

FIGURES

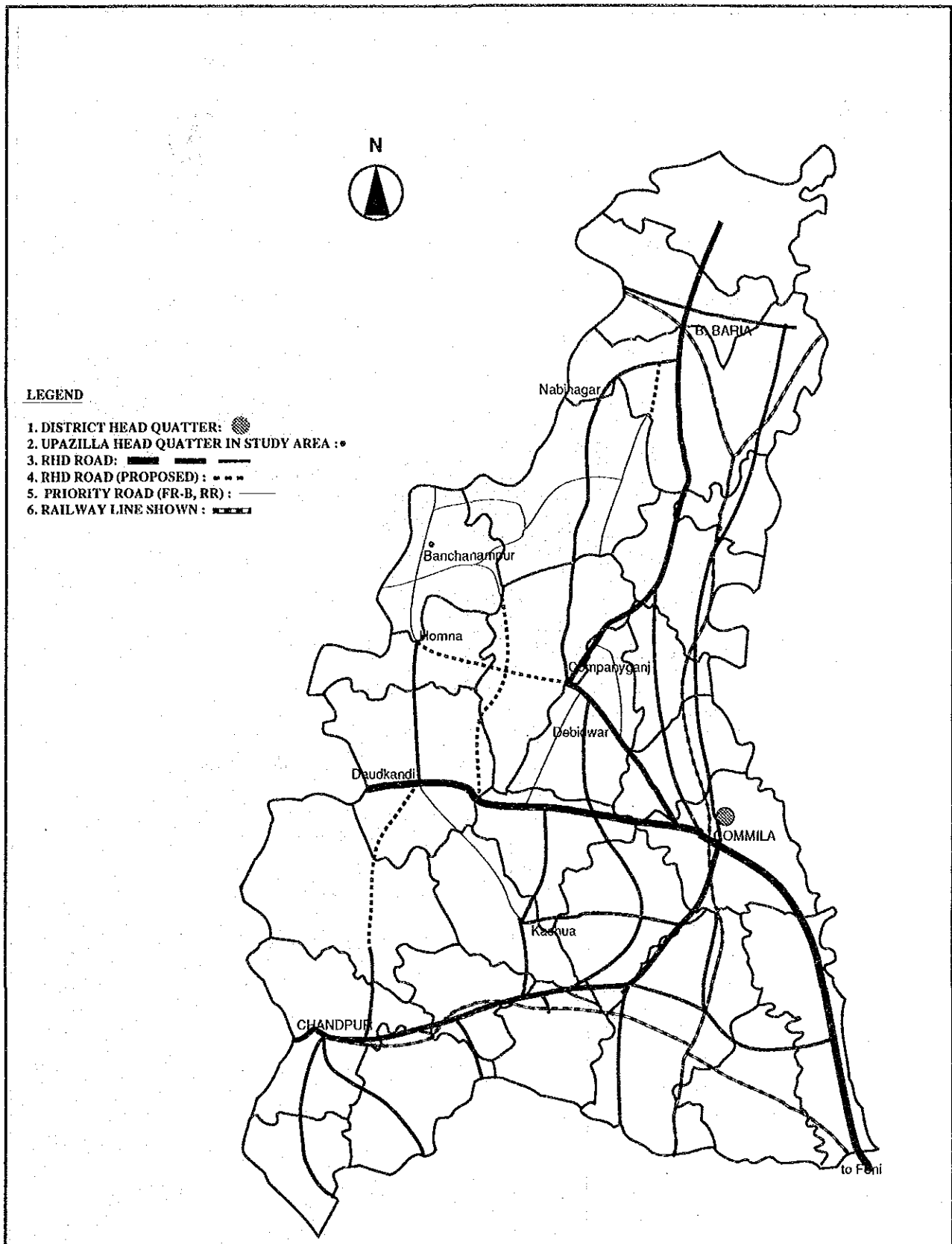


Figure G.1.1 Trunk Road Network in Old Comilla District

THE PEOPLE'S REPUBLIC OF BANGLADESH
THE MASTER PLAN STUDY ON THE MODEL RURAL DEVELOPMENT PROJECT PHASE II FOR KACHUA, NABINAGAR, BANCHARAMPUR AND DEBIDWAR UPAZILAS
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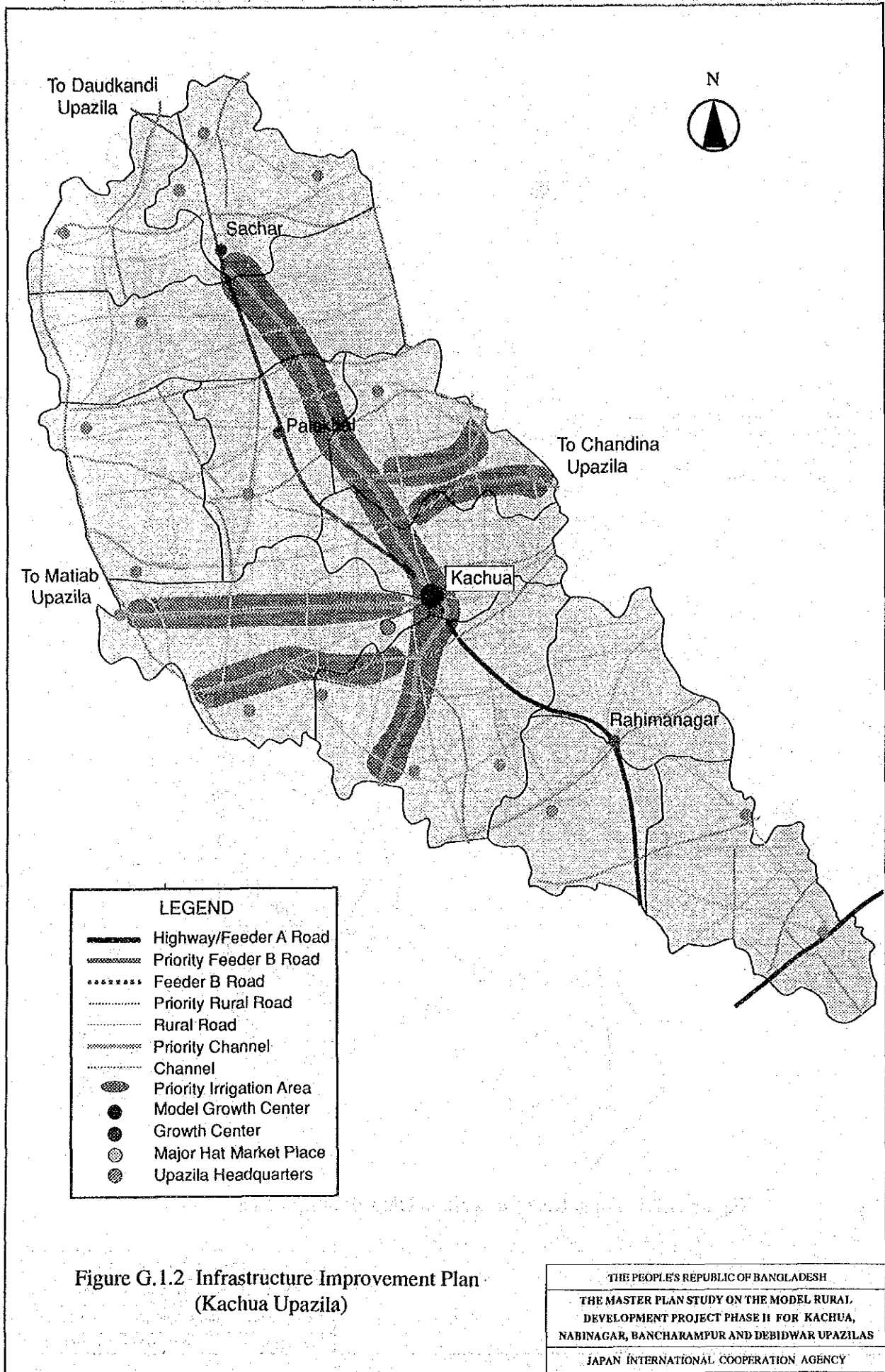


Figure G.1.2 Infrastructure Improvement Plan (Kachua Upazila)

THE PEOPLE'S REPUBLIC OF BANGLADESH
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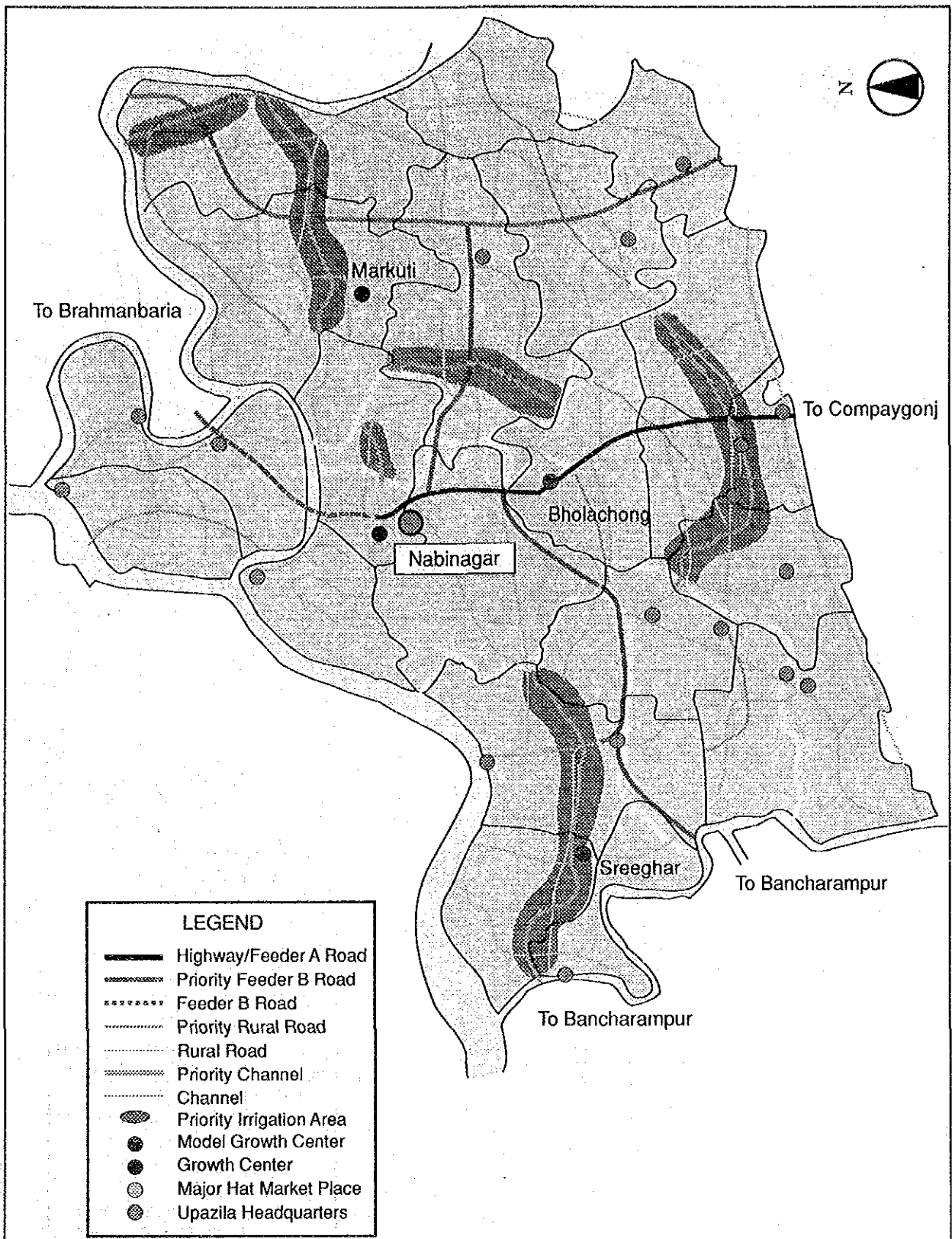


Figure G.1.2 Infrastructure Improvement Plan
(Nabinagar Upazila)

THE PEOPLE'S REPUBLIC OF BANGLADESH
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 DEVELOPMENT PROJECT PHASE II FOR KACHUA,
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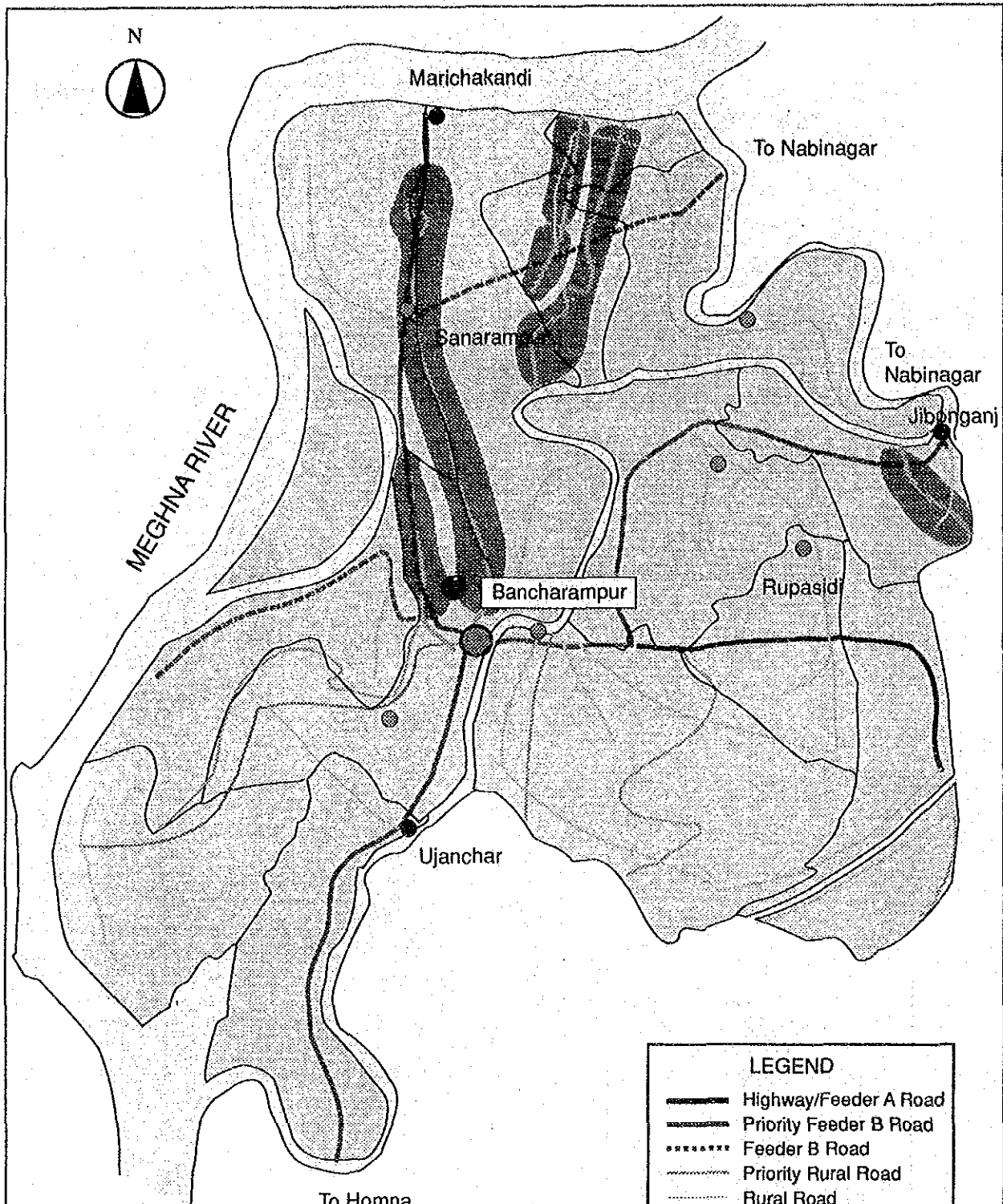


Figure G.1.2 Infrastructure Improvement Plan
(Bancharampur Upazila)

LEGEND	
	Highway/Feeder A Road
	Priority Feeder B Road
	Feeder B Road
	Priority Rural Road
	Rural Road
	Priority Channel
	Channel
	Priority Irrigation Area
	Model Growth Center
	Growth Center
	Major Hat Market Place
	Upazila Headquarters

THE PEOPLE'S REPUBLIC OF BANGLADESH
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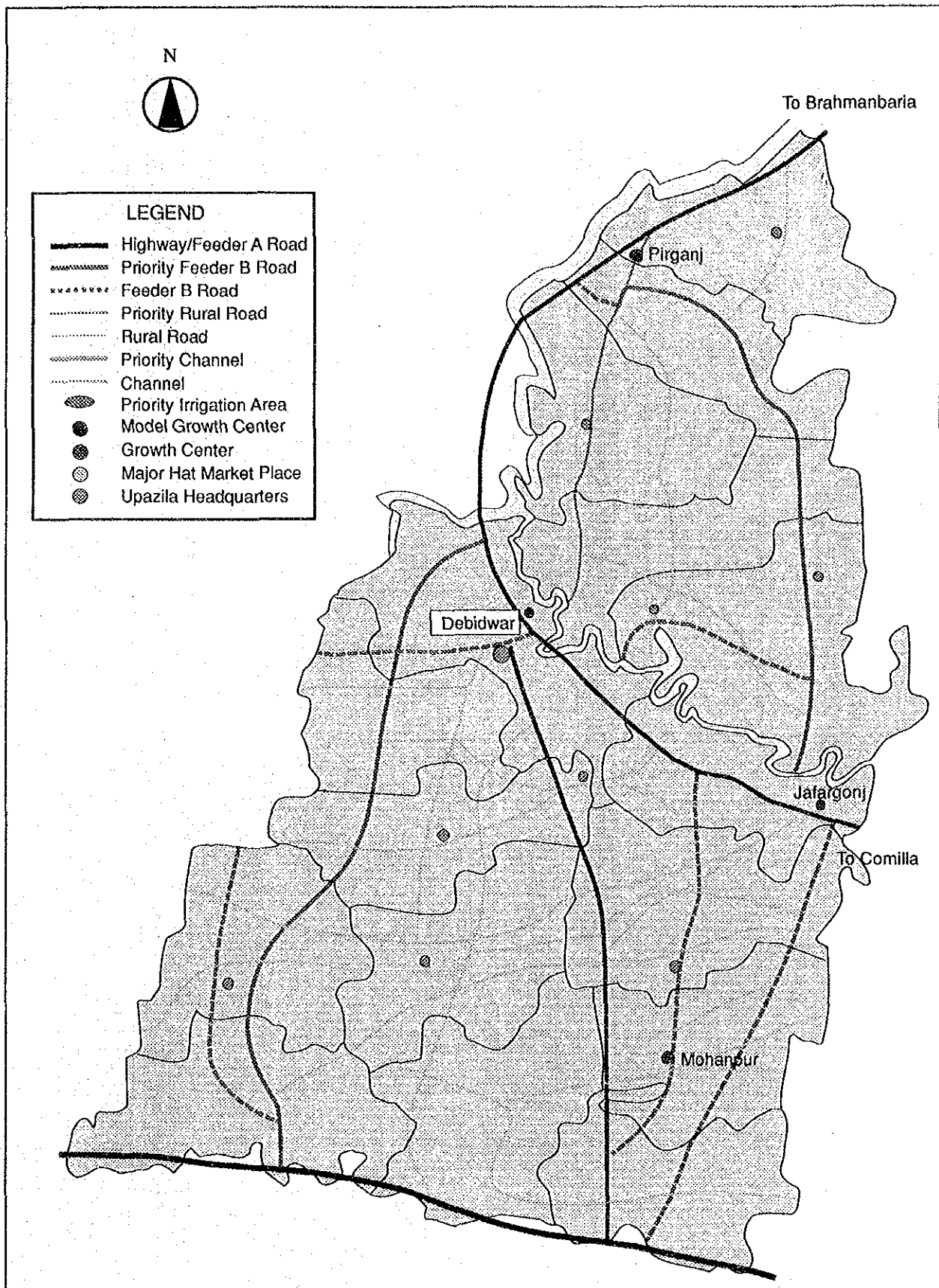


Figure G.1.2 Infrastructure Improvement Plan
(Debidwar Upazila)

THE PEOPLE'S REPUBLIC OF BANGLADESH
 THE MASTER PLAN STUDY ON THE MODEL RURAL
 DEVELOPMENT PROJECT PHASE II FOR KACHUA,
 NABINAGAR, BANCHARAMPUR AND DEBIDWAR UPAZILAS
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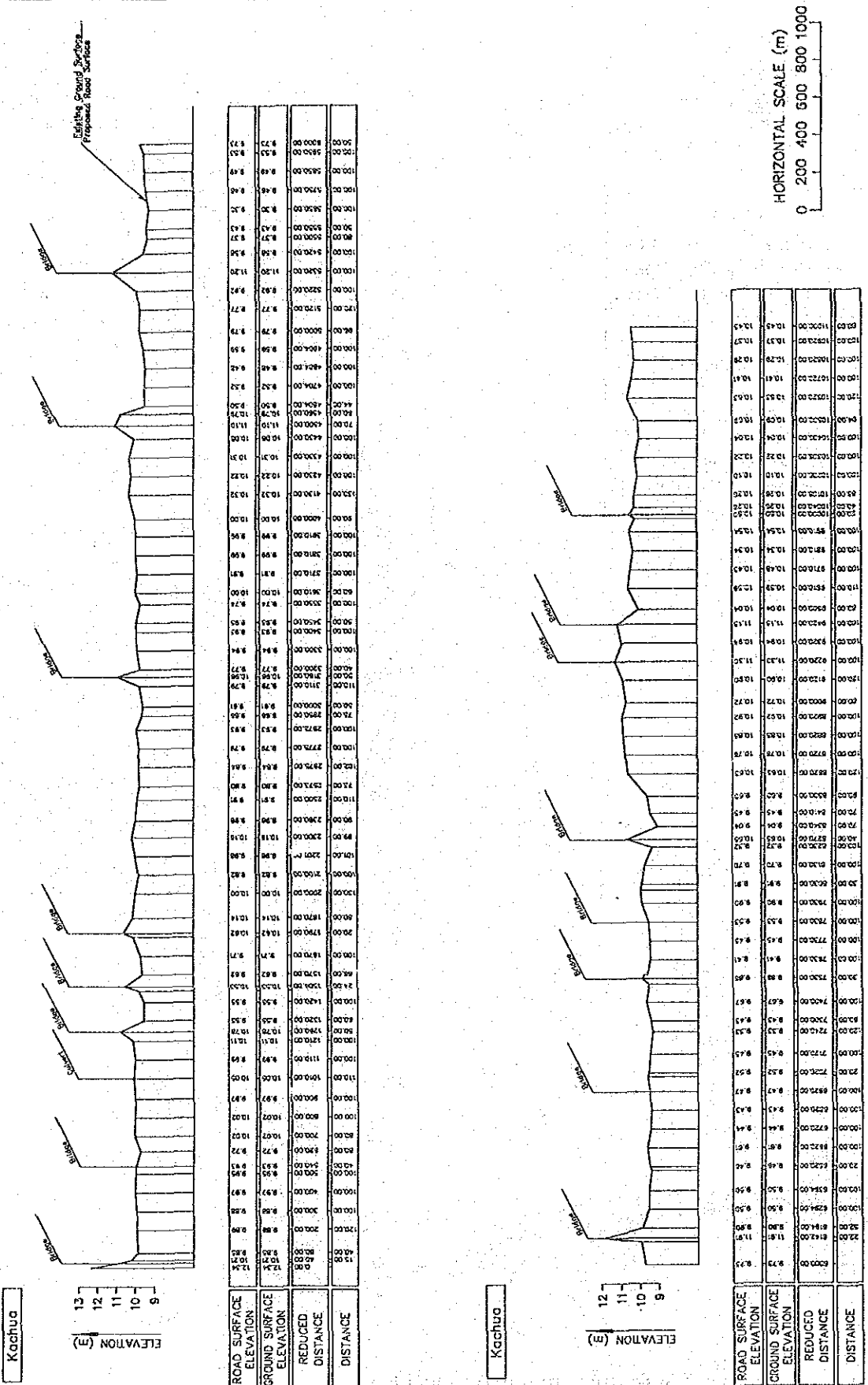
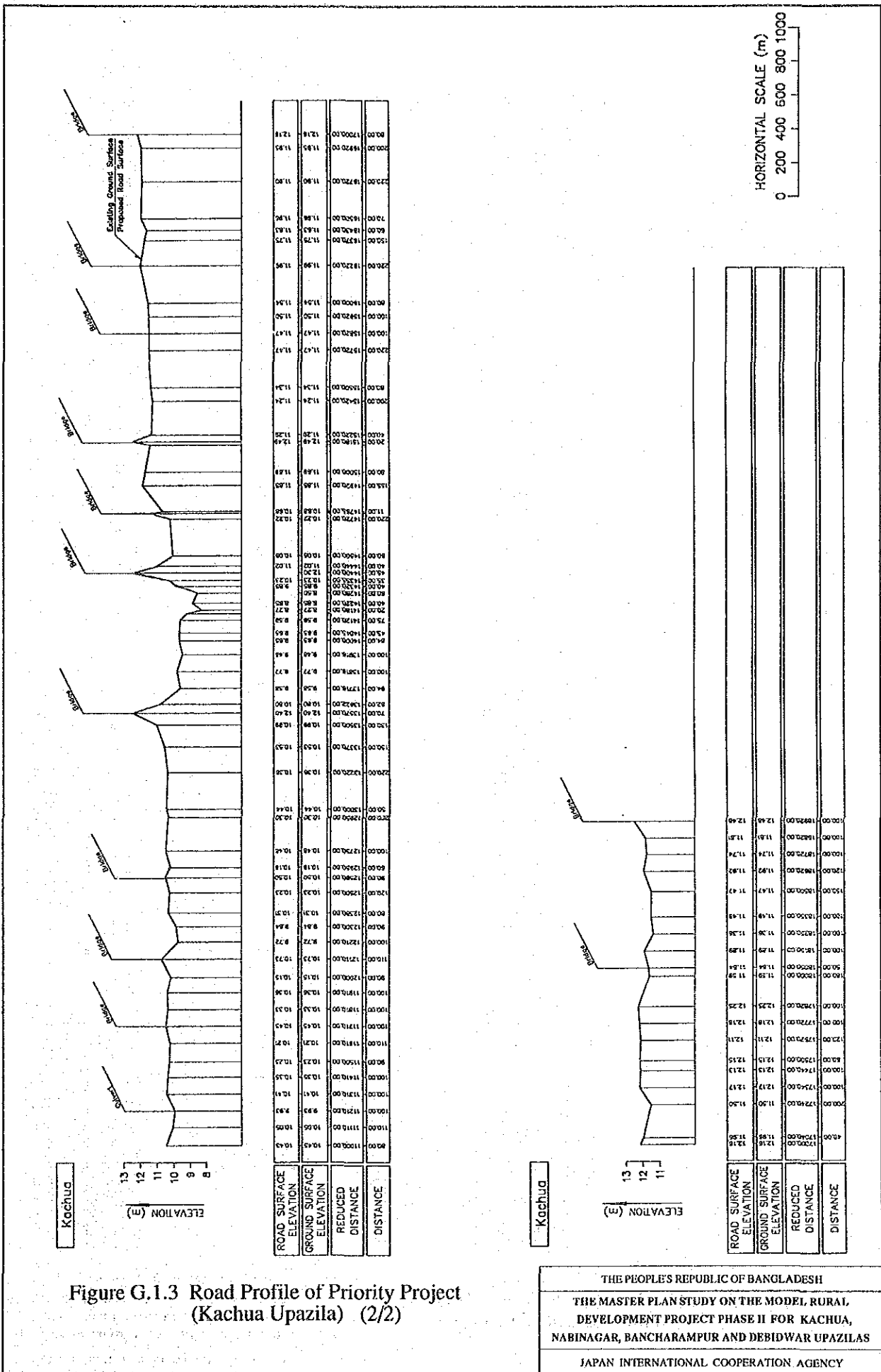


Figure G.1.3 Road Profile of Priority Project (Kachua Upazila) (1/2)



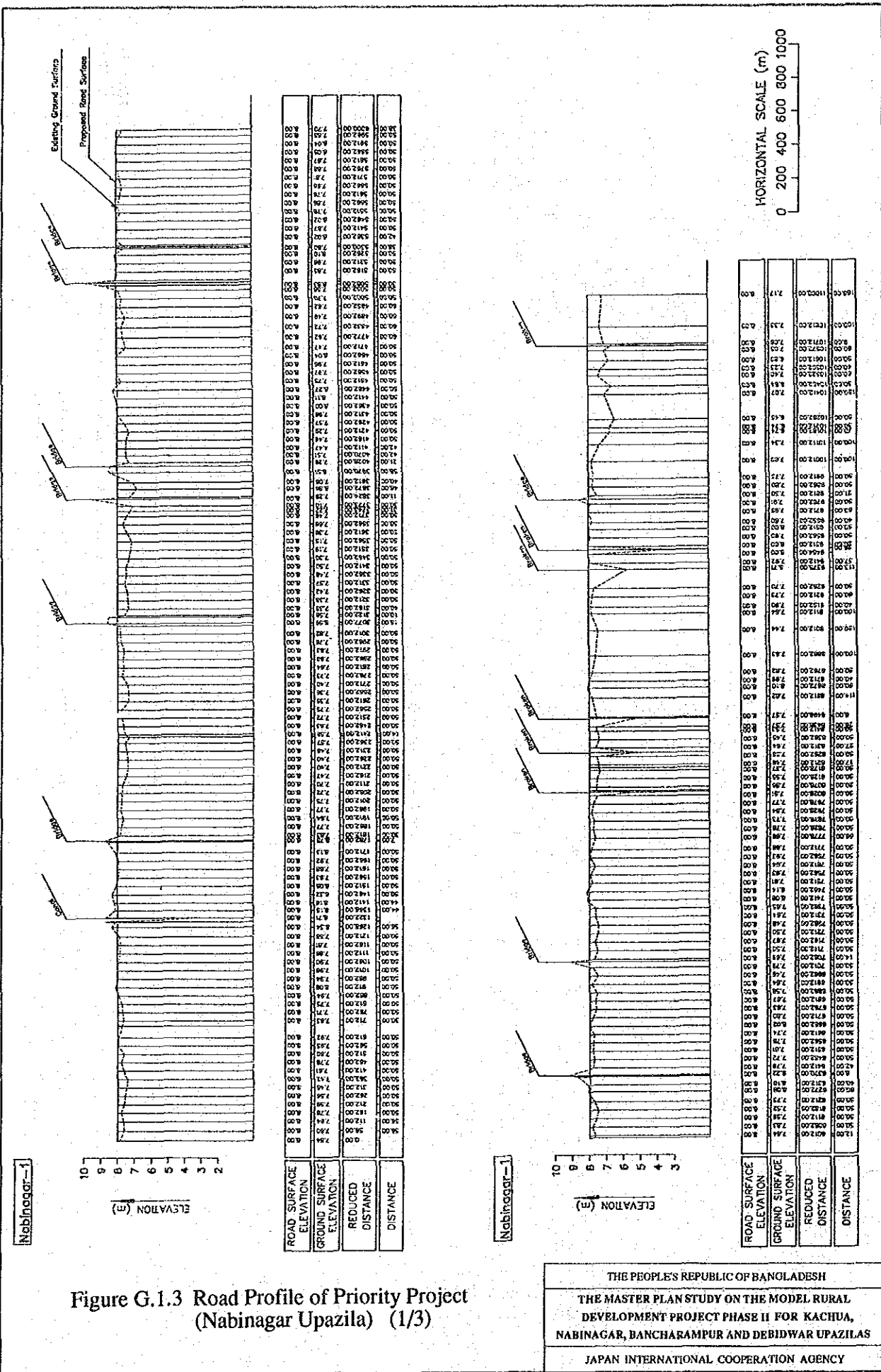


Figure G.1.3 Road Profile of Priority Project (Nabinagar Upazila) (1/3)

THE PEOPLE'S REPUBLIC OF BANGLADESH
 THE MASTER PLAN STUDY ON THE MODEL RURAL
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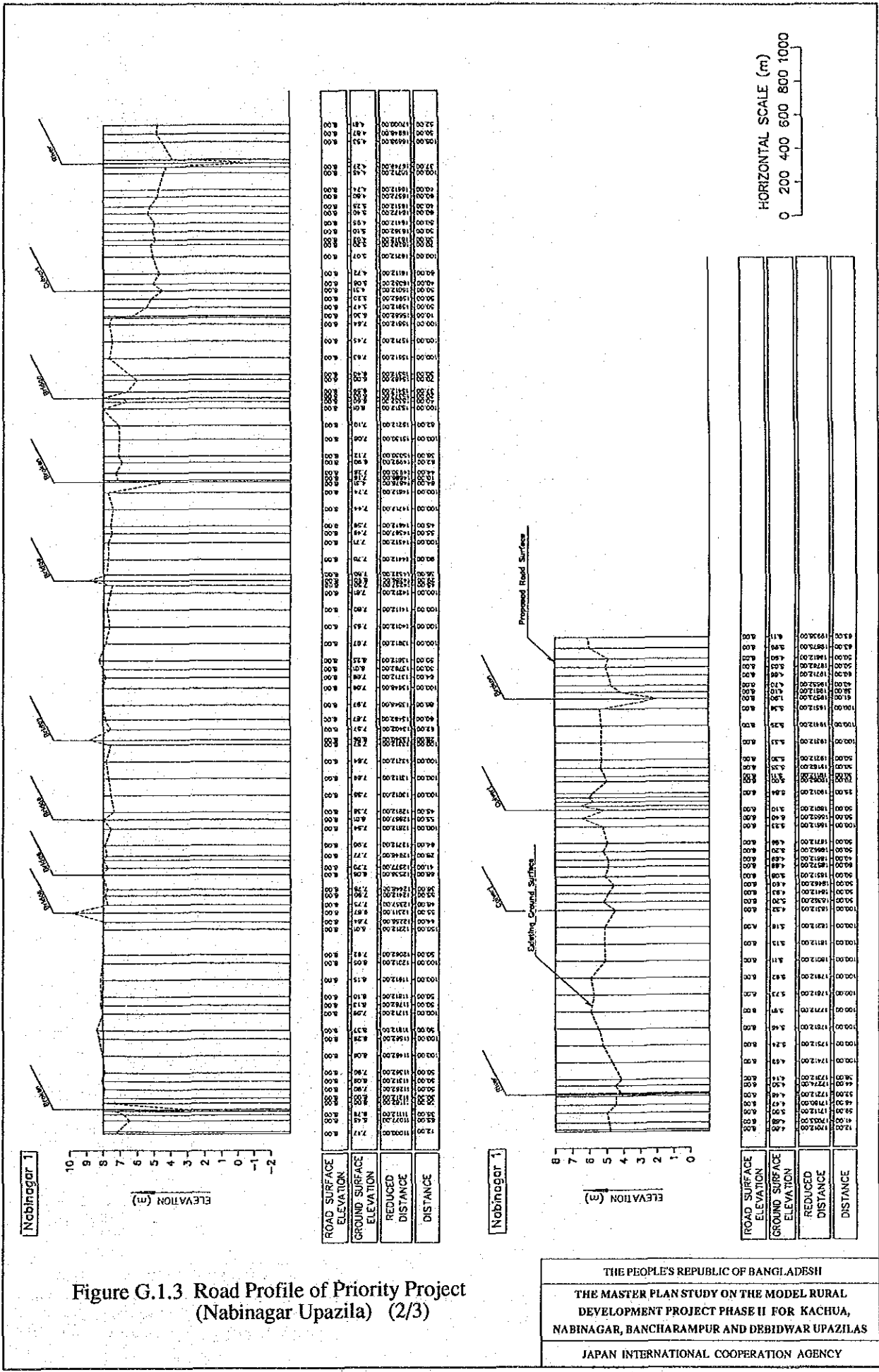


Figure G.1.3 Road Profile of Priority Project (Nabinagar Upazila) (2/3)

THE PEOPLE'S REPUBLIC OF BANGLADESH
 THE MASTER PLAN STUDY ON THE MODEL RURAL
 DEVELOPMENT PROJECT PHASE II FOR KACHUA,
 NABINAGAR, BANCHARAMPUR AND DEBDWAR UPAZILAS
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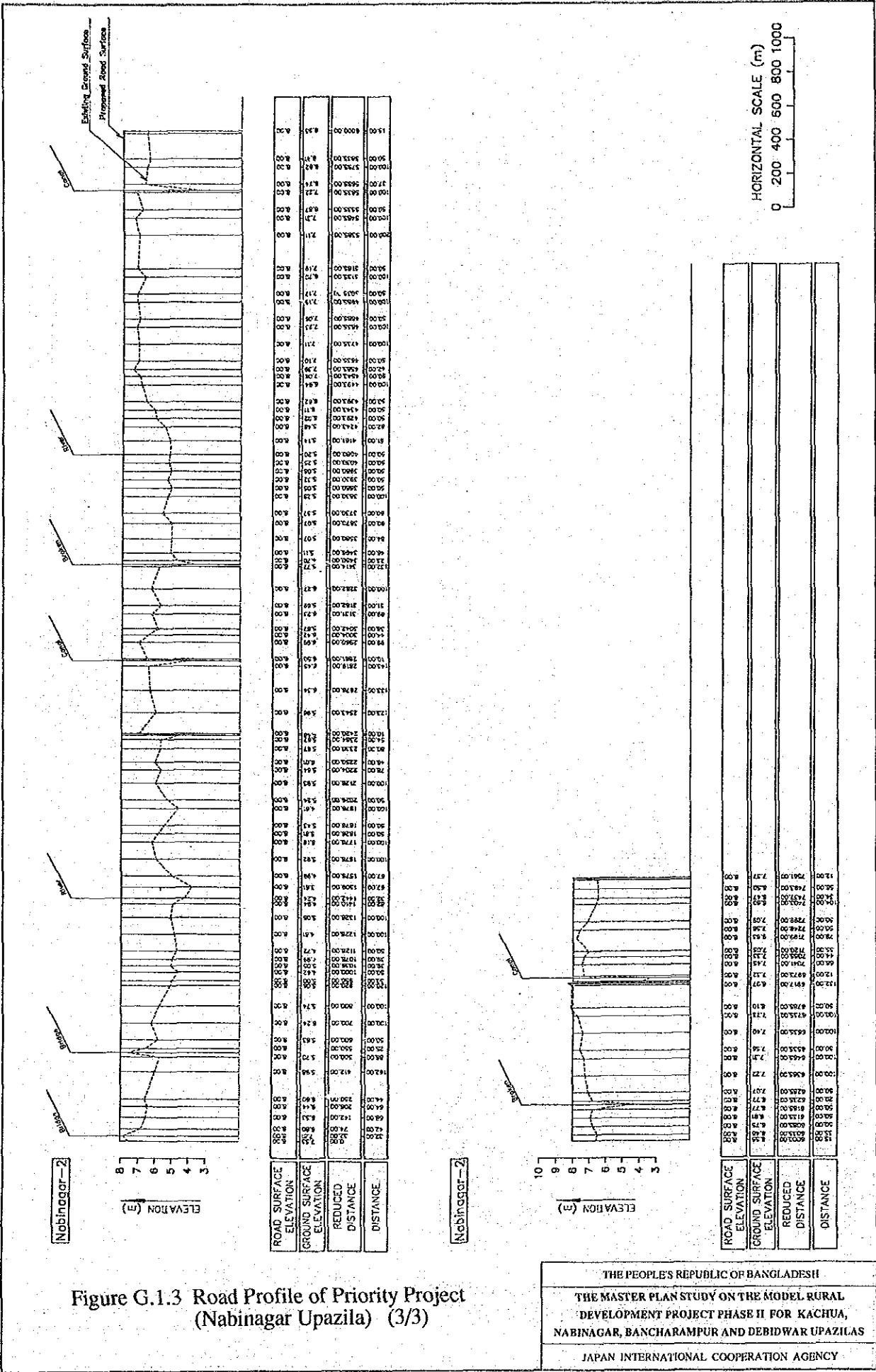
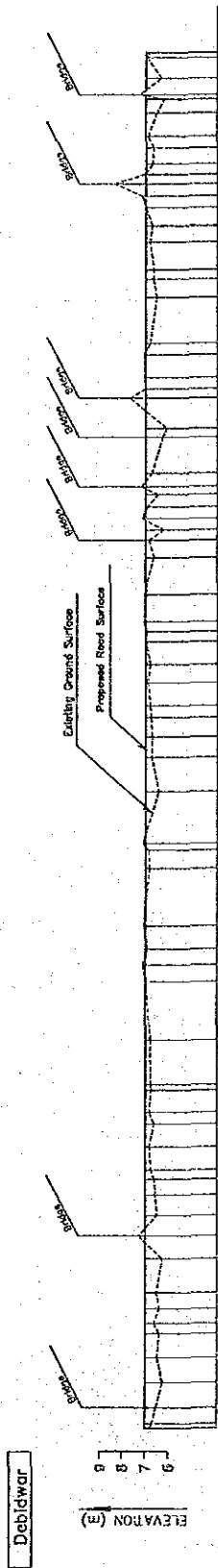
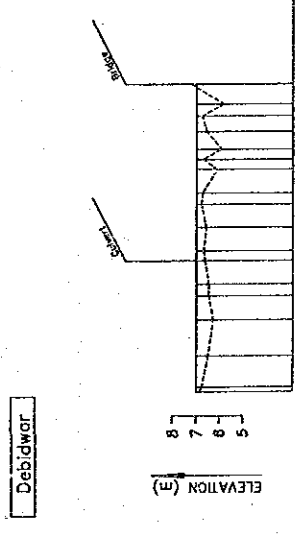


Figure G.1.3 Road Profile of Priority Project (Nabinagar Upazila) (3/3)



ROAD SURFACE ELEVATION	GROUND SURFACE ELEVATION	REDUCED DISTANCE	DISTANCE
9.00	8.90	0.10	7.00
8.90	8.80	0.10	7.20
8.80	8.70	0.10	7.40
8.70	8.60	0.10	7.60
8.60	8.50	0.10	7.80
8.50	8.40	0.10	8.00
8.40	8.30	0.10	8.20
8.30	8.20	0.10	8.40
8.20	8.10	0.10	8.60
8.10	8.00	0.10	8.80
8.00	7.90	0.10	9.00
7.90	7.80	0.10	9.20
7.80	7.70	0.10	9.40
7.70	7.60	0.10	9.60
7.60	7.50	0.10	9.80
7.50	7.40	0.10	10.00
7.40	7.30	0.10	10.20
7.30	7.20	0.10	10.40
7.20	7.10	0.10	10.60
7.10	7.00	0.10	10.80
7.00	6.90	0.10	11.00
6.90	6.80	0.10	11.20
6.80	6.70	0.10	11.40
6.70	6.60	0.10	11.60
6.60	6.50	0.10	11.80
6.50	6.40	0.10	12.00
6.40	6.30	0.10	12.20
6.30	6.20	0.10	12.40
6.20	6.10	0.10	12.60
6.10	6.00	0.10	12.80
6.00	5.90	0.10	13.00
5.90	5.80	0.10	13.20
5.80	5.70	0.10	13.40
5.70	5.60	0.10	13.60
5.60	5.50	0.10	13.80
5.50	5.40	0.10	14.00
5.40	5.30	0.10	14.20
5.30	5.20	0.10	14.40
5.20	5.10	0.10	14.60
5.10	5.00	0.10	14.80
5.00	4.90	0.10	15.00
4.90	4.80	0.10	15.20
4.80	4.70	0.10	15.40
4.70	4.60	0.10	15.60
4.60	4.50	0.10	15.80
4.50	4.40	0.10	16.00
4.40	4.30	0.10	16.20
4.30	4.20	0.10	16.40
4.20	4.10	0.10	16.60
4.10	4.00	0.10	16.80
4.00	3.90	0.10	17.00
3.90	3.80	0.10	17.20
3.80	3.70	0.10	17.40
3.70	3.60	0.10	17.60
3.60	3.50	0.10	17.80
3.50	3.40	0.10	18.00
3.40	3.30	0.10	18.20
3.30	3.20	0.10	18.40
3.20	3.10	0.10	18.60
3.10	3.00	0.10	18.80
3.00	2.90	0.10	19.00
2.90	2.80	0.10	19.20
2.80	2.70	0.10	19.40
2.70	2.60	0.10	19.60
2.60	2.50	0.10	19.80
2.50	2.40	0.10	20.00
2.40	2.30	0.10	20.20
2.30	2.20	0.10	20.40
2.20	2.10	0.10	20.60
2.10	2.00	0.10	20.80
2.00	1.90	0.10	21.00
1.90	1.80	0.10	21.20
1.80	1.70	0.10	21.40
1.70	1.60	0.10	21.60
1.60	1.50	0.10	21.80
1.50	1.40	0.10	22.00
1.40	1.30	0.10	22.20
1.30	1.20	0.10	22.40
1.20	1.10	0.10	22.60
1.10	1.00	0.10	22.80
1.00	0.90	0.10	23.00
0.90	0.80	0.10	23.20
0.80	0.70	0.10	23.40
0.70	0.60	0.10	23.60
0.60	0.50	0.10	23.80
0.50	0.40	0.10	24.00
0.40	0.30	0.10	24.20
0.30	0.20	0.10	24.40
0.20	0.10	0.10	24.60
0.10	0.00	0.10	24.80
0.00	-0.10	0.10	25.00



ROAD SURFACE ELEVATION	GROUND SURFACE ELEVATION	REDUCED DISTANCE	DISTANCE
8.40	8.30	0.10	7.00
8.30	8.20	0.10	7.20
8.20	8.10	0.10	7.40
8.10	8.00	0.10	7.60
8.00	7.90	0.10	7.80
7.90	7.80	0.10	8.00
7.80	7.70	0.10	8.20
7.70	7.60	0.10	8.40
7.60	7.50	0.10	8.60
7.50	7.40	0.10	8.80
7.40	7.30	0.10	9.00
7.30	7.20	0.10	9.20
7.20	7.10	0.10	9.40
7.10	7.00	0.10	9.60
7.00	6.90	0.10	9.80
6.90	6.80	0.10	10.00
6.80	6.70	0.10	10.20
6.70	6.60	0.10	10.40
6.60	6.50	0.10	10.60
6.50	6.40	0.10	10.80
6.40	6.30	0.10	11.00
6.30	6.20	0.10	11.20
6.20	6.10	0.10	11.40
6.10	6.00	0.10	11.60
6.00	5.90	0.10	11.80
5.90	5.80	0.10	12.00
5.80	5.70	0.10	12.20
5.70	5.60	0.10	12.40
5.60	5.50	0.10	12.60
5.50	5.40	0.10	12.80
5.40	5.30	0.10	13.00
5.30	5.20	0.10	13.20
5.20	5.10	0.10	13.40
5.10	5.00	0.10	13.60
5.00	4.90	0.10	13.80
4.90	4.80	0.10	14.00
4.80	4.70	0.10	14.20
4.70	4.60	0.10	14.40
4.60	4.50	0.10	14.60
4.50	4.40	0.10	14.80
4.40	4.30	0.10	15.00
4.30	4.20	0.10	15.20
4.20	4.10	0.10	15.40
4.10	4.00	0.10	15.60
4.00	3.90	0.10	15.80
3.90	3.80	0.10	16.00
3.80	3.70	0.10	16.20
3.70	3.60	0.10	16.40
3.60	3.50	0.10	16.60
3.50	3.40	0.10	16.80
3.40	3.30	0.10	17.00
3.30	3.20	0.10	17.20
3.20	3.10	0.10	17.40
3.10	3.00	0.10	17.60
3.00	2.90	0.10	17.80
2.90	2.80	0.10	18.00
2.80	2.70	0.10	18.20
2.70	2.60	0.10	18.40
2.60	2.50	0.10	18.60
2.50	2.40	0.10	18.80
2.40	2.30	0.10	19.00
2.30	2.20	0.10	19.20
2.20	2.10	0.10	19.40
2.10	2.00	0.10	19.60
2.00	1.90	0.10	19.80
1.90	1.80	0.10	20.00
1.80	1.70	0.10	20.20
1.70	1.60	0.10	20.40
1.60	1.50	0.10	20.60
1.50	1.40	0.10	20.80
1.40	1.30	0.10	21.00
1.30	1.20	0.10	21.20
1.20	1.10	0.10	21.40
1.10	1.00	0.10	21.60
1.00	0.90	0.10	21.80
0.90	0.80	0.10	22.00
0.80	0.70	0.10	22.20
0.70	0.60	0.10	22.40
0.60	0.50	0.10	22.60
0.50	0.40	0.10	22.80
0.40	0.30	0.10	23.00
0.30	0.20	0.10	23.20
0.20	0.10	0.10	23.40
0.10	0.00	0.10	23.60
0.00	-0.10	0.10	23.80
-0.10	-0.20	0.10	24.00

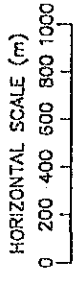


Figure G.1.3 Road Profile of Priority Project (Debidwar Upazila) (2/2)

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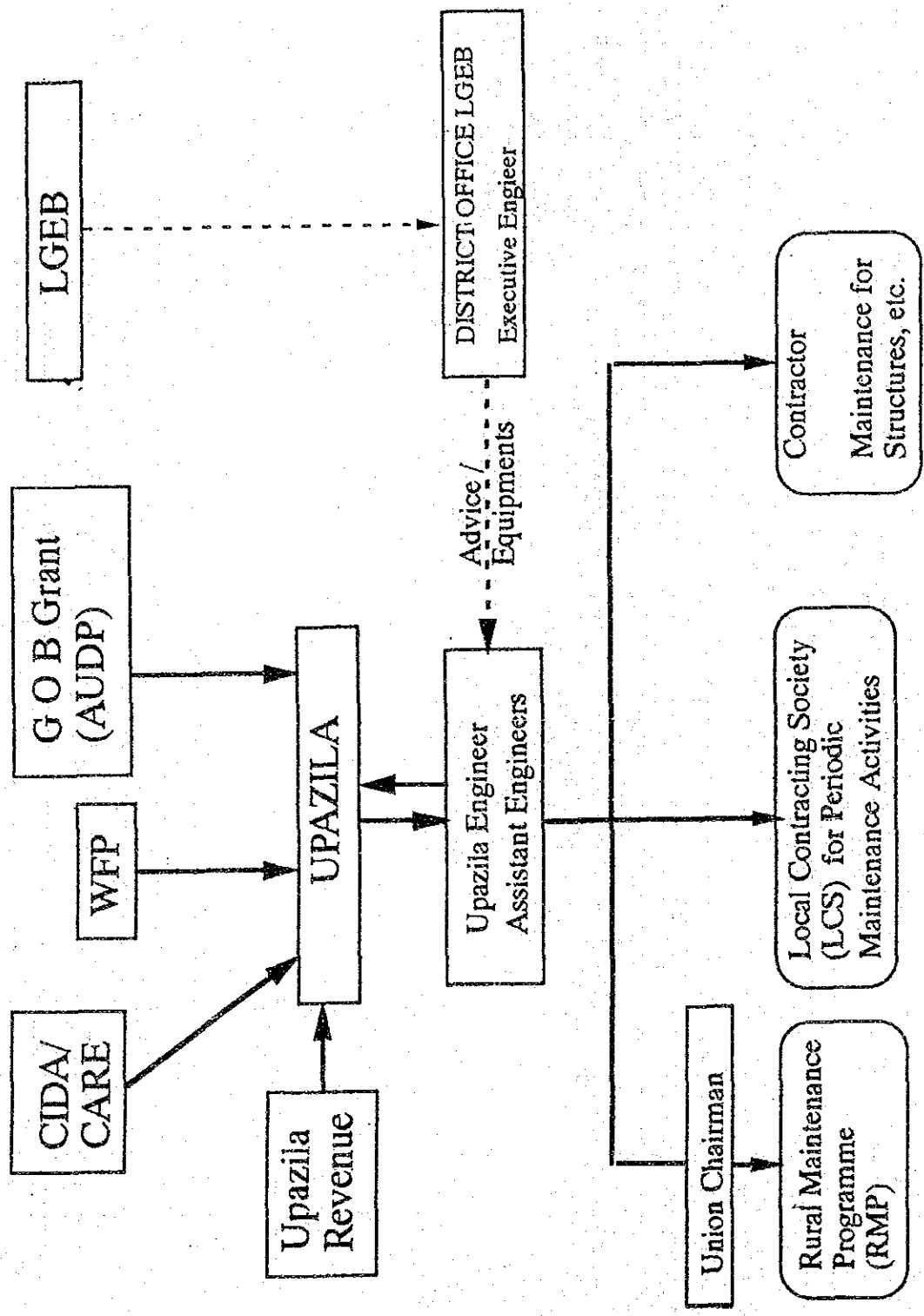


Figure G.1.4 Organization for Road Construction and Maintenance

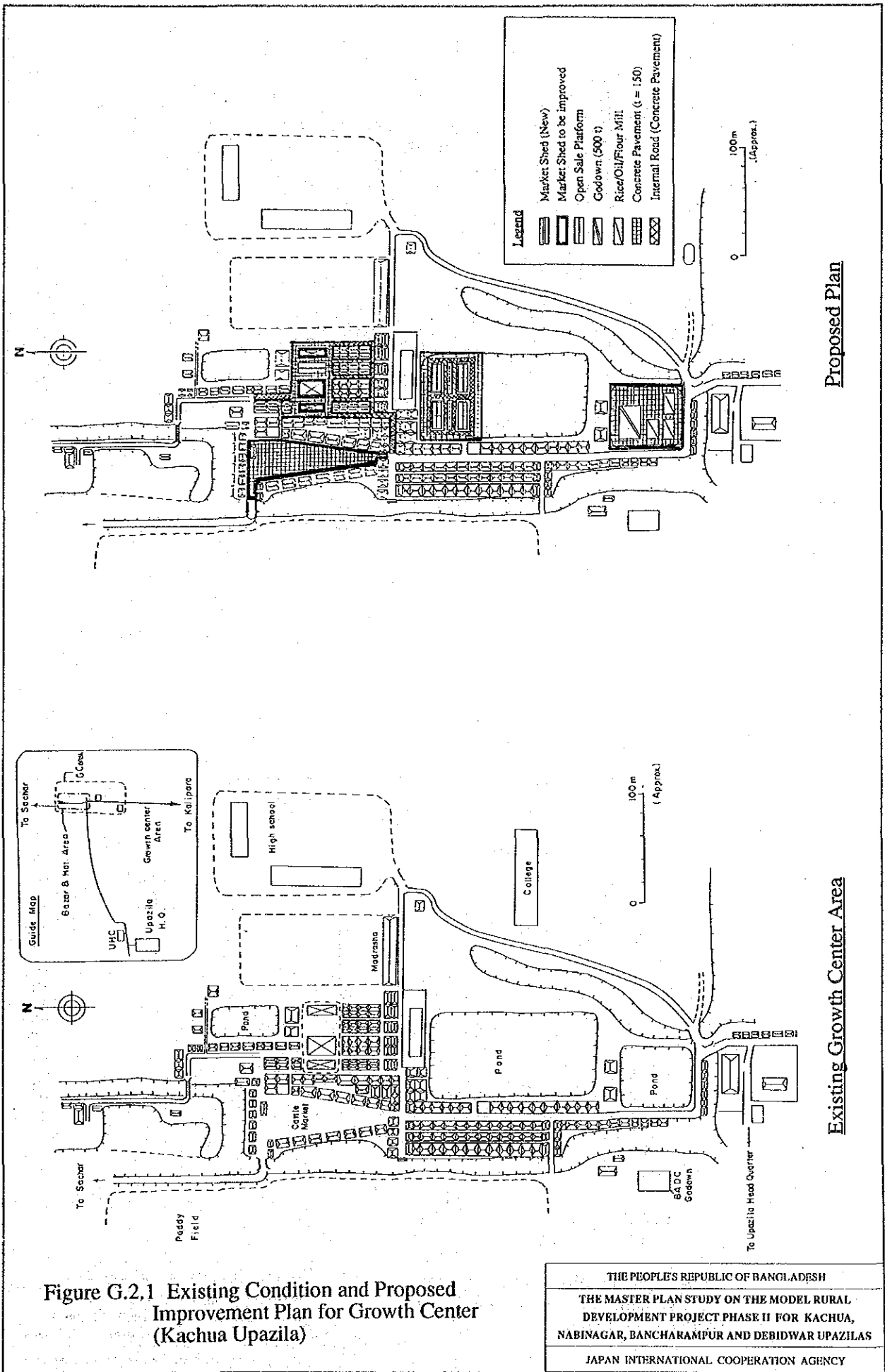


Figure G.2.1 Existing Condition and Proposed Improvement Plan for Growth Center (Kachua Upazila)

THE PEOPLE'S REPUBLIC OF BANGLADESH
 THE MASTER PLAN STUDY ON THE MODEL RURAL DEVELOPMENT PROJECT PHASE II FOR KACHUA, NABINAGAR, BANCHARAMPUR AND DEBIDWAR UPAZILAS
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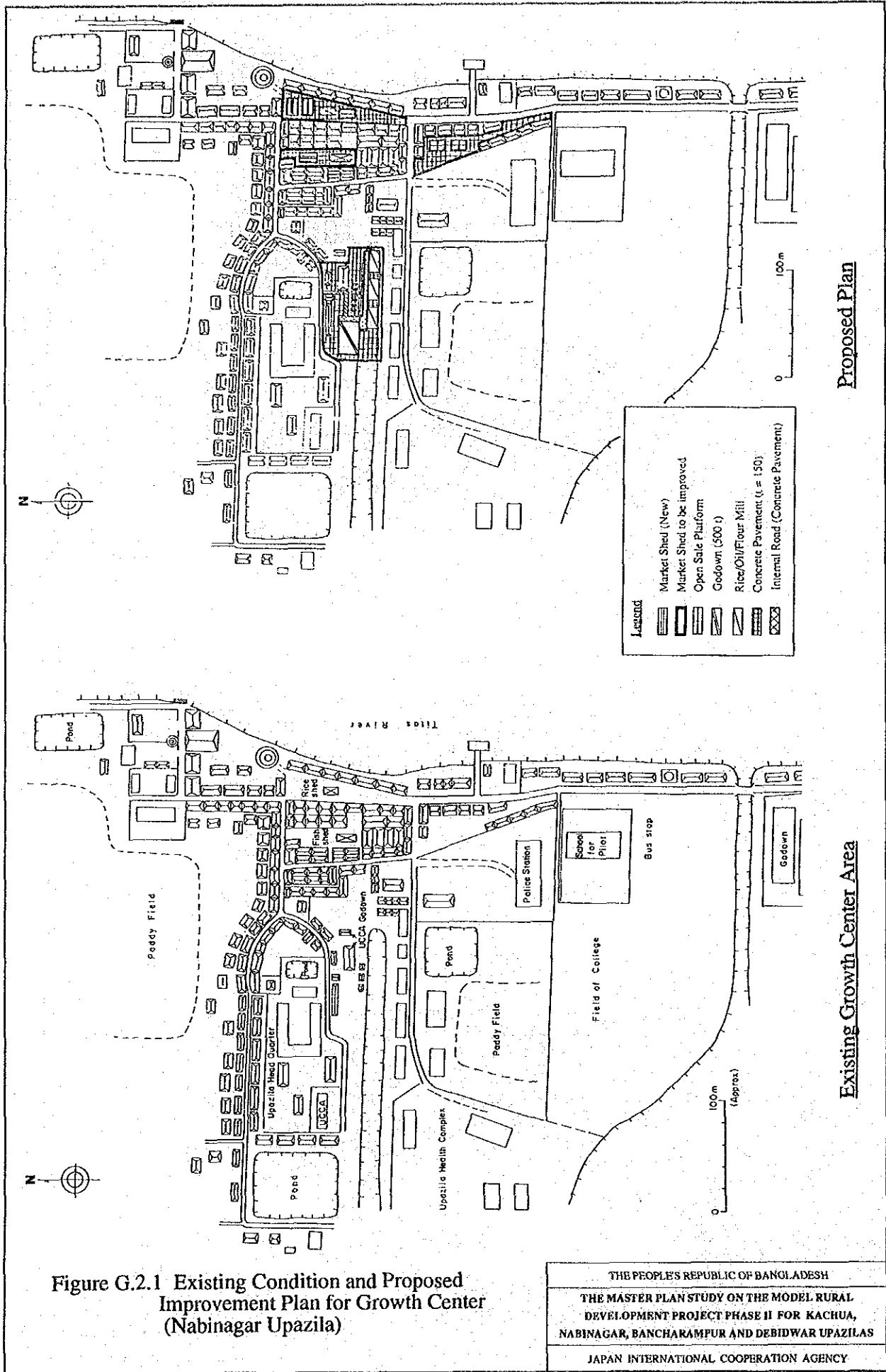
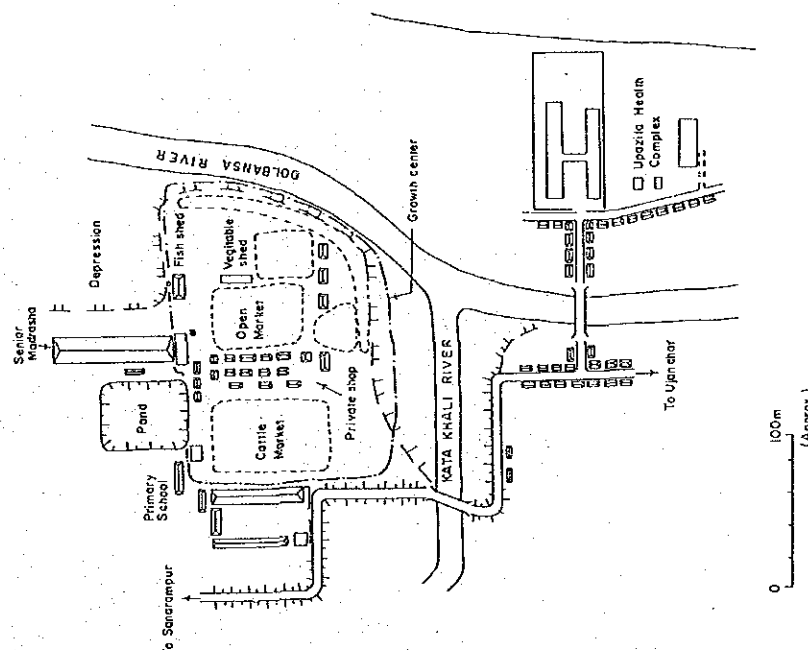


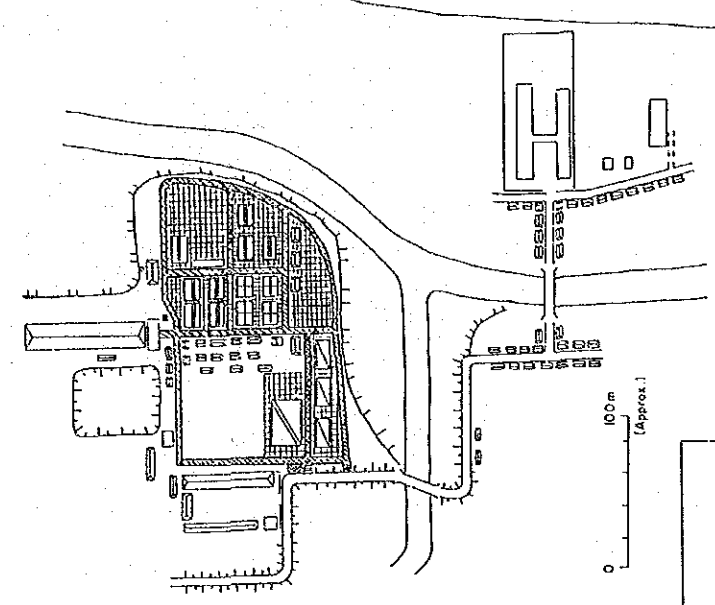
Figure G.2.1 Existing Condition and Proposed Improvement Plan for Growth Center (Nabinagar Upazila)

THE PEOPLE'S REPUBLIC OF BANGLADESH
 THE MASTER PLAN STUDY ON THE MODEL RURAL DEVELOPMENT PROJECT PHASE II FOR KACHUA, NABINAGAR, BANCHARAMPUR AND DEBIDWAR UPAZILAS
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Existing Growth Center Area

0 100m (Approx.)



Proposed Plan

Legend

- Market Shed (New)
- Market Shed to be improved
- Open Sale Platform
- Godown (500 t)
- Rice/Oil/Floor Mill
- Concrete Pavement (1: = 150)
- Internal Road (Concrete Pavement)

Figure G.2.1 Existing Condition and Proposed Improvement Plan for Growth Center (Bancharampur Upazila)

THE PEOPLE'S REPUBLIC OF BANGLADESH
 THE MASTER PLAN STUDY ON THE MODEL RURAL DEVELOPMENT PROJECT PHASE II FOR KACHUA, NABINAGAR, BANCHARAMPUR AND DEBIDWAR UPAZILAS
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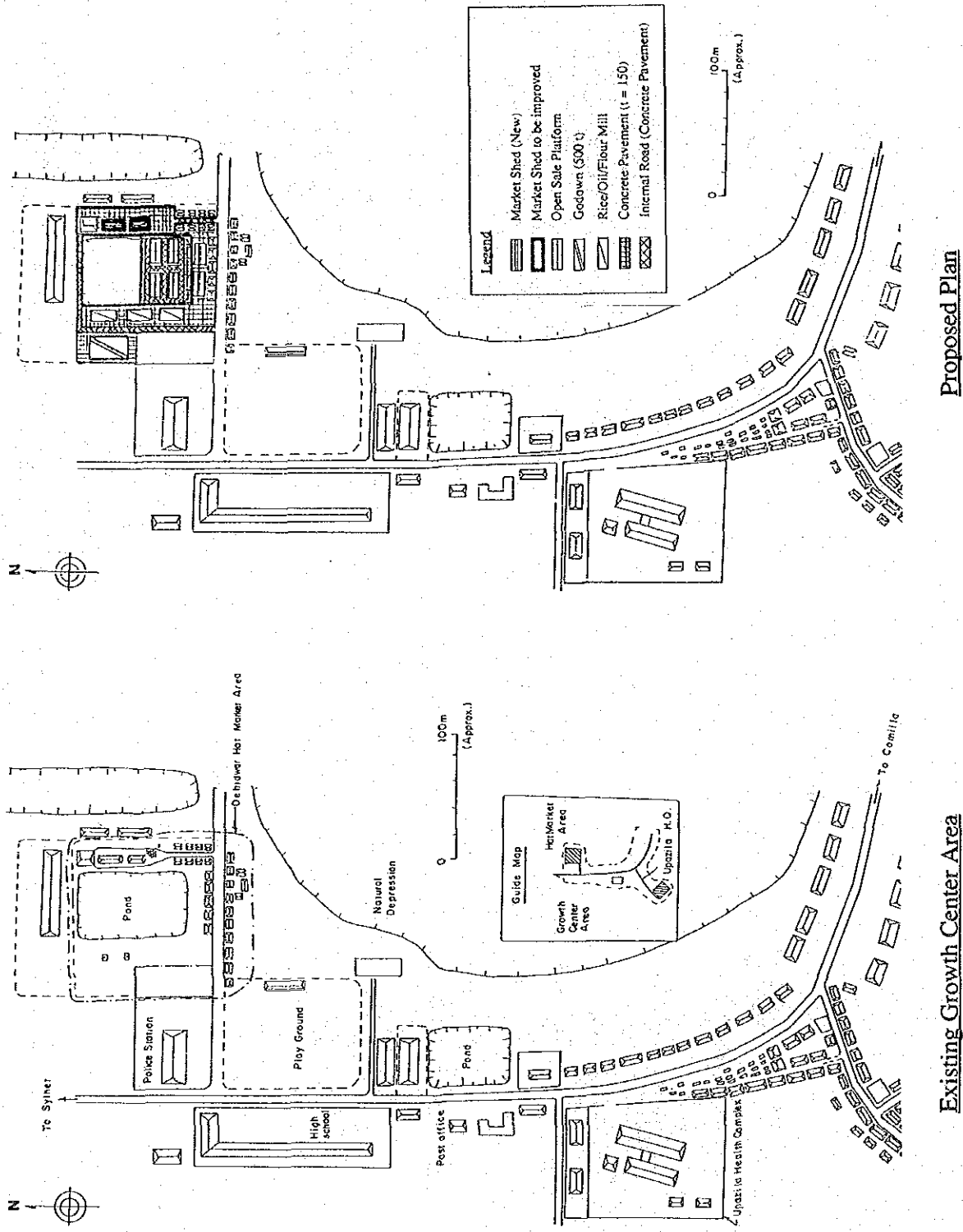


Figure G.2.1 Existing Condition and Proposed Improvement Plan for Growth Center (Debidwar Upazila)

THE PEOPLE'S REPUBLIC OF BANGLADESH
 THE MASTER PLAN STUDY ON THE MODEL RURAL DEVELOPMENT PROJECT PHASE II FOR KACHUA, NABINAGAR, BANCHARAMPUR AND DEBIDWAR UPAZILAS
 JAPAN INTERNATIONAL COOPERATION AGENCY



LEGEND

Transmission Line

	Existing	Under Construction	Planned
230 KV	—————	—————	—————
132 KV	—————	—————	—————
66 KV	—————	—————	—————
33 KV	—————	—————	—————

33 KV Line Energised at 11 KV

	Existing	Under Construction	Planned
Power Plant	▲	▲	▲
Grid Sub-Station	■	■	■
Diesel Power Station	⊙	⊙	⊙
REB 33/11 KV Sub-Stn.	●	●	●
PDB 33 KV Sub-Station	⊖	⊖	⊖

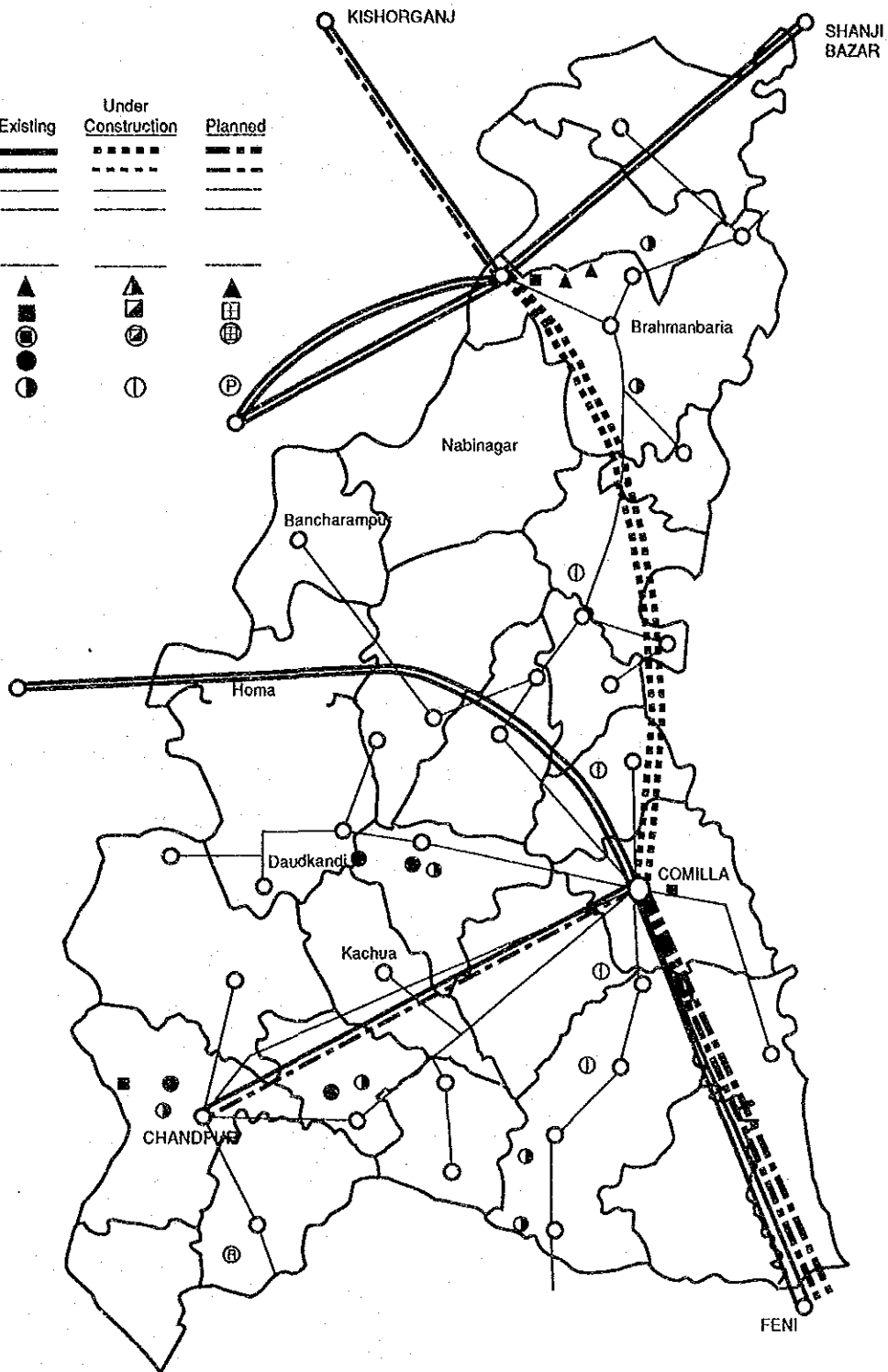


Figure G.3.1 Electric Line Network in Old Comilla District

THE PEOPLE'S REPUBLIC OF BANGLADESH
 THE MASTER PLAN STUDY ON THE MODEL RURAL DEVELOPMENT PROJECT PHASE II FOR KACHUA, NABINAGAR, BANCHARAMPUR AND DEBIDWAR UPAZILAS
 JAPAN INTERNATIONAL COOPERATION AGENCY

ANNEX H
AGRO-PROCESSING

THE MASTER PLAN STUDY ON
THE MODEL RURAL DEVELOPMENT PROJECT PHASE II
FOR KACHUA, NABINAGAR, BANCHARAMPUR AND DEBIDWAR UPAZILAS

ANNEX H AGRO-PROCESSING

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1. BACKGROUND

Bangladesh, as evaluated from her present resources and assets, is basically an agrarian country, where agricultural production still dominates the national product and provides other industrial units with various raw materials.

The manufacturing sector, at the moment, still remains in a minor position in the national economy. In 1988 - 89 its share in GDP is only at 9% at current prices, implies that Bangladesh is in Phase 1 (below 12% of GDP) of industrial development as for others LLDCs. This situation is expected to be continued for several next decades unless dynamic measures for industrial development to be induced into the present system of national economy.

Upon the official classification in Bangladesh, 2 types of manufacturing, large scale (including medium scale) and small scale & cottage industries are categorized. The definition is as follows.

- * Cottage Industry: Industrial work in family premises with less than 20 hired workers in case of without motive power, or less than 10 hired workers in case of using motive power.
- * Small Industry: Industrial unit with an investment of up to Tk. 150 crore in total for land, building, equipment, machinery and working capital in which the investment for machinery is up to Tk. 50 lakhs.
- * Medium Industry: Any industrial unit with an investment of more than Tk. 150 crore in total or an investment in machinery for more than Tk. 50 lakhs but the number of workers is less than 1,000 persons.
- * Large Industry: Same as Medium Industry but the number of workers is more than 1,000 persons.

From this definition as well as the present situation of medium and large scale industries in Bangladesh, these would be considered as small scale industries in other developed countries.

Besides, the share of medium and large scale industries in the industrial sector of Bangladesh, however, is 57.5% versus 42.5% for small and cottage industries, reflecting the important role

of small and cottage industries in economic activities of this country. Small and cottage industries are mainly carried out in the rural areas.

Industry Sector	Employment (%)	Value Added (%)
Large-scale Industries	17.8	57.5
Small & Cottage Industries	82.2	42.5
Total:	100.0	100.0

Note: Large-scale Industries including Medium-scale Industries
(Source: FFYP, Distribution of Manufacturing Employment and Value Added in 1981-82)

Meanwhile, regarding employment, the manufacturing sector employs approximately 3 million people or 11% of the whole national labour force at the present time, in which its distribution is 20% for medium and large scale industries, 25% for small scale industries and 55% for cottage industries. This implies the largest labour force is absorbed by cottage industries, succeeded by small scale industries; and then by medium and large scale industries.

Regarding agro-processing of major items (foods), based on a survey by Chr. Michelsen Institute in 1980, the situation of industrial units, employment, gross output and value added in medium & large scale industries and small & cottage industries is shown as follows:

Industry Sector	Industrial Unit (No)	Employment (1,000 persons)	Gross Output (Million Tk.)	Value Added (Million Tk.)
Large and Medium-scale Industries	34	22	2,11	525
Small-scale Industries	15,722	193	2,310	875

According to this survey, the average employment per industrial unit is 647 persons for medium and large scale industries and 13 persons for small scale industries.

Also from this survey, the value-added per employment per annum is 23,800 Tk. for medium and large scale industries and 4,500 Tk. for small scale industries.

The low value-added per employment for small scale industries such as rice-mill, oil-mill, flour-mill etc., would be based on the major employment of casual workers hired on temporary basis through the year.

Besides, for cottage industries such as cottage rice-husking (Dheni), this survey shows also an average employment of 2.6 persons per unit with a value-added of 5,800 Tk. per employment per annum.

In the actual socio-economic structure in the rural area where most of the whole population are living, this contribution of approximately 6,000 Tk. per year to the family-income has a significant meaning for their living.

With a high population growth by 2.5% per annum at national level, the rural population becomes a fundamental problem rooting the national issue at its basis of poverty up to now.

From those socio-economic conditions, Bangladesh has been reportedly logging in a chronic situation of food and nutrition deficiency with a steady increase in the number and proportion of malnourished people in the rural area. The situation becomes worse during off and flood seasons where foods are scarce, so as labour works for earning their living.

The FFYP, therefore, recognizes the important role of industrial development in the national economy, quoted as follows :

"The supporting role of industrial sector is absolutely essential even in the Agriculture sector led growth scenario in the medium run as envisaged in the Fourth Five Year Plan. The support of industrial sector in such a scenario is essential not only for supplying of inputs to agriculture and for processing of its products but also for absorbing surplus labour in the agricultural sector."

"With a view to realizing the employment generation and poverty alleviation objectives, the Fourth Plan shall provide high priority to the investment programmes in the small, cottage and rural industries. The public sector programme for these categories of industries will concentrate on promotional measures such as development of infrastructure facilities (e.g. industrial estates), training, extension and research, market promotion and availability of institutional credit and equity support. Development of sericulture, handloom and various other types of rural industries will receive special attention in the public sector programme for industrial development.

In order to benefit from the income effect of Agriculture led growth such industries would mostly be located in close proximity to centres of Agricultural growth. However, previous experience shows the pattern of demand emanating from rural income growth is different from

the pattern of demand emanating from urban income growth. As such, consumer goods industries producing both basic needs as well as consumer goods suited for rural market should be located in rural areas. Small industries should be dispersed over the country after careful evaluation of local condition. In order to facilitate such a pattern of industrialization, during the Fourth Plan attempt would be made to develop at the upazila level the mechanism for delivery of the services such as repair maintenance of industries, marketing and credit facilities. Such small and cottage industries will be development as part of the decentralized local level planning as envisaged during the Fourth Plan."

In the "Strategy for Rural Development Projects" formulated by Bangladesh Planning Commission (1984), it quoted "4.12 In the field of agriculture development of cattle and poultry, production of fish, production , processing, preservation and making of fruits, vegetables and spies have high potentials for rural employment and production".

From this background mentioned above, the participation of rural unemployed labour force in agro-processing, the main small and cottage industries using agro-based materials locally supplied, should be intensively elaborated for the development of industrial sector at its utmost basis in the rural areas for enhancing the value-added of these local agricultural products, diversifying the rural production-system and generating incomes for local inhabitants.

2. PRESENT SITUATION IN THE STUDY AREA

2.1 General

In the study area of 4 upazilas, large scale industry for agro-processing is not existing, except for a cold storage for potato of approximately 3,000-ton capacity in Debidwar upazila, but various small and cottage industries on the aspect of agro-processing are in operation.

Concerning locations, cottage industries are performed in rural households and small industries are found near upazila headquarters and along main feeders.

2.2 Cottage Industries

This category of agro-processing could be observed in most rural households in these 4 upazilas.

As a part of social-structures, rural households in Bangladesh are generally grouped in more than 3-4 units around a square ground.

This group of households which is called Bari in Bengali consists of relative families having their backyard homestead gardens growing vegetables, fruits, etc., and adjacent to their agricultural fields.

Agro-processing activities as cottage industries are performed on the ground of these households after each harvest, mainly paddy.

In rural Bangladesh, the conservative social system intervenes the participation of women in farm activities outside the homestead. Their farm activities, if would be done, are mostly restricted in post harvest operations within the homestead which include threshing beating, perboiling, drying, husking, winnowing, serving, storing, food preparation, preservation, etc.

From the situation of agricultural production in the study area as notified below, agro-processing activities through the year are presently centralized on the treatment of paddy as its main crop, especially during the post harvest time.

These treatments which include threshing, beating, perboiling, drying, husking, winnowing, serving, storing, processed preparations and preservation are always subjected to be done on the household ground.

The present agricultural production in the study area is as follows:

(Unit: Metric ton)

Upazila	Rice	Wheat	Potato	Mustard	Beans	Vegetables
Bancharampur	33,315	5,925	1,315	1,130	840	N.A.
Nabinagar	71,846	8,964	1,893	4,588	2,250	550
Kachua	44,135	9,644	12,164	760	990	N.A.
Debidwar	78,376	10,276	5,390	2,359	7,200	4,500
Total	227,672	34,804	20,762	8,837	11,280	5,050

(Source: Upazila Information, 1990)

After the harvest, farmers have the option whether to sell paddy unprocessed or processed and whether to sell all crops soon after the harvest or after storage for a higher price.

As per the following surveys, the valued added on paddy by processed and storage are notified from a study by BRAC in 1983 with following figures :

Price per Maund of paddy after threshing: Tk. 85.00
 Output of rice per Maund of paddy: 27 Seers (67.5%)
 Price per Seer of rice: Tk. 4.00
 Price of husk from 1 Maund of paddy: Tk. 2.50
 Price of total output: Tk. (4.00 x 27) + 2.50 = 110.50

(Notes: 1 Maund = 37.32417216 Kg
 1 Seer = 0.933104304 Kg
 1 Maund = 40 Seers)

According to this study the husking process to make paddy into rice gives a value-added of 30% or Tk. 25.50 per Maund, making a considerable profit for farmers.

From our recent survey in 4 upazilas, these value-added are as follows :

Price per Kg of paddy on season: Tk. 3.00 ~ 4.00

Price per Kg of paddy off season: Tk. 6.00 ~ 7.00

The value-added by storage per Kg is Tk. 3.00 or approximately 100%.

Price of rice (after husking) per Kg on season: Tk. 8.00

Price of per-boiled rice per Kg on season: Tk. 12.00

The value added by per-boiled processing is 50% to Tk. 4.00 per Kg of rice.

From these above results, processing activities for paddy such as storage, husking, per-boiled husking clearly make a high value added to paddy.

Regarding these processes, from our recent survey, cottage industries for agro-processing in the study area are summarized as follows :

Threshing: After the harvest, farmers include family members apply manual beating for threshing paddy. At rich households, locally made threshing machines with manual operation could be found also. Price of threshing machine per unit is 3,000~5,000 Tk.

From our observation, this threshing operation could not offer a proper result when paddy is not dry well due to rainy climate, making a considerable unthreshed portion on paddy.

The whole paddy production in the study area, however, is subjected to cottage threshing at now.

Husking: In rural areas, husking is still performed by Dhani foot-pounding apparatus for paddy husking. This process is generally done by women but with the establishment of nearby rice-mills this type of husking is decreasing day by day.

Per-Boiling: At households, this boiling process is done simply on an open metal container for an amount of approximately 10 - 15 kg, normally operated by female labour force before drying and husking.

Storing: Paddy or rice is stored in the household for consuming purpose and sometimes for selling during off-seasons.

For other crops such as wheat, potato and mustard, processing activities as cottage industries are not largely applied, except for home-consumption purpose.

For processing of homestead vegetables (chilli, sweet potato etc.) and fruits (banana, mango, jackfruit etc.) such as drying, making pressed cakes etc. for preservation or sales purpose, these activities are almost not performed in the study area. In case of marketing purpose, these homestead products will be distributed as fresh products to nearby markets.

Despite of a considerable value added obtained from these cottage activities all households in 4 upazilas are not applying these agro-processing techniques for improving their food and nutritional conditions as well as improving their income-generation, which requires only some manual works on the available ground. This is due to their unawareness of these basic techniques and a lack of finance as well as a supporting organization for production.

If these people are trained on these basis techniques, sufficiently financed and organized for production, cottage works such as drying of banana, jackfruit, mango, chilli, fish etc. making pickles of available vegetables, making pressed fruit cakes, dried fish etc. will be largely carried out for processing these products from their homestead gardens.

Regarding cooperative activities for cottage industries and handicrafts, from our survey of 200 samples in 4 upazilas, the figures are as follows :

Bancharampur	:	16	units
Nabinagar	:	0	"
Kachua	:	12	"
Debidwar	:	19	"

This implies a minor operation on cooperative activities for cottage industries in the study area.

2.3 Small Scale Industries

This category of industries could be observed near upazila headquarters and along main feeders.

According to data of Zila Statistics in 1983 the situation of agro-based rural industries is as follows:

Agro-based rural industries in the study area

Upzila	Rice Mill	Flour Mill	Oil Mill
1. Bancharampur			
Unit :	30	1	1
Fixed investment :	2,454,500		10,500
Family workers :	33	1	1
Hired workers :	51	0	2
2. Nabinagar			
Unit :	84	0	42
Fixed investment :	3,738,000		283,400
Family workers :	152		122
Hired workers :	45		14
3. Kachua			
Unit :	62	0	0
Fixed investment :	4,170,000		
Family workers :	83		
Hired workers :	0		
4. Debidwar			
Unit :	20	0	3
Fixed investment :	1,359,700		556,000
Family workers :	26		4
Hired workers :	22		11
Total (Unit)	196	1	46

(Source: Comilla Zila Statistics, 1983)

According to our latest survey, the situation of small scale industries in 4 upazilas is as follows:

Upazila	Rice Mill	Flour Mill	Bakery Oil Mill	Confectionery
1. Bancharampur				
Unit :	13	9	2	2
Family Workers/Unit :	1.5	1	1	2
Hired Workers/Unit :	2.5	3	5	5
2. Nabinagar				
Unit :	26	12	3	1
Family Workers/Unit :	1.5	1	1	2
Hired Workers/Unit :	4	2.5	4	6
3. Kachua				
Unit :	16	9	5	1
Family Workers/Unit :	1.5	1.5	1.5	1
Hired Workers/Unit :	3.5	2	3	8
4. Debidwar				
Unit :	19	13	6	3
Family Workers/Unit :	2.5	1	1	1
Hired Workers/Unit :	4	2.5	3	9

(Source: Our recent survey in 4 upzilas, 1990)

This shows some changes from data of statistics in 1983.

From these above figures, all small scale industries in the study area are private industrial units for creating jobs and incomes firstly for family members and hiring a limited number of workers from outside, 2-9 persons per unit.

Indeed these industrial units are for purpose of using simple technique treatments such as rice mill, flour mill, oil mill, supplying simple products with a limited investment in facilities up to 100,000 Tk. per unit.

Besides, industrial units such as flour mill and oil mill could not operate fully through all seasons in the year due to an inconsistent supply of raw materials, especial during off seasons. Flour-mills run normally 5-8 hours per day on-season. Oil-mills normally run 2-3 days per week during off-seasons. This is due to their lack of material-stocks as well as the high price of materials during off-season. The present treatment capacity of these small scale industries is notified in Table H.3.1.

Despite of the frequent electric suspension in the study area, average 1-2 times per day, these industries using electricity, however, have not largely effected due to their flexible adjustment for production schedule in a day.

Only for bakery and confectionery, these industries could run almost fully through the year, applying a relatively complicated treatment procedure with a number of workers from outside, average 7 persons per unit.

2.4 Medium and Large Scale Industries

There is only one industrial unit considered as large scale industry in the study area which is a cold storage for potato (Kondogar Cold Storage Ltd.) established about 10 years ago in upazila Debidwar with a capacity of approximately 3,000 tons. This is a private company, employs about 80 persons including a permanent staff of 7 persons and about 70 seasonal workers for loading and unloading.

Normally the period for cold-storage of potatoes is 2 months.

The electric condition in upazila Debidwar is relatively good, making the operation of this cold storage steady up to now. For potato-storage, electric suspension will not effect the designed temperature-range up to 3 days.

2.5 Training Situation

At the present time, vocational training for cottage and small scale industries is mainly performed by BSCIC (Ministry of Industry) in each upazila. This agency also provides financial supports for subjected entrepreneurs. Activities and problems of this agency are notified in 2.7 BSCIC Activities and Constraints.

UCCA under BRDB has conducted also a training program for mainly cooperative management and credit operation, with a very limited vocational training. In BRDB Headquarters in Dhaka the Training Section is mainly in charge of "Training Materials Production Unit". Main vocational training activities of BRDB are covered by the framework of each project and related Training Institutes.

These vocational training programs at upazila level, however, are mainly in weaving, tailoring, bamboo-cane products, pottery and, sometimes, mechanics, but not any for agro-processing.

Upazila officials and local inhabitants are willing to obtain some basic techniques for agro-processing.

2.6 Financial Situation

For BSCIC, after training, individual credit could be done through related banks with BSCIC recommendation. The credit could be up to 20,000 Tk. per individual entrepreneur upon the type and scale of business to be established/invested.

For BRDB, credits are normally for purchasing fertilizer, seed, DTW and should be performed through formal groups registered as cooperative(s) with loan-procedure proceeded by its group leader with his/her repayment-responsibility through UCCA's recommended bank(s), mainly Sonali Bank.

From this strict purpose and procedure, most individuals willing to obtain credit for doing some rural business could be largely restricted by the BRDB system, for being relied to BSCIC or on NGO promotion.

Recently, in RD-12, BRDB has firstly practiced loans to informal groups of poor people for their business promotion with encouraged results up to now.

Proprietors of many small industries in the study area expressed their main concern on financial problem due to the extremely difficult procedure for getting a loan from bank for using in business, and an inconsistent supply of materials due to an insufficient system of materials-distribution in rural areas.

2.7 BSCIC Activities and Constraints

BSCIC (Bangladesh Small and Cottage Industries Corporation), an autonomous organization under the Ministry of Industry and a successor of the former EPSIC (East Pakistan Small Industries Corporation established in 1957, is in charge of promotion and development of cottage, small and rural industries in this country.

BSCIC has its Headquarters Office and Design Center in Dhaka, 4 Regional Offices in Dhaka, Chittagong, Khulna and Rajshahi, 25 BSCIC Industrial Estates (as of 1990) and one BSCIC officer in each Upazila Parishad.

Names of BSCIC Industrial Estates and the number of their industrial units are as follows:

1.	Tongi	:	128	Industrial Units
2.	Konabari Gazipur	:	29	"
3.	Maskanda, Mymensingh	:	38	"
4.	Jamalpur	:	2	"
5.	Madaripur	:	3	"
6.	Rajbari	:	17	"
7.	Comilla	:	69	"
8.	Sholashahar, Chittagong	:	27	"
9.	Kalurghat, Chittagong	:	30	"
10.	Fouzdarhat, Chittagong	:	33	"
11.	Sylhet	:	53	"
12.	Feni	:	20	"
13.	Cox's Bazar	:	14	"
14.	Rajshahi	:	53	"
15.	Pabna	:	72	"
16.	Dinajpur	:	38	"
17.	Rangpur	:	15	"
18.	Saidpur (Nilphamari)	:	7	"
19.	Bogra	:	27	"
20.	Khulna	:	39	"
21.	Jessore	:	60	"
22.	Kushtia	:	22	"
23.	Swarupkathi	:	21	"
24.	Barisal	:	31	"
25.	Patuakhali	:	2	"

(Note: As of 1990)

For the promotion and development of small and cottage industries 8 following objectives are entrusted to BSCIC:

- 1) To ensure the accelerated growth
- 2) To increase the productivity
- 3) To use optimally the financial resources
- 4) To provide infrastructural facilities
- 5) To create and develop marketing facilities
- 6) To innovate product process and technology
- 7) To ensure the development of skills
- 8) To help the socio-economic development

For the investment-schedule in the National Plan, BSCIC has classified products in 11 groups, namely (1) Food and Allied Products (2) Textile Industries (3) Jute Products (4) Forest Products and Allied Industries (5) Paper, Board, Printing and Publishing (6) Leather, Rubber Products (7) Chemical, Pharmaceutical and Allied Industries (8) Glass, Ceramics and Other Non-Metallic Mineral Products (9) Engineering Industries (10) Miscellaneous and (11) Industries not Elsewhere Classified.

This shows an extremely large number of items covered by the promotion framework of BSCIC.

Particularly, for Group 1 (Food and Allied Products) related to Agro-Processing, 21 products are enlisted as follows:

- 1) Gur Making (home made sour milk)
- 2) Bee-Keeping
- 3) Fruit Processing (jam, jelly, squash, pickles and chutney)
- 4) Dried Fish
- 5) Spices Grinding (chilli, turmeric coriander and ginger)
- 6) Bidi Making (hand made cigarettes)
- 7) Zarda and Other Tobacco Products
- 8) Ghani Oil (home make oil crushing)
- 9) Potato Chips and Coconut Chips
- 10) Confectionery
- 11) Sweetmeat (muslim cake)
- 12) Salt Production
- 13) Dhenki (rice and chira) (food pounding apparatus)
- 14) Salted Groundnuts
- 15) Poultry Farm
- 16) Dairy Farm
- 17) Dal Production (smashed pulses)
- 18) Catechu Production
- 19) Fisheries
- 20) Misri Production (sugarcane products)
- 21) Vermicelli Industries

For the entrusted operation, BSCIC has implemented 9 development projects in TFYP as follows:

			(Tk. in lakh)
Sl. No.	Name of Projects	—	Total Cost (During TFYP)
1.	Industrial Estate Programme (9) July 1980 - June 1990	—	1,053.61
2.	Training Institute for SCI January 1985 - June 1988	—	380.00
3.	Reclaimed Rubbler Pilot Project July 1942 - June 1986	—	44.41
4.	National, Regional and District Level Institutional Network for Development of SCI July 1980 - June 1986	—	937.00
5.	Service Programme for Development SCI 1945 - 1990	—	6,083.00
6.	Development Programme for Specific Target Group and Areas 1985 - 1990	—	903.00
7.	Programme for the promotion and Development of Specific Products, 1985 - 1990	—	375.00
8.	Investment Programme for Development of SCI, 1985 - 1990	—	1,657.00
9.	Infrastructure Development of SCI, 1945 - 1990	—	560.00
			11,993.02
			Say Tk.12,000.00

(Source: BSCIC Annual Report 1988)

Especially, in the Development Programme for Specific Target Group and Areas (S I.4) the Programme of Women Entrepreneurship Development and the Programme of Entrepreneurship Development for Skilled Technician Engineers, Wage Earners and Dependants of Wage Earners have been induced.

Also a vocational training programme conducted at upazila level named RDI (Rural Development Industries) has been carried out intensively up to now for various aspects, especially on electrical and mechanical works.

These activities are mainly aimed at business promotion which inquire participants should have some academic level and some finance source for paying training materials and kits because BSCIC has no budget to finance all items included.

Since the coverage of BSCIC is too large, the aspect of agro-processing has not been promoted significantly.

Besides, BSCIC could not efficiently promote jobs for trainees after their graduation.

Regarding inquiries for assistances from BSCIC, a survey done by Zahid HUSSAIN et al. in 1984 shows the following inquiries from people engaged in small and cottage industries:

Input Assistances :	Working Capital	90%
	Raw Materials	40%
	Machinery and Spares	30%
	Training	20%
Output Assistances :	Marketing	55%
	Design Improvement	25%
	Advertisement	20%

On inquiries for input assistances, it may be pointed out that working capital shortage was notified as the highest factor constraining capacity utilization by over 90% of the units. Supply of raw materials was sought by the small and cottage industrial units as the second constraint.

For output assistances, marketing was sought as the highest factor by the majority of the surveyed units.

It may therefore be concluded that the problems faced by the small and cottage industries and the kind of help wanted from BSCIC are quite consistent. Input and output related supports wanted by these industries are to be provided for their operation and desired expansion, similar to assistances provided to the agricultural sector for increasing production of major commodities.

Despite of considerable efforts in the recent period for making the organization to be more functional, but due to a limited resource for budgets and a limited number of competent staff, BSCIC cannot solve these basic problems and constraints in a short time.

These basic problems are a combination of institutional development, supply of materials supply of credits, training, marketing, technical innovation and socio-economic development

In the whole scope, the major constraints for development of small and cottage industries can be pointed out as being weak management and organization, high initial investments and a limited access to credit, interior marketing channels, inconsistent supplies of raw materials and the lack of skilled workers and training programs.

3. AGRO-PROCESSING DEVELOPMENT PLAN

3.1 Basic Concept

The basic concept for agro-processing development in MRDPP II is firstly to enhance the value added of local agricultural products, to create employment in the rural Bangladesh where the agricultural sector will be limited in the future labour absorption, to promote income generation for people engaged in these activities and, at the same time, to practice a new rural-economy with rural industrialization by off-farm activities.

From this basic concept, the agro-processing development plan should be prepared on the basis of the following points as well as the present situation of small and cottage industries in the study area:

- (1) The present situation and potentials of agricultural production in the study area,
- (2) Employment opportunities of rural labours and the level of appropriate technology,
- (3) Competition between small/medium industries introduced and existing cottage industries,
- (4) The possible support services, technically and financially, and
- (5) The proper marketing of the products.

Regarding (1) the present agricultural situation in the study area, rice is in top production in all 4 upazilas but the production for other crops (wheat, potato, jute, mustard, beans, vegetables, etc.) is different in 4 upazilas. Legumes and vegetables are considered as crops of high potentials.

The problem in (2) is that more than 30% of rural labour force in Bangladesh are engaging in household employment. Besides the skilled labour force for industries is very limited. Techniques to be introduced should be based on possible training and adaptation by local people.

In the problem of (3), industries subjected to the development plan should be oriented to small/medium scale as well as application as cottage industries.

Concerning (4), the selection of industries for the development plan should be based on the possible realization of a supporting system.

And for (5), marketing of these products, a proper distribution system should be formed with a priority aiming at local and domestic markets.

This means agro-processing industries subjected to the development plan will be provided with raw materials produced by each Upazila for making marketable products with available techniques. Farmers in the study area will be trained with these techniques for working in small/medium industries or as entrepreneurs of corresponding cottage industries.

The supporting system in technical and financial aspects should be formed properly. A promotion program for existing small and cottage industries is subjected to the development.

The agro-processing development plan will be aimed for both cottage industries and small scale industries.

3.2 Training

Firstly, the training of the people involved in the development plan of agro-processing should be carried out as follows:

At central (national) level, this training should be imparted firstly to the program responsables in BRDB Headquarters in Dhaka by concerned Experts on every aspect of this program. After this training, training materials will be compiled by the Training Materials Unit for the training program at upazila level.

At upazila, training will be imparted to concerned persons in each upazila by the arrangement of BRDB upazila office. Instructors are program responsables.

At the present time, 2 kinds of training, small industries and cottage industries, are envisaged in the development plan of MRDPP II.

(1) Training for Small Industries

For each small industry to be established in the agro-processing development plan of MRDPP II, 2 kinds of training, management and O.M., will be done for concerned people in each upazila.

The concerned people at upazila level envisaged for these trainings are concerned BRDB, UCCA, BSS and operational staffs.

The training of management will be done by a Management-Expert. For the training of management, these following persons are recommended to be participated.

- i) Project-Manager
- ii) BRDB Staff
- iii) UCCA Staff

The training of O.M. will be done by machinery-suppliers. For the training of O.M., these following persons are recommended to be participated.

- i) UCCA Staff
- ii) BSS Staff
- iii) Operational Staff

(2) *Training for Cottage Industries*

The Training Section of BARD would assist BRDB officers for gathering positive trainees from poor people for this training program.

Each course will consist of 20-50 trainees. Honorarium for trainees should be considered accordingly.

Training programs would be varied with local material potentials of each Upazila but programs components should be considered on the level and capacity of rural women such as following items:

- a. Processing of Vegetable Products, such as drying and pickle-processing.
- b. Processing of Fruit Products, such as drying, making cakes and jams.
- c. Processing of Cereal Products, such as rice cake, chapatee, cheera, muri, moa, khai etc.
- d. Processing of Fish Products, such as dried fish, processed fish (hilsha) etc.
- e. Processing of Milk Products, such as ghee, curd, chana, ponir etc.

A budget - allocation for paying trainers and trainees in this program, therefore, should be considered in the project - frame.

During the vocational training period, the group formation will be done and group leader(s) will be selected. The strengthening of groups (at least 15 members per group) and sub-groups (5 members per sub-group) should be activated for their future group - activities.

3.3 Financial Preparation

(1) Small-scale Industries

For small scale industries, as a large amount of investments is required for land, buildings, equipments and running capital, the financing program should be elaborated at first.

In order to set up the financial source for industries subjected to the MRDPP II, a Central Board including the Finance Source should be firstly established for evaluating the project(s) including the financing program.

Apart from the production aspect, the marketing aspect should be carefully evaluated.

(2) Cottage Industries

For cottage industries, the group(s) will register to UCCA as a professional group for obtaining a short-term credit (within one year) i.e. 5000 Tk. per member through the proceeding to be done by its group-leader.

For proceeding the loan-procedure, the group leader should assist group-members for preparing the production-plan for assuring the repayment could be done in due time with the responsibility of each group - leader.

With this loan, the group will procure necessary equipments and raw materials and cooperate together for the production plan of each member to be implemented properly.

3.4 Inputs Preparation

(1) Small Scale Industries.

For small scale industries, inputs will be as follows:

- i) Making the plant-building with necessary utilities
- ii) Installation of equipments
- iii) Preparation of materials for running equipments and raw materials for production.

2) Cottage Industries

For cottage industries, inputs will be equipments and additional raw materials. Most of raw materials are from their homestead gardens. For commercial purposes, raw materials would be supplied constantly from local markets/dealers.

3.5 Production

(1) Small Scale Industries

For production of small scale industries, agro-processing plants(s) would be established at each upazila for producing some products of high marketability.

Upon the potentials of agricultural production in 4 upazilas and based on technical possibilities in local conditions, expecting agro-processing industries are follows:

1. Per-boiled Rice Mill
2. Flour Mill
3. Oil Crushing Mill

For agro-processing plants with higher techniques such as potato-products and vegetables & fruit products, despite of a stronger impact on the rural industrialization-programme these industries are subjected to the future plan due to needs of proper infrastructures and high investments. (Please refer to the Attachment H.A.5 Future Processing Development Plan and Figure H.3.1.)

(2) Cottage Industries

The production of each group will be based on available materials (vegetables, fruits, grains etc.) from the local supply-system with a marketing capability, firstly dried fruits, jams and pickles.

3.6 Marketing

(1) Small Scale Industries.

For the marketing of products made by factory(ies) of each upazila, the products will be put on sale by UCCA from the marketing plan made by its corresponding division.

From the marketing plan, the production plan of each factory will be made and endorsed accordingly.

In case of necessity the Management Committee should conclude contract(s) with related dealers before the production of product for assuring the business program.

The marketing program of products from small scale industries in details is notified the corresponding Annex.

(2) Cottage Industries

For marketing of products from home-based group production, the group can sell its products at local markets (bazars, growth centers) or to Karu Palli of BRDB.

Now, Karu Palli has one shop at the ground-floor of BRDB Building in Dhaka for selling BRDB related products, but it will establish 6 more shops, 3 units in Dhaka and 3 units in the outside (Chittagong, Khulna and Sylhet) as well as a Training Center in Gazipur.

Karu Palli has a purchase budget of Tk. 600,000 per annum at the present time for buying BRDB related products, but it will increase this annual budget up to Tk. 800,000.

Besides, for trial products, Karu Palli will give BRDB related products for sale-display and will pay to supplie(s) after sale.

For sale purposes, product should be anti-bacteria preservation and checked by the group leader, before marketing with the notification of an expired date for consumption.

3.7 Detailed Development Plan for Agro-Processing

3.7.1 Programme for Small Scale Industries

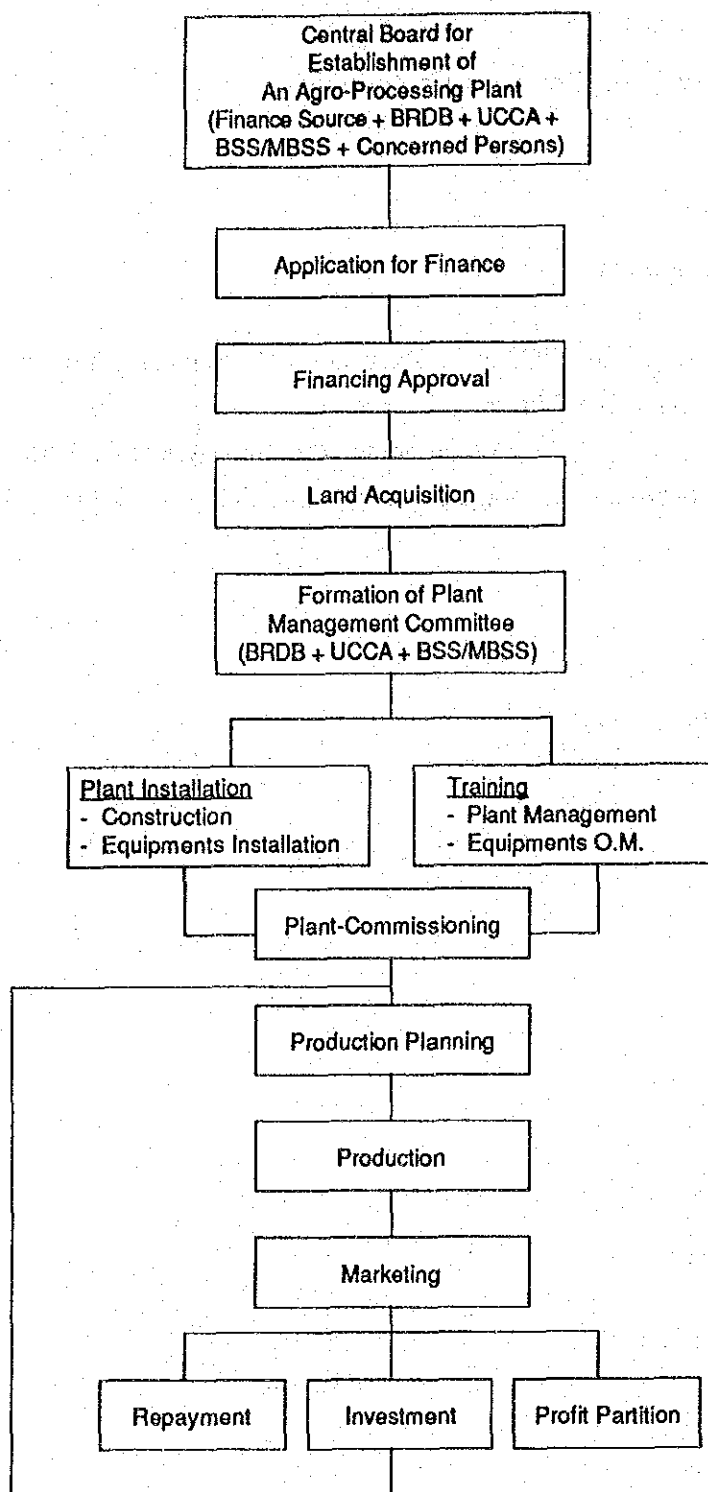
(1) Objectives

The programme has following objectives

- 1) Enhancing the value added of local agricultural products and therefore, increasing the R.G.P (Regional Gross Production) and G.D.P. at national level.
- 2) Promoting the industrialization programme for improving this sector in the rural area.
- 3) Absorbing an amount of rural labour force by training for skilled workers.

(2) Operation-Flow

If to be implemented, the operation-flow would be formulated as follows :



(3) Roles and Responsibilities Demarcation

BRDB

BRDB will bear all responsibilities of the programme toward the finance source

- Obtaining finance for the programme
- Controlling the programme implementation
- Advising and assisting the Plant Management Committee
- Reporting works to the Finance Source
- Repayment if so agreed

BRDB will participate in the Central Board and the Management Committee of the factory for any final decision

UCCA

For joint entrepreneurship of the subjected factory. UCCA should provide a part of working capital for this installation. UCCA will have an equivalent number of members to BSS/MBSS in the Plant Management Committee. Also UCCA members can work for appropriate jobs in the factory after training

BSS/MBSS

BSS/MBSS should be organized firmly for jointing the joint-entrepreneurship of the factory, with an equivalent number of members in the Plant Management Committee.

These members can work for appropriate works in the factory after training.

(4) Development Target

Following targets are envisaged for this programme.

1) The rural industrialization is subjected to be made in 2 phases as follows:

Phase 1 : Development of basic industries possessing simple techniques for processing and O.M.

Phase 2 : Development of potential industries possessing higher techniques for processing and O.M.

2) Following basic industries are envisaged for Phase 1.

- * Perboiled Rice Mill
- * Flour Mill
- * Oil Crushing Mill

3) Following industries of higher techniques are envisaged for Phase 2.

- * Processing Plant for Potato Products
- * Processing Plant for Vegetables and Fruit Products

In the framework of MRDPP II small scale industries of Phase 1 are subjected to be established.

The installation-schedule is planned as follows.

Rice Mill Installation Schedule

Year	Kachua	Bancharampur	Nabinagar	Debidwar	Total
Annual Rice Mill Installation (No.)					
Existing	16	13	26	19	74
1993	1	1	2	3	7
1994	1	1	2	3	7
1995	1	1	2	2	6
1996	1	1	2	2	6
1997	1	1	2	2	6
1998	1	1	2	1	5
1999	1		1	1	3
2000	1		1	1	3
2001	1	1	1	1	4
2002			1	1	2
Total	9	7	16	17	49

Flour Mill Installation Schedule

Year	Kachua	Bancharampur	Nabinagar	Debidwar	Total
Annual Rice Mill Installation (No.)					
Existing	9	9	12	13	43
1993	1	2	1	1	5
1994		1	1		2
1995		1			1
1996	1	1	1		4
1997	1	1	1	1	4
1998	1	1	1	1	4
1999	1	1	1	1	4
2000		1	1	1	2
2001	1	1	1		4
2002		1	1	1	1
Total	6	11	8	6	31

Oil Mill Installation Schedule

Year	Kachua	Bancharampur	Nabinagar	Debidwar	Total
Annual Rice Mill Installation (No.)					
Existing	5	2	3	6	16
1993	1	1	3	1	6
1994		1	2	1	4
1995		1	2	1	4
1996		1	2	1	4
1997		1	1	1	3
1998		1	1		2
1999			1		1
2000			1		1
2001		1	2		3
2002			2		2
Total	1	7	17	5	30

This installation schedule is aimed at processing approximately 50% of the quantity of subjected agricultural products, based on the present treatment-capacity and the increased portion for each product under the projection of MRDPP II.

3.7.2 Programme for Cottage Industries

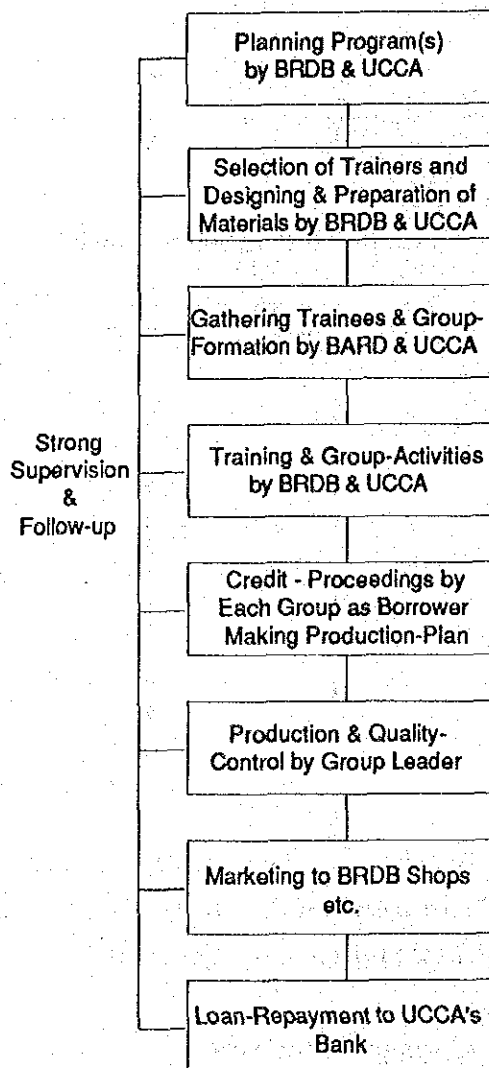
(1) Objectives

- 1) To mobilize women labour force for enhancing the value-added of agricultural products from their homestead gardens and from local production

- 2) To improve the nutritional and food conditions in the rural areas
- 3) To generate family-incomes and, at the same time, to make proper status for women in rural Bangladesh

(2) Implementation - Procedure

The following flow-chart shows the implementation procedure :



At upazila, a training course would take about 2 months mainly conducted by a responsible trainer who had been trained at central level (BRDG Headquarters).

There would be 3 training courses per year for each upazila. The average number of trainees per 1 course would be 30 (or 2 groups of 15 members).

(3) Priority in Production-Plan

1) Products

Dried and related products for local fruits and vegetables (banana, mango, jackfruit, pine-apple, etc.).

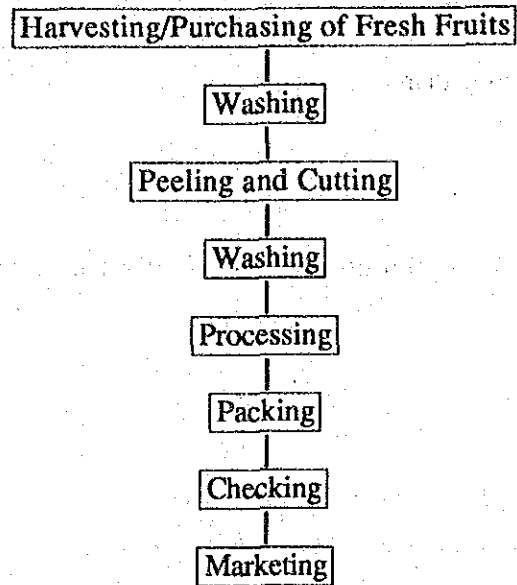
2) Equipments

- (i) Rollers (Belun) and Plates (Piri) for Pressing
- (ii) Plastic Gloves for Manual Processing Application
- (iii) Bamboo Trays (Chalun) for Drying
- (iv) Transparent Plastic Sheets as Covers for preventing dust and insects
- (v) Plastic Baskets for Washing Materials and Containers
- (vi) Knives for Cutting
- (vii) Plastic Bags/Bottles as Packing Material
- (viii) Large Containers for Materials Storage and Products Delivery

3) Materials

- (i) Fresh Fruits and Vegetables
- (ii) Sugar, Sweetener, Ingredients etc.
- (iii) Detergent for Washing

(4) Process-Flow



(5) Group-Production Plan

- 1) At least 5 members making a production group (sub-group). There would be 3 sub-groups per group.
- 2) Proceeding for getting a short-term loan (within 1 year) of total 25,000 Tk. (5,000 Tk. x 5 members)
- 3) Purchasing of Equipments
- 4) Purchasing of Materials
- 5) Starting Production
- 6) Checking by Group-Leader etc.
- 7) Marketing

Selling amount per month would be at average 8,000 Tk. for 1 sub-group, or approximately 1,500 Tk. per member.

(6) Programme of Cottage-Industries: Costs and Benefits

1) Costs :

i) Training Cost

The approximate training cost for this program per upazila would be as follows :

i) Trainer - Salaries :	5000 Tk. x 2 months x 3 courses	= 30,000 Tk.
ii) Trainer - Accommodation :	5000 Tk. x 2 months x 3 courses	= 30,000 Tk.
iii) Guest/Hired Speakers :	150 - 200 Tk./session about 30 sessions	= 6,000 Tk.
iv) Training - Materials :	10,000 Tk. x 3 courses	= 30,000 Tk.
v) Trainees - Allowances :	50 Tk. x 30 persons x 20 days x 2 months x 3 courses	= 180,000 Tk.
vi) Others :	5,000 Tk. x 3 courses	= 15,000 Tk.
	Total	= 291,000 Tk.

This training cost budget for 4 upazilas including trainings and compiled training materials at central as well as upazila levels, therefore, would be approximately 1,500,000 Tk. per annum.

ii) Credit-Portion

Besides, a credit scheme should be considered i.e. 5,000 Tk. per group-member for their purchase of equipments and materials for implementing their production plan.

An annual portion of approximately 500,000 Tk. per upazila or 2,000,000 Tk. for 4 upazilas would be considered as the credit volume to these production-groups. This fund would work as a revolving fund.

iii) Other Initial Costs

For other initial costs such as cars, motorbikes, miscellaneous items, a portion of capital for purchasing these subjected items for using in the programme should be considered accordingly.

2) Benefits

Apart from benefits of job-creation from the implementation of this programme other benefits would be considered as follows:

- i) Vocational training (as indicated above) for poor people, especially women, for their homestead employment-generation and nutrition-improvement.
- ii) As approximately 100 poor people will be trained per upazila per annum for their income generation, the problem of poverty could be solved gradually.
- iii) After training and loan providing, a trained group member would make an average income up to 50 Tk. per day or approximately up to 1,500 Tk. per month and this would improve his/her living as well as their social living status.

(7) Evaluation

This programme is evaluated to be promoted by NGO or BSCIC rather than a project of BRDB initiative.

4. PRIORITY PROJECTS FOR UCCA COMPLEX

4.1 Selection Criteria

As notified in "Selection Criteria for Priority Projects", concerning Agro-Industry Sector, there are 3 subjected programmes, namely (1) Post-Harvest Processing Plants Expansion programme (2) Cold storage Installation Programme and (3) Homestead Food Processing Extension Programme, in which the programme for Post Harvest Processing Plants Expansion is selected as the programme for priority projects.

This is based on following criteria:

- i. Programmes suitable for UCCA's economic activities
- ii. Programmes for income generation of cooperative members
- iii. Programmes for generation of employment opportunities
- iv. Programmes to contribute to large mass of beneficiaries directly and indirectly
- v. Programmes for local government with suitable fund requirement
- vi. Programmes with high expectation of supplemental and multiplier effects
- vii. Programmes not covered by the other existing programmes to avoid technical conflicts

For this expansion-programme of post-harvest processing plants, subjected plants to be selected will be further based on following criteria.

1. Availability of raw materials locally produced and potentially supplied to the plant(s).
2. Availability of the local market for these processed products with reasonable prices for local consumers.
3. Financial and technical aspects for the establishment of these plants to be proper for establishment and operation in present local conditions.

From the present situation of agro-processing in the study-area and the agricultural production projection in the MRDP II, agro-processing treatments for paddy, wheat and mustard seed, therefore, are considered as top-priorities.

For agro-processing treatments of potato, vegetables and fruits which inquire higher financial and technical aspects, these processing plants will be subjected to the future development plan or to be totally entrusted to the private sector..

4.2 Concept of UCCA Complex

The concept of UCCA complex is to encourage the two-tier cooperative system under the initiative of UCCA for combining the agricultural production with agro-processing and marketing.

This, therefore, is oriented to these following joint-activities organized by the UCCA for functioning the two-tier system.

- 1) Purchase & Storage of subjected agricultural products
- 2) Agro-Processing
- 3) Marketing

These activities will be gathered in a proper place in each upazila, i.e. the Growth Center, for conveniently proceeding their objectives.

The area of Growth Center will be made into a mini industrial estate with the existing Growth Center and newly established godowns and agro-processing plants.

Regarding the aspect of utilities and accessibility for these facilities, the location of Growth Center would be the proper place at the moment.

For gathering various industrial units in one place, some technical points especially on the environmental aspect, such as the prevention of industrial dust, waste etc. come from nearby plants, should be established accordingly.

Besides, this concept of UCCA Complex is based on the area of Upazila Growth Center, which would limit the expansion of such industrial units in the future plan, unless more areas for future UCCA complexes are subjected to be established.

Moreover, with the newly promoted UBCCA organization, the management-formation of UCCA Complex would be changed in the future upon the UBCCA official function in the rural development system.

4.3 Agro Processing Components in UCCA Complex

Based on these concept mentioned above, the present situation of agro-processing in the study area and the agricultural production projection in the MRDPP II, 3 agro-processing components, namely (1) Perboiled Rice Mill (2) Flour Mill and (3) Mustard Oil Seed Crushing Mill are subjected to be established in UCCA Complex together with corresponding Go-Down.

As priority projects for agro processing in UCCA Complex, one plant of each above component is subjected to be established as follows.

Perboiled Rice Mill:	1 unit	(Capacity: 2 t/hr)
Flour Mill:	1 "	(Capacity: 0.4 t/hr)
Oil Crushing Mill:	2 "	(Capacity: 0.1 t/hr)

For technical aspects of these installations, following items are considered.

(1) Land: Land Area of Growth Center

Perboiled Rice Mill:	2,000 m ²	(50 x 40 m)
Flour Mill:	500 m ²	(25 x 20 m)
Oil Mill:	500 m ²	(25 x 20 m)

(2) Building: One-storey RC Building with Brick Walls

Perboiled Rice Mill:	500 m ²
Flour Mill:	250 m ²
Oil Mill:	200 m ²

(3) Equipments: Local Equipments

1) Perboiled Rice Mill:

* Boiling Equipment

(1 Furnace + 3 Piwas + 1 Pump + Piping etc.)

* Husking Equipment

(2 Hollars + 2 Frames + 2 Motors)

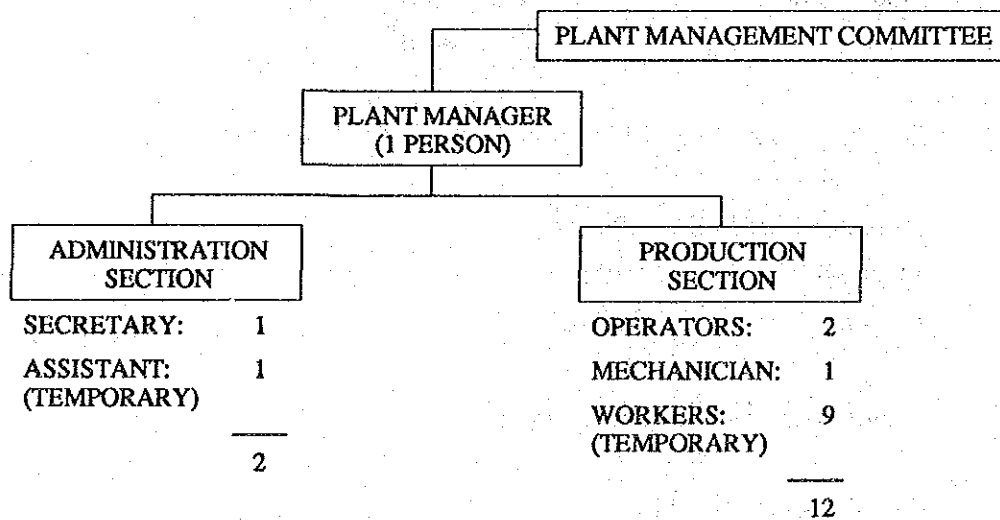
* Others (Electric, Furniture, Tools etc.)

- 2) Flour Mill:
 * Motor
 (2 units)
 * Milling Machinery
 (1 set)
 * Others
 (Electric, Furniture, Tools etc.)

- 3) Oil Mill:
 * Crushing Equipment
 (3 pairs)
 * Expeller
 (2 sets)
 * Motor, Shaft etc
 (2 sets)

4.4 Organization

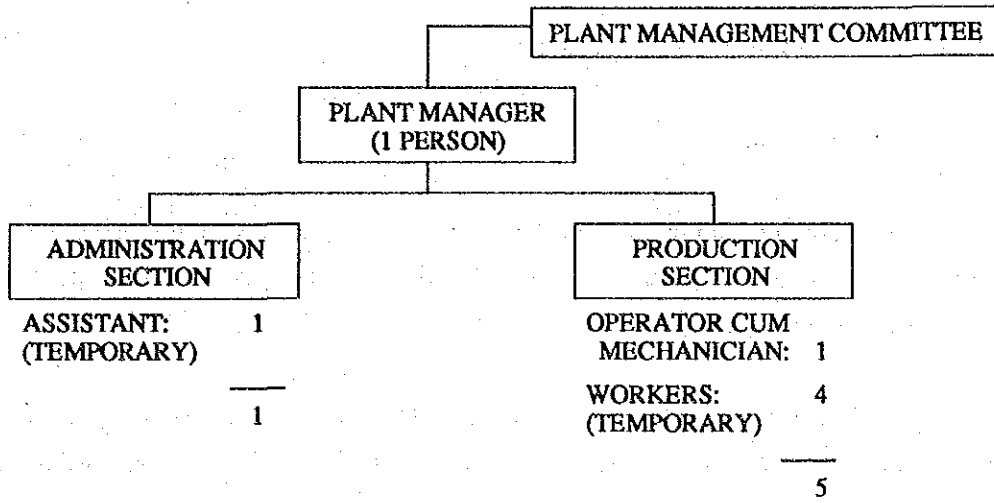
(1) PERBOILED RICE MILL



TOTAL STAFF:

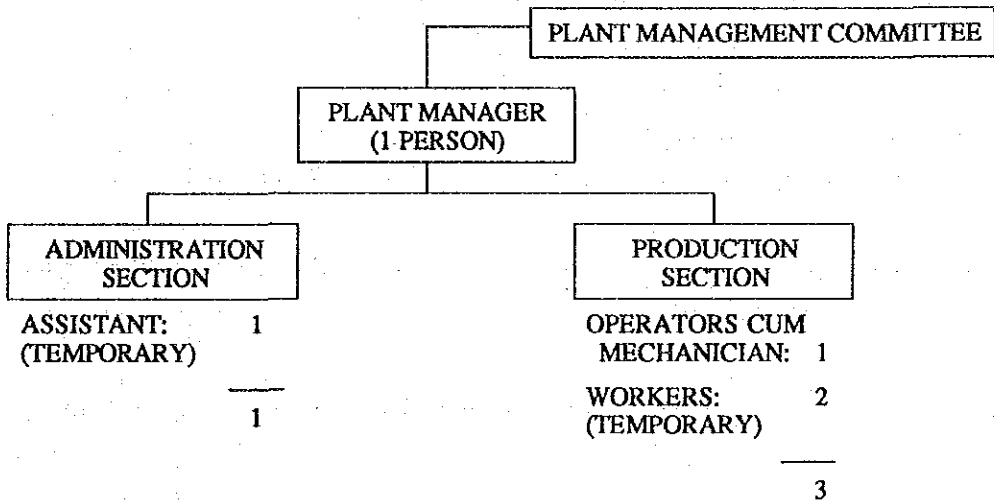
PERMANENT STAFF: 5 PERSONS
 TEMPORARY STAFF: 10 PERSONS

(2) FLOUR MILL



TOTAL STAFF:
 PERMANENT STAFF: 2 PERSONS
 TEMPORARY STAFF: 5 PERSONS

(3) OIL MILL



TOTAL STAFF:
 PERMANENT STAFF: 2 PERSONS
 TEMPORARY STAFF: 5 PERSONS

4.5 Management and Operation

4.5.1 Management and Operation

(1) Management

The management of each plant (a component in UCCA Complex) will be executed by the plant-manager with the assistance of a secretary. For the rice-mill, due to its large production-scale, 2 secretaries will be necessary.

The designed plant manager(s) will be trained on the management-system by a Management Expert as well as O.M. training by Machinery-Dealer prior to the plant-operation.

Items subjected to the plant-management are as follows

- i. Accounting
- ii. Control of Inputs and Outputs
- iii. Labour and Operation Conditions
- iv. Prevention and Protection from Accidents, Damages and Losses
- v. Machinery System
- vi. Meeting with Workers
- vii. Production-Planning
- viii. Reporting to the Management Committee of UCCA Complex

Regarding the management-system of UCCA Complex, this will be notified in the Annex of Marketing (UCCA Complex).

A Management-Expert, however, is recommended to be posted in this Management Committee for control and advisory works.

(2) Operation

For general operation of each plant, the following procedure will be applied.

- i. Confirmation on the quantity and quality of raw material(s) in godown(s)
- ii. Confirmation on the stock of production and delivery-schedule
- iii. Confirmation on the production-plan

- iv. Checking conditions of machinery, utilities and fuels
- v. Conditions of working staff
- vi. Starting operation, Completing operation, Cleaning up and Washing machinery

For specific operation of each plant, the processing procedure of a perboiled rice mill consists of 3 processes, (boiling, drying and husking,) conditions of weather, boiler and rice-miller, therefore, should be considered prior to starting operation.

For flour mill, due to a continuous operation to be done after starting the machine, the condition of machinery should be checked intensively before starting operation.

For oil crushing mill, the sanitary condition of machinery and containers should be strictly checked before starting operation.

4.5.2 Equipment and O.M. Costs

(1) Equipment-Cost:

1) Perboiled Rice Mill (1 unit per Upazila)

- | | | | |
|----|--|------------|--|
| 1) | Boiling Equipment | 100,000 TK | |
| | (1 Furnace + 3 Pimas + 1 Pump + Piping etc.) | | |
| 2) | Husking Equipment | 60,000 TK | |
| | (2 Hollars + 2 Frames + 2 Motors) | | |
| 3) | Others | 40,000 TK | |
| | (Electric, Furniture, Tools etc.) | | |

Total:		200,000 TK	
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For 4 Upajilas: 200,000 TK x 4 = 800,000 TK

2) Flour-Mill (1 Unit per Upazila)

1) Motor (2 units)	80,000 TK
2) Milling Equipment (1 set)	50,000 TK
3) Others (Electric, Tools etc.)	20,000 TK
<hr/>	
Total:	150,000 TK

For 4 upazilas: 150,000 TK x 4 = 600,000 TK

3) Oil Mill (1 Unit per Upazila)

1) Crushing Equipment (3 pairs)	80,000 TK
2) Expeller (2 sets)	40,000 TK
3) Motor & Shaft etc. (2 sets)	50,000 TK
<hr/>	
Total:	200,000 TK

For 4 upazilas: 200,000 TK x 4 = 800,000 TK

Total Equipment Cost for 4 Upazilas: 800,000 + 600,000 + 800,000 = 2,200,000 TK

- Notes:
- i. Local price
 - ii. Price excluding land Building, Installation and Commissioning Fees
 - iii. Price as of June 1991 without Escalation and Contingency

(2) O.M. Cost

1) Perboiled Rice-Mill (1 unit)

i) Operation-Cost

Permanent Working Staff:	3,000 TK/month x 5 persons x 12 months =	180,000 TK
Labour:	1,500 TK/month x 10 persons x 12 months =	180,000 TK
Electric, Fuel Water:	6,000 TK/month x 12 months =	72,000 TK
Others:	4,000 TK/month x 12 months =	48,000 TK
		<hr/>
		480,000 TK

ii) Maintenance cost

Lump-sum as 10% of initial cost	20,000 TK
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	500,000TK/year

For 4 upazilas: 500,000 TK x 4 = 2,000,000 TK

2) Flour mill (1 unit)

i) Operation-Cost

Permanent Working staff:	3,000 TK/month x 2 persons x 12 months =	72,000 TK
Labour:	1,500 TK/month x 5 persons x 12 months =	90,000 TK
Electric, Fuel Water:	6,000 TK/month x 12 months =	72,000 TK
Others:	2,000 TK/month x 12 months =	24,000 TK
		<hr/>
		258,000 TK

ii) Maintenance Cost

Lump sum as 10% of initial cost	15,000 TK
	<hr/>

Total: 273,000TK/year

For 4 Upazilas: 273,000 TK x 4 = 1,092,000 TK

3) Oil Mill (1 unit)

i) Operation-Cost

Permanent Working staff:	3,000 TK/month x 2 persons x 12 months =	72,000 TK
Labour:	1,500 TK/month x 3 persons x 12 months =	54,000 TK
Electric, Fuel Water:	6,000 TK/month x 12 months =	72,000 TK
Others:	2,000 TK/month x 12 months =	24,000 TK
		<hr/>
		222,000 TK

ii) Maintenance Cost

Lump sum as 10% of initial cost	<hr/>	20,000 TK
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Total: 242,000TK/year

For 4 Upazilas: 242,000 TK x 4 = 9,680,000 TK

Total of O.M. Cost for 4 Upazilas:

2,000,000 TK + 1,092,000 TK + 968,000 TK = 4,060,000 TK/year

- Notes:
- i. Local price
 - ii. O.M. cost for 1 year
 - iii. Price as of June 1991 without Escalation and Contingency

5. RECOMMENDATIONS ON SUPPORTING PROGRAMMES

Apart from the programmes specified above, following recommendations should be taken into consideration for being carried out together for supporting these programmes.

(1) INFORMATION ON ADVANCED POST-HARVEST TREATMENTS OF OTHER COUNTRIES

This implementation will be done through TV/Video/Movie/Picture-Materials

This is aimed at modernizing the rural life and preventing food grain losses, especially for rice-production which is considered as a major factor of low agricultural productivity.

Advanced post-harvest treatments would effectively prevent the high loss of agricultural yields in developing countries.

Following figures show losses resulted from the present rice production in Bangladesh.

	Percent Loss
<u>Pre-storage Losses:</u>	
Cutting	1.45
Field stacking	0.50
Transportation	0.53
Threshing	1.79

Total to threshing	3.3

<u>Storage Losses:</u>	
Raw paddy	3.3
Perboiled paddy	2.4
Perboiled rice	2.5
Average (Weighted)	2.6

Total food losses	10.9

Source: Greeley (1980)

(2) INTRODUCTION OF SOPHISTICATED FARMING MACHINERY AND KITCHEN APPLIANCES INTO BANGLADESH

Small machineries for better farming practices such as small power tillers, combiners, planting machines, etc. as well as kitchen appliances such as mixer, oven, pressure-pot etc. should be firstly introduced into special regions i.e. Comilla for increasing the agricultural production as well as improving farming works and daily life in these subjected areas for making them as leading areas in farming modernization for the whole country.

Experiences in other countries showed that the introduction of modern farming practices and housewife-works have improved significantly living aspects in the rural area.

(3) INTRODUCTION OF OTHER RELATED ACTIVITIES TO FARMERS

Activities related to Post Harvest Treatments such as raising livestock, aqua-culture, manure-fertilization, hygiene, nutrition, women activities, modern rural life in advanced countries etc. should be considered for introduction to farmers through TV/Video/Movie/Picture-Materials.

On the other side, the introduction or the expansion of agro-processing as well as farming modernization should be carefully discussed from the viewpoint of job creation. In fact technical innovation in crop production and processing declines traditional economic activities as cottage industries and continues to take the employment opportunities away from the rural poor, especially from women labour forces. Development plans, therefore, should be considered on this aspect of balancing labour force and national development.

These issues should be planned on national level.

TABLES

Table H.1.1 Gross Domestic Product per Sector 1980 - 1985

(Crore Taka at 1973/73 Market Prices)

Sector/Year	1980-85	Share (%) 1980-1985
Agriculture	3,633	48.4%
Crops	2,843	37.8
Forestry	198	2.7
Livestock	373	4.9
Fisheries	230	3.0
Industry	1,143	15.2%
Manufacturing	779	
Large-Medium	440	5.9
Small-scale Cottage	339	4.5
Construction	326	4.3
Utilities	38	0.5
Services	2,751	36.5%
Transport & Trade	1,183	15.6%
Other	1,568	20.8%
Gross Domestic Product (at market price)	7,538	100%
Real Annual Growth %	3.6	-

Source: World Bank (1986)

Table H.1.2 Large and Medium Scale Industries in Bangladesh

Industry	Units Number	Employ- ment (1,000)	Gross output (Tk.ml.)	Value added (Tk.ml.)	Fixed assets (Tk.ml.)
Food, beverages, tobacco	525	50.5	9,500	1,592	1,681
Textiles	1,298	300.0	11,990	4,022	4,815
Wearing apparel, footwear	28	3.9	416	88	143
Wood, and wood manufactures	40	3.3	224	81	270
Pulp, paper and products	29	11.2	1,582	219	1,235
Printing, publishing	152	6.3	425	138	181
Leather and goods (excl. footw.)	117	2.8	1,322	115	114
Rubber and plastic goods	70	3.1	279	92	66
Drugs and medicines	140	11.6	2,194	945	460
Other chemicals, petro-chem.	281	23.9	9,664	1,255	1,237
Non-metallic mineral ind.s	59	6.7	963	145	367
Basic metals (steel)	47	10.7	4,202	925	525
Metal goods	259	9.7	765	183	183
Machinery, equipm., transp. equip.	213	18.4	2,410	428	2,501
Miscellaneous (incl. optic., jute b.)	98	1.0	573	70	80
Total	3,356	465.1	47,612	10,327	13,962

Source: Unpublished Data Bangladesh Bureau of Statistics, Dhaka, October, 1984.

Table H.1.3 Small Scale Industries in Bangladesh

Industry	Units Number	Employ- ment (1,000)	Gross output (Tk.ml.)	Value added (Tk.ml.)	Fixed assets (Tk.ml.)
Food, beverages, tobacco	17,210	221.3	3,073	1,068	1,080
Rice mills	12,242	151.9	1,213	624	648
Bakeries	2,167	21.9	901	143	130
Flour mills	1,315	21.0	194	104	103
Others	1,486	76.5	765	797	799
Textiles	1,253	17.2	432	83	84
Wearing apparel, footwear	82	1.1	23	4	7
Wood, and wood manufactures	918	12.8	202	86	90
Pulp, paper and products	88	0.9	19	10	10
Printing	1,004	10.1	226	133	138
Leather and goods (excl. footw.)	96	1.1	24	8	57
Rubber and plastic goods	63	0.7	15	6	5
Drugs and medicines	79	1.6	76	17	20
Other chemicals	234	2.8	146	33	34
Non-metallic minerals	216	8.2	114	34	24
Basic metals (foundries etc.)	97	1.7	37	12	11
Metal goods	1,089	16.7	302	96	92
Machinery, equipm., transp. equip.	1,242	21.4	183	88	102
Miscellaneous (incl. goldsm.)	334	4.4	166	97	113
Total	24,005	321.9	5,057	1,775	1,867

Source: Survey Report on Small Industries.

Table H.1.4 Cottage Industries in Bangladesh

Industry	Units Number	Employ- ment (1,000)	Gross output (Tk.ml.)	Value added (Tk.ml.)	Fixed assets (Tk.ml.)
Food, beverages, tobacco	56,767	175.8	3,117	875	1,568
Textiles	39,305	120.7	944	302	159
Apparel (tailoring), footwear	47,763	106.6	855	343	344
Wood, bamboo and cane	70,787	210.1	1,998	742	437
Paper products	539	1.8	36	13	10
Printing	1,203	5.8	182	47	113
Leather and goods	689	1.7	36	10	67
Rubber and plastic goods	585	1.9	101	18	13
Drugs and medicines (traditional)	101	0.3	5	2	2
Other chemicals	611	2.7	63	18	14
Non-met. min. man. (potteries)	17,935	83.5	502	213	163
Metal goods	11,289	30.1	448	141	95
Equipment and repair	12,056	30.4	501	180	223
Misc. (mainly handicrafts)	31,387	83.2	759	288	236
Total	291,063	854.8	9,556	3,192	3,449

Source: Cottage Industries of Bangladesh.

Table H.1.5 Values on Employment, Value Added and Fixed Assets
in Industrial Sector in Bangladesh

Industry group.	Value added per employed (Tk.)	Value added fixed assets ratio	Fixed assets per employed (Tk.)
ALL INDUSTRIES	7,225	0.83	8,700
of which			
Large scale	22,200	0.74	30,000
Small scale	5,500	0.93	5,800
Cottage	3,730	0.93	4,000
Textile industries	5,415	0.97	5,600
of which:			
Large scale	13,400	0.84	16,050
Small scale	4,815	0.98	4,890
Cottage	2,490	1.90	1,315
Handlooms	2,770	1.39	2,000
Food industries	7,890	0.82	9,660
of which:			
Large scale	31,840	0.95	33,300
Small scale	4,825	0.99	4,900
Cottage	4,970	0.56	8,900
Wood, bamboo, cane	4,020	1.14	3,530
Metal working	9,570	0.38	24,960
of which:			
Large scale (unadj.)	21,810	0.23	95,830
Large scale (adjusted)*	21,875	0.42	52,405
Chemicals	45,000	1.02	44,300
of which:			
Large scale	52,270	1.01	51,500

Source: As for H.2 - H.4.

Table H.1.6 Allocation for Industrial Subsectors in TFYP

Subsector	Public sector Investment		Private sector Investment		Total	
	Amount	(%)	Amount	(%)	Amount	(%)
1. Jute Textiles	64.0	2.4	25.0	0.8	89.0	1.5
2. Cotton Textiles	285.0	10.9	500.0	15.6	785.0	13.6
3. Metal working/Light Engineering, including non-electrical, electrical, and electronic machinery and appliances	65.0	2.5	200.0	6.3	265.0	4.6
4. Transport Equipment (including shipbuilding)	45.0	1.7	125.0	3.9	170.0	2.9
5. Basic Metals (Iron and steel)	145.0	5.6	650.0	20.3	795.0	13.7
6. Fertilizer	1,130.0	43.5	850.0	26.5	1,980.0	34.1
7. Cement	245.0	9.4	-	-	245.0	4.2
8. Pulp and Paper	75.0	2.9	50.0	1.6	125.0	2.2
9. Chemicals and Pharmaceuticals	25.0	1.0	200.0	6.3	225.0	3.9
10. Glass, Ceramics	15.0	0.6	50.0	1.6	65.0	1.1
11. Leather and Leather Products	20.0	0.8	100.0	3.1	120.0	2.1
12. Sugar	205.0	7.8	25.0	0.8	230.0	4.0
13. Food and Allied Products	21.0	0.8	75.0	2.3	96.0	1.7
14. Mining and Minerals Based Industries	25.0	1.0	-	-	25.0	0.4
15. Wood, Bamboo, Cane and Coir Products	10.0	0.4	100.0	3.1	110.0	1.9
16. Printing	10.0	0.4	50.0	1.5	60.0	1.0
17. Agro-supportive Small Scale Rural Industries	65.0	2.5	200.0	6.3	265.0	4.6
18. Export Promotion	25.0	1.0	-	-	25.0	0.4
19. Small and Cottage Industries Promotion	60.0	2.3	-	-	60.0	1.0
20. Other Industrial Promotion	65.0	2.5	-	-	65.0	1.1
Total	2,600.0	100.0	2,900.0	100.0	5,701.0	100.0

Source: TFYP 1985 - 90

Table H.2.1 BRDB Training Programme in 1990 - 1991

	Trainees	Trainees- Target by 30.6.90	1990-91	Tr. Duration	Location
A. Core Programmes					
1.	URDO	-	30	2 months	RDTI/BARD
2.	ARDO	-	100	2 months	RDTI/BARD
3.	Accounts	-	100	2 months	RDTI/BARD
4.	Office Asst. Clerk	-	40	2 months	BMDC/Other places
5.	Union Staff	-	20	7 days	-
6.	General Employees	-	40	2 days	-
7.	Drivers	-	10	15 days	-
B. RD - II Programme					
1.	UPTS	-	25	4 days	RDTI
2.	ARDO	-	150	4 days	RDTI
3.	Workshop for Jt. D, Dy. D. URDO, ARDO	-	100	3 days	-
4.	TMEF Tr. NGO	-	50	3 days	-
5.	BSS & MBSS	-	100	3 days	-
6.	UCCA Personnel KSS Manager Chairman etc. on Crop Marketing	61450	3990	3 days	UCCAs
7.	Do (Fertilizer Marketing Persons)	1539	81	2 days	UCCAs
8.	Do (Jt. D./Dy. D.)	-	105	1 day	RDTI
9.	Asst. & Staff	-	1250	2 days	UCCA
10.	Dy. D. Sr. Asst. D. Ex. Eng. etc. on IMP	144	503	4 days	RDA
11.	URDOs, U Agri. Officer, SSE, UCA Chairman Ex. Engg. on IMP	1482	348	7 days	RDA

	Trainees	Trainees- Target by 30.6.90	1990-91	Tr. Duration	Location
12.	ARDOs, SSO SI. SE, on IMP	1176	44	4 weeks	RDS
13.	KSS Chairman Manager, Block Supervisor, Village Acct. Inspectors on IMP	24126	873	3 days	UCCA
14.	Pump Operator on IMP	6162	430	6 days	UCCA
15.	Block Supervisors on IMP	36712	2840	2 days	UCCA
16.	Contract Farmers on IMP	103993	12900	1 day	Farm Location
C. TAPP					
i)	Accountant	-	120	1 month	UTU/Village Tr. Centre
ii)	Dr. D., Sr. Asst. D., URDOs, ARDOs Chairman	-	136	2 days	UTU/Village Tr. Centre
iii)	UCCA Inspectors	-	434	10 days	UTU
iv)	ARDOs	-	20	4 days	UTU
D. Rural Poor Programme (RPP)					
i)	BSS/MBSS/Chairman & Manager	-	3400	1 day	UCCA
ii)	ARDOs	33	9	1 month	RDTI Sylhet
iii)	Accountant	14	11	1 month	RDTI Sylhet
iv)	Organiser	78	92	1 month	RDTI Sylhet
v)	Dy. D., Sr. Asst. ARDOs	-	31	2 days	RDTI Sylhet
vi)	URDOs/ARDOs Accts. & Organisers	-	262	3 days	RDTI Sylhet
vii)	BSS Members	-	50	2 months Centre	Tangail Tr. Centre
viii)	BSS & MBSS Members	-	1700	21 days	UCCA

	Trainees	Trainees- Target by 30.6.90	1990-91	Tr. Duration	Location
E. Family Planning (For Females) Programme					
i)	MSS & MBSS	23848	6600	2 months	Different Organisation
ii)	Manager & Organiser	1030	400	10 days	Co-Op. college
iii)	Accounts Asst. Organisers	100	102	10 days	Different
iv)	Supervisors	400	400	10 days	Different
v)	ARDOs	100	100	3 days	Different
F. NRDP (Noakali Rural Development Project) Programme					
i)	UCCA Managing Committee Members	195	60	5 days	NRDP Tr. Centre
ii)	Primary Society Committee Members				
	a) KSS	2160	336	5 days	UCCAs
	b) BSS	1330	360	5 days	UCCAs
	c) MBSS	1470	360	5 days	UCCAs
iii)	Manager/Chairman of				
	a) KSS	1624	336	5 days	UCCAs
	b) BSS	1004	360	5 days	UCCAs
	c) MBSS	1144	360	5 days	UCCAs
iv)	Member of				
	a) KSS	5694	1400	3 days	UCCAs
	b) BSS	3685	1500	3 days	UCCAs
	c) MBSS	4412	1500	3 days	UCCAs
	d) UCCA Inspector	403	104	10 days	NRDP
v)	ARDOs	67	24	6 days	NRDP
vi)	Co-Op. Members & Officials	864	20	6 days	UCCAs

	Trainees	Trainees- Target by 30.6.90	1990-91	Tr. Duration	Location
G.	IDA - Deep Tubewell-II Project - programme				
i)	URDO/ARDOs	112	120	3-5 days	RDA/GTI
ii)	ARDOs	-	25	2 months	RDTI
iii)	Co-Op. Farmers	26892	5600	3 days	RDTI & UCCA
iv)	Officers at Upazila level	435	811	2 days	-
v)	Farmers at Scheme Level	15000	35000	1 day	-
vi)	Scheme Chairman & Manager & Block Level	1728	1840	3 days	-
vii)	ARDOs/Accts.	147	135	2 days	UTU
viii)	UCCA Inspectors	-	225	4 days	UCCAs
ix)	Accountants	-	30	4 days	UTU
x)	KSS Managers	-	150	4 days	UCCA
xi)	UCCA Accts. & Acct. Asst.	-	60	2-5 days	UCCA
H.	Bhola Irrigation Project - Programme				
i)	Group Managers	1410	652	3 months	Bhola
ii)	Pump Operators	1093	969	3 months	Bhola
I.	UNICEF Project Programme (Welfare of Rural Women & Children)				
i)	ARDOs/Organiser	52	16	1½ months	BRDB/RDA/RDT
ii)	Co-operators	15340	78000	2 days	BRDB/RDA/RDT
iii)	Supervisors	31	20	10 days	BRDB/RDA/RDT

Trainees	Trainees- Target by 30.6.90	1990-91	Tr. Duration	Location
J. NWRDP (North West Rural Development Project) Programme				
i) Village Accts.	88	18	2 months	RDTI
ii) Supervisors	87	125	2 months	RDTI
iii) Pump Mechanics	508	22	2 months	Upazila Workshop
iv) Fishermen Co-Op. Members	187	581	1 month	Upazila Workshop
v) IMP Trainers	307	277	1 month	RDA
vi) IMP Implementations	9065	535	7 days	RDA
K. Training at Agri. Dev. Project Programme				
i) ARDOs	-	12	2 months	BARD
ii) Organiser	-	33	2 months	BARD
iii) Committee Members of the Central Co-Op.	195	189	17 days	BARD
iv) BSS & MBSS Members	-	60	25 days	BARD
v) Executive Committee of BSS	-	15	21 days	BARD
vi) KSS/BSS Members	262	17	2-4 days	Tangail
vii) KSS Members	664	37	3-6 days	Tangail
viii) Illiterate KSS Members	200	310	6 months	BRAC & UCCA
ix) KSS Members/Farmers	-	150	1 day	-
x) Farmers/Block Leader	80	350	3-5	-

Trainees	Trainees- Target by 30.6.90	1990-91	Tr. Duration	Location
L. RD-V Programme				
i) Sr. Asst. Director Asst. Director/URDO/AR DOs/Field Organisers	1795	950	3-20	BARD/BMDC
ii) Target Groups Manager	24386	18900	3-5 days	Local Place
Under RD-12				
i) URDOs	-	25	2 months	RDTI/BARD
ii) URDOs	-	114	3 days	RDTI/BARD
iii) ARDOs	-	50	2 months	RDTI/BARD
iv) ARDOs	-	89	3 days	RDTI/BARD
v) Field Managers	-	400	2 months	RDTI/BARD
vi) Field Managers	-	500	3 days	RDTI/BARD
vii) Field Managers	-	60	4 days	RDTI/BARD
viii) Accountants	-	50	17 days	UTU
ix) Accountants	-	89	3 days	UTU
M. ILO - Family Planning Project Programme				
i) National Co-Op. Members	-	45	1 day	Dhaka
ii) Managers	-	22500	3 days	Upazila
iii) Women Co-Op. Members	-	3000	5 days	Upazila
iv) UCCA Chairman	-	150	5 days	BARD/RDO RDTI
v) Members of Primary Co-Op. Societies				

	Trainees	Trainees- Target by 30.6.90	1990-91	Tr. Duration	Location
N.	SWRDP (Shallow Well Rural Development Project) Programme				
i)	ARDOs	-	39	15 days	RDTI
ii)	ARDOs	51	18	15 days	UTU
iii)	Organiser	108	56	15 days	UTU
iv)	BSS/MBSS Managers	3760	1000	1 day	UTDC
v)	BSS/MBSS Managers	3943	1000	1 day	UTCA
vi)	BSS/MBSS Members	1730	1000	7 days	UTCA

Table H.3.1 Present Situation of Agro-Processing in 4 Upazilas in 1991

Item	Upazila	Upazila				Total
		Kachua	Bancharampur	Nabinagar	Debidwar	
Paddy Production	(t/year)	44,135	33,315	71,846	78,376	227,672
Existing Rice Mills	(unit)	16	13	26	19	74
Treatment-Capacity	(t/year)	11,200	9,100	18,200	13,300	51,800
Treatment-Percentage		25%	27%	25%	16%	22%
Wheat Production	(ton)	9,644	5,925	8,964	10,276	34,804
Existing Flour Mills	(unit)	9	9	12	13	43
Treatment-Capacity	(t/year)	2,520	2,520	3,360	3,640	12,040
Treatment-Percentage		26%	42%	37%	35%	34%
Mustard Production	(ton)	760	1,130	4,588	2,359	8,837
Existing Oil Mills	(unit)	5	2	3	6	16
Treatment-Capacity		700	280	420	840	2,240
Treatment-Percentage		92%	24%	9%	35%	25%

Notes: 1. Treatment capacity is the possible annual treatment-capacity based on average basis in the study area.

- i. Rice Mill : 700 t/year (2.5 t/day x 280 days/year)
- ii. Flour Mill : 280 t/year (1 t/day x 280 days/year)
- iii. Oil Mill : 140 t/year (0.5 t/day x 280 days/year)

2. The Range of Present Treatment Percentage by Small-Scale Industries:

- i. Rice : 16 ~ 27%
- ii. Wheat : 26 ~ 42%
- iii. Mustard : 9 ~ 92%

Table H.3.2 Projection of Agro-Processing for 4 Upazilas in 2010

Item	Upazila				Total
	Kachua	Bancharampur	Nabinagar	Debidwar	
Paddy Production in 2010	71,720	60,170	124,900	120,640	377,430
Newly Installed Rice Mills	9	7	16	17	49
Treatment-Capacity (t/year)	25,000	19,600	44,800	47,600	137,200
Present Treatment-Capacity (t/year)	11,200	9,100	18,200	13,300	51,800
Total Treatment-Capacity (t/year)	36,200	28,700	63,000	60,900	189,000
Treatment-Percentage	50.7%	50.4%	47.7%	50.5%	50%
Wheat Production in 2010	11,550	16,800	16,100	14,350	58,800
Newly Installed Flour Mills	6	11	8	6	31
Treatment-Capacity (t/year)	3,360	6,160	4,480	3,360	17,360
Present Treatment-Capacity (t/year)	2,520	2,520	3,360	3,640	12,040
Total Treatment-Capacity (t/year)	5,880	8,680	7,840	7,000	29,400
Treatment-Percentage	50.9%	51.6%	48.7%	48.8%	50%
Mustard Production in 2010	1,690	2,470	5,460	2,990	12,610
Newly Installed Oil Mills	1	7	17	5	30
Treatment-Capacity (t/year)	140	980	2,380	700	4,200
Present Treatment-Capacity (t/year)	700	280	420	840	2,240
Total Treatment-Capacity (t/year)	840	1,260	2,800	1,540	6,440
Treatment-Percentage	49%	51%	51%	51%	50%

Notes: 1. Average treatment capacities of newly established plants:

- i. Rice Mill : 2,800 t/year (10 t/day x 280 days/year)
- ii. Flour Mill : 560 t/year (2 t/day x 280 days/year)
- iii. Oil Mill : 140 t/year (0.5 t/day x 280 days/year)

2. The Projected Treatment Percentage of 50% by Small-Scale Industries is based on following conditions:

- i. Balancing Small-Scale Industries and Cottage Industries in the Study Area
- ii. Rural Industrialization Programme
- iii. Urbanization-Programme in the Future

