----</p>
2.12	<p>আঁ জব্দি লব্দি, বগিবি ডিজি জব্দি লব্দি কম্দি প্রক্রিয়াকারী মিলারদের উপর কি ধরনের প্রভাব চোত, ডিজি কিঅ:</p> <p>1. -----</p> <p>2. -----</p>

**Appendix-A: Data Collection Instruments  
FGD Guidelines**

2.13	<p><i>Lv` , `vg ubgv#bi dtj GjvKvq Lv` kms</i> প্রক্রিয়াকারী মিলারদের ব্যবসা বানিজ্যের উপর কি ধরনের প্রভাব <i>ctot0</i>, <i>Dtj L Ki ab:</i></p> <p>1. -----</p> <p>2. -----</p>
2.14	<p><i>Lv` , `vg ubgv#bi dtj GjvKvq Lv` kms</i> প্রক্রিয়াকারী মিলারদের কোন অসুবিধার সৃষ্টি হচ্ছে কিনা, উল্লেখ করুন:</p> <p>1. -----</p> <p>2. -----</p>
2.15	<p><i>Lv` , `vg ubgv#bi mi Kvi #Kfite j vfevb nt"Ob, Dtj L Ki ab:</i></p> <p>1. -----</p> <p>2. -----</p>
2.16	<p><i>Lv` , `vg ubgv# I msi y#bi dtj GjvKvq Kgms`v#b #K ai#Yi c#ve ctot0, Dtj L Ki ab:</i></p> <p>1. -----</p> <p>2. -----</p>

FGD *cwi Pvj bvKvixi brg* t -----

FGD *cwi Pvj bvKvixi `v#i* t-----

*Zwi L* t -----

*mgq* *t'ia:* ----- *#kl :* -----

**Annex-A: Data Collection Instruments**  
**Project Management Personnel and Policy Makers Questionnaire**

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**Government of the People's Republic of Bangladesh**  
**Implementation Monitoring and Evaluation Division (IMED)**  
**Ministry of Planning**

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**Questionnaire for Project Management Personnel and Policy Makers**

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1. Which office was responsible for the overall management of New Food Godown at the Head office level?

.....  
.....

2. Who were entrusted with responsibility of management of the Project at the Field level?

.....  
.....

3. Which office was involved in the Design of the New Food Lab?

.....  
.....

4. What was the primary focuses for Construction of the Food Godown?

.....  
.....

5. Which office was responsible for preparation of the technical specification of the Food Godown?

.....  
.....

6. What were the selection criteria of the goods and contractors?

.....  
.....

7. Was the work completed fulfilling all the technical specifications of the contract?

.....  
.....

8. How much was the performance of the contractor in terms of the compliance of the technical specifications?

.....  
.....

9. Which office was responsible for monitoring the project implementation at the field level?

.....  
.....

**Annex-A: Data Collection Instruments**  
**Project Management Personnel and Policy Makers Questionnaire**

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10. Who was responsible for quality control of materials, management of materials, quantity and timeliness at the field level?

.....  
.....

11. Did the contractor and or the client carry out field laboratory tests according to the technical specifications?

.....  
.....

12. Which office was responsible for analyzing the field monitoring reports?

.....  
.....

13. Whether the monitoring reports contained any non-conformance by the contractor?

.....  
.....

14. What actions were taken in case of non-compliance?

.....  
.....

15. How many cases of non-compliance of the actual with the technical specifications were reported in your section of the rail line?

.....  
.....

16. How were the cases mitigated?

.....  
.....

17. Was there any case of challenging the field laboratory test/site selection? How the issue was resolved?

.....  
.....

18. Was the contract value at par with the schedule price?

.....  
.....

19. If not, why and how the issue was resolved?

.....  
.....



**Annex-A: Data Collection Instruments  
Project Management Personnel and Policy Makers Questionnaire**

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20. What were the major constraints in implementing the project?

-----  
-----

21. Do you consider the longevity of the construction and equipment as per standard req?

-----  
-----

23. Is there any regular repair and maintenance works of godown carried out?

-----  
-----

24. What additional needs to be done to attain national's needs?

Design : -----  
Material : -----  
Management : -----  
Maintenance : -----

25. Please mention at least three strengths and three weaknesses of the project:

<b>Strengths:</b>	<b>Weaknesses (Faults):</b>

26. Do you think that the food godown has contributed to food security?

Yes  No

27. Do you think that food godown inspired more crop production?

-----  
-----

28. Year wise production and government procurement.

-----  
-----

29. Do you think that godown can reduce poverty with incentive price of food?

-----  
-----

**Annex-A: Data Collection Instruments**  
**Project Management Personnel and Policy Makers Questionnaire**

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30. Would you please mention at least 3 measures for enhancing godown efficiency?

-----  
-----

31. Do you face any financial budget allocation problem?

-----  
-----

32. Do you face any management problem?

-----  
-----

33. How effective was their support?

-----  
-----

34. What are the issues to consider in future project?

-----  
-----

**Annex-B:  
Observation/ Physical Verification on Checklist of the Construction of New Food Godown of 1.10 MT**

**Implementation Monitoring and Evaluation Division (IMED)  
Observation Checklist for Works and Goods for  
Construction of New Godown of 1.10 Lakh M.T Capacity of Northern Region of the Country under DGoF**

**Name of Food Godown:** .....

**Division:** ..... **District:** ..... **Upazilla:** .....

**Construction Status of the Construction of New Food Godown of 1.10 MT:**

Quantity	Type of Work	Procurement Method & Authority	Tender/Bid/ Proposal		Cost of Works (in BDT)	Implementation Schedule of Works		Selection of Tender Date	Procurement Date		Quality of Electrical Works		Site Development	Internal RCC Road	Site Selection
			Invitation Date	Closing Date		As per Contract	Actual Date		Invitation of Tender	Signing of Contract	Internal	External			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

**Code:**

3= Procurement Method of Authority: Code: (1= Teder; 2= Direct; 3= Others (Specify-----))

8= Quality & Durability of the Works: Code: (1= Poor; 2= Good; 3= Very Good; 4= Excellent)

12= Quality of Electrical Works (Internal): Code: (1= Poor; 2= Good; 3= Very Good; 4= Excellent)

13= Quality of Electrical Works (External): Code: (1= Poor; 2= Good; 3= Very Good; 4= Excellent)

14= Site Development: Code: (1= Poor; 2= Good; 3= Very Good; 4= Excellent)

15= Internal RCC Road: Code: (1= Poor; 2= Good; 3= Very Good; 4= Excellent)

16= Site Selection: Code: (1= Poor; 2= Good; 3= Very Good; 4= Excellent)

**Annex-B:  
Observation/ Physical Verification on Checklist of the Construction of New Food Godown of 1.10 MT**

**Functional Status of the Construction of New Food Godown of 1.10 MT:**

Storage Capacity M.T	Used Capacity M.T	Who are the Major Seller	Present Condition of Godown			Manpower	Is Godown Regularly Maintained?	What Additional Support is Needed?	Purchase Food (Figure in M.T)	Can Godown meet up Present Demand?	Do you think Additional Godown is Needed?
			Wall, Fittings with Color	Floor	Storage facilities with Equipment						
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>

**Code:**

1= Storage Capacity M.T: Code: (1= 500 M.T; 2= 1000 MT)

4= Present Condition of Godown (Wall, Fittings with Color) Code: (1= Damage; 2= Good; 3= Very Good; 4= Excellent)

5= Present Condition of Godown (Floor): Code: (1= Damage; 2= Good; 3= Very Good; 4= Excellent)

6= Present Condition of Godown (Storage facilities with Equipment): Code: (1= Damage; 2= Good; 3= Very Good; 4= Excellent)

8= Is Godown Regularly Maintained? Code: (1=Yes; 2=No)

9= What Additional Support is Needed? Code: (1=Yes; 2=No)

11= Can Godown meet up Present Demand? Code: (1=Yes; 2=No)

12= Do you think Additional Godown is needed? Code: (1=Yes; 2=No)

\_\_\_\_\_  
Signature with Seal  
Godown In-charge

\_\_\_\_\_  
Signature  
Field Supervisor

\_\_\_\_\_  
Signature  
Field Enumerator

### Comparison between Traditional and Silo Food Godown

<b>Traditional Food Godown</b>	<b>Silo Food Godown</b>
1. Constructional Period is long	1. Construction period is Short
2. Not easy to Construction	2. Easy to Installment
3. For 1000 MT Godown need to establish 1.5 crore taka	3. For 1000 MT Godown need to establish 80 lakh taka
4. Storage Period 6 Months to 1 Year	4. Storage Period 1 to 5 Years
5. Operation through Conventional method	5. Operation through Mechanical Method
6. Large area needed for establishment	6. Small area needed for establishment
7. Less Cost effective	7. More cost effective
8. Fumigant Requirement is High	8. Fumigant Requirement is Low
9. Need more manpower	9. Need Less manpower
10. Food are store on wooden donnage	10. Wood dunnage, and gunny bag are not need



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