

Appendix 4

Items Requested by GOB		
Original Request	Confirmed Request	Remarks
1) Facility		
10 nos. grain storage bins Each having 10,000 Mt capacity	Grain storage bins with capacity 50,000 Mt or less	
—	Intake chain conveyer system	
—	Belt and bucket elevator	
—	Loading chain and flight conveyer	
—	Bulk weigh system (hopper scale)	
—	Unloading chain and flight conveyor system	
—	Electric motors	
—	Bin accessories	
—	Aeration system	
—	Temperature, Bin monitoring system	
—	Bin sweep auger	
—	Silo discharge gate packages	
—	Bagging system	
—	Packing and loading	
—	Stores and spares	
Approach road and side development including water supply, sanitation and pilling	—	To be covered by GOB
Development of railway infrastructure	—	To be covered by GOB up to the Facility
Inspection bungalow and office building	Office building	
2) Equipment		
Intake chain conveyer system	—	Categorized as facility
Belt and bucket elevator	—	Categorized as facility
Loading chain and flight conveyer	—	Categorized as facility
Bulk weigh system (hopper scale)	—	Categorized as facility
Unloading chain and flight conveyor system	—	Categorized as facility
Electric motors	—	Categorized as facility
Bin accessories	—	Categorized as facility
Aeration system	—	Categorized as facility
Temperature, Bin monitoring system	—	Categorized as facility
Bin sweep auger	—	Categorized as facility

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Silo discharge gate packages	—	Categorized as facility
Electric 3 way bulb	—	N/A
Electric 2 way bulb	—	N/A
Bagging system	—	Categorized as facility
Packing and loading	—	Categorized as facility
Shipping documents	—	N/A
Stores and spares	—	Categorized as facility
Training	—	Categorized as Soft Component
3) Soft components (Technical guidance)		
Foundation	—	Categorized as the Others
Erection	—	Categorized as the Others
Commission (workout)	—	Categorized as the Others
Custom duties, VAT	—	Categorized as the Others
Freight	—	Categorized as the Others
Insurance	—	Categorized as the Others
Physical and price contingency	—	Categorized as the Others
Consultants	—	Categorized as the Others
Manpower including revenue expenditure etc.	—	Categorized as the Others
—	Training	
4) Design/Supervision		
Consultants	—	Included in Japan's grant aid scheme
5) Others		
—	Foundation	Included in facility construction
—	Erection	Included in facility construction
—	Commission (workout)	Included in Japan's grant aid scheme
—	Custom duties, VAT	To be covered by GOB
—	Freight	Included in Japan's grant aid scheme
—	Insurance	Included in Japan's grant aid scheme
—	Physical and price contingency	N/A
—	Consultants	Included in Japan's grant aid scheme
—	Manpower including revenue expenditure etc. (for operation and maintenance)	To be covered by GOB

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(2) Signed Minutes of Meetings on April 28, 2011 at 3rd Field Survey

THE MINUTES OF MEETINGS
ON
THE THIRD MISSION FOR THE PREPARATORY SURVEY
ON
THE PROJECT FOR
THE IMPROVEMENT OF THE CAPACITY OF PUBLIC FOOD STORAGE
IN
THE PEOPLE'S REPUBLIC OF BANGLADESH

AGREED UPON BETWEEN

THE GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH

AND

THE JAPAN INTERNATIONAL COOPERATION AGENCY

Dhaka, 28th April, 2011



Mr. MAKINO Koji
Leader
Third Mission Team
Japan International Cooperation Agency



Ms. Khadiza BEGUM
Deputy Secretary
Economic Relations Division, Ministry of
Finance, Government of the People's
Republic of Bangladesh



MD. ABU BAKAR SIDDIQUE
Assistant Engineer
M/o. Food & Disaster Management
Govt. of the People's Republic
of Bangladesh.
Ministry of Food and Disaster Management
Government of the People's Republic of
Bangladesh



Shaikh Zakir Hossain
Director
Inspection, Dev. & Tech. Services
Directorate General of Food, Dhaka.
Directorate General of Food
Government of the People's Republic of
Bangladesh

The government of the People's Republic of Bangladesh (hereinafter referred to as "GOB") and the Japan International Cooperation Agency (hereinafter referred to as "JICA") have made several preliminary discussions in order to identify priority projects in the field of Agriculture and Rural Development, and agreed to make preparation for the improvement of the capacity of public food storage in Bangladesh (hereinafter referred to as "the Project"). Accordingly, JICA dispatched mission teams on the Project (hereinafter referred to as "the Team") to the People's Republic of Bangladesh (hereinafter referred to as "Bangladesh").

JICA sent the first mission to Bangladesh from 9th October 2010 to 26th November, 2010 (hereinafter referred as the "First Mission") in order to develop scope and implementing arrangements of a further survey which draws up an outline of designs and cost estimations of the Project (hereinafter referred to as "the Preparatory Survey").

Based on the analysis by the Team through field survey in Bangladesh and work in Japan, it was found necessary to reconsider the scope of the Preparatory Survey, i.e. type of the storage. Considering the necessity of the discussion on the scope of the Project, JICA sent the second Mission (hereinafter referred to as "the Second Mission") to Bangladesh from 5th January 2011 to 20th January 2011.

After the Second Mission, JICA Bangladesh office and Ministry of Food and Disaster Management (hereinafter referred as 'MoFDM') have discussed continuously considering the scope of the Preparatory Survey.

Based on the discussions, JICA sent on 24th April 2011 the Third Mission (hereinafter referred to as "the Third Mission") headed by Mr. Makino Koji, Deputy Director General, Rural Development Department in order to discuss and proceed the further survey.

The main points discussed between the Third Mission and Bangladeshi side are described in the Appendix 1.

It should be noted that implementation of the Preparatory Survey does not imply any decision or commitment by JICA to extend its grant for the project at this stage.

Appendix 1: Main Points Discussed
Appendix 2: Location Maps

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Appendix 1

THE MAIN POINTS DISCUSSED

A series of discussions between the Ministry of Food and Disaster Management and other related organizations (hereinafter referred as 'Bangladeshi side'), and the Third Mission were held.

The main points discussed are described as follows.

1. Necessity of the food storage
Both sides reconfirmed that the public food storage was necessary for national buffer stock as a measure of food security.
2. Executing agency and implementing agency
Both sides reconfirmed the executing agency as MoFDM and the implementing agency as Directorate General of Food (hereinafter referred as 'DG of Food').
3. Type of the food storage
The type of the food storage has been changed from a silo to a multi-story warehouse and both sides confirmed to proceed the Preparatory Survey for a multi-story warehouse.
4. Site of the food storage
Bangladeshi side reconfirmed that the project site was in Santahar Union as Appendix 2, and the land and road of the project site were owned by the MoFDM.
5. Capacity of the food storage
Considering the budget constrain and avoiding delay in the Project process, both sides finally agreed that the capacity of the storage would be 25,000 Mt as maximum and the ultimate capacity would be determined by the cabinet approval of the Government of Japan.
6. Schedule for Development Project Proposal (DPP) appraisal
Bangladeshi side promised that the Development Project Proposal (hereinafter referred as DPP) for the Project shall be approved by Executive Committee for National Economic Council (hereinafter referred as ECNEC) by the end of November 2011.

GOB shall finalize the DPP for the Project based on the Draft Final Report. Based on the time frame established in the approval procedure, the expected DPP approval schedule is as follows. GOB agreed to take necessary actions to follow this tentative schedule to obtain approval by ECNEC.

The Third Mission agreed to share necessary information of the project with Bangladeshi side for preparation of DPP.



Early September	DPP Submission to MoFDM from DG Food
Early September	DPP Examination and Modification by MoFDM
Middle September	DPP Examination by Planning Commission (15days)
Middle October	DPP Circulation of PEC decision (10days)
End of October	Examination by Sector division of Planning Commission (10days)
November	Examination and final approval by ECNEC (30 days)

7. Construction of Railway

GoB requested to design the warehouse by keeping the possibility of future railway construction by GoB though the existing road access will be used for the proposed warehouse.

8. Soft Components

Bangladeshi side requested the technical support and capacity building of concerned staff for operation and maintenance of the modernized multi-story warehouse and forklift system around the starting stage of operation. The Survey Team will consider the necessity, appropriateness and contents of the technical support in further study.

9. Environmental and Social Consideration borne by GOB

Bangladeshi side promised to take necessary arrangement for Environmental and Social Consideration by following Bangladesh Environmental Conservation Act, 1995, and it should harmonize with the DPP procedures and the JICA guidelines for environmental and social consideration.

10. Further Schedule

Bangladeshi side requested to shorten time of procedures and a construction period of the Project as much as possible and The Third Mission agreed to streamline them as feasible as possible.

The Third Mission will proceed to further surveys in Bangladesh until May 20, 2011 and collect additional information to designing and cost estimation for a multi-story warehouse.

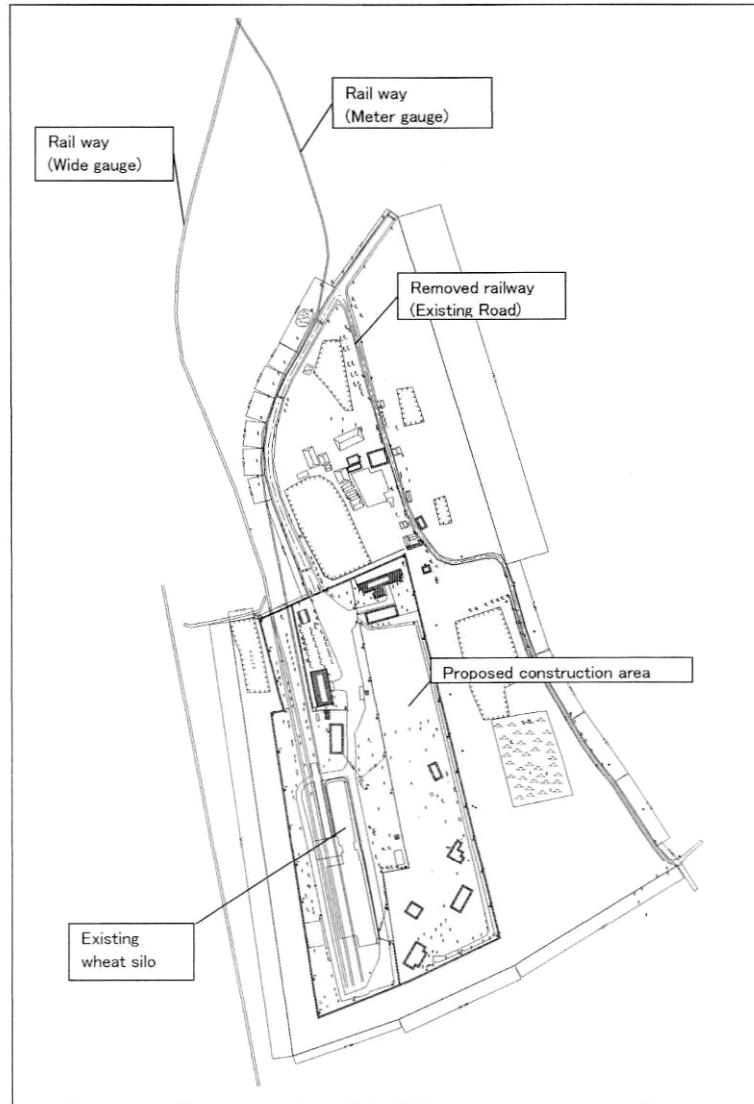
JICA will prepare the draft report in English and dispatch a mission in order to explain its contents in September – October 2011.

When the contents of the draft report are accepted by GOB, JICA will complete the final report and send it to the GOB in December 2011.

JICA will reschedule the visit of MoFDM to Japan to observe functions of multi-story warehouse in Japan.



Appendix 2



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(3) Signed Minutes of Meetings on October 17, 2011 at Explanation of Draft Outline Design

**MINUTES OF DISCUSSION
ON
PREPARATORY SURVEY
ON
THE PROJECT FOR THE IMPROVEMENT OF THE CAPACITY OF PUBLIC
FOOD STORAGE
IN THE PEOPLE'S REPUBLIC OF BANGLADESH
(Explanation of draft Report)**

The Japan International Cooperation Agency (hereinafter referred to as "JICA") dispatched Preparatory Survey Teams on the Project for the Improvement of the Capacity of Public Food Storage in Bangladesh (hereinafter referred to as "the Project") to the People's Republic of Bangladesh (hereinafter referred to as "Bangladesh") in November 2010, January and April 2011. Through discussions, field survey and technical examination in Japan, JICA prepared the draft Report of the study.

In order to explain and to consult with the Government of Bangladesh (hereinafter referred to as "GOB") on the components of the draft Report, JICA sent the Draft Report Explanation Team (hereinafter referred to as "the Team"), which was headed by Mr. Koji Makino, Deputy Director General, Rural Development department of JICA to Bangladesh, from October 12th to October 18th, 2011.

As a result of discussions, both sides confirmed the main items described in the attached sheets.

Dhaka, October 17th, 2011



Mr. Koji Makino
Leader
The Draft Report Explanation Team
Japan International Cooperation
Agency

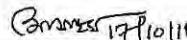


Ms. Khadiza BEGUM
Deputy Secretary
Economic Relations Division, Ministry of
Finance, Government of the People's
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17-10-2011

Syed Mamunul Alam
Deputy Chief,
Food Division, Ministry of Food and
Disaster Management, Government
of the People's Republic of
Bangladesh



17/10/11

Mr. Md. Mahiuddin
Additional Director
For Director General of Food,
Government of the People's Republic of
Bangladesh

ATTACHMENT

1. Components of the Draft Report

The Bangladeshi side agreed and accepted in principle the components of the draft Preparatory Survey Report explained by the Team. In regard to other small points to be modified, Bangladeshi side will send their comments to Japanese side by 17th October, 2011. The Project Components are shown in Annex-1. Also, both sides confirmed that the project was expected to contribute to adaptation to climate change.

2. Japan's Grant Aid Scheme

The Bangladeshi side understood the Japan's Grant Aid Scheme and the necessary measures to be taken by the Bangladeshi side as follows.

- 1) To ensure prompt unloading and customs clearance of the products at ports of disembarkation in Bangladesh and to assist internal transportation of products purchased under the Project (including tax exemption)
- 2) To ensure that customs duties, internal taxes and other fiscal levies which may be imposed in the recipient country with respect to the purchase of products and services be borne by the Food Division, the Ministry of Food and Disaster Management (hereinafter referred to as "MoFDM") without using the Grant.
- 3) To accord the agent whose services may be required in connection with the supply of the products and the services such facilities as may be necessary for their entry into Bangladesh and stay therein for the performance of their work
- 4) To ensure the facilities and the products be maintained and used properly and effectively for the implementation of the Project
- 5) To bear all the expenses, other than those covered by the Grant, necessary for the implementation of the Project
- 6) To assign staff necessary for this operation and maintenance
- 7) To bear commissions paid to the Japanese bank for banking services based upon the B/A

3. Responsible and Implementing Agency

3.1 Responsible Agency is the Food Division, the MoFDM

3.2 Implementing Agency is the Director General of Food (hereinafter referred as "DG of Food")

4. Schedule of the Study

JICA will complete the final report in accordance with confirmed item and send it to GOB by January 2012.

5. Other Relevant Issues

5.1 Undertakings of the Bangladeshi side



The Team requested GOB to abide by the following undertakings. The Bangladeshi side agreed to do so.

[Before the commencement of the construction]

- 1) To submit application for construction works, fire services and others related to the Project if any, and to obtain permission for these
- 2) To prepare land, remove fences, trees and other preparatory construction related to the Project
- 3) To bring in power lines to Project site
- 4) To secure water supply
- 5) To secure personnel who will be assigned to the Project
- 6) To procure furniture and equipment related to the Project

[After the commencement of the construction]

- 1) To secure and dispatch personnel for the technical assistance
- 2) To attend beginning, mid-term and completion inspection of the construction
- 3) To attend equipment and materials inspection

5.2 Site of the Food Storage

Both sides confirmed that the project site is in Santahar Union, Adamdighi Upazila, Bogra District, Rajshahi Division.

5.3 Capacity of the Food Storage

Both sides agreed that the capacity of the storage would be 25,740 Mt as maximum and the ultimate capacity would be determined by the cabinet approval of the Government of Japan.

5.4 Schedule and Procedure for Development Project Proposal (DPP)

The Team requested the Government of Bangladesh to finalize DPP for the Project based on the draft Report and obtain approval by the Executive Committee for National Economic Council (hereinafter referred as ECNEC) by the end of November 2011.

In accordance with the time frame established in approval procedure, the expected DPP approval schedule is as follows. GOB agreed to take necessary actions to follow the tentative schedule and to share its progress in detail to JICA Bangladesh Office.

End of September	The Team shared necessary information for preparation of DPP to the Bangladesh side
Middle October	DPP Submission to MoFDM from DG Food
Late October	DPP Examination and Modification by MoFDM (15 days)
Early November	DPP Circulation of the Examination Results by Planning Commission (10 days)

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Middle November Examination by Sector division of Planning Commission (10 days)
Late November Examination and final report by ECNEC (30 days)

5.5 Environmental and Social Consideration borne by GOB

Bangladeshi side promised to take necessary arrangement for Environmental and Social Consideration by following Bangladesh Environmental Conservation Act, 1995, and it should harmonize with the DPP procedure and the JICA guidelines for environmental and social consideration.

5.6 Soft Components

Based on the request by GOB in the Minutes of Meetings signed on 28th April 2011, The Team proposed the draft plan of Soft Components and the Bangladeshi side agreed it. The components of the project are shown in Annex-1.

5.7 Budget and Staff Allocation for Operation and Maintenance of Facility and Equipment Designed in the Project

The Bangladeshi side committed to allocate the budget and staff for operation and maintenance of the facility and equipment which will be designed in the Project.

5.8 Project Cost Estimation

The Team explained to the Bangladeshi side the Project cost estimation as described in Annex-2. The Team and the Bangladeshi side agreed that the Project cost estimation should never be duplicated or released to any outside parties before signing of all the Contract(s) for the Project. The government of Bangladesh understood that the Project cost estimation attached as Annex-2 is not final and is subject to change according to further examination by the Government of Japan.

The Bangladesh side will check the cost estimation and when there are some points to be modified, will send their comments to the Japanese side by 17th October, 2011.

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Annex-1

Project Components

(1) Construction of Facilities

Multistoried Warehouse

(Storage room, Platform, Access slope, Truck yard)

(2) Equipment Supply

Forklifts (4), Pallets (26,000), Equipment for monitoring (Grain Moisture Meter, Thermometer for Grain, Thermo Hydrometer, 4 items each)

(3) Soft Component

- Warehouse management including inventory management for pallets loading system
- Rice bags loading on the pallets and pallets stacking using forklift
- Operation of air conditioning machine to maintain grain moisture in good condition

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Annex-2

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(1) Current Estimation of Project Cost to be Borne by Japan's Grant Aid

Category	Cost (JPY)
Construction works (Including Storage room, Platform, Access slope, Truck yard, etc.)	
Equipment (Forklift, Pallets, and Equipment for monitoring)	
Detail Design, Construction Supervision,	
Soft Component	
Total	

Notes:

- (1) The cost estimates in the above table are provisional and will be further examined by the government of Japan for the approval of the Grant.
- (2) The total cost of the Project to be borne by Japan's Grant Aid, is equivalent to at the exchange rate BDT1.0=JPY1.16.

(2) Current Estimation of Project Cost to be Borne by the Bangladeshi side

Category	Cost (BDT)
Site ground leveling, Removal of fence, residents, trees, etc.	5,600,000
Construction of management office, rest house, etc.	9,000,000
Connecting electricity	10,000,000
Water supply to the tank	10,000,000
Pavement inside the Project site	7,900,000
Construction of railway	15,100,000
Furniture and equipment	2,000,000
Construction permission	100,000
Supposed Bank fees	1,000,000
Subtotal	60,700,000
Custom duties, internal taxes and other fiscal levies	468,500,000
Total	529,200,000

Notes:

- (1) Specific items are shown in the draft Preparatory Survey Report.
- (2) The Total Cost of the Project to be borne by the Bangladeshi side, BDT 529.2

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million is equivalent to JPY 613.8 million at the exchange rate BDT 1.0=JPY 1.16.

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5. Soft Component (Technical Assistance) Plan

5-1 Background of the Soft Component (Technical Assistance)

(1) Project background

The purpose of the Project is “to establish food storage facility to ensure food quality over the long term in Santahar, Rajshahi Division located in the grain belt of Bangladesh”. And the overall goal of the Project is “to improve the capacity of food storage and to realize food security in times of emergency”. To achieve the above purpose, the Project shall include construction of food storage facility, procurement of required equipment, storing and distribution of parboiled rice without quality deterioration. In the Project, Japan’s Grant Aid shall cover construction of warehouse, procurement of equipment required for operation of warehouse.

In Bangladesh, parboiled rice packed in gunny bags is loaded and stored by hand in warehouses. At the time of distribution, unloading rice bags from storage lot in a storage room, moving rice bags from storage room to platform, loading rice bags to trucks are executed by hand. Accordingly, the system necessary for smooth and speedy distribution is considered to be not established at present. Additionally, rotation of rice bags by hand at the adequate timing and frequency seems difficult, although it is effective to rotate the rice bags for equalization of moisture content in storage area, because air condition is different between top and bottom, and between centre and the end of storage room.

In the existing food warehouses, air conditioning machines are not installed. Thus, hot and humid air will damage the quality of stored rice because it is hot and humid throughout the year in Bangladesh. It is necessary to transfer skills and technology focusing on long term storage without quality deterioration established in Japan to operate properly the warehouse of the Project planned to be equipped with air conditioning, because it is the first case to install air conditioning machines in a Bangladeshi food warehouse. Additionally, it is desired to transfer skills and technology in order to realize a pallet storage system to secure quality and safety, because it is the first case to introduce the system.

At existing food warehouses in Bangladesh, place, amount and period of stored food are managed by checking shipping documents at the time of both incoming to and outgoing from the warehouse. Accordingly, basic skills and technology of warehouse management have been established. However, it is necessary to improve warehouse management because a pallet storage system will require a more segmented warehouse management system than the existing system.

To achieve the purpose of the Project, it is necessary to store parboiled rice without quality deterioration and to distribute the rice smoothly from the warehouse to the destination. Considering the above mentioned situation in Bangladesh, soft component (technical assistance) is required to realize sound and sustainable operation and maintenance. Accordingly, soft component is planned to be implemented in the Project to establish skills and technology for 1) adequate warehouse

management including inventory management for the pallet storage system, 2) loading rice bags on pallets and pallets stacking using a forklift, and 3) proper and effective operation of air conditioning machines to maintain grain moisture in good condition, because it is the first case for Bangladeshi food storage to install air conditioning machines and a pallet storage system using a forklift.

(2) Summary of technical assistance

1) Warehouse management including inventory management for pallet storage system

To realize adequate warehouse management including inventory management without quality deterioration, it is necessary to control the inventory in the scheme of first in - first out method. Soft component shall be planned in order to improve warehouse management and establish a management system to control inventory including place, amount and period of stored food that are essential for adequate warehouse management.

2) Loading rice bags on pallets and pallets stacking using a forklift

Pallet storage system requires both adequate loading of rice bags on pallets and stacking of loaded pallets on top of each other. Adequate stacking of pallets with a certain clearance between the pallets and wall/column of the warehouse make it possible to prevent damage caused by insects and/or rats. On the other hand, inadequate stacking of pallets can cause collapse of pallet piles. Therefore, it is crucial to check at the time of loading of rice bags on the pallets and stacking of pallets in order to prevent any damage and/or accident.

In Japan, unloading of rice bags from trucks to pallets is done by hand. After loading rice bags on the pallets, they are moved into the warehouse and stacked using a forklift. Besides, in Bangladesh, unloading of rice bags from a truck, carrying into the warehouse and stacking of rice bags in the warehouse are all done by hand. Soft component is planned to establish an adequate pallet storage system with the consideration of both the present situation in Bangladesh and actual examples in Japan.

It is difficult to maintain a uniform air temperature and relative humidity in the warehouse, because they vary depending on the location in the warehouse. However, pallet storage system can contribute equalization of storing condition by pallet rotation using a forklift.

3) Operation of air conditioning machines

Moisture content of parboiled rice is dependant on relative humidity in the warehouse. Thus, it seems possible to control moisture content of stored parboiled rice by controlling relative humidity.

To secure sustainability of the Project, it is essential to minimize the cost for operation and maintenance of the facilities and equipment of the Project. Accordingly, soft component is planned to establish effective skills and technology to operate air conditioning machines in accordance with condition of parboiled rice stored in the warehouse.

5-2 Purpose of Soft Component

The purpose of soft component is “to establish storage skills to maintain a high quality of parboiled rice in warehouses equipped with air conditioning machine and establish inventory management skills”.

5-3 Outputs of Soft Component

There are three outputs to be achieved by the result of soft component of the Project as follows.

- | |
|--|
| (Output 1) Improvement of warehouse management and inventory management
(Output 2) Establishment of storage skills and technology using pallets and forklift
(Output 3) Establishment of skills and technology to operate and maintain air conditioning machines |
|--|

Besides, it is expected that the relationship between grain condition and air condition such as temperature and relative humidity is going to be clear throughout the actual experience after the completion of the soft component. In addition, it is expected indirectly by the soft component implementation that skills and technology for storage, loading and unloading will be improved and promoted throughout the country.

5-4 Means of Output Verification

(1) Basic policy

Objectively verifiable indicators of the outputs and their means of verification are presented as follows.

Table 1: Means of Output Verification

Sector	Output	Objectively verifiable indicator	means of verification
Warehouse Storage	Improvement of warehouse management and inventory management	Understanding of warehouse management and inventory management	Level of understanding examination
		Implementation of first in – first out	Confirmation of inventory book
	Establishment of storage skills and technology using pallets and forklift	Implementation of rice bag loading on pallets and stacking of pallets	Confirmation of check sheet for pallet loading
		Implementation of smooth carrying in and distribution of rice using forklift	Comparative study of required time with the carrying in and distribution by hand
		Implementation of rotation of pallets with rice bags in the storage room	Visual check and interview survey
	Establishment of skills and technology to operate and maintain air conditioning machines	Understanding of skills and technology to operate and maintain air conditioning machines	Level of understanding examination
Implementation of monitoring of grain moisture, grain temperature, air temperature and relative humidity in storage room		Confirmation of quality check sheet	

(2) Output 1: Improvement of warehouse management and inventory management

Level of understanding examination shall be executed by the consultant prior to and after implementation of the soft component. Understanding of warehouse management and inventory management shall be verified by comparative study of examination result.

Besides, implementation of first in – first out shall be verified through the confirmation of inventory book by the consultant.

(3) Output 2: Establishment of storage skills and technology using pallets and forklift

To establish storage skills in the warehouse of the Project, it is necessary to implement adequately both loading of rice bags on the pallets and stacking of pallets loaded with rice bags on the top of each other. Checking and implementation of rice bag loading on pallets and stacking of pallets shall be verified by confirmation of check sheet for pallet loading.

Further, implementation of smooth carrying in and distribution of rice using forklift shall be verified by comparative study of required time with the carrying in and distribution by hand.

In addition, Implementation of rotation of pallets with rice bags in the storage room shall be verified

by visual check and interview survey.

(4) Output 3: Establishment of skills and technology to operate and maintain air conditioning machines

Obtaining skills and understanding of technology to operate and maintain air conditioning machines shall be verified by confirming the result of the level of understanding examination. There is little possibility of repairing breakdowns and/or wear and tear at the time of soft component implementation, because the soft component shall be implemented immediately after the completion of construction works and equipment procurement works. However, soft component shall include normal operation as well as operation at the time of repairing and changing consumable parts in order to secure sound and sustainable operation and maintenance after the completion of the Project.

It is essential to grasp the relationship between grain condition and air conditioning machine operation throughout the monitoring of grain moisture, grain temperature, air temperature and relative humidity in storage room. Implementation of monitoring of grain moisture, grain temperature, air temperature and relative humidity in storage room shall be verified by the confirmation of quality check sheet.

5-5 Activity of Soft Component (Input Plan)

(1) Basic policy

The person in charge of soft component shall grasp and record the achievement concerning each output. The person in charge of warehouse management shall confirm the result of soft component and submit the completion report of soft component to responsible organization of the Project and JICA.

(2) Output 1: Improvement of warehouse management and inventory management

It is the first case to introduce a pallet storage system in a food warehouse in Bangladesh. To establish warehouse management and inventory management using pallets storage, it is effective to gain the basic knowledge through observation of similar type of warehouse. Similar type of food warehouse does not exist in Bangladesh. Therefore, soft component shall implement training in Japan prior to on-the-job training in Bangladesh.

Table 2: Input Plan for the Improvement of Warehouse Management and Inventory Management

Output: Improvement of Warehouse Management and Inventory Management			
Term: In the year of 2014			
Input Plan		Japan Side	Bangladeshi Side
Activities	Necessary Technology	Warehouse Management, Inventory Management	Inventory Management
	Technology Level	It is required to have skills and technology for warehouse management and inventory management introducing pallets storage.	At present, shipping documents shall be checked at the warehouse. It is desired to have experienced inventory management at existing warehouse.
	Personnel	Chief / the person in charge of warehouse Management and Inventory Management (1 person)	The person in charge of Inventory Management (1 person)
	Training	Training in Japan, On-the-Job Training in Bangladesh	
Implementation	Trainee	Japanese Consultant (1 person)	
Resources	Period	Training in Japan: 0.55 M/M	
		Training in Bangladesh: 1.70 M/M	
Output Materials		Storage and Management Manual for Rice Warehouse (including inventory book format)	

(3) Output 2: Establishment of storage skills and technology using pallets and forklift

It is the first case to store parboiled rice using pallet storage system in Bangladesh. To establish storage skills and technology, it is effective to gain the basic knowledge through observation of similar type of warehouse. Similar type of food warehouse does not exist in Bangladesh. Therefore, soft component shall implement training in Japan prior to on-the-job training in Bangladesh.

Table 3: Input Plan for the Establishment of storage skills and technology using pallets and forklift

Output: Establishment of storage skills and technology using pallets and forklift			
Term: In the year of 2014			
Input Plan		Japan Side	Bangladeshi Side
Activities	Necessary Technology	Storage skills and technology using pallets and forklift	Storage skills and technology in existing food warehouse
	Technology Level	It is required to have skills and technology for loading rice bags on the pallets, stacking of pallets and pallets handling using forklift.	It is desired to have experience managing of unloading from truck and loading of rice bags in warehouse.
	Personnel	The person in charge of storage skills and technology using pallets and forklift (1 person)	The person in charge of storage in warehouse (1 person)
	Training	Training in Japan, On-the-Job Training in Bangladesh	
Implementation	Trainee	Japanese Consultant (1 person)	
Resources	Period	Training in Japan: 0.35 M/M	
		Training in Bangladesh: 1.50 M/M	
Output Materials		Pallet Storage Manual for Rice Warehouse (including pallet storage check sheet format)	

(4) Output 3: Establishment of skills and technology to operate and maintain air conditioning machines

It is the first case to install air conditioning machines in a food warehouse in Bangladesh. To establish skills and technology for operation and maintenance, it is effective to gain the basic knowledge through observation of similar type of warehouse. Similar type of food warehouse does not exist in Bangladesh. Therefore, soft component shall implement training in Japan prior to on-the-job training in Bangladesh.

Table 4: Input Plan for the Establishment of skills and technology to operate and maintain air conditioning machines

Output: Establishment of skills and technology to operate and maintain air conditioning machines			
Term: In the year of 2014			
Input Plan		Japan Side	Bangladeshi Side
Activities	Necessary Technology	Operation and maintenance of air conditioning machines	Mechanical engineer
	Technology Level	It is required to have skills and technology for operation and maintenance of air conditioning machines, and grain moisture measurement.	It is desired to have basic knowledge of air conditioning machines.
	Personnel	The person in charge of operation and maintenance of air conditioning machines (1 person)	The person in charge of mechanical works (1 person)
	Training	Training in Japan, On-the-Job Training in Bangladesh	
Implementation Resources	Trainee	Japanese Consultant (1 person)	
	Period	Training in Japan: 0.35 M/M Training in Bangladesh: 1.50 M/M	
Output Materials		Operation and Maintenance Manual of Air Conditioning Machines for Rice Warehouse (including quality check sheet format)	

5-6 Procurement Methods of Implementation Resources of Soft Component

In Bangladesh, there are no food warehouses with air conditioning machine, forklifts or pallets. To implement adequate soft component, it is necessary to transfer skills and technology that have been established in Japan. Thus, soft component shall be implemented by Japanese consultant.

In Bangladesh, duty of each staff in operation and maintenance system for facilities and equipment is designated clearly in accordance with their responsibility, classification and subject. Therefore, technical guidance shall be implemented subject by subject independently. Accordingly, it is required to assign three Japanese consultants to give training on the three outputs.




In all categories, it is required to gain new skills and technology that are not adapted for food warehouse in Bangladesh. Thus, soft component shall include observation of similar facilities in Japan in order to gain basic skills and technology. Technical documents and manuals used in existing warehouses in Japan are possible to be used for the training to gain basic skills and technology. These documents and manuals will be translated from Japanese to Bangladeshi and will be used to the training.

5-7 Implementation Schedule of Soft Component

Soft component shall include training in Bangladesh as well as training in Japan. Training in Japan shall be implemented in summer season in Japan considering that it is important to gain basic skills and technology through observation of similar facilities under similar climatic conditions as Bangladesh. The target of training in Bangladesh is to establish necessary skills and technology to operate and maintain the facilities and equipment of the Project. Accordingly, training in Bangladesh shall be implemented after the completion of construction works and procurement of equipment of the Project.

Initial operator guidance to operate forklift shall be implemented by the equipment supplier. Soft component shall be implemented after the initial operator guidance.

Table 5: Implementation Schedule of Soft Component

Output	Month	Training in Japan	Training in Bangladesh		Remarks
		1	0	1	
			▲ Completion of Construction and Equipment Procurement		
Improvement of Warehouse Management and Inventory Management		<input type="checkbox"/>			
Establishment of storage skills and technology using pallets and forklift		<input type="checkbox"/>			
Establishment of skills and technology to operate and maintain air conditioning machines		<input type="checkbox"/>			

Whole concept, contents and term to achieve each output is shown in the table below.

Table 6: Output 1: Summary of Soft Component for the Improvement of Warehouse Management and Inventory Management

Output: Improvement of Warehouse Management and Inventory Management			
Item	Term	Place	Contents
Preparation, General statement	3 days	Japan (Consultant office)	Confirmation of item and contents of soft component General statement of warehouse management and inventory management Basic concept of warehouse management Prevention of mixed storage Storage system Preparation for storage, etc
Observation of actual examples to store the rice	1 day	Japan (Similar facilities)	Observation of inspection at the receiving by the third party
	3 days		Observation of warehouse management and inventory management Receiving Distribution Inventory control Maintenance of facilities Safety measures, etc
Internal investigation, Process report	4 days	Japan (Consultant office)	Investigation of training in Japan and report
Introduction	3 days	Bangladesh	Leading to the basic concept of warehouse management and inventory management Clarification of role and duty of the person in charge
Planning of warehouse management and inventory management	15 days		Planning of Storage and Management Manual for Rice Warehouse Planning of inventory book format
Guidance of inventory management	8 days		Technical guidance of inventory management
Implementation, Monitoring	15 days		Implementation of warehouse management and inventory management by the Bangladeshi side Modification of Storage and Management Manual for Rice Warehouse
Verification of output, Recommendation to the Bangladeshi side	4 days		Review and checking inventory book Level of understanding examination Recommendation to the Bangladeshi side
Holding workshop	6 days		Investigation of output of soft component, Explanation of the training result by Bangladeshi counterpart for prevalence to staff

Table 7: Output 2: Summary of Soft Component for the Establishment of Storage Skills and Technology Using Pallets and Forklift

Output: Establishment of storage skills and technology using pallets and forklift			
Item	Term	Place	Contents
Preparation, General statement	3 days	Japan (Consultant office)	Confirmation of item and contents of soft component Summary of pallet storage system Securing passage and air space, etc
Observation of actual examples of pallet storage	4 days	Japan (Similar facilities)	Unloading from truck on to the pallets, loading rice bags on the pallet. Pallets handling by forklift Forklift operation between storage room and platform Storage and maintenance of forklift Safety measures at the time of operation, etc Observation of pallets stacking Checking stacking condition Securing function of pallets Checking pallets material, etc
Introduction	1 day	Bangladesh	Clarification of role and duty of the person in charge
Planning of pallet storage system	12 days		Planning Pallet Storage Manual for Rice Warehouse Loading rice bags on pallets Stacking pallet on the top of another pallet Pallet storage check sheet format Pallet handling using forklift
Guidance	5 days		Guidance for the Manual Guidance for pallets handling by using forklift
Implementation, Monitoring	8 days		Implementation of pallet storage system by the Bangladeshi side Modification of the Manual and check sheet
Verification of output, Recommendation to the Bangladeshi side	4 days		Review and checking pallet storage check sheet Visual inspection and interview survey of pallet loading Recommendation to the Bangladeshi side

Table 8: Output 3: Summary of Soft Component for the Establishment of Skills and Technology to Operate and Maintain Air Conditioning Machines

Output: Establishment of skills and technology to operate and maintain air conditioning machines			
Item	Term	Place	Contents
Preparation, General statement	3 days	Japan (Consultant office)	Confirmation of item and contents of soft component Type and function of air conditioning machines Relationship between grain moisture and relative humidity
Observation of actual examples of air conditioning in the warehouse	4 days	Japan (Similar facilities)	Air conditioning machine Operation and maintenance Quality control and inspection Inspection Documentation Improvement
Introduction	1 day	Bangladesh	Clarification of role and duty of the person in charge
Planning of air conditioning machine operation and maintenance	12 days		Planning of Operation and Maintenance Manual of Air Conditioning Machines for Rice Warehouse Mechanism, function and operating instructions Planning of quality check sheet format
Guidance	5 days		Guidance for the Manual
Implementation, Monitoring	8 days		Implementation of operation and maintenance of air conditioning machines by the Bangladeshi side Modification of the Manual and check sheet
Verification of output, Recommendation to the Bangladeshi side	4 days		Review and checking quality check sheet Level of understanding examination Recommendation to the Bangladeshi side

5-8 Output Materials of Soft Component

Output materials of soft component are listed in the table below. Besides, progress report shall be submitted at the time of completion of training in Japan.

Table 9: Output Materials of Soft Component (Draft)

Item	Submission to	Remarks
Completion Report of Soft Component in English	Bangladeshi side, JICA	
Completion Report of Soft Component in Japanese	JICA	
Training Report/Documents showing the implementation of soft component activity (including photograph)	JICA	
Result of Questionnaire by the Counter Part	JICA	
Storage and Management Manual for Rice Warehouse (including inventory book format)	Bangladeshi side	Refer to annex
Pallet Storage Manual for Rice Warehouse (including pallet storage check sheet format)	Bangladeshi side	Refer to annex
Operation and Maintenance Manual of Air Conditioning Machines for Rice Warehouses (including quality check sheet format)	Bangladeshi side	

5-9 Responsibilities of the Implementing Organization of the Bangladeshi Side

In order to achieve the purpose of soft component, it is necessary to implement the activity listed below continuously by the Bangladeshi side

- Bangladeshi side shall need to assign staff to the soft component training, and shall coordinate with persons trained by the Project continuously.
- Bangladeshi side shall need to implement warehouse management and inventory management in compliance with the Storage and Management Manual for Rice Warehouses.
- Bangladeshi side shall need to implement loading and storing in compliance with Pallet Storage Manual for Rice Warehouses.
- Bangladeshi side shall need to implement operation and maintenance of air conditioning machines in compliance with Operation and Maintenance Manual of Air Conditioning Machines for Rice Warehouses, and shall need to modify the manual to be appropriate with the natural conditions in Bangladesh.
- Staff trained by the soft component shall be engaged to concerned work continuously.

Annex 1

Storage and Management Manual for Rice Warehouses (Draft)

To realize appropriate parboiled rice storage for long term, it is necessary to implement adequate warehouse management including quality control, smooth receiving and distribution of parboiled rice with the consideration of location, structure and function of the warehouse and natural conditions in the site.

The Manual shall need to be planned to include the items listed below.

Table 10: Storage and Management Manual for Rice Warehouses (Draft)

Item	Contents
Organization	Appointment of responsible person for warehouse management, responsible person for storage, responsible person for pallet loading and so on. Clarification of responsibility of the person in charge Supervision, checking, guidance, reporting for warehouse management Facility management, safety measures, guidance for labors Receiving and loading of rice bags on pallet, pallet stacking Preparation of shipping documents, inventory management Accounting, general affairs, personnel affairs
Implementation	Storage planning Lot storage arrangement (receiving date, product area, quality and quantity) Confirmation of traceability Preparation for receiving and distributing Inventory control procedure
Quality Control	Prevention from damage
Distribution	Confirmation and record of quantity, item and lot
Action in an Emergency	Communication chart in an emergency, ensuring food distribution in an emergency
Shipping Documents	Confirmation of quantity of receiving, distributing and storing Record of shipped quantity and the person in charge of delivery
Inventory Book	

Annex 2

Pallet Storage Manual for Rice Warehouse (Draft)

The Manual shall need to be planned to include the items listed below.

Table 11: Pallet Storage Manual (Draft)

Item	Contents
Safety Measures	Safety measures during pallet loading, distribution from stacked pallets, condition checking and handling using forklift Checking and inspection prior to the works Periodical checking and inspection
Rice Bags to be Stored	Checking and inspection of weight and dimension of rice bags prior to the loading
Pallets	Confirmation of deformation and damage of pallets
Loading of Rice Bags on Pallet	Confirmation of working atmosphere and working contents Securing flat loading of bags Prevention from tumble loading
Stacking of Pallet on the top of another Pallet	Heights of pallets stacking Securing air space between rice bags and wall, rice bags and ceiling Securing passage in the storage room
Forklift	Maintenance and improvement of operation skills Daily checking
Pallet storage check sheet format	

6. References

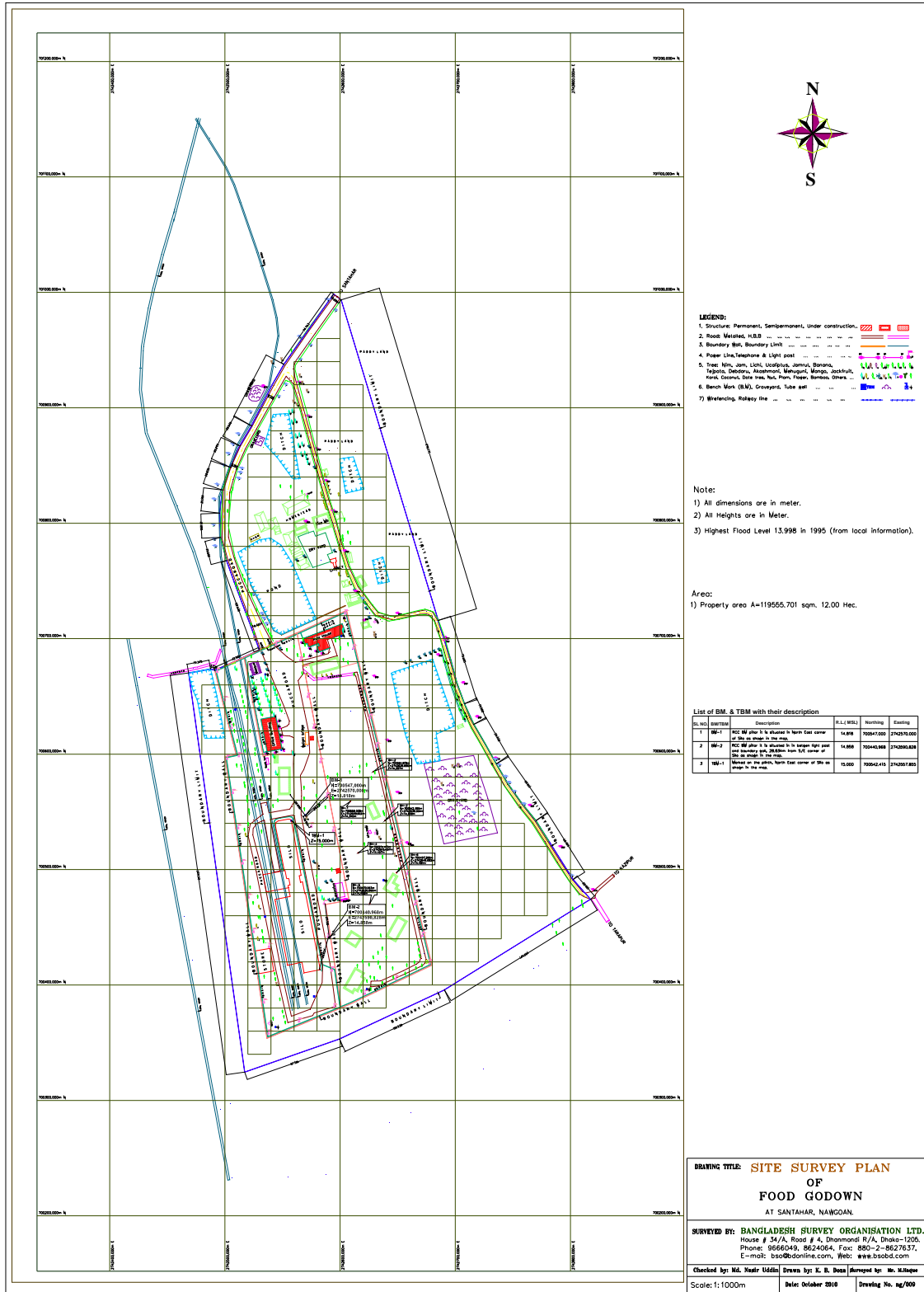
No	Title	Type Book/Video/Photo/Etc	Original/Copy	Issuing Institution	Year
1	Annual Budget 2008-2009, Ministry of Food and Disaster Management	Book	Copy	Finance Division, Ministry of Finance	2009
2	Annual Budget 2009-2010, Ministry of Food and Disaster Management	Book	Copy	Finance Division, Ministry of Finance	2010
3	Annual Budget 2010-2011, Ministry of Food and Disaster Management	Book	Copy	Finance Division, Ministry of Finance	2011
4	Annual Development Programme (2009-2010)	Book	Original	Planning Commission, Programming Division	2009
5	Bangladesh Country Investment Plan A Road Map towards investment in agriculture, food security and nutrition	Book	Copy	Food Division, Ministry of Food and Disaster Management	2010
6	Bangladesh Economic Review 2009	Book	Original	Economic Advisor's Wing, Finance Division, Ministry of Finance	2010
7	Custom Act, 1969 (Act IV of 1969), First Schedule (Bangladesh Custom Tariff)	Book	Original		
8	Development Project Proposal for Construction of Vertical Rice Silo (steel) of Capacity 100,000 Mt at Santahar grain silo premises	Book	Copy	Directorate General of Food, Ministry of Food and Disaster Management	2010
9	Development Project Proposal for Construction of a Concrete Grain Silo at Mongla Port with Ancillary Facilities (50,000 Mt Capacity)	Book	Copy	Directorate General of Food, Ministry of Food and Disaster Management	2010
10	Development Project Proposal for Construction of New Food Godown of 1.10 lakh Mt capacity in the Northern Region of the Country	Book	Copy	Directorate General of Food and Public Works Department	2009
11	Development Project Proposal for Construction of 1.00 Lakh Mt Vertical Steel Silo (Postagola, Dhaka)	Book	Copy	Directorate General of Food, Ministry of Food and Disaster Management	2010
12	Development Project Proposal for Construction of a Vertical Rice Silo at Baghabari, Sirajganj with Ancillary Facilities (50000 Mt Capacity)	Book	Copy	Directorate General of Food, Ministry of Food and Disaster Management	2010
13	Development Project Proposal for Construction of Vertical Grain Silo of Capacity 100,000 Mt at Chittagong Silo Premises, Chittagong	Book	Copy	Directorate General of Food, Ministry of Food and Disaster Management	2011

Appendix-6 References

No	Title	Type Book/Video/Photo/Etc	Original/Copy	Issuing Institution	Year
14	Development Project Proposal for Construction of 1.05 Lakh Mt Capacity New Food Godowns	Book	Copy	Directorate General of Food, and Public Works Department	2010
15	Development Project Proposal for Construction of 1.35 Lakh Mt Capacity New Food Godowns	Book	Copy	Directorate General of Food, and Public Works Department	2010
16	Development Project Proposal for Construction of 0.84 Lakh Mt Capacity New Food Godowns with Ancillary Facilities at Halishar CSD Compound, Chittagong	Book	Copy	Directorate General of Food, and Public Works Department	2010
17	Import Policy Order 2006-2009	Book	Copy	Ministry of Commerce	2007
18	Poverty Reduction Strategy Paper Policy Matrix	Book	Copy		
19	The National food Policy(2006) Plan of Action (2008-2015)	Book	Original	Food Planning and Monitoring Unit, Ministry of Food and Disaster Management	2008
20	The Public Procurement Rules 2008 (Preliminary Working Draft)	Book	Copy	Central Procurement Technical Unit, Implementation Monitoring and Evaluation Division, Ministry of Planning	2008

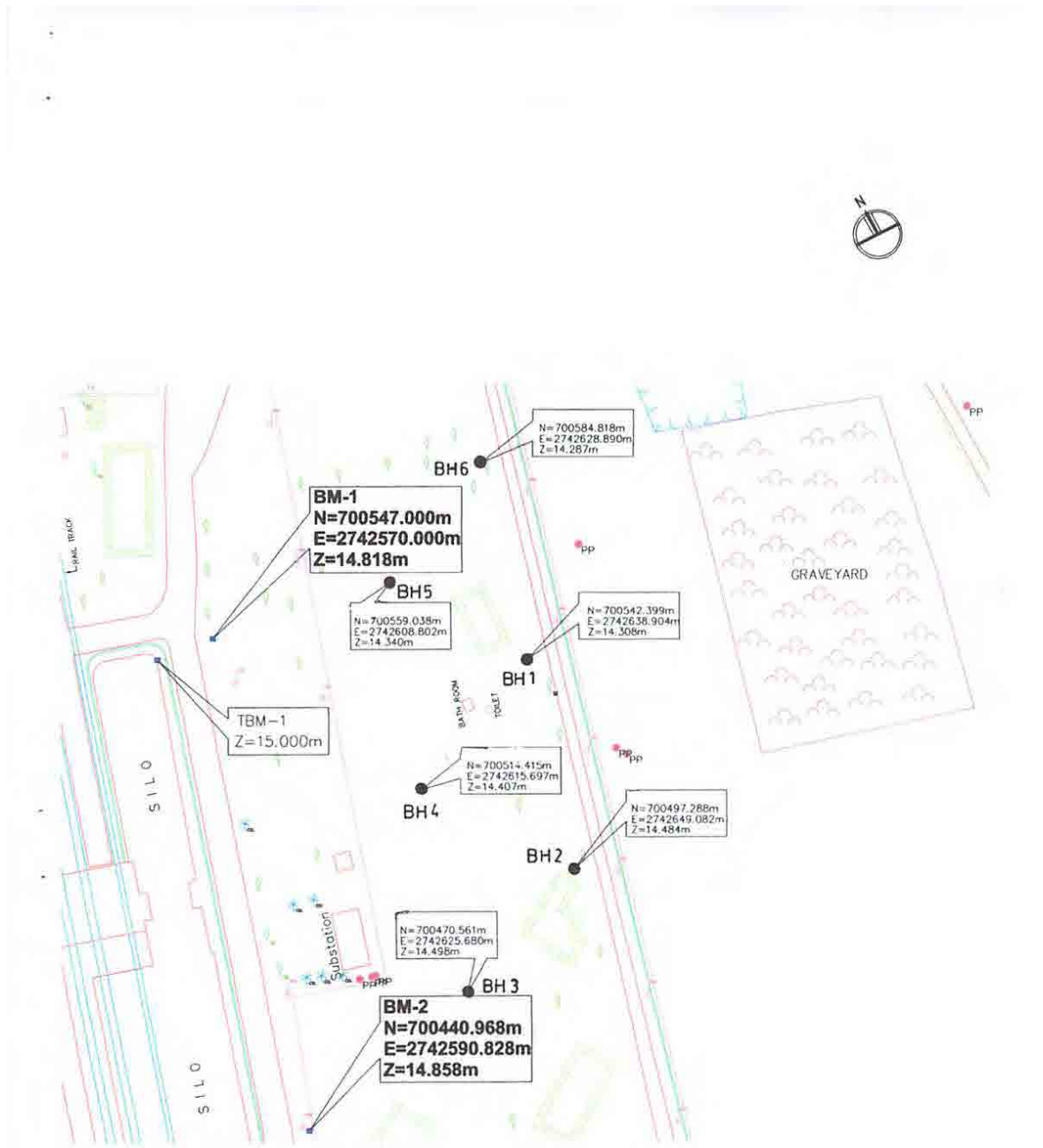
7. Other Relevant Data

(1) Topographic Survey Result



Topographic Map

(2) Geographic Survey Result



SKETCH SHOWING BOREHOLE LOCATIONS