

No. 11

**BASIC DESIGN REPORT ON**  
**THE BANGLADESH COLLEGE OF AGRICULTURAL SCIENCES**  
**DEVELOPMENT PROJECT**

**MARCH-1981**

**JAPAN INTERNATIONAL COOPERATION AGENCY**

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国際協力事業団

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P R E F A C E

It is with great pleasure that I present this report on "BASIC DESIGN OF THE BANGLADESH COLLEGE OF AGRICULTURAL SCIENCES DEVELOPMENT PROJECT" to the Government of the Republic of Bangladesh.

This report contains the result of a basic design survey which was carried out in Dacca from 29 Jan. to 17 Feb. 1981 by a survey team commissioned by the Japan International Cooperation Agency following the request of the Government of the Republic of Bangladesh to the Government of Japan.

The survey team, headed by Mr. Mitsuru Naitoh, Second Economic Cooperation Division, Ministry of Foreign Affairs had a series of discussions with the officials concerned of the Government of the Republic of Bangladesh and conducted a wide scope of field survey and data analyses.

I hope that this report will be useful as a basic reference for development of the project.

I wish to express my deep appreciation to the officials concerned of the Government of the Republic of Bangladesh for their close cooperation extended to the team.

March, 1981



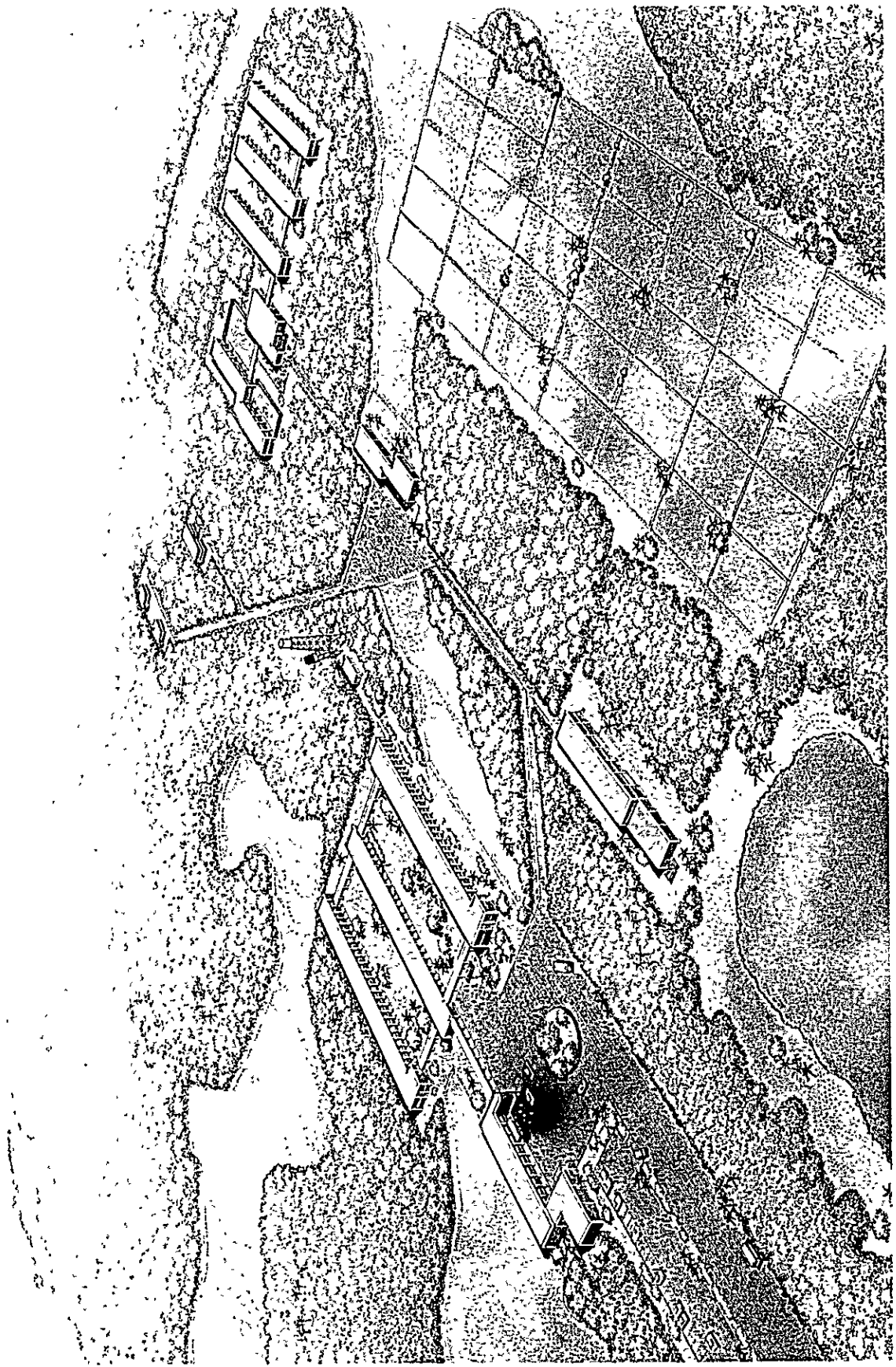
Keisuke Arita

President

Japan International Cooperation Agency

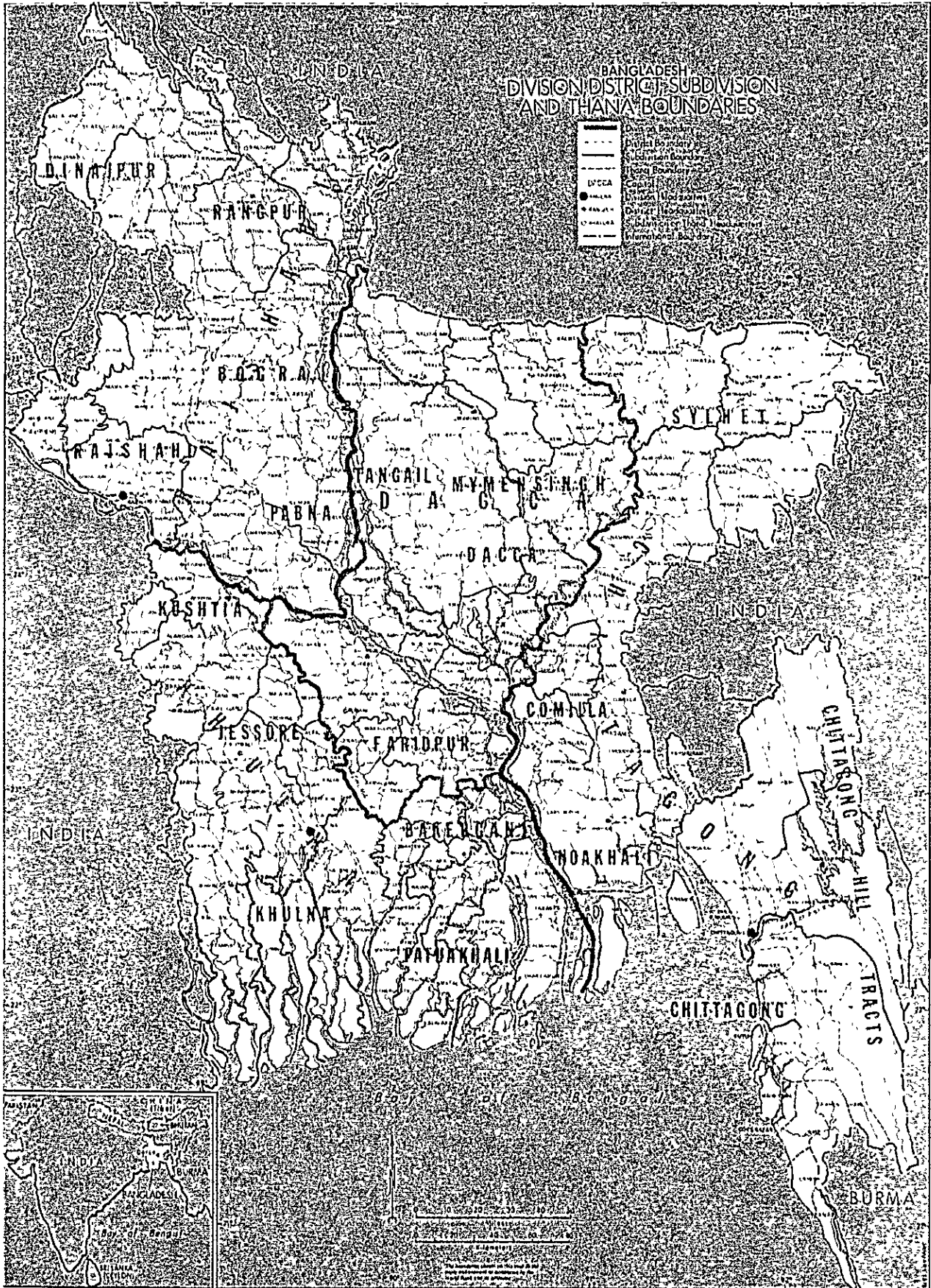






BIRDS-EYE VIEW





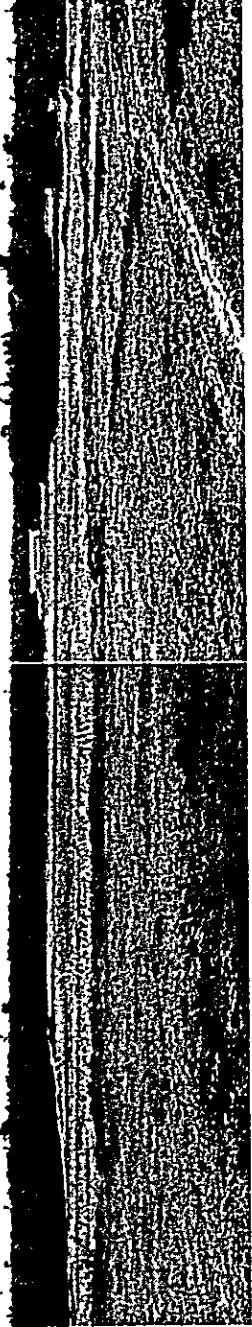
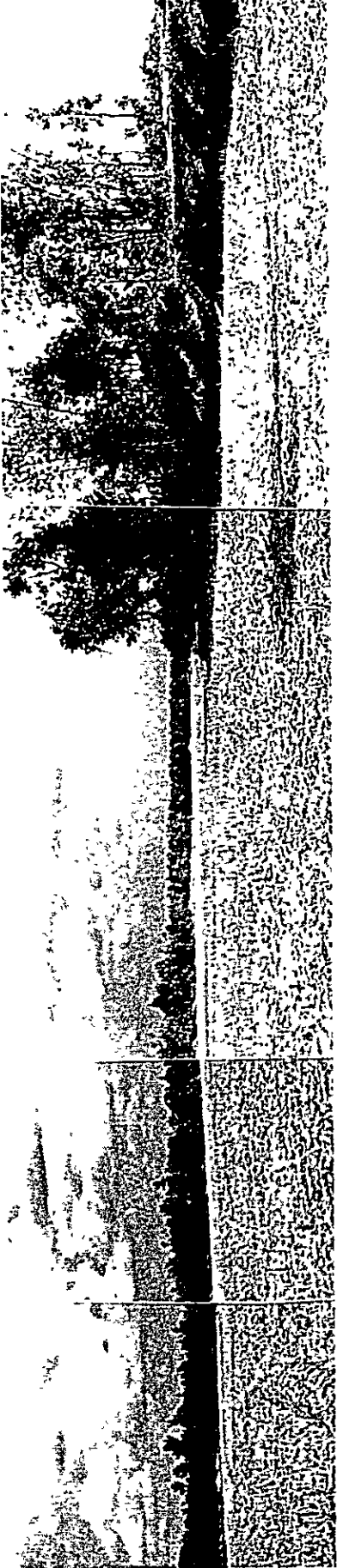
MAP





EXCHANGE OF MINUTES





PROJECT SITE





BASIC DESIGN REPORT ON  
THE BANGLADESH COLLEGE OF AGRICULTURAL SCIENCES  
DEVELOPMENT PROJECT

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## OUTLINE OF BASIC DESIGN SURVEY REPORT

### 1. CIRCUMSTANCES

The People's Republic of Bangladesh is planning to construct an agricultural college for 600 students and has requested the Japanese Government to provide it with the grant-in-aid system. Upon receipt of this request, the Japanese Government dispatched the Basic Design Survey Team to Bangladesh through the Japan International Cooperation Agency in order to examine the feasibility of this project as grant-in-aid. Based on the request of the construction project of the Bangladesh Government, the survey team investigated and examined the social significance and effect of this agricultural college to Bangladesh and also from the technical point of view. After return to Japan, the survey team prepared this report, including the drawings and specifications of the general plan, to estimate the appropriate scale and contents of the facilities. An outline of the investigation results is as below.

### 2. ESTABLISHMENT PLANNING

#### – Social significance and effect of this project –

The agriculture is most important industry in Bangladesh, as it accounts for 57% of gross domestic production (GDP), 77% of the labor force and 95% of exports. Above all, the improvement of the productivity in the agricultural sector is a problem to be urgently solved as Bangladesh is short of foodgrains as a result of the rapid population growth. In these circumstances, it is necessary to introduce the modern agricultural techniques and improve the ratio of land use by expansion of the irrigated land in order to increase its agricultural products.

On the other hand, the country is short of agricultural technicians to spread the above agricultural methods, so more assistants need to be trained. At present, there are only 2 colleges as higher agricultural education institutes in the country, accordingly, they need to be perfected and expanded. The Government of Bangladesh is now constructing a research and education town in Joydebpur to the north of Dacca that will group all the agricultural research institutes together, and is contemplating establishing an additional agricultural university there.

As described above, coupled with the social requirements such as the "introduction of modern agricultural techniques" and the "education of personnel" and the concept of establishing the agricultural college in Joydebpur, this project has great social significance.

### 3. CONSTRUCTION PLANNING

#### — Basic Design —

In the architectural plan, the natural conditions of the construction site and the technical circumstances of construction have a big effect in planning the shape and scale of a building and the living space.

Of above reason, the survey team researched the data concerning the climatic conditions of the site, the site conditions and the trend of the construction and labor market, etc. From above data, the survey team has established the appropriate scale and contents of facilities and made the basic design report including the following contents.

#### CONTENTS OF BUILDING:

Functional building : 12,000 m<sup>2</sup> sq.f (including the library and auditorium)

College building : 49,500 sq.f  
Community facilities: 3,300 sq.f  
Workshop : 4,100 sq.f  
Hostel buildings : 64,000 sq.f

#### STRUCTURAL DESIGN

The structure of the building should be made of reinforced concrete structure for foundations and superstructures, and brick masonry for the walls.

#### SERVICE PLANNING

Water should be supplied from a deep well on the site. Drainage should be performed through a septic tank.

#### CONSTRUCTION PLANNING

The construction materials used should be in principle the ones which are available locally. Construction costs are to be reduced by use of a labor intensive work method. The construction period should be 18 months including 2 dry seasons to avoid a delay in work during the rainy season. The construction costs was estimated by the data obtained through an on-site survey.

#### 4. CONCLUSION

The Basic Design Survey Team has confirmed, judging from the results of their survey, the this project is significant for the agricultural development of Bangladesh and social by desirable and also its construction is technically feasible. It is hoped that this project will be actually executed.

The above entails that for execution of this project, the Government of Bangladesh will be strongly requested

to level the site supply electric power and gas before the start of this project. And also to prepare the budgetary measures for the above items and for customs clearance of imported materials to be used for this project.

## CONVERTION

### 1. CURRENCY

1 Taka (TK) = 13 yen  
(US \$ 1.00 = TK 16)

### 2. WEIGHTS AND MEASURES

foot (ft)      1 ft = 0.305 m (3.28 ft = 1.0 m)  
                  1 sqf = 0.093 m<sup>2</sup> (10.75 sqf = 1.0 m<sup>2</sup>)  
                  1 cuf = 0.028 m<sup>3</sup> (35.71 cuf = 1.0 m<sup>3</sup>)  
acre (ac)      1 ac = 4,046.7 m<sup>2</sup> (2.47 ac = 1.0 ha)  
pound (lb)     1 lb = 0.375 Kg (2.68 lb = 1.0 Kg)

## GOVERNMENT ORGANS

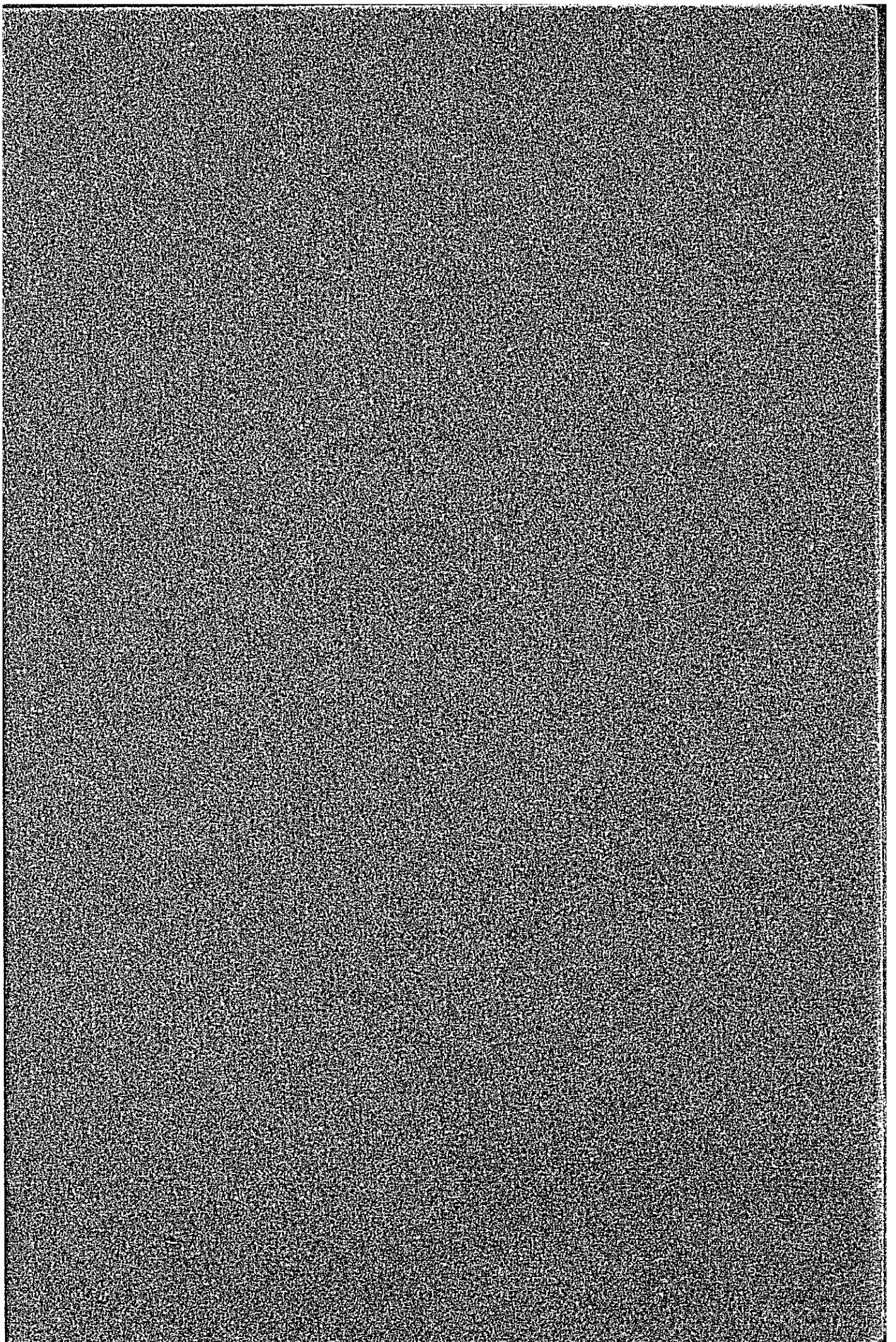
BARI	Bangladesh Agricultural Research Institute
BARC	Bangladesh Agricultural Research Council
BRRI	Bangladesh Rice Research Institute
BAI	Bangladesh Agricultural Institute
BAU	Bangladesh Agricultural University
CERDI	Central Extension Resource Development Institute
AETI	Agricultural Extension Training Institute
MAF	Ministry of Agriculture and Forestry
MP	Ministry of Planning
PC	Planning Commission
BBS	Bangladesh Bureau of Statistics
PWD	Public Works Department





**CHAPTER 1**  
**BASIC DESIGN SURVEY**





## 1-1 BACKGROUND

The agricultural industry definitely plays an important role in Bangladesh where 57% of the gross national product and 77% of the working population depend on farming, and agricultural products and processed products account for 95% of total exports. In Bangladesh, however, the increase in rice production which accounts for 80% of farm produce and is the staple food, cannot cope with the rate of increase in the population so that food self sufficiency is not established at present. To cope with this situation, the Bangladesh Government places emphasis on improving agricultural productivity through the spread of knowledge of modern agricultural techniques. In order to spread knowledge, the Bangladesh Government realizes that it is essential to train agricultural technicians by providing experimental and research facilities. The government also realizes that it is essential to take concrete measures such as establishing a new agricultural college and also expanding agricultural research organs.

At present, however, there are only two colleges in Bangladesh; BAU (Bangladesh Agricultural University) under the management of the Ministry of Education and BAC (Bangladesh Agricultural College) under the management of the Ministry of Agriculture and Forests. There are about 600 graduates from these two institutes each year. However, Bangladesh is facing the need to increase the number of graduates as practical technicians from the current level to 2,200 persons by 1987 and more graduates on and after 1987 in order to develop the agricultural industry. Because of this need, the idea was born to create a new city of agricultural research and education institutes which are related with the existing agricultural research

institute established in Joydebpur, 30 km to the north of Dacca and which is showing satisfactory results. As part of this project The Bangladesh College Of Agricultural Sciences (tentative name) is expected to be built in this city.

## 1-2 OBJECTIVES

With the background described above, the Bangladesh Government has mapped out the construction of an agricultural college of 600 students and requested the Japanese Government to conduct a survey of feasibility of grant-in-aid and technical assistance.

To meet the above request, the Japanese Government dispatched the mission to Bangladesh twice in the past through the Japan International Cooperation Agency.

From the results of the previous survey, it was confirmed that this agricultural college construction plan will be of great benefit to Bangladesh and should be considered as the subject of an aid project of Japan. In light of this, it was planned to dispatch this basic design survey team.

This basic design team was organized for the purpose of discovering the best facilities suitable for Bangladesh through an understanding of the Bangladesh requests described in the previous report.

The objectives and contents of the survey conducted this time are as below.

- (1) To confirm the scope of this facilities plan requested by the Bangladesh Government.
- (2) To understand the present situation of agricultural education in Bangladesh, which is connected to

the national development program, and to study the significance of education and training of capable technicians through high agricultural education.

(3) To survey ground conditions of the site, water and energy resources such as electric power and gas, and also climate, natural features, life habits, scope of education and actual conditions of existing facilities, etc., and to study the scale and contents of the facilities suitable for the present situation.

(4) To propose that a substantial and effective project should be established by clarifying the construction phases of the project including the field construction method, types of the materials available on site and their unit prices.

This survey is designed to examine the above survey items and prepare the basic design drawings and documents related to the construction of Bangladesh College of Agricultural Sciences (tentative name).

### 1-3 MEMBERS OF SURVEY TEAM

The survey team was organized with the following 7 members, headed by Mr. Mitsuru Naito, the Ministry of Foreign Affairs.

Mitsuru Naito	Head	the Ministry of Foreign Affairs
Shiro Ebara	Agricultural Planning	the Ministry of Agriculture and Forestry
Masaaki Ohtsuka	Coodinator	JICA
Akio Numakura	Project Architect	Yamashita Architects & Engineers Inc.
Makiya Takagi	Quantity Survey	"
Minoru Tanaka	Architect	"
Takanori Tanaka	Architect	"

#### 1-4 SURVEY SCHEDULE

The schedule of the field survey is chiefly composed of discussions with the government officials concerned, field reconnaissance and discussions about the results of the survey as shown in the table below.

Survey period: January 29, 1981 to February 17, 1981

##### Survey Schedule

Date	Details of survey
Jan. 29 (Thu)	Left Tokyo (via JAL flight 717).
" 30 (Fri)	Arrived at Dacca. Visited the JICA Dacca Office and the Japanese Embassy to pay our respects.
" 31 (Sat)	Explained to and discussed with Dr. Doza about the building plan at BARC.
Feb. 1 (Sun)	Investigated the facilities of CERDI, BARI and Jahangir Nagar University and surveyed the site.
Feb. 2 (Mon)	Discussion with Dr. ALI of Planning Commission.. Discussion with the persons concerned about the facilities plan at BARI.
" 3 (Tue)	Exchange Signing of Agreed minutes.
" 4 (Wed)	Mr. Naito, the leader of the team left Dacca for Japan. Discussion at BARI and obtained the data of materials.
" 5 (Thu)	Site survey.
" 6 (Fri)	Discussion at BARI. Obtained the data on site.

Date	Details of survey
" 7 (Sat)	Discussion among team members. The data were put in order.
" 8 (Sun)	Observation of construction conditions in the city.
Feb. 9 (Mon)	Discussion at BARI and data collection. Discussion with K.K. JAPAN ENGINEERING CONSULTANT.
" 10 (Tue)	Interim survey report to the Japanese Embassy and JICA Dacca Office.
" 11 (Wed)	Messrs. Ebara and Ohtsuka left Dacca for Japan. Visited an BRTC Site for investigation.
" 12 (Thu)	Discussion of survey results at BARI.
" 13 (Fri)	Discussion of survey results at PLANNING COMMISSION. Reporting of survey results and saying good-bye to people at the Japanese Embassy and JICA Dacca Office.
" 14 (Sat)	Investigation of furnitures and other materials.
" 15 (Sun)	Discussion at BARI. Obtained the data related to the hostel.
" 16 (Mon)	Messrs. Numakura, Takagi, Tanaka (Minoru) and Tanaka (Takanori) left Dacca (BG Flight 072) for Japan.
" 17 (Tue)	Arrived at Tokyo.



1-5 MINUTES

The minutes of the basic design survey which have been confirmed and signed between Bangladesh and Japan, are as follows:

AGREED MINUTES OF DISCUSSION

In response to the request of the Government of Bangladesh for establishing the Bangladesh College of Agricultural Sciences Project (hereinafter referred to as "the Project"), the Government of Japan has dispatched, through the Japan International Cooperation Agency (hereinafter referred to as "JICA"), a team headed by Mr. MITSURU NAITO to conduct a basic design survey for 15 days from January 29, 1981. The team had a series of discussions and exchanged views with the authorities concerned.

Both sides have agreed to recommend to their respective Governments to examine the results of the survey attached toward the realization of the Project.

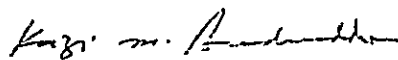
(Date) February 3, 1981



Mr. MITSURU NAITO

Team Leader

The Japanese Survey Team



Dr. Kazi M. Badruddoza

Director

Bangladesh Agricultural  
Research Institute

## M I N U T E S

1. The proposed site of the Project will be Salna, Joydebpur, Dacca in Bangladesh (Hereinafter referred to as "the Project Site").
2. The objectives of the Project is to provide necessary buildings, incidental facilities and equipment for the College at the Project Site.
3. The Japanese Survey Team will convey the desire of the Government of Bangladesh to the Government of Japan that the latter will take necessary measures to cooperate in implementing the Project and will provide the building and other items as listed in Annex I within the scope of Japanese economic cooperation in grant form.
4. The Government of Bangladesh will take necessary measures on condition that the grant assistance by the Government of Japan is extended to the Project:
  - (a) to provide data and information necessary for the design and the construction
  - (b) to secure lands necessary for the construction
  - (c) to clear and level the Project Site before the start of the construction, including the removal of existing obstacles
  - (d) to provide other items listed in Annex II
  - (e) to ensure prompt unloading, customs clearance, paying of tax, duties and fiscal levies in Bangladesh of imported materials and equipment for the construction and also to facilitate the internal transportation for them
  - (f) to provide and accord necessary permissions, licences and other authorization required for carrying out the Project.

A N N E X I

Items requested by the Government of Bangladesh whose cost will be borne by the Government of Japan:

There was discussion between the Japanese Team and the Bangladesh Representatives about the basic items of the Project. Keeping the general Japanese grant aid system in view, the project was reviewed and tentatively readjusted as follows:

- 1) Buildings (Tentatively but not exceeding)
  - (a) Functional building : About 3,900.00 sft.
  - (b) College building  
(including small size Auditorium) : 53,000.00 "
  - (c) Engineering workshop : 4,000.00 "
  - (d) Community facilities : 3,000.00 "
  - (e) Hostel building  
(including a. Principal's quarter b. Vice-Principal's quarter c. 6 unit C-type quarter) : 71,500.00 "
- 2) Equipments
  - (a) Laboratory apparatus
  - (b) Vehicles
  - (c) Furniture
- 3) Other Facilities (in the Project site)
  - (a) Water supply
  - (b) Gas supply
  - (c) Electrical works
  - (d) Inter road

A N N E X    I I

Items whose cost will be borne by the Government of Bangladesh;

- 1) Buildings for residence except the list of ANNEX I and Miscellaneous structures
- 2) Electrical power main line to the Project Site
- 3) Gas supply to the Project Site
- 4) Telephone lines
- 5) Farm Machinery
- 6) Item 2, 3 shall be completed prior to site work.