

**ANNEX G**

**RURAL INFRASTRUCTURE**



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

**ANNEX G RURAL INFRASTRUCTURE**

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# **1 IMPROVEMENT OF FEEDER AND RURAL ROADS**

## **1.1 Current Situation**

### **1.1.1 Transportation in Bangladesh**

The transport system of Bangladesh consists of railway, road, inland water way and civil aviation. Road transport has increased its share in movement of goods and the allocation of budget in the system. Road transport carried 719 lakh tons (75.8 % of total movement) in 1987/88 and received Tk. 1,020 crore (38.7%) during the Third Five Year Plan Period (TFYP). Inland water transport has also played an important role in movement of goods and passengers, particularly in the rainy and flood season. In flood period from June to September, most of the movement of goods for local markets depends on the inland water transport. It shared 21.3 % of total movement of goods in 1987/88, while the share of budget was 21.7 % during the TFYP period.

Summary of value added of transport, allocation of budget and movement of goods in the system are provided in Tables G.1.1 to G.1.3.

Inland water transport has been facing serious problem of siltation of their river water ways in recent years. This siltation is occurred very likely due to the destruction of the environment such as plan less felling of forest and wide-spreading of slash-and-burn farming in the upstream hilly and mountainous areas. Although dredging works require huge cost and continuous efforts, it is inevitable to keep the connection of linkage of water ways and to ensure the economic performance.

### **1.1.2 Agency/organization for Implementation and Maintenance of Road Network**

Roads are classified into 5 categories, namely, National Highway, Regional Highways, District Roads, Feeder Roads (Upazila Road) and Rural Roads in Bangladesh. Feeder & Rural Roads are further subdivided into several classes.

The agencies and organizations, which are responsible to each class of road for implementation and maintenance, are shown below.

Category	Agency/Organization
National Highway	Road & Highway Department(RHD) Ministry of Communication
Regional Highway	RHD
District Road	District Board
Feeder type-A	RHD
type-B	Upazila
Rural Road (A,B,C)	Upazila

The more detailed information about road classification is provided in Table G.1.4.

In the rural area, formulation of Feeder type-A road development plans and implementation of them are executed by RHD with the fund from the Ministry of Communication. On the other hand, Feeder type-B and Rural Roads are developed and maintained using Upazila budgets such as AUDP, IDP, FFW and SFFW.

### 1.1.3 Existing Road Network

#### (1) Trunk road network in Old Comilla District

The most important National Highway in Bangladesh, namely, Dhaka-Chittagong Road runs through central and east south parts of the Old Comilla district. R&HD has been carrying out up-grading and improvement works for the section from Daudikandi to Comilla town using ADB fund.

District Highways connect district capitals such as Comilla, Bramanbaria and Chandpur. These roads are tow-lane roads with bituminous pavement and are maintained in rather good condition.

Feeder Road A type (FR-A) connects Upazila Head Quarter to national or district road network. R&HD has the responsibility for improvement and maintenance of this type of road in principal. However, in Kachua Upazila, the improvement of FR-A especially surface pavement has been conducted by R&HD, LGEB district office and Upazila jointly dividing the road into some sections. It is notable that institutional responsibility for the road improvement is not always clearly defined.

The trunk road network in Old Comilla District is illustrated in Figure G.1.1.

## **(2) Existing road network in the Study area**

The current road situations are characterized by the topographic conditions in the study area.

In low land lying area, such as Bancharampur and Nabinagar Upazilas, floods attacked annually require high embankment roads, and numerous rivers and streams also require a large number of bridges and culverts. These difficulties in road construction bring about the low allocation of road network. Especially in Bancharampur Upazila, there exist no roads which connect the Upazila headquarters to outer Upazilas and the villages are also isolated from the Upazila headquarters because of insufficient provision of bridges and culverts and the deterioration of structures as a result of flood damages.

In Debidwar Upazila, the road conditions are good in some degree comparing with other Upazilas because of the flood protection dick recently constructed along the Gumuti river.

Serious deterioration on road surface of Feeder A roads, connecting Upazila headquarters to national or district highway, are observed especially in Kachua and Nabinagar Upazilas. This deterioration of surface were caused by heavy rainfall in the rainy season and poor maintenance works.

The following table shows the accessibility from one mauza to nearest pucca (metalled) road in each Upazila. Based on the analysis of these data, it may be said that the main road network in Debidwar Upazila is well developed and inequitable allocation of road network is observed in Kachua Upazila. In Nabinagar Upazila, roads are allocated with comparatively good balance even though the total length of roads is not sufficient. The road network is not developed sufficiently in Bancharampur Upazila.

	Distance from one Mauza to nearest Pucca Road					
	<3 km	4-6 km	7-10 km	11-15 km	16-20 km	21 km<
Kachua	38 %	23 %	6 %	10 %	8 %	12%
Debidwar	46 %	28 %	18 %	8 %	0 %	0 %
Bancharampur	0 %	0 %	0 %	0 %	6 %	94 %
Nabinagar	11 %	22 %	49 %	14 %	1 %	0 %

Source : BBS, Mauza based study of rural facilities, 1989

The following table shows the numbers and total length of roads in four Upazilas.

	Kachua	Nabinagar	Bancharampur	Debidwar
<b>RHD Road</b>				
- Number of roads	1	1	1	2
- Length (in Km)	13.3	10.0	(Not passable)	42.5
<b>Feeder Road B</b>				
- Number of roads	2	2	3	7
- Length (in Km)	17.2	17.6	55.3	68.4
<b>Rural Road</b>				
- Number of roads	36	43	21	13
- Length (in Km)	275.1	266.8	176.0	169.4
<b>Density of roads (in km/Sq.km)</b>	1.32	0.93	1.16	1.20
<b>(in km/1,000persons)</b>	1.02	0.73	0.89	0.82

Location of rural road network in each Upazila is illustrated in Figure G.1.2.

#### 1.1.4 Maintenance Activities

##### (1) Existing Maintenance Activities

Upazila is the main body of the maintenance works for Feeder B type and Rural Roads. The major maintenance activity is earthwork. WFP, CARE, CIDA aid wheat or monetized wheat are allocated to Upazila for maintenance works as a part of Food For Work (FFW) programme. Upazila adds 10% of Annual Upazila Development Programme (AUDP) granted by GOB and part of Upazila own revenue to the fund. Union parishad implements the maintenance work

actually hiring the landless and informal group peoples as part of FFW programme and also hiring women group as part of Rural Maintenance Programme (RMP).

The periodic maintenance is done mainly in post-monsoon season and minor maintenance work is carried out when needs arise. The Upazila Engineer (UE) and his staffs give technical assistance in case of need. However, the main activity of UE is construction of facilities such as bridge and culvert and UE takes part of maintenance activities to minimum extent.

## **(2) Maintenance Strategy for Rural Infrastructure**

The government of Bangladesh considers importance and necessity of routine and periodic maintenance in Fourth Five Year Plan (FFYP). GOB recognizes the maintenance as an essential activity to prolong the useful life of the infrastructures.

In this circumstances, LGEB develop a new maintenance strategy in April, 1991. According to this strategy, system for maintenance at Upazila level will be simplified and Upazila Engineer and his staffs will take full responsibility for maintenance of both structures and road boy including earthwork. In existing system, project implementation officer (PIO) sent from Ministry of Relief takes responsibility on rural road earthwork. PIO will be responsible only for relief activities after introducing maintenance strategy at Upazila level in new strategy.

UE and eight (8) numbers of his assistants will be responsible for both construction and maintenance activities and also inspection activities. For this purpose, Upazila area will be divided into eight (8) maintenance zones for eight (8) staffs.

Planning and cost estimation will be executed by UE and his staffs. The plan will be implemented after getting approval from Upazila parishad. In implementation stage, LGEB district office will give technical advice and proved equipment which will not be available in Upazila level.

Total amount of fund is not sufficient for the maintenance activities to all roads in Upazilas. Raising of fund is inevitable to ensure the accessibility in the rural area.

## **(3) Fund for Maintenance**

The sources of fund for maintenance work at Upazila level in the study area are as follows:

- **Annual Upazila Development Programme (AUDP)**  
Revenue from AUDP in each Upazila amounts to one million Taka on an average. AUDP in each Upazila is presented in Table G.1.5. The fund allocation to road maintenance section varies from 40% in maximum to 2% in minimum.
- **Wheat grant by FFW programme and SFFW**  
The total amount of wheat granted to each Upazila as normal FFW is 1,200 tons on an average of 1988/89 and 1989/90 physical years. Approximately 20 % of wheat is used for maintenance work. In addition to this, 100 tons of wheat is allocated to construction and maintenance for Growth Center Connection Road (GCCR) by Special Food For Work programme (SFFW). FFW programme in each Upazila is shown in Table G.1.6.
- **Monetized wheat grant by CIDA/CARE through FFW**  
Women's group consisting of 15 members executes minor maintenance work through the year. One women's group is formed in each Union under RMP. The group member gets 25 taka per day in return for work through Union parishad.
- **Upazila's own resources**  
Upazilas expend 30 to 845 thousands Taka for infrastructure maintenance and construction sectors from their revenue. Revenues from their own local income amount only 70 to 150 thousands in 1989/90. Therefore it may say that Upazila additional expenditure to AUDP fully depend on the grant from central government.

#### **(4) Cost for Maintenance**

The unit costs for maintenance work widely varies depending on the natural conditions, road type and the degree of deterioration, and no reliable data is available in target Upazilas. Therefore, the study estimate the maintenance cost based on the records of similar projects and the data provided by LGEB.

The following table presents the records of maintenance cost for various types of road and the estimated cost for the study.

(Unit : 1,000 Taka)

	LGE Schedule	FRMIP	BCL	World Bank	Estimate Cost
Feeder Road B					
- Earth		10.0- 13.0			10.0
- HBB		68.0- 95.8		127.5	-
- WBM		82.4-111.8		185.0	-
- Bituminous	7.0	70.0-120.0		120.0	20.0
Rural Road improvement					
- Earth			7.0- 9.0		7.0

### 1.1.5 Sectorial Constraints Caused by Poor Road Condition

#### (1) Less balanced infrastructure development

Accessibility to location of scheme is one of major conditions to judge its feasibility. Even in Debidwar, out of 25 proposed tubewell schemes, 17 were realized and 8 were dropped. The main reason of dropout is poor accessibility with which transportation of farm input and output between schemes and markets can not be justified.

Under the UNICEF's drinking water supply projects, approximately 10,000 HTWs have been sunk in the study area. This gives the remarkably high density of water supply sources, i.e. less 100 persons per well. However, the location of existing HTWs are not well distributed, but highly coincident with road network.

#### (2) Difficulty of maintenance works for DTW,STW,HTW and LLP

As for the HTW maintenance works for drinking water supply, four mechanics are allotted in each Upazila and take charge of 500 to 700 HTWS per person. Approximately 5 % of HTWs develop troubles and require repairs every month. Some of the HTWs, however, are forced to be deserted without any repairs because of the poor road network distribution and poor transportation facilities in addition to the lack of mechanics.

The situation of maintenance works for DTWs, STWs and LLPs of irrigation purpose is almost same as that of HTWs. Difficulty in supplying of spare parts and in moving of mechanics become the constraints for smooth operation of equipment.

### **(3) Inadequate marketing of farm products**

The opportunity to produce cash crop like vegetables, fruits, live fish and other animals heavily relies on the accessibility between the national level road and villages. It is obvious that the main producing area for vegetable and fruits are located along the national level roads. Farmers' bargaining powers to get higher prices is strong in the area accessible to rural market or national level road. The middlemen charge about 2 kg per mound of paddy as transportation cost from the farmers in common. During the rainy season, the land transportation is frequently intercepted and remote area from the road networks have constraints to transport farm inputs and outputs. The road improvement, especially in the backward area, will accelerate the income generations of villagers through the year. The rural markets will be activated by the improvement of road transportation because buyers could be increased through improvement of accessibility.

### **(4) Discouraged extension services due to poor access**

Block Supervisors (BS) provides extension services directly to farmers through the Training and Visit (T&V) system. One BS covers around 890 farmers with 1,000 acres farm land on an average in Debidwar Upazila. The work load of BSs can not be achieved due to hard accessibility to the scattered villages by a bicycle. The road improvement, especially Feeder Road connecting among villages, is indispensable to promote agricultural extension activities.

In addition to extension services, educational activities concerning family planning and public health are also discouraged because of the poor accessibility to the rural area.

### **(5) Transportation loss and shortened useful life of transportation means**

Road transportation is not insufficiently carried out. Road surfaces are considerably deteriorated in most Upazila of the study area. It was reported that the parts of sanitation facilities, such as slabs and rings for latrines, are something damaged during transportation from factory to distribution center and from the center to each consumer. These breakage are caused mainly by shocks due to the poor road conditions in addition to physical weakness of these parts. To spread the sanitation facilities widely to the rural area, development of road network and upgrading of roads are indispensable.



Poor road conditions shorten the life of vehicles and require a large amount of repair charge. these expenses bring about high transportation cost which will obstacle the movement of goods and activated marketing.

#### **1.1.6 Constraints**

##### **(1) Severe climate condition**

The major part of study area lying low and flat land is suffered from annual flood and heavy (high rainfall intensity). Once the floods overtop the road embankment, the road will be seriously destroyed. The heavy rain causes serious deterioration of road shoulder and road surface metalling. As a result, this severe climate condition requires frequent maintenance works and huge amount of O&M cost.

##### **(2) High construction cost**

Road construction cost as well as maintenance cost is extremely high in Bangladesh. This high cost is caused by the following hard climatic and flat topographic nature of the country.

Annual flood with high water level, affecting the study area for 4 months from June to September, requires high embankment road of about 4m in height.

Innumerable rivers and streams run here and there in the study area. Prevention of water logging and the smooth drainage for production activities will need a large number of bridges and culverts.

Course aggregates for concrete can not be procured in the study area. The fragments of bricks are utilized instead of them, and this will be a one reason why the life of concrete structures is shorter than the expected life. For the important structures, course aggregates are transported form the north-west part of the country.

##### **(3) Shortage of O&M budget**

As mentioned in Chapter I in this paper, O&M cost is not taken up in the Upazila budget. In addition to the lack of staff and equipment, this shortage of O&M cost is fatal disadvantage in this country.

It was reported in Kachua Upazila that maintenance for Feeder type-A (RHD road) was repaired some 6km but not whole portion by the matching fund with RHD due to the shortage of RHD's O&M cost. This showed that O&M cost is scarce in everywhere and extension of rural network will be meaningless in this point of view.

#### **(4) Poor capability in planning**

There is no technical staff for planning in Union parishad. So, the selection of priority infrastructures is made politically in most Unions. In addition, some of the chairmen of Union parishad are heads of rural contractors.

The plans without reflection of the demand from rural population will be wasteful. According to the study conducted by BIDS/IFPRI in 1985, only 30 % of FFW programme taken up were well implemented and functioning.

#### **(5) Weak linkage of government organization concerned**

Although the organic and harmonious road network development is inevitable, it is observed that the development plans of RHD and Upazila are not well coordinated and this causes weak linkage and less balanced distribution of road network.

### **1.2 Model Development Plan**

#### **1.2.1 Objectives**

The road improvement programme emphasizes the betterment of accessibility to the following centers and institutions.

- (1) Administrative centers such as Upazila and Union Head Quarters
- (2) Markets such as Growth centers and rural hat bazar
- (3) Health centers such as Upazila Health Complex, Union sub-health centers and family welfare center at Union level
- (4) Educational institutes such as vocational centers, primary, secondary, high-schools and collage
- (5) Production area such as irrigated cottage industry and fishery areas

The area covered by the programme will receive following profits through the improvement of roads

- (1) Encouragement to agricultural production activities and extension services
- (2) Reduction of transportation cost
- (3) Betterment of rural life
- (4) Acceleration of extension project concerning with the basic human needs such as drinking water supply, sanitation improvement, family planning, etc.
- (5) Support to maintenance activities for irrigation and drinking water supply facilities

### **1.2.2 Selection Criteria**

To meet the requirements of objects, the study team examined the proposed roads prepared by Upazila applying the below-mentioned criteria.

There is no definite selection criteria and justification of feeder and rural roads in Bangladesh. Selection and justification have been done by the local government, international agencies or donors individually with their own criteria. As a result, some projects applied only economic feasibility tests, while other projects considered only social impacts as the only criterion for selection and justification.

MRDP II study applies three-steps selection procedure which will ensure that the selected roads are both economically feasible and have a high social impact. This procedure is developed through the ample experiences by the U.S. Agency for International Development (AID).

The three-step selection procedure consists of screening followed by socioeconomic ranking and economic evaluation.

#### **(1) Screening**

As the first step, screening is carried out to examine whether the roads proposed by each Upazila will have minimum economic and social benefits or not.

The following list presents the screening items.

1. **Road Classification**

Rural roads are classified into four (4) classes. Feeder roads are given highest priority ( 1st class ) as backbone roads in the area. The important rural roads ( 2nd class ) follow feeder roads. The rural roads branched off from 1st and 2 class roads are defined as 3rd class. The 4th class roads branch off from 3rd class roads.

2. **Linkage to market and/or administrative center**

Markets and administration centers, where many social services exist, are cores for rural area development. In this context, linkage to local or regional markets and administrative centers is evaluated based on the data prepared by each Upazila parishad.

3. **Population Served**

To examine whether the road will contribute to economic and social development objects or not, population in road influence area is estimated based on the population census 1981. For suitable socio-economic development, more than 600 persons per km should live along the road

4. **Availability of Alternative Transportation Means**

The road must not be closely parallel to another paved (Feeder B type) road or road scheduled for construction to Feeder B type standards. The existence of navigable waterway should be taken into account.

5. **Priority Ranking Prepared by the Upazila**

The road project should be endorsed by local government and communities. Priority ranking prepared by Upazila may indicate the demand of the communities.

6. **Environmental Impact**

The road shall not contribute to erosion, adversely affect drainage, or interfere with irrigation of farmland along the road.

Table G.1.7 shows the criteria for the first screening step.

**(2) Socioeconomic Ranking**

Second step aims at assessing the candidate roads, which passed through first screening step, from both the value of economic and non-economic factors. For this purpose, the economic

and non-economic objectives are classified into two major categories of road impacts: economic activity and quality of life.

### Economic Activity

Economic activity is sub-divided into following four factors:

- (1) agricultural potential,
- (2) the degree of access improvement,
- (3) the existence of parallel development activities of MRDP-II in the road influence area, and
- (4) linkage to local and regional market.

The weights of each factor are established to represent the importance of each factor. The summary table of weight of each factor is shown in Table G.1.8.

### Quality of Life

Quality of life relates to health, education, vocational training, etc. of the rural population. In this category, access to social services such as hospitals, vocational institutes, schools and other services is examined. In addition to above examination, population served in road influence area and request of Upazila which may indicate the demand of the community are evaluated

The weights of each factor are established to represent the importance of each factor. The summary table of weight of each factor is shown in Table G.1.8

Calculation tables of score for socioeconomic ranking and basic data such as population and farmland in road influence area are presented in Table G.1.9 and G.1.10, respectively.

### **(3) Economic Evaluation**

The economic evaluation of each road is calculated based on an assessment of its developmental impact on agricultural production and improvement in personal mobility (user cost saving) and benefits arising from reduction in transport costs for existing and projected traffic.

Construction cost of each road is estimated based on the work volume prepared by each Upazila and unit cost of LGEB. For the comparison of economic feasibility of candidate road on the same condition, road improvement work items for cost estimate include road body, pavement, tree planting, turfing and structure works.

The summary table for benefits of candidate roads are summarized in Table G.1.11 and construction costs are presented in Table G.1.12. IRRs are calculated one by one in Table G.1.13.

### 1.2.3 Selection of Roads

MRDP II study takes up the roads which passed the screening step and have reasonable economic feasibility as the model development programme. The following table presents the summary feature of selected roads.

	Kachua	Nabinagar	Bancharampur	Debidwar
Candidate roads listed by each Upazila				
Feeder B	2	2	3	7
Rural Road	36	43	21	13
Selected roads				
Feeder Road B	2	2	3	7
Rural Road	32	33	16	9
Dropped out in first screening				
	4	10	5	4

Existing condition and MRDP II improvement plan for roads in each Upazila are presented in Table G.1.14. Summary table for selected road and selection of priority roads are shown in Table G 1.15 and G.1.16, respectively.

### 1.2.4 Physical Plan

The study divided selected roads into two improvement levels to minimize the burden to the Upazila for maintenance and to maximize the project benefit.

#### (a) Level 1

Comprehensive improvement is planned for feeder road and its linking rural roads. The work items to be improved are as follows:

- a. construction and rehabilitation of bridges and culverts,
- b. embankment above the 20 year return period flood level plus 90cm (side slope gradient = 1:2),
- c. pavement of road surface with bituminous material (width = 3.6m),
- d. tree planting (1,000nos/km),and
- e. turfing on the slopes.

(b) Level 2

Construction and improvement of structures such as bridges and culverts for the selected rural roads

The following table presents the summary of the project works.

	Kachua	Nabinagar	Bancharampur	Debidwar
<b>Feeder Road B improvement</b>				
- Number of selected roads	2	2	3	7
- Length (in Km)	17.2	17.6	55.3	68.4
- Pavement Length (in Km)	17.2	17.6	55.3	68.4
- Tree Planting (in No.)	17,200	17,600	55,300	68,400
- Turfing (in Km)	17.2	17,600	55.3	68.4
- Number of Structures	28	6	41	82
<b>Rural Road improvement</b>				
- Number of selected roads	36	33	16	9
- Length (in Km)	5.5	33.8	-	-
- Pavement Length (in Km)	5.5	33.8	-	-
- Tree Planting (in No.)	5500	33,800	-	-
- Turfing (in Km)	5.5	33.8	-	-
- Number of Structures	368	242	98	127

The project works are divided into three (3) stages : 1st stage (1993-1995), 2nd stage (1996-2000) and 3rd stage (2001-2010). The roads in first stage are selected considering the capacity of Upazila maintenance budget. Second and third stage roads improvement works will be executed following the priority ranking. The stage-wise plan of roads is shown in Table G.1.17

### 1.3 Priority Project

#### 1.3.1 Objectives of the Programme

- Improvement of accessibility to markets, administrative centers and other social services
- Encouragement to the agricultural production activities and extension services
- Reduction of transportation cost
- Support to maintenance activities for DTW,STW,HTW and LLP

#### 1.3.2 Physical Plan

The priority projects are selected considering following conditions.

- roads in urgent need
- roads which can get project benefit immediately
- ability of contractor
- technical difficulty
- period of implementation

The following tables present the list of priority roads selected and the project work volume.

List of Priority Road

Name of road	Name of Road
<b>Kachua Upazila</b>	<b>Nabinagar Upazila</b>
FB Kachua-Schar G.C.C Road	FB Nabinagar-Bancharampur
FB Kachua-Upazila parishad Road	RR Mohesh Road-Goali-Rasulpur
RR Schar-Amirabad Road	RR Link Road (RH-Mohesh Road)
<b>Bancharampur Upazila</b>	<b>Debidwar Upazila</b>
FB Homna-Marichakandi	FB Madhya-Companygonj
FB Bancharampur-Nabinagar	FB Kalikapur-Istagram
RR Bancharampur-Dariachar	RR Debidwar-Istagram



### Priority Road Work Volume

	Kachua	Nabinagar	Bancharampur	Debidwar
<b>Feeder Road B improvement</b>				
- Number of selected roads	2	1	2	2
- Length (in Km)	17.2	12.9	41.6	35.0
- Pavement Length (in Km)	17.2	12.9	22.4	18.2
- Tree Planting (in No.)	17,200	12,900	22,400	18,200
- Turfing (in Km)	17.2	12.9	22.4	18.2
- Number of Structures	28	4	27	36
<b>Rural Road improvement</b>				
- Number of selected roads	1	2	1	1
- Length (in Km)	5.5	19.5	-	-
- Pavement Length (in Km)	5.5	19.5	-	-
- Tree Planting (in No.)	5500	19,500	-	-
- Turfing (in Km)	5.5	19.5	-	-
- Number of Structures	9	29	8	14

Road longitudinal profile of priority roads are drawn in Figure G.1.3.

#### 1.3.3 Operation and Maintenance

At the Upazila level, Upazila Engineer and his staff should be responsible for periodic inspection and supervision of construction and maintenance activities receiving the technical advice from the LGEB district office.

Labour contracting society (LCS) will implement the maintenance on a contract basis as much as possible. LCS concept was developed by NORAD/SIDA project in Faridpur, etc. and met good results from the view point of quality of job, cost saving and job creation to poorest segments. LCS is formed by vulnerable women's, landless labours and informal groups who do not need overhead to the contracted job. In parallel to this LCS, women's group activity under RMP should be continued for minor maintenance.

Raising fund for the maintenance is crucial. To take the burden from Upazila, maintenance cost in initial period, which may be three years period after completion of earthwork, will be shared by donor and Upazila parishads. Because the embankment will not become stable in initial period and will require high rate of maintenance.

Figure G.1.4 illustrates the organization of the maintenance work.

## 2 IMPROVEMENT OF GROWTH CENTER

### 2.1 Current Situation

The Hats and Growth Centers have been played important roles as business cores in the rural area. Hat is a kind of market opens once or twice a week at the certain area leased by Upazila.

Growth Center is a Hat market but selected specially for the center of economic development in the rural area. The location of Growth Center is determined taking accessibility and regional distribution into consideration. In addition to the role of business core, Growth Center has also a function of regional social service center which includes a post office, banks, dispensary, drinking water supply and sanitation facilities, etc.

The total numbers of Hats and Growth Center which exist in the study area are tabulated as follows;

Upazila	No. of Hat market	Estimated No. of population covered by one Hat market
Kachua	24	12,460
Debidwar	26	13,120
Bancharampur	20	12,950
Nabinagar	19	21,100

Source : BBS, Mauza based study of rural facilities, 1989  
BBS, Population Census, 1981

The following table shows the accessibility from one mauza to nearest Hat market.

Upazila	Distance from one mauza to nearest Hat				
	< 3km	4-6km	7-10km	11-15km	16km <
Kachua	68 %	28 %	1 %	1 %	0 %
Debidwar	80 %	16 %	4 %	0 %	0 %
Bancharampur	83 %	17 %	0 %	0 %	0 %
Nabinagar	96 %	4 %	0 %	0 %	0 %

Source : BBS, Mauza based study of rural facilities, 1989

As for the accessibility, almost all villagers live within the range of 6km from a Hat in the study area and no remarkable distinction is observed among four Upazilas.

## **2.2 Constraints Identified**

### **2.2.1 Inadequate Collection of Lease Money**

The markets are managed by Upazila parishad. The market places are leased to bidders who win the auction held once a year. The winner of auction can get the right to collect various kinds of toll charges. It is commonly known that the lease money charged to bidders is considerably low comparing with the total amount of toll charge collected by the lessee.

The total amount of lease money is very low when compared with the proceeds obtained from the market and it is valued at a few lakh taka per Hat on an average.

The lease money collected from markets is to be distributed in the following manner:

a) to market development	25 %
b) to national taxes	5 %
c) to Upazila funds	70 %

The market development as well as daily maintenance works is hardly taken up with the amount of 25% of total lease money collected.

### **2.2.2 Insufficient Facilities in the Market**

The facilities, such as godowns and cold storage, for supporting wholesale activities and those for vitalizing retail activities of landless people without shops, such as sheds, are left in poor conditions.

From a viewpoint of public health, the minimum requirements, i.e. drainage, garbage pits, latrines, to sustain the sanitary condition are not sufficiently equipped in the market.

### **2.2.3 Weak linkage between Rural Market and District or National Market**

In addition to the facilities in the market, connection roads between rural market and district market or market and highways are also not sufficiently allocated and maintained well. This insufficient road networks hinder vital business activities.

## **2.3 Basic Model Development Plans**

### **2.3.1 Objects**

- (1) Improvement of existing Growth Center area to encourage marginal farmers and/or rural poor who may gather to act as temporary vendors
- (2) Strengthening of financial situation of Upazila by increasing lease money through improvement of facilities in market area
- (3) Strengthening of self-reliance system for market development and maintenance by increasing lease money

### **2.3.2 Strategy**

- (1) A three-stage improvement concept will be applied.

Stage 1 : Improvement of existing market area especially open and shed area with minimum standard

Stage 2 : Improvement of market area expanding market area

Stage 3 : Comprehensive improvement including re-location and re-construction of permanent shops

### **2.3.3 Physical Plan**

- (1) Minimum facilities in Stage 1 level

The GCs are overcrowded in hat day. However, the GC areas have no space for expansion in general. In this context, the improvement and construction of facilities will be planned in existing market area because the land acquisition will take long and complicated procedure and will require huge budget.

The minimum facilities can be defined as the facilities which will be improved and constructed in existing market area. These facilities are divided widely in to following two categories:

- a) **Business Facilities**

- Sheds for rice, fish, meat, vegetable, etc.,

- Open sale platform
  - metalled internal road with drainage canals
- b) Sanitation Facilities
- garbage pits,
  - water supply system, and
  - latrines.

(2) Facilities Plan in Stage 2 level

In addition to the minimum facilities, expansion of market area into the government own adjacent ponds will be planned. Because the government owned ponds are normally located adjacent to existing market area and there is no procedure required to negotiate land acquisition problem. However, water in these ponds is utilized for local population. Then market area will be expanded limitedly to almost half of these ponds

Facilities such as godown, workshop, mills, etc. will be also constructed in GC area by UCCA

(3) Facilities plan in Stage 3 level

Permanent shop's facilities will be re-located to local government owned two or three stories market building to be newly constructed. The area created by re-location of permanent shops will be improved to sheds and platforms for temporary venders. The market area will be expanded purchasing of land.

The construction and maintenance cost will be exceeded existing Upazila financial ability. This stage of development will be planed when the strengthen of Upazila financial situation and managing system will be achieved.

(4) Facility Plan for GCs

GC improvement will be planned up to level 2 considering existing Upazila financial situation and managing system.

The following table presents the principal feature of major facilities plan for GCs.

Name of Market	Project Area (in m <sup>2</sup> )	Shed and Open Platform (in m <sup>2</sup> )	Market Place Pavement (in m <sup>2</sup> )
Kachua	18,000	4,700	13,000
Nabinagar	13,000	3,800	8,800
Bancharampur	18,000	4,500	13,000
Debidwar	11,000	3,800	7,400

Details are presented in Table G.2.1.

## 2.4 Priority Project

### 2.4.1 Selection of Growth Center

There exists 20 to 30 numbers of markets in each Upazila. Some local markets (hat) are bigger than small size Growth Center (GC) such as Marichakandi GC in Bancharampur Upazila in trading volume, etc. However, GC is selected in national level taking into consideration of regional balance and investment for rural development is concentrated on GC area as a center. In this context, improvement of all GCs are taken up.

### 2.4.2 Physical Plan

#### (1) Model Growth Center

Model Growth Center is a market with level 2 facilities and UCCA facilities. This type of GC is planned to establish in Upazila Head Quarter where the management and maintenance may be easier than remote area. The remaining GCs are planed to be improved by minimum facilities of level 1

The following table shows the name of GCs and level of improvement.

Upazila	Model Growth Center	Level 1 GCs
Kachua	Kachua	Sachar Palakhal
Debidwar	Debidwar	Rahimanagar Pirganji Mohanpur
Bancharampur	Mouilagonj	Jafargonj Marichakandi Jibonganj
Nabinagar	Nabinagar	Ujanchar Bholachong Sreeghar Markuti

Facility plan of priority Growth Center improvement is presented in Table G.2.2. Existing condition and proposed improvement plan for Model Growth Center is illustrated in Figure G.2.1.

### **3. RURAL ELECTRIFICATION**

#### **3.1 Current Status**

##### **3.1.1 Power Supply and Consumption**

BPDB (Bangladesh Power Development Board of the Ministry of Energy and Mineral Resources) takes a responsibility for construction, operation and management of power generation and power transmission.

Throughout the Third Five Year Plan (TFYP) period, the allocation for the power sector was one of the highest. The physical targets set in the TFYP were 2,222 MW for generating capacity, 8,933 Gwh for energy generation and 7,194 Gwh for sale.

As shown in Table G.3.1 attached hereto, installed generating capacity seems to reach a satisfactory level of 2,365 MW in 1989 while the maximum demand attained to 1,393 MW. On the other hand, the actual generation was remained at 7,114 Gwh (equivalent to 1,976 MW) against the target of 8,933 Gwh (equivalent to 2,481 MW) because of the inadequate maintenance works and lack of maintenance budgets.

Generation and sale of electricity grew steadily at average annual rates of 13.1 % and 14.5 % from 1980/81 to 1988/89, respectively. This shows that there is a great potential for development. Annual records of generation and sale of electricity in national level are summarized in Table G.3.2.

##### **3.1.2 Rural Electrification**

The rural electrification programme is set up taking into considerations of regional balance, population density, existing road distribution and demand from consumers.

Rural electrification rate in Bangladesh is estimated at about 15 % as of the end of June, 1989 and only 8 % of total population are beneficiaries of the electrification programme.

GOB has established the Rural Electrification Board (REB) as an executing agency for rural electrification since 1977 in order to accelerate socio-economic developments in grass root level.



REB is an agency to establish PBSs (Palli Bidut Samities), to arrange credits for PBS and to give technical and financial assistants to PBS. Total 33 numbers of PBS, which cover 129 Upazilas out of 460, were established by the end of 1988.

PBS is a kind of a cooperative which is managed by the representatives of consumers, and aims at introduction of an equal profit-sharing system among the consumers. One PBS covers four to six Upazilas and an area of 1000 km<sup>2</sup> on an average. The major activities of PBS are;

- 1) extension of power distribution lines,
- 2) Buying-in electricity from BPDB (Bangladesh Power Development Board) and selling to the consumers, and
- 3) repayment of credits arrangement by REB.

BPDB also takes a responsibility for supply of electricity to the area where REB has not yet been established. According to the FFYP, the number of villages and consumers connection covered by BPDB are estimated at 4,136 ( 32 % of total electrified villages) and 122,5000 ( 72 % of total consumers), respectively.

Rural electrification projects and their achievements are presented in Tables G.3.3 and G.3.4.

### **3.1.3 Electrification in the Study Area**

REBs are established in Hajganj, Comilla and Bramanbaria. REB in Hajganj covers Kachua Upazila and REB Comilla supplies electricity to Debidwar Upazila, respectively. REB has not yet been established in Nabinagar and Bancharampur Upazilas. BPDB supplies electricity directly to these two Upazilas. Electrification line network in old Comilla district is illustrated in Figure G.3.1.

As shown in the following table, the electrification in the Study area have been implemented at the almost same pace of nationwide level except Debidwar Upazila. Debidwar has some advantages of the location, rather high road distribution density and high demand from consumers.

Upazila Accumulation	No. of Electrified Village		Total No. of Rate	Elect. Rate
	1990	1985 to 1989 Villages		
Bangladesh		13,018*	86,170**	15.1 %
Kachua		37	241	15.4 %
Nabinagar	14	39	210	18.6 %
Bancharampur	16	19	116	16.4 %
Debidwar	62	72	202	35.6 %

Source: Upazila Profile 1990, Upazila information 1990, FFYP for\*\*\*  
Upazila statistics Vol.1, 1985 by BBS for\*\*\*\*

## 3.2 Constraints

### 3.2.1 High Rate of Electrification Caused by System Loss

High system loss made management cost of BPDB higher and consequently it causes the high rate of electrification and delay of implementation of the rural electrification programme.

Reduction of high system loss has been one of major targets in the FYPs. The system loss has kept high rang between 30% and 42% since 1979/80.

The system loss consists of technical losses, i.e. overloading of the distribution system, poor maintenance and inadequate renovation of old transmission and distribution lines, and man-made losses, i.e. installation of inadequate meters, poor billing system and pilferage.

Various measures were taken as a immediate programme to reduce the man-made losses. However, system loss could not be reduced as per schedule in the TFYP period.

The following table shows the annual system loss rates of BPDB and PBSs.

Year	BPDB Loss in Station	Distribution Loss	Total	PBS
1980/81	4.6 %	30.1 %	34.7 %	-
1981/82	4.6 %	28.6 %	33.2 %	28.8 %
1982/83	4.6 %	28.6 %	33.2 %	22.6 %
1983/84	4.1 %	27.7 %	31.8 %	21.2 %
1984/85	4.5 %	32.8 %	37.3 %	20.6 %
1985/86	4.7 %	26.4 %	31.1 %	21.6 %
1986/87	5.0 %	32.6 %	37.6 %	20.2 %
1987/88	6.2 %	36.2 %	42.4 %	19.2 %
1988/89	5.5 %	28.5 %	34.0 %	18.3 %

Source : OECF "Research quarterly report 1990"

### 3.2.2 System Reliability

Voltage fluctuation and sudden drop will cause the deterioration of electric engines and motors. The frequent load shedding will obstacle the introduction of modern irrigation practice which use DTW, STW, LLP, etc.

Before 1986, problems like voltage drop, load shedding and grid failure were common due to generation short-fall. Load shedding were recorded 593 hours in 1985/86. After that, measures for reinforcement of power generation facilities were taken and the situation improved considerably in 1987. However, voltage fluctuation and uncertainty in supply of power are still observed. There is room for further improvement in this direction.

### 3.2.3 Paucity of Local Funds

Paucity of local funds to meet the requirement of planning and programming will result in the delay of implementation of the rural electrification.

This paucity of local funds occurred due to lack of the self financing by BPDB. The self financing by BPDB was not increased during the TFYP period, which was Tk.115 crore in 1985/86 and Tk.116 crore in 1989/90.

The reasons for this slow growth of self generated resources were low revenue earning due to the system loss, inadequate expansion of the transmission and distribution networks, etc.

PBSs are now allowed subsidy for a period of minimum five years. However, it is transpired that most of the PBSs have not reached the self sufficiency economically after the expire of

subsidy period. For the smooth extension of the rural electrification programme, economic self sufficiency of PBSs should be attained.

### 3.2.4 Insufficient Distribution of Power Distribution Line

Power distribution line networks are insufficient to promote electric tubewell and pump irrigation systems to the Study area.

The achieved number of electrified villages were 13,018, and it lagged far behind the target of TFYP of 22,100 due to the lack of local funds.

### 3.3 Preliminary Consideration for Development Plans

#### 3.3.1 GOB Policy

In the FFYP development objectives of the Power Sector, the rural electrification programme is emphasized as follows;

"To augment the power supply in the rural areas to boost up the rural economy and thereby alleviate rural poverty and maximize participation of women folks in particular and rural people in general through intensification and expansion of Area Coverage of Rural Electrification Programme."

In this context, 47,888 km of distribution line, 14,880 of villages and 798,000 consumers will be scheduled to cover additionally in a physical programme of REB. In addition, additional 500 villages will be also covered by BPDB programme. The prospected rate of electrification of villages will be as shown below.

Particulars	Benchmark Position	Additional Position	Accumulation	Rate
BPDB Electrified Village	4,136	500	4,636	5.4 %
REB Electrified Village	8,930	14,880	23,810	27.6 %
Distribution line (km)	35,602	47,888	83,490	
Total rate of electrified villages				33.0 %

Source : FFYP, Planning Commission

### **3.3.2 Preliminary Consideration**

- 1) Prior to extension of distribution line networks and expansion of coverage area, establishment of adequate monitoring system for bill collection and training of maintenance workers are essential to reduce the system loss and to keep the high system reliability.
- 2) Establishment of PBS in the Study area will be required to be covered by the rural development programme.

## 4. COMMUNICATION

### 4.1 Current Situation

#### 4.1.1 Telecommunication

The Bangladesh Telegraph and Telephone Board (BTTB) of the Ministry of Communication executes a number of programmes to expand and develop the telecommunication system.

The telephone density in Bangladesh is only 0.21 % per 100 population in 1989/90. This density is the one of the lowest in the world.

Although, telephones are installed in Upazila offices, branch offices of central level agencies, growth centers and some of important markets in the Study area, it is next to impossible to make contact over the telephone from Dhaka or District towns to even Upazila headquarters particularly in Nabinagar and Bancharampur.

#### 4.1.2 Post Office

The total number of Post Offices are also insufficient in comparison with the Universal Postal Union (UPU) standard. There exists one post office for about 14,000 population in Bangladesh, while the UPU standard requires one for 3,000 to 6,000 population. (FFYP,1990)

Post Offices are located in the Growth Center and major markets in the study area. Their buildings and equipment are seriously deteriorated and need reconstruction or repairs.

The number of communication facilities in the study area is tabulated as shown below.

Upazila	Number of communication facilities			(Unit: Nos.)
	Tel. Exchange	Telegraph	Post office	
Kachua	2	3	26	
Debidwar	1	1	33	
Bancharampur	1	1	16	
Nabinagar	3	1	34	

Source : Nirbahi Officer in each Upazila, "Upazila Profile,1990"

## **4.2. Constraints**

### **4.2.1 Inadequate Operation and Maintenance of Telecommunication System**

Inadequate operation and maintenance bring about the low reliability of telephone system in the Study area.

### **4.2.2 Paucity of Local Budget for the Telecommunication Sector**

Paucity of local budget is also crucial in the tele-communication sector. Because of this paucity of local budget, replacement of old telephone system and telephone line networks is delayed. Consequently, the reliability becomes low.

### **4.2.3 Inadequate Distribution of Post Office**

It is not too much to say that post office can only provide communication means for rural population. However, the numbers and its distribution are inadequate in the rural area. As a result, the services such as delivery of mails are in poor level.

### **4.2.4 Poor Facilities of Telecommunication and Post Office**

The facilities and equipment of Telecommunication and Post Office are in poor conditions. These poor conditions result in the low efficiency of the services.

## **4.3. Preliminary Consideration for Development Plans**

### **4.3.1 BOG Policy**

The government will allocate about 89 % of the budget to BTTB and about 8 % to the Post Office in the FFYP.

The major targets for telecommunication and Post Office stipulated in the FFYP are as follows:

#### **Telecommunication**

- Expansion of telephone services through installation of additional telephones,
- Replacement of existing analog telephones by digital ones,

- Establishment of UHF radio links of 389 Upazilas in total to connect them with district headquarters,
- Extension of Nationwide Dialling (NWD) facilities, etc.

#### **Post Office**

- Completion of construction of 111 Upazila Headquarters post offices & Post Master's quarters spilled over from the TFYP,
- Extension of 23 and construction/reconstruction of 18 Upazila Post Offices with Post Master's quarters,
- Extension of 36 Head Post Offices with Post Master's quarters,
- Construction of 133 rural post offices,
- Installation of required machines, and
- Extension of existing training centers and procurement of training equipment.

#### **4.3.2 Preliminary Consideration**

- 1) Extension and development of telephone system should be undertaken by the nationwide programme from the view point of standardization of equipment.
- 2) Most of the rural post offices are housed in various types of non-government houses. Improvement and reconstruction plans should be carefully examined.
- 3) It seems extension of the UHF radio network is usefully in case of emergency such as flood. The Upazila UHF radio network programme has already been launched since the TFYP period. In this context, if necessary the acceleration programme should be carefully examined paying attention to the coordination with the existing programme.



## 5 DRINKING WATER SUPPLY

### 5.1 Current Situation

Mainly two sources of water, i.e. surface water and ground water, are utilized for drinking water to the rural habitants in the study area. The quality of surface water, it may be pond or pool water, is not always suitable for drinking water. Especially in the dry season, quality of stagnant water bodies alters to seriously bad.

In order to supply more safe water, about 10,000 HTWs with average depth of 100 to 150 feet have been installed in the study area. One HTW is sunk for every 10 families or 70 to 100 population.

Five to six HTWs are newly installed in each union every year, and same number of HTWs are renewed in each union every year under the Rural Water Supply Programme by UNICEF.

The water quality is examined for two items of iron and chloride when the HTW is installed. Although the iron contents (1-5 ppm) of ground water are rather high comparing with the WHO and Bangladesh standard (less than 1.0 ppm), while the chloride contents are within the safety range in most cases, the water quality is much better than that of surface water such as pool, puddle and pond water.

Present Condition of Drinking Water Supply

Upazila	Total No. sunk	Total No. abandoned	Iron con. (ppm)	Chloride (ppm)	Depth of HTW(feet)
Kachua	2,367	146	3 - 5	300	below 100
Nabinagar	3,027	219	2 - 3	300	150
Bancharampur	2,021	112	1 - 2	300	100
Debidwar	2,598	112	1 - 2	300	100

Source: PHE Comilla, 1990

## **5.2 Constraints**

### **5.2.1 Insufficient Number of HTW**

Based on the target set up by GOB and UNICEF and population in each Upazila, total required numbers of HTWs are estimated at 3,200 for Kachua Upazila, 3,700 for Debidwar Upazila, 2,900 for Bancharampur Upazila and 4700 for Nabinagar Upazila, respectively.

At present, achievement rate of installation of HTWs is calculated at 70 % on an average. To supply HTWs for the remaining population, it will take over 10 years if the UNICEF programme would keep the installation rate of 5-6 HTWs per one union a year.

### **5.2.2 Inequality of Distribution of HTWs**

Inequality of distribution of HTWs is observed in the study area, although HTWs' sites are selected in conformity with the UNICEF guideline.

### **5.2.3 Lack of Mechanics for Maintenance**

Four mechanics are allotted for maintenance of HTWS in each Upazila and take charge of 500 to 750 HTWs per person. Approximately 5 % of HTWs develop troubles and require repairs every month, consequently, each mechanic should repair 20 to 30 HTWs in a month.

Because of the poor transportation facilities in the rural area and lack of vehicles, repair works are in a difficult situation. It is possible that some of the HTWs may be deserted without repairs.

### **5.2.4 Competitive Use of Ground Water With Irrigation**

In dry season, a certain number of HTWs is dried up due to the competitive use of ground water with irrigation. The inhabitants in the irrigation dominant area are forced to drink pond, puddle or pool water during the irrigation season.

The shallow hand tubewell area is being gradually reduced from 68 % in 1980 to 53 % in 1990 due to intensive pumping up of ground water for irrigation.

### 5.3 Preliminary Consideration for Development Plans

#### 5.3.1 GOB Policy

The GOB is to implement the following five on-going programmes in close cooperation with UNICEF:

- a) Rural water supply and sanitation in the coastal area,
- b) Rural water supply and sanitation in the low water table area,
- c) Rural water supply and sanitation in the shallow water table area,
- d) Rural water supply, maintenance, rehabilitation and upgrading ,and
- e) Water supply and sanitation in urban slum and fringes.

Along with the implementation of above programmes, large numbers of various kinds of tubewell will be installed as tabulated below.

Achievement of TFYP and Target of FFYP

	TFYP Target	Achieve- ment	Position 1989/90	FFYP Target (Addition)
<b>Rural Water Supply</b>				
Shallow hand tubewell	120,000	122,082	751,168	60,000
Deep hand tubewell	4,000	5,665	22,496	20,000
Tara/Deepset hand TW	50,000	18,340	27,231	120,000
Choked up tubewell	500,000	481,400	918,125	1,000,000

Source : Planning Commission, "The Fourth Five Year Plan (DRAFT), June 1990", Dhaka

#### 5.3.2 Preliminary Consideration

Rural water supply programme has been implemented continuously by DPHE with the assistance of UNICEF. Although many constraints are reported, the programme has made progress steadily in number of tubewells installed.

The MRDP phase-II study has no intention of disturbing their activities. As a support of the programme, following studies will be conducted.

- improvement of accessibility to the poorly distributed area of tubewells,
- provision of storage facilities for spare parts,
- introduction of a simple iron removal plant which was developed by UNICEF to the iron problem area, and
- installation of tubewells to the public place such as growth center.

## **6. SANITATION**

### **6.1 Current Situation**

Sanitation condition is very poor and approximately 3 % of rural population are covered by village sanitation programme in the Study area.

Village sanitation programme has been implemented by Public Health Engineering (PHE) with full support of UNICEF. In line with the programme latrine units have been sold to the public through production centers. Two production centers were built in each Upazilas in the Study area.

### **6.2 Constraints**

#### **6.2.1 Relatively High Cost of Latrine Unit**

The cost of the latrine unit is Tk. 750, while the sale price is subsidized by approximately 65 percent. However, it is estimated that only 25 % of rural household can afford to purchase the latrine.

On the other hand, the experience from early projects launched in 1954 proved that free distribution of latrine not always contribute to improvement of sanitary condition. As a solution of this high cost problem, provision of a simple and cheaper latrine unit and demonstration of it for the majority of rural households are argued by UNICEF.

#### **6.2.2 Lack of Awareness Regarding Sanitation and Safe Drinking Water**

The level of awareness of rural population regarding safe drinking water, sanitation and hygiene as precondition of good health is far behind the satisfaction in order to extend the sanitation programme.

#### **6.2.3 Technical Limitation Against Flood**

The high ground water level in the rainy season and inundation by flood are the complicated technical problems. The common method to reduce the ill effects from high ground water level

is to build up the level of slab using the excavated soil from the latrine pit. The technical countermeasures against inundation are not exist at present.

#### **6.2.4 Slow Sale Caused by Policy Change**

The latrine unit is composed of one slab and five (5) rings. Recently, this combination is change to one slab and three (3) rings due to the GOB policy change suggested by UNICEF. However, the rural population prefer to purchase former unit of latrine because of its capacity and advantage in the rainy season. Consequently, sales of new unit from July up to middle September, 1990 were very slow. According to the interview to PHE Comilla, 11,600 slabs out of 14,540 and 13,200 rings out of 21,800 remained unsolved.

### **6.3 Preliminary Consideration for Development Plans**

#### **6.3.1 GOB Policy**

During the FFYP period, provision of 1,000,000 units of latrines to increase the coverage to 18 % of population will be made. In order to ensure achieving this nationwide target, the package programme of water supply, sanitation, drainage and health education will be pursued.

#### **6.3.2 Preliminary Consideration**

- 1) Judging from the empirical data, free distribution of latrines to the rural poor is not always effective to change the sanitation condition.
- 2) Because of technical reason, mitigation of annual flood is indispensable to spread latrines widely.
- 3) Public hygiene and health education through field visitors, community centers, etc. is also inevitable.

## 7. NUTRITION

### 7.1 Current Situation

#### 7.1.1 Nutrition Status in Bangladesh

Statistical data concerning about nutrition status are not collected in the Study area. However, nationwide and nationwide sample surveys such as " Bangladesh Household Expenditure Survey" have been conducted periodically by central level organizations.

##### (1) Household Expenditure Survey (HES)

In order to assess the nutrition condition, HES follows the World Bank guideline. The minimum energy requirements, which is defined as the first poverty line (PL-1), is estimated at 2,122 Kcal and 48 grams of protein per capita per day. The second line (PL-2) is defined at 85 % (1,805 Kcal) of PL-1 intakes and can be termed as the line of hard-core poverty. (BBS, Bangladesh Expenditure Survey 1985-86, Dhaka 1988)

The HES survey result indicated improvement of malnutrition status over the 1973/74 to 1985/86 period. However, about 51 percent of rural population still consumed less than 2,122 Kcal per day and 22 percent in rural population living below the PL-2 level as shown in the following table.

Percentage of Population below Minimum Calorie Intake

Year	PL-1		PL-2	
	Rural	Urban	Rural	Urban
poor as percentage of total population				
1973-74	83	81	44	29
1981-82	74	66	52	31
1983-84	57	66	38	35
1985-86	51	56	22	19

Source : BBS, HES 1985/86, Dhaka 1988

The HES result of per capita per day intake of calories for food items and intake of protein for food groups in are shown in Table G.7.1 and G.7.2, respectively.

## **(2) Anthropometric Data Survey by BBS in 1987**

In parallel with the HES, anthropometric data, i.e. height, weight and arm circumference, were collected in order to catch the national nutrition status and to analyze the relationship between nutrition status of children and economic status of their households.

As a result of the survey, the following conclusions were drawn in the "Report of the Child Nutrition Status Module" by BBS.

- (1) The stunting (Chronic Malnutrition) rate of 56% was considered high comparing with the other developing countries' average of approximately 20%.
- (2) The wasting (Acute Malnutrition) rate of 8% was also high, while the other developing countries had reported national wasting rates at less than 5%.
- (3) Rural female are in the highest risk group, where the observed stunting rate is 59.1% , wasting 9.8% and 18.4% were found have low arm circumference.
- (4) The nutritional status is related to poverty, since nutritional status is worse in children who were members of poorer households.

In addition, even children of the highest income groups experience stunting. This result may be concluded that various environmental factors seem to affect the nutritional status of children in the rural area.

- (5) Nutritional status is better in children who are the members of households which have safe drinking water sources and better sanitary (toilet) facilities.

These results provide evidence that environment plays an important role in nutritional status.

- (6) Nutrition status is better in children who have better educated mothers, and where mothers wash their hands.



## **7.2 Constraints**

### **7.2.1 Wide-spreading of Diarrheal Diseases and Worm Infection**

Diarrheal diseases including dysentery and cholera are the most prevailing sickness accounting for about 17 % of the total morbidity in the rural area. For children under ten (10) years, the diarrheal diseases are more serious accounting for 25.5 % of the total morbidity. In addition to this diarrheal diseases, about 60 % of rural children are infected with parasitic worm due mainly to poor sanitation.

These diseases and infection resulting in mal-absorption of diets are one of the major causes of malnutrition in the rural area.

### **7.2.2 Poor Sanitation Facility**

It is estimated that only around 3 % of households install the latrines in the Study area and about 80 % of all illness in Bangladesh are directly or indirectly caused by poor hygienic conditions arising from low installation level of latrines, etc.

### **7.2.3 Low Income of Household**

As mentioned above, there was high correlation between malnutrition and low income. In order to take more than the minimum energy level of PL-1, the monthly per capita expenditure was required more than Tk.300 in 1985/86 for rural population.

### **7.2.4 Low Education Level of Mother(female)**

Most of mothers in rural poor families have insufficient knowledge of hygiene, nutrition and storage of cooked and uncooked foods leading to malnutrition in the family members particularly in children under five years old.

## **7.3 Preliminary Consideration for Development Plans**

### **7.3.1 The Fourth Five Year Plan (FFYP)**

Improvement of nutritional status of population particularly of mothers and children is one of the objectives of the Fourth Five Year Plan in the health sector.

To improve the nutrition status, various development activities are scheduled to be pursued during the Fourth Five Year Plan.

The Health/Family Planning programmes will include promotion of breast feeding, use of ORS for diarrheal diseases, nutrition surveillance, establishment of child nutrition units including rehabilitation centers at UHCs and to provide primary health care, reduction in maternal and child mortality and morbidity, blindness prevention, control of IDD, improvement of diet through applied nutrition programme and with special reference to weaning and deworming of children.

Safe drinking water will get special attention so that the progress achieved by other activities is not upset due to lack of sanitation portable water and personal hygiene.

Nutrition education at the primary level along with communication through mass media will be taken up for educating people about nutrition and to create awareness about the welfare of the families and communities at large.

### **7.3.2 Preliminary Consideration**

- 1) The nutrition status is affected by various factors of society such as economic, environmental, educational, institutional and geographical ones. In this context, improvement of nutrition status will not be achieved by single purpose development programme.
- 2) Income generation of rural households and public health and hygiene education programmes will have a vital importance among the development programmes.
- 3) Public health and hygiene education will not contribute to improvement of nutrition status without the participation from the grass roots such as NGOs and volunteers.

## 8. CLUSTER FORMATION OF RURAL HOUSING

### 8.1 Current Situation

#### 8.1.1 Cluster Formation Programme

Cluster formation of rural housing programme, called "Operation Thikana", is a nationwide programme that was launched by the Government in 1988.

The objectives of this programme defined in the Fourth Five Year Plan (FFYP) is "to settle homeless and landless in cluster villages located on government land and to help the Thikana families to become self-reliant through promoting and supporting income generating and social welfare activities."

It is reported that 568 cluster villages were established in which about 21,000 families were settled and benefited, by the end of June 1990.

#### 8.1.2 Homeless and Landless Families in the Study Area

The data for the number of homeless and landless families is not available in the Upazila offices, so the number of families supposed to be included in this programme will be estimated on the basis of statistical data collected in 1981 by BBS.

	Tenure of Dwelling Unit		Landless Households		Required Number of Cluster (Homeless)
	Total, Number of Household Owned	Rented			
Kachua	41,908	41,569	339	7,190	22
Nabinagar	60,425	58,703	1,722	19,881	115
Bancharampur	37,025	36,498	527	13,300	35
Debidwar	46,417	45,698	719	8,244	48

Source: Upazila Statistics of Bangladesh 1988, BBS

### 8.1.3 Cluster Village in the Study Area

There exists one cluster village in each Upazila. In Nabinagar Upazila, for instance, one cluster village located in 7 to 8 miles from the Upazila H.Q. was established. The government land of 4.63 acres and dwelling houses were provided for 15 cluster families. In addition to this infrastructure programme, successive training programmes concerning income generation for the settlers are scheduled by BRDB, etc.

The number of cluster families and total area allocated in cluster villages are tabulated as follows:

Upazila	No. of Village	No. of Family	Total area in Cluster Village
Kachua	1	15	1.27 acres
Debidwar	1	15	2.62 acres
Bancharampur	2	-	4.62 acres
Nabinagar	1	15	4.63 acres

Source : Upazila Profile prepared by each Upazila

## 8.2 Constraints

### 8.2.1 Limited Area of Government Land

Although the government lands hold some extent, most of them have been already utilized for some other purposes or have been left as wasteland.

In this connection, it is likely to be said that only small space remains for selection of suitable land for the cluster village development in the study area.

### 8.2.2 Large Number of Landless and Homeless families

As stated in section 1.3, there exists large number of landless and Homeless families in the study area. To settle all of these families and to provide cultivation land to them, minimum 800 acres of government land for Kachua, 1,800 acres for Debidwar, 1,300 acres for Bancharampur and 4,300 acres for Nabinagar should be prepared.

### **8.3 Preliminary Consideration for Development Plans**

#### **8.3.1 GOB Policy**

In FFYP, settlement of 75,000 to 100,000 homeless and landless families in cluster villages is planned with the allocation of Tk.60 crore.

#### **8.3.2 Preliminary Consideration**

- 1) Criteria for selection of cluster families should be clearly defined.
- 2) Special attention should be paid to the coordination between the landless farmers living adjacent to the cluster village and cluster families.
- 3) Provisions of income generating activities, initial funds for the activities and training programme are of crucial importance.



## ***TABLES***





**G.1.1 Summary of Value Added of Transport, Communication,  
and Storage Sector at Current Price**

(Million taka)

Sector	1984-85	1985-86	1986-87	1987-88
1. Bangladesh Railway	847	1,221	1,285	1,394
2. Organized road transport	6,133	6,496	6,903	7,098
3. Unorganized road transport	18,810	23,075	28,773	29,582
4. Organized water transport	1,831	2,073	2,186	3,223
5. Unorganized water transport	15,976	19,486	26,498	21,720
6. Air transport	762	765	499	833
7. Communication	1,223	1,406	1,661	1,983
8. Storage	73	83	96	112
<b>Total</b>	<b>45,655</b>	<b>54,605</b>	<b>67,901</b>	<b>65,945</b>

- Organized road transport :
- 1) Bus (Private, Public)
  - 2) Small bus and station wagon (P)
  - 3) Taxi (P)
  - 4) Auto - Rickshaw
  - 5) Trucks
- Unorganized road transport :
- 1) Rickshaw
  - 2) Push cart
  - 3) Bullock cart
- Organized water transport :
- 1) Bangladesh Shipping Corporation
  - 2) Inland water Transport Authority
- Unorganized water transport :
- 1) Country boats
- Communication :
- 1) Post offices
  - 2) Telegraph offices

Sources : STATISTICAL YEAR BOOK OF BANGLADESH, 1990

**Table G.1.2 Transport Sector Allocation During Various Plan Period**

(Tk. in Crore)

Mode	First Five Year Plan	Two Year Plan	Second five Year Plan	Third Five Year Plan	Fourth Five Year Plan
Railway	126.1	123.1	413.4	836.0	997.0
Road	149.6	168.8	409.0	1,020.0	4,006.0
Inland Water	186.2	109.9	316.9	571.0	878.0
Air	65.7	48.3	147.2	210.0	359.0
<b>Total Transport</b>	<b>527.6</b>	<b>450.1</b>	<b>1,286.5</b>	<b>2,637.0</b>	<b>6,240.0</b>

Source : Planning Commission ; The Fourth Five Year Plan (Draft), 1990

**Table G.1.3 Movement of Goods by Means of Transportation**

(Unit : 1000 metric ton)

Sector	1985-86	1986-87	1987-88
<b>Rail Way</b>	2,378	1,955	2,703
<b>Road Transport</b>			
Organuized	17,619	17,036	18,326
Unorganized	52,167	52,868	53,578
<b>Total</b>	<b>69,786</b>	<b>70,804</b>	<b>71,904</b>
<b>Water Transport</b>			
Organized	5,477	5,710	5,778
Un organized	13,392	14,255	14,444
<b>Total</b>	<b>18,869</b>	<b>19,965</b>	<b>20,222</b>
<b>Air</b>	2	2	2
<b>G Total</b>	<b>91,035</b>	<b>92,726</b>	<b>94,831</b>

Source : BBS, Statistical Year Book, 1990

Table G.1.4 Road Classification

Classification	Definition	Responsibility	Dimension		
			Crest width	Pavement width	Shoulder width on either side
<b>National Highways</b>	Connecting the Capital with divisional HQ and major regional centers	Roads and Highways Dept. (RHD)			
- Category A			40' - 0"	22' - 0"	9' - 0"
- Category B			40' - 0"	18' - 0"	11' - 0"
<b>Regional Highways</b>	Inter-connecting old district HQ and commercial centers of district	RHD			
- Category A			36' - 0"	18' - 0"	9' - 0"
- Category B			36' - 0"	12' - 0"	12' - 0"
<b>District Roads</b>	Connecting old sub-division HQ and commercial centers of the district	District Board	36' - 0"	12' - 0"	9' - 0"
<b>Feeder Roads:</b>					
- Type A	Connecting Upazila HQ to the arterial road system	RHD	24' - 0"	12' - 0"	6' - 0"
- Type B	Roads that link growth centers to either Upazila HQ	Upazila	24' - 0"	12' - 0"	6' - 0"
<b>Rural Roads:</b>					
	(a) Roads connecting villages with the growth centers markets and Upazila HQ	Upazila	16' - 0"	10' - 0"	3' - 0"
	(b) Roads connecting villages and farms to local markets/Union HQ	Upazila	12' - 0"	-	-
	(c) Inter village road	Upazila	8' - 0"	-	-

Sources : -Bangladesh Planning Commission January, 1984  
 -Progress Report-The master Plan study on The Model Rural Development Project for Homna and Daudkandi Upazilas- December, 1988 JICA

Table G.1.5 Annual Upazila Development Programme  
(Kachua Upazila)

Sector	Unit : Taka		
	1987/88	1988/89	1989/90
Agricultural and Irrigation	319,181.00	175,000.00	Nil
Transport and Communication	2,438,233.55	670,000.00	40,364.00
Housing	Nil	151,650.00	439,000.00
Socio-economic Infrastructure	863,512.00	412,500.00	17,420.00
Cottage Industries	118,825.00	Nil	37,000.00
Health and Social Welfare	31,530.00	40,000.00	Nil
Repair	200,865.00	66,961.00	402,374.00
Union Grants	284,746.00	78,624.00	Nil
Miscellaneous	455,107.45	58,265.00	27,842.00
<b>Total</b>	<b>4,712,000.00</b>	<b>1,653,000.00</b>	<b>964,000.00</b>

Source : Upazila Nirbahi Officer, 1990

Table G.1.5 Annual Upazila Development Programme  
(Nabinagar Upazila)

Sector	Unit : Taka		
	1988/89	1989/90	1990/91 (First Half)
Agricultural and Irrigation	354,915.00	315,870.00	104,005.00
Transport and Communication	604,670.00	509,468.00	167,750.00
Housing	262,900.00	356,627.00	83,875.00
Socio-economic Infrastructure	282,617.00	254,734.00	80,520.00
Cottage Industries	177,498.00	101,894.00	33,550.00
Sports and Culture	65,725.00	50,947.00	16,775.00
Health and Social Welfare	203,447.00	244,548.00	50,325.00
Children's Fund	196,875.00	152,840.00	50,325.00
Repair	596,832.00	500,000.00	67,100.00
Union Grants	385,650.00	234,362.57	Nil
Miscellaneous	28,550.00	50,947.00	16,775.00
<b>Total</b>	<b>3,159,679.00</b>	<b>2,772,237.57</b>	<b>671,000.00</b>

Source : Upazila Nirbahi Officer, 1990

Table G.1.5 Annual Upazila Development Programme  
(Bancharampur Upazila)

Sector	Unit : Taka		
	1988/89	1989/90	1990/91 (First Half)
Agricultural and Irrigation	214,800.00	115,000.00	59,211.00
Transport and Communication	572,800.00	143,750.00	87,075.00
Housing	143,200.00	86,250.00	52,245.00
Socio-economic Infrastructure	100,240.00	71,875.00	43,538.00
Cottage Industries	42,960.00	28,750.00	26,123.00
Sports and Culture	35,800.00	28,750.00	10,449.00
Health and Social Welfare	71,600.00	43,125.00	26,122.00
Children's Fund	71,600.00	43,125.00	26,122.00
Repair	250,000.00	66,000.00	38,700.00
Union Grants	107,400.00	-	-
Miscellaneous	71,600.00	14,375.00	17,415.00
<b>Total</b>	<b>1,682,000.00</b>	<b>641,000.00</b>	<b>387,000.00</b>

Source : Upazila Nirbahi Officer, 1990

Table G.1.5 Annual Upazila Development Programme  
(Debidwar Upazila)

Sector	Unit : Taka		
	1987/88	1988/89	1989/90
Agricultural and Irrigation	-	-	242,093.00
Transport and Communication	-	-	463,304.00
Housing	-	-	451,043.00
Socio-economic Infrastructure	-	-	-
Cottage Industries	-	-	74,720.00
Sports and Culture	-	-	57,450.00
Health and Social Welfare	-	-	-
Repair	-	-	-
Union Grants	-	-	-
Miscellaneous	-	-	212,307.00
<b>Total</b>	<b>-</b>	<b>-</b>	<b>1,500,917.00</b>

Source : Upazila Nirbahi Officer, 1990

Table G.1.6 FFW Programme (Kachua Upazila)

Sector	1987/88			1988/89			1989/90		
	Grain allocation (Metric tons)	No. of persons worked for FFW	Total man-day (man-day)*	Grain allocation (Metric tons)	No. of persons worked for FFW	Total man-day (man-day)*	Grain allocation (Metric tons)	No. of persons worked for FFW	Total man-day (man-day)*
<b>I. Local Programme</b>									
1) Regular Programme									
Road	1,199	2,380	239,841	1,231	2,255	24,612	1,167	2,552	2,334,022
Others	45	89	9,000	-	-	-	-	-	-
2) Post-flood Emergency Rehabilitation									
	214	424	42,713	244	447	4,889	-	-	-
<b>II. BWDB Programme</b>									
	-	-	-	97	192	1,936	-	-	-
<b>III. SFFW Programme</b>									
Growth Center Connecting Road Programme									
	-	-	-	-	-	-	100	218	199,988
IV. Post-monsoon Rehabilitation Programme									
	-	-	-	117	521	2,334	123	549	245,942
<b>Total</b>	<b>1,458</b>	<b>2,893</b>	<b>291,554</b>	<b>1,689</b>	<b>3,415</b>	<b>39,771</b>	<b>1,390</b>	<b>3,319</b>	<b>2,779,952</b>

Note : The total man-day is estimated by the following manner,  
(Total Man-day) = (Grain Allocation) \* (5 kg/day/person)

Source : Upazila Nirbahi Officer, 1990

Table G.1.6 FFW Programme (Nabinagar Upazila)

Sector	1987/88			1988/89			1989/90		
	Grain allocation (Metric tons)	No. of persons worked for FFW	Total man-day (man-day)*	Grain allocation (Metric tons)	No. of persons worked for FFW	Total man-day (man-day)*	Grain allocation (Metric tons)	No. of persons worked for FFW	Total man-day (man-day)*
<b>I. Local Programme</b>									
1) Regular Programme									
Road/Embankment	1,532	30,114	306,400	1,445	30,972	289,000	1,079	23,119	215,720
Canals	198	4,136	38,600	262	1,755	52,400	256	6,853	51,159
Others	-	-	-	-	-	-	-	-	-
2) Post-flood Emergency Rehabilitation	-	-	-	-	-	-	-	-	-
<b>II. BWDB Programme</b>	-	-	-	-	-	-	-	-	-
<b>III. SFFW Programme</b>									
Growth Center Connecting Road Programme	-	-	-	-	-	-	-	-	-
<b>IV. Post-monsoon   Rehabilitation Programme</b>									
Total	1,725	34,250	345,000	1,707	32,727	341,400	1,446	30,541	289,247

Note : The total man-day is estimated by the following manner;  
(Total Man-day) = (Grain Allocation) × (5 kg/day/person)

Source : Upazila Nirbahi Officer, 1990

Table G.1.6 FFW Programme (Debidwar Upazila)

Sector	1987/88		1988/89		1989/90	
	Grain allocation (Metric tons)	No. of persons worked for FFW	Grain allocation (Metric tons)	No. of persons worked for FFW	Grain allocation (Metric tons)	No. of persons worked for FFW
I. Local Programme	-	-	-	-	-	-
1) Regular Programme	-	-	-	-	938.833	-
Road/Embankment	-	-	-	-	-	-
Canals	-	-	-	-	-	-
Others	-	-	-	-	-	-
2) Post-flood Emergency Rehabilitation	-	-	-	-	-	-
II. BWDB Programme	-	-	-	-	-	-
III. SFFW Programme	-	-	-	-	-	-
Growth Center Connecting Road Programme	-	-	-	-	79.400	-
IV. Post-mosoon Rehabilitation Programme	-	-	-	-	52.056	-
Total	-	-	-	-	-	-

Note : The total man-day is estimated by the following manner:  
(Total Man-day) = (Grain Allocation) ÷ (5 kg/day/person)

Source : Upazila Nirbahi Officer, 1990



Table G.1.7 Screening Criteria

Screening Item		Criteria
1	Road Classification	1st class 2nd class 3rd class 4th class
2	Linkage to market and/or administrative center	Yes No
3	Population Served (More than 600 persons/km)	Yes No
4	Availability of alternative transportation means	No Yes
5	Priority ranking prepared by Upazila Parishad	Top 80 % Bottom 20 %
6	Environmental impact	No Yes

**Criteria for dropout**

When a road satisfies the following condition, the road will be dropped out in first screening step.

- 1 3rd or 4th class road
- 2 no linkage to economic and social services
- 3 less than 600 persons per km along the road
- 4 bottom 20 % of priority list of Upazila
- 5 existence of alternative transportation means

In addition to this criteria, the road having less population and/or lowest Upazila ranking will be also dropped out regardless of existence of alternative transportation means.

Table G. 1.8 Weight of Factor for Socioeconomic Ranking

	Quantity	Scale	Weight	Score
<b>Economic Activities</b>				
<b>Agricultural Potential</b>				
Agricultural Farm Land	> 150 ha/km	100	10 %	10.0
	120 ha/km	80	10 %	8.0
	90 ha/km	60	10 %	6.0
	60 ha/km	40	10 %	4.0
	30 ha/km	20	10 %	2.0
	< 30 ha/km	0	10 %	0.0
Production (Foodgrain Balance)	> 200 kg/capita/year	100	10 %	10.0
	200-150 kg/capita/year	80	10 %	8.0
	150-100 kg/capita/year	60	10 %	6.0
	100- 50 kg/capita/year	40	10 %	4.0
	50- 0 kg/capita/year	20	10 %	2.0
-----				
Degree of Access Improvement	No road	100	5 %	5.0
	Poor road (without structure)	60	5 %	3.0
	Poor road	40	5 %	2.0
	Fair road	20	5 %	1.0
-----				
<b>Existence of Parallel Development Activities</b>				
GC Improvement & Channel re-excavation	(multiple)	100	10 %	10.0
		70	10 %	7.0
		40	10 %	4.0
		30	10 %	3.0
	No activities	0	10 %	0.0
-----				
<b>Linkage to Local and Regional Market</b>				
GCs and Local Hats	GC	100	15 %	15.0
	Local Hats	75	15 %	11.3
	Local Hat	50	15 %	7.5
	No Linkage	25	15 %	3.8
		0	15 %	0.0
-----				
<b>Quality of Life</b>				
<b>Access to Social Services</b>				
Health	Upazila Health Complex	100	5 %	5.0
	Union Health Centers (Family welfare Center)	75	5 %	3.8
	Upazila Health Complex	50	5 %	2.5
	Union Health Centers	25	5 %	1.3
	No access	0	5 %	0.0
Education	More than 5 institutes	100	5 %	5.0
	More than 3 institutes	60	5 %	3.0
	More than one institute	30	5 %	1.5
	No access	0	5 %	0.0
-----				
<b>Population Served</b>				
	More Than 2,000 persons/km	100	25 %	25.0
	More Than 1,800 persons/km	90	25 %	22.5
	More Than 1,600 persons/km	80	25 %	20.0
	More Than 1,400 persons/km	70	25 %	17.5
	More Than 1,200 persons/km	60	25 %	15.0
	More Than 1,000 persons/km	50	25 %	12.5
	More Than 800 persons/km	40	25 %	10.0
	More Than 600 persons/km	30	25 %	7.5
	More Than 400 persons/km	20	25 %	5.0
	More Than 200 persons/km	10	25 %	2.5
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Request by Upazila (Demand of community)	From top 10 % of the Priority List	100	15 %	15.0
	From top 10 to 20 % of the Priority List	90	15 %	13.5
	From top 20 to 30 % of the Priority List	80	15 %	12.0
	From top 30 to 40 % of the Priority List	70	15 %	10.5
	From top 40 to 50 % of the Priority List	60	15 %	9.0
	From top 50 to 60 % of the Priority List	50	15 %	7.5
	From top 60 to 70 % of the Priority List	40	15 %	6.0
	From top 80 to 90 % of the Priority List	30	15 %	4.5
	From top 90 to 100 % of the Priority List	20	15 %	3.0
	No priority	0	15 %	0.0

Table G.1.9 Calculation of Score for Socioeconomic Ranking (Kachua)

NAME OF ROAD	Linkage to Market	Agriculture Potential	Degree of Access In	Paritell Activities	Eco Total	Population Served	Request Upazila	Access to Health	Access to Social Services School	Socio Economic Total	TOTAL SCORE	Socio-Economic Ranking									
FB - A Kachua- Kalijpara Road	100	150	50	100	0	0	30	3.0	28.0	100	26.0	100	15.0	7.5	50.0	78.0	2				
FB - B Kachua- Upazila Peristad Road	100	150	40	80	0	0	0	0.0	25.0	100	20.0	100	15.0	7.5	60	4.5	45.1	3			
FB - B Kachua- Sachser G.C.C Road	100	150	45	90	0	0	100	10.0	36.0	100	20.0	100	15.0	7.5	5.6	100	7.5	48.1	1		
RR - 1 Kachua- Kashimpur Road	75	113	50	100	40	2.0	20	2.0	25.3	30	6.0	90	13.5	25	1.9	60	4.5	25.9	5		
RR - 2 Kachua- Raguntpur Road	50	75	60	120	40	2.0	20	2.0	23.5	40	8.0	90	13.5	30	3.8	30	2.3	27.6	6		
RR - 3 Kachua- Nowabpur Road	75	113	35	70	40	2.0	30	3.0	23.3	30	6.0	90	13.5	25	1.9	30	2.3	23.7	7		
RR - 4 Sachser- Amirabad Road	75	113	60	120	40	2.0	30	3.0	28.3	60	12.0	70	10.5	25	1.9	30	2.3	26.7	4		
RR - 5 Kachua- Teguria Road	50	75	45	90	40	2.0	20	2.0	20.5	40	8.0	30	4.5	25	1.9	30	2.3	16.7	12		
RR - 6 Pipalkora- Rahimanagar Road	50	75	40	80	40	2.0	20	2.0	19.5	20	4.0	80	12.0	0	0.0	30	2.3	18.3	11		
RR - 7 Barabogon- Monoharpur Road	25	38	55	110	40	2.0	0	0.0	9.0	20	4.0	70	10.5	25	1.9	30	2.3	18.7	20		
RR - 8 Palkhal- Alara Road	25	38	55	110	40	2.0	0	0.0	16.8	30	6.0	60	9.0	30	3.8	30	2.3	21.1	37.9	10	
RR - 9 Kachua- Batharish Road	0	0	0	0	0	0	0	0.0	11.0	20	4.0	40	6.0	0	0.0	0	0.0	10.0	21.0	31	
RR - 10 Palgiri- Darbeshgouj Road	25	38	40	80	60	3.0	0	0.0	14.8	40	8.0	20	3.0	0	0.0	30	2.3	13.3	28.1	19	
RR - 11 Uzani- Boxgonj Road	25	38	55	110	60	3.0	30	3.0	20.8	30	6.0	50	7.5	25	1.9	30	2.5	17.7	38.5	9	
RR - 12 Laymanchaer- Alara Road	25	38	60	120	40	2.0	0	0.0	17.8	60	12.0	30	4.5	0	0.0	30	2.3	18.8	36.6	13	
RR - 13 Sachser- Modhupur Road	25	38	60	120	40	2.0	0	0.0	17.8	60	12.0	30	4.5	0	0.0	30	2.3	18.8	36.6	14	
RR - 14 Sachser- Ragdol- Bayek Road	25	38	50	100	60	3.0	0	0.0	16.8	40	8.0	60	9.0	25	1.9	0	0.0	18.9	35.7	15	
RR - 15 Palakhal- Kadla Road	0	0	0	0	0	0	0	0.0	13.0	30	6.0	0	0.0	0	0.0	0	0.0	6.0	19.0	34	
RR - 16 Bachrys- Prashamdep Road	0	0	0	0	0	0	0	0.0	15.0	50	10.0	0	0.0	0	0.0	0	0.0	10.0	25.0	22	
RR - 17 Barmanra- Modhupur Road	0	0	0	0	0	0	0	0.0	12.0	50	10.0	0	0.0	0	0.0	0	0.0	12.3	24.3	25	
RR - 18 D.C. Road- Jagdipur Road	0	0	0	0	0	0	0	0.0	9.0	20	4.0	50	7.5	25	1.9	0	0.0	13.4	22.4	28	
RR - 19 Amojan- Poyagchra Road	0	0	0	0	0	0	0	0.0	10.0	10	2.0	40	6.0	0	0.0	0	0.0	8.0	18.0	35	
RR - 20 Batpokari- Nindpur Road	0	0	0	0	0	0	0	0.0	9.0	30	6.0	60	9.0	0	0.0	0	0.0	15.0	24.0	26	
RR - 21 Hashimpur- Darbeshgouj Road	0	0	0	0	0	0	0	0.0	10.0	30	6.0	40	6.0	0	0.0	0	0.0	12.0	22.0	29	
RR - 22 Uzani- Singda Road	0	0	0	0	0	0	0	0.0	15.0	10	2.0	20	3.0	0	0.0	0	0.0	5.0	20.0	33	
RR - 23 Regunathpur- Modhupur Road	25	38	45	90	60	3.0	0	0.0	15.8	30	6.0	0	0.0	25	1.9	0	0.0	7.9	23.7	27	
RR - 24 Kachua- College- Begur Road	0	0	0	0	0	0	0	0.0	13.0	20	4.0	0	0.0	25	1.9	30	2.3	8.2	21.2	30	
RR - 25 Ragdol- Gograbari Road	0	0	0	0	0	0	0	0.0	11.0	50	10.0	0	0.0	0	0.0	0	0.0	10.0	21.0	32	
RR - 26 Akmia- Duntoria Road	0	0	0	0	0	0	0	0.0	11.0	20	4.0	20	3.0	0	0.0	0	0.0	7.0	18.0	36	
RR - 27 Pathar- Alara Road	25	38	40	80	60	3.0	20	2.0	16.8	40	8.0	0	0.0	0	0.0	0	0.0	8.0	24.8	23	
RR - 28 Palakhal- Charabanga Road	0	0	0	0	0	0	0	0.0	10.0	30	6.0	0	0.0	25	1.9	0	0.0	7.9	17.9	37	
RR - 29 Teusa- Borochow Road	0	0	0	0	0	0	0	0.0	9.0	0	0.0	0	0.0	0	0.0	0	0.0	0.0	9.0	39	9
RR - 30 Rahimanagar- Pararpur Road	0	0	0	0	0	0	0	0.0	14.0	40	8.0	80	12.0	0	0.0	0	0.0	20.0	34.0	16	
RR - 31 Monoterpur- Lowkora Road	50	75	40	80	60	3.0	0	0.0	18.5	50	10.0	10	1.5	0	0.0	30	2.3	13.8	32.3	17	
RR - 32 Koa- Demoria Road	0	0	0	0	0	0	0	0.0	8.0	30	6.0	70	10.5	0	0.0	0	0.0	18.8	26.8	21	
RR - 33 Koraisb- Khidda Road	0	0	0	0	0	0	0	0.0	14.0	90	18.0	0	0.0	0	0.0	0	0.0	18.0	32.0	18	
RR - 34 Monkhola- Kalline Road	0	0	0	0	0	0	0	0.0	11.0	30	6.0	50	7.5	0	0.0	0	0.0	13.5	24.5	24	
RR - 35 Hossainpur- Changini Road	0	0	0	0	0	0	0	0.0	8.0	0	0.0	10	1.5	0	0.0	0	0.0	1.5	9.5	38	
RR - 36 Rahima Nagar Subdipur via Meair Bazar	75	113	30	60	40	2.0	0	0.0	19.3	20	4.0	80	12.0	25	1.9	30	2.3	20.2	39.5	8	

Table G.1.9 Calculation of Score for Socioeconomic Ranking (Nabinagar)

NAME OF ROAD	Linkage to Market	Agriculture Potential	Degree of Access in	Paralel Activities	Eco Total	Population Served	Request by Upazila	Access to Health	Access to Social School	Socio Total	TOTAL SCORE	Priority Ranking								
FB - 1 Nabinagar - B.Baia	100	15.0	90	18.0	20	1.0	0	0.0	34.0	100	20.0	90	13.5	75	5.6	60	4.5	43.6	77.6	1
FB - 2 Nabinagar - Bancharampur	100	15.0	55	11.0	20	1.0	0	0.0	27.0	100	20.0	80	12.0	50	3.8	100	7.5	43.3	70.3	3
RR - 1 Kalia College - Mubesh Road	50	7.5	60	12.0	60	3.0	0	0.0	22.5	40	8.0	0	0.0	25	1.9	60	4.5	14.4	26.9	15
RR - 2 Jemupur - Jamuna River	100	15.0	35	11.0	60	3.0	30	3.0	32.0	30	6.0	50	7.5	25	1.9	0	0.0	15.4	47.4	8
RR - 3 Karabari - Rasulkabad	0	0.0	60	12.0	60	3.0	0	0.0	15.0	40	8.0	0	0.0	0	0.0	0	0.0	8.0	23.0	33
RR - 4 Mijana Girls School - Bibishara	0	0.0	80	16.0	60	3.0	0	0.0	19.0	80	16.0	50	7.5	0	0.0	60	4.5	28.0	47.0	10
RR - 5 Baishamji Bazar - Gajickandi via Birgoan	50	7.5	85	17.0	60	3.0	0	0.0	27.5	90	18.0	0	0.0	0	0.0	30	2.3	20.3	47.8	7
RR - 6 Jemupur - Bhatursid	100	15.0	45	9.0	60	3.0	30	3.0	30.0	40	8.0	40	6.0	50	3.8	30	2.3	20.1	50.1	6
RR - 7 Barikandi Launch Ghat - Jellid	0	0.0	50	10.0	60	3.0	0	0.0	13.0	60	12.0	0	0.0	0	0.0	0	0.0	12.0	25.0	28
RR - 8 Jafarpur - Januna River	100	15.0	70	14.0	60	3.0	30	3.0	35.0	60	12.0	30	4.5	25	1.9	0	0.0	18.4	53.4	5
RR - 9 Narsingpur - Chitti	0	0.0	60	12.0	60	3.0	0	0.0	15.0	70	14.0	0	0.0	25	1.9	0	0.0	15.9	30.9	21
RR - 10 Link Road (R&H - Mubesh Road)	0	0.0	30	6.0	60	3.0	0	0.0	9.0	30	6.0	100	15.0	0	0.0	30	2.3	23.3	32.3	18
RR - 11 Lowfatapur - Kalligonj Bazar	0	0.0	60	12.0	60	3.0	0	0.0	15.0	60	12.0	0	0.0	0	0.0	0	0.0	4.0	13.0	41
RR - 12 Dhari - Shreerapur - Lahari	0	0.0	60	12.0	60	3.0	0	0.0	15.0	60	12.0	0	0.0	0	0.0	0	0.0	4.0	13.0	27
RR - 13 Aliahad - Gopalpur	0	0.0	60	12.0	60	3.0	0	0.0	15.0	60	12.0	0	0.0	0	0.0	0	0.0	4.0	13.0	23
RR - 14 Shauzagan - Solimganj	75	11.3	80	16.0	60	3.0	0	0.0	30.3	90	18.0	60	9.0	25	1.9	60	4.5	33.4	63.7	4
RR - 15 Mubesh Road - Gooli - Panipur	0	0.0	60	12.0	60	3.0	0	0.0	30.3	100	20.0	100	15.0	50	3.8	100	7.5	46.3	76.6	2
RR - 16 Dashmouja - Jemupur	0	0.0	60	12.0	60	3.0	0	0.0	15.0	80	16.0	50	7.5	0	0.0	0	0.0	23.5	38.5	12
RR - 17 R&H Road - Kizmatad via Bolachang Bazar	100	15.0	30	10.0	60	3.0	40	4.0	32.0	30	6.0	0	0.0	0	0.0	0	0.0	6.0	38.0	13
RR - 18 Raulabad - Ratampur via Mubah	50	7.5	50	10.0	60	3.0	0	0.0	20.5	50	10.0	70	10.5	25	1.9	60	4.5	26.9	47.4	9
RR - 19 Nurabangur - Muktabangur	0	0.0	50	10.0	60	3.0	0	0.0	13.0	60	12.0	0	0.0	0	0.0	0	0.0	12.0	25.0	22
RR - 20 Manikongur Launch Ghat - Kingkong Bazar	50	7.5	40	8.0	60	3.0	0	0.0	18.5	50	10.0	0	0.0	0	0.0	30	2.3	12.3	30.8	29
RR - 21 Dhapuna - Subyur High School	0	0.0	30	6.0	60	3.0	0	0.0	9.0	10	2.0	0	0.0	0	0.0	0	0.0	2.0	11.0	43
RR - 22 Monipur - Natchar Bazar	0	0.0	70	14.0	60	3.0	30	3.0	20.0	30	6.0	0	0.0	0	0.0	30	2.3	8.3	28.3	26
RR - 23 Kalligonj - Dobacchali	0	0.0	35	7.0	60	3.0	0	0.0	10.0	50	10.0	0	0.0	0	0.0	0	0.0	10.0	20.0	35
RR - 24 Rajapur - Coppers South Para	0	0.0	80	16.0	60	3.0	0	0.0	19.0	20	4.0	0	0.0	0	0.0	0	0.0	4.0	23.0	34
RR - 25 Krishnagar - Bahabari	0	0.0	70	14.0	60	3.0	0	0.0	17.0	40	8.0	0	0.0	0	0.0	0	0.0	8.0	25.0	30
RR - 26 Nabinagar - Karimshah Bazar	0	0.0	40	8.0	60	3.0	30	3.0	14.0	40	8.0	60	9.0	0	0.0	0	0.0	17.0	31.0	20
RR - 27 Alamnagar - Charlapang - Manipur	0	0.0	50	10.0	60	3.0	0	0.0	13.0	50	10.0	80	12.0	0	0.0	30	2.3	24.3	37.3	14
RR - 28 Bugeon - Kedarbaha	0	0.0	70	14.0	60	3.0	30	3.0	20.0	60	12.0	0	0.0	25	1.9	30	2.3	16.2	36.2	16
RR - 29 Shabpur Veterinary Hospital - Kalligonj (Dhobachali)	0	0.0	50	10.0	60	3.0	0	0.0	13.0	10	2.0	0	0.0	0	0.0	0	0.0	2.0	15.0	39
RR - 30 Bolachang Bazar - Nabinagar/Bancharampur Road	0	0.0	30	6.0	60	3.0	0	0.0	9.0	10	2.0	0	0.0	0	0.0	0	0.0	2.0	11.0	44
RR - 31 Nabinagar - Alamnagar	0	0.0	30	6.0	60	3.0	0	0.0	9.0	30	6.0	60	9.0	0	0.0	0	0.0	15.0	24.0	32
RR - 32 Isambari - Sharda via Nuvli	0	0.0	70	14.0	60	3.0	0	0.0	17.0	50	12.0	0	0.0	0	0.0	0	0.0	12.0	29.0	25
RR - 33 Barali - Nilobhi	0	0.0	20	4.0	60	3.0	0	0.0	7.0	20	4.0	0	0.0	0	0.0	0	0.0	4.0	11.0	42
RR - 34 Mubeshpur Launch Ghat - Cori Coan via Bilger	25	3.8	50	10.0	60	3.0	0	0.0	16.8	60	12.0	0	0.0	25	1.9	30	2.3	16.2	33.0	17
RR - 35 Dhara Barings - Solimganj	0	0.0	20	4.0	60	3.0	0	0.0	7.0	10	2.0	0	0.0	0	0.0	0	0.0	2.0	9.0	45
RR - 36 Kowaghat - Manikongur	0	0.0	45	9.0	60	3.0	0	0.0	11.0	30	6.0	0	0.0	0	0.0	0	0.0	6.0	17.0	36
RR - 37 Durgamapur Launch Ghat - Keoborepur	0	0.0	30	6.0	60	3.0	0	0.0	12.0	20	4.0	0	0.0	0	0.0	0	0.0	4.0	16.0	37
RR - 38 Lowfatapur - Hazipur	0	0.0	30	6.0	60	3.0	0	0.0	7.0	10	2.0	0	0.0	0	0.0	60	4.5	6.5	13.5	40
RR - 39 Subarna - Rasulkabad via Gagandapur	0	0.0	70	14.0	60	3.0	0	0.0	17.0	50	10.0	0	0.0	0	0.0	30	2.3	12.3	29.3	24
RR - 40 Khabara - Meruonia Bazar via Bagura	25	3.8	60	12.0	60	3.0	40	4.0	23.8	60	12.0	0	0.0	25	1.9	30	2.3	16.2	40.0	11
RR - 41 Pundhagar - Marun via Mahi	100	15.0	60	12.0	60	3.0	0	0.0	30.0	10	2.0	0	0.0	0	0.0	0	0.0	2.0	32.0	19
RR - 42 Kurchar - Borhiti	0	0.0	70	14.0	60	3.0	0	0.0	17.0	30	6.0	0	0.0	25	1.9	0	0.0	7.9	24.9	31
RR - 43 Karabari - Barikbaha	0	0.0	40	8.0	60	3.0	0	0.0	11.0	20	4.0	0	0.0	0	0.0	0	0.0	4.0	15.0	38

Table G.1.9 Calculation of Score for Socioeconomic Ranking (Bancharampur)

NAME OF ROAD	Linkage to Market	Agriculture Potential	Degree of Access Im/Parallel	Eco Total	Population Served	Request Upazila	Access to Health		Access to Social Services		TOTAL SCORE	Socio Ranking								
							Health	School	Socio	Total										
FB - B Horna - Marichakandi	100	15.0	60	12.0	60	3.0	100	10.0	40.0	70	14.0	100	15.0	100	7.5	100	7.5	44.0	84.0	1
FB - B Bancharampur - Nabinagar	75	11.3	50	10.0	60	3.0	70	7.0	31.3	40	8.0	90	13.5	50	3.8	60	4.5	29.8	61.1	2
FB - B Sahimganj - Kariakandi	75	11.3	60	12.0	60	3.0	30	3.0	29.3	50	10.0	100	15.0	50	3.8	30	2.3	31.1	60.4	3
RR - 1 Bancharampur - Dariachar	50	7.5	55	11.0	60	3.0	30	3.0	24.5	60	12.0	90	13.5	25	1.9	60	4.5	31.9	56.4	4
RR - 2 Ujunchar - Dariachar - Bahorechar	50	7.5	40	8.0	60	3.0	0	0.0	18.5	20	4.0	80	12.0	0	0.0	0	0.0	16.0	34.5	6
RR - 3 Bashgari - Durgapur	0	0.0	40	8.0	60	3.0	0	0.0	11.0	20	4.0	80	12.0	0	0.0	0	0.0	16.0	27.0	11
RR - 4 Bahadurpur - Gokulnagar	0	0.0	40	8.0	60	3.0	0	0.0	11.0	10	2.0	70	10.5	0	0.0	0	0.0	12.5	23.5	15
RR - 5 Bancharampur - Kalainagar Launch Ghat	0	0.0	30	6.0	60	3.0	0	0.0	9.0	30	6.0	70	10.5	0	0.0	0	0.0	16.5	25.5	13
RR - 6 Jobongarj Bazar - Bishnarampur	25	3.8	40	8.0	60	3.0	0	0.0	14.8	40	8.0	60	9.0	25	1.9	0	0.0	18.9	33.7	7
RR - 7 Bishnarampur - Jaikalipur	50	7.5	30	6.0	60	3.0	0	0.0	16.5	30	6.0	60	9.0	25	1.9	0	0.0	16.9	33.4	8
RR - 8 Ulukandi - Paharikandi	0	0.0	45	9.0	60	3.0	0	0.0	12.0	20	4.0	50	7.5	0	0.0	30	2.3	13.8	25.8	12
RR - 9 Shalinabad - Junarchar	0	0.0	40	8.0	60	3.0	30	3.0	14.0	40	8.0	50	7.5	0	0.0	30	2.3	17.8	31.8	10
RR - 10 Charlahani - Purbahaty via Guaratoli	0	0.0	40	8.0	60	3.0	30	3.0	14.0	40	8.0	40	6.0	25	1.9	30	2.3	18.2	32.2	9
RR - 11 Fardabad - Junarchar	0	0.0	50	10.0	60	3.0	0	0.0	13.0	40	8.0	30	4.5	0	0.0	0	0.0	12.5	25.5	14
RR - 12 Kalainagar Launch Ghat - Rupashdi	50	7.5	60	12.0	60	3.0	0	0.0	22.5	70	14.0	20	3.0	50	3.8	0	0.0	20.8	43.3	5
RR - 13 Rupashdi - Burberia	0	0.0	30	6.0	60	3.0	0	0.0	9.0	10	2.0	10	1.5	25	1.9	0	0.0	5.4	14.4	21
RR - 14 Rupashdi - Ashrafabad	0	0.0	40	8.0	60	3.0	0	0.0	11.0	20	4.0	0	0.0	0	0.0	30	2.3	6.3	17.3	17
RR - 15 Sarifpur - Paratuli	0	0.0	40	8.0	60	3.0	0	0.0	11.0	20	4.0	0	0.0	0	0.0	0	0.0	4.0	15.0	20
RR - 16 Sunarampur - Shantipur	0	0.0	50	10.0	60	3.0	0	0.0	13.0	20	4.0	0	0.0	0	0.0	0	0.0	4.0	17.0	18
RR - 17 Barakandi - Jaikalipur Launch Ghat	0	0.0	50	10.0	60	3.0	0	0.0	13.0	0	0.0	0	0.0	0	0.0	0	0.0	0.0	13.0	22
RR - 18 Dariakandi - Gukolnagar via Imamnagar	0	0.0	40	8.0	60	3.0	0	0.0	11.0	10	2.0	0	0.0	0	0.0	0	0.0	2.0	13.0	23
RR - 19 Bahorchar South Para - Bahorchar	0	0.0	40	8.0	60	3.0	0	0.0	11.0	30	6.0	0	0.0	0	0.0	0	0.0	6.0	17.0	19
RR - 20 Rupashdi - Kaurpur	0	0.0	50	10.0	60	3.0	0	0.0	13.0	40	8.0	0	0.0	0	0.0	0	0.0	8.0	21.0	16
RR - 21 Hossainpur Road	0	0.0	30	6.0	60	3.0	0	0.0	9.0	20	4.0	0	0.0	0	0.0	0	0.0	4.0	13.0	24

Table G.1.9 Calculation of Score for Socioeconomic Ranking (Debidwar)

NAME OF ROAD	Linkage to Market	Agricultural Potential	Degree of Access Imj	Parallel Activities	Eco Total	Population Served	Request for Upazila	Access to Health	Access to Social School	Socio Total	TOTAL SCORE	Socio Ranking								
FB - B Madhya - Companygonj	100	15.0	55	11.0	60	3.0	0	0.0	29.0	80	16.0	100	15.0	50	3.8	60	4.5	39.3	68.3	1
FB - B Kalikapur - Iszagram	100	15.0	70	14.0	20	1.0	0	0.0	30.0	80	16.0	100	15.0	50	3.8	30	2.3	37.1	67.1	2
FB - B Barat - Gobindpur	100	15.0	55	11.0	20	1.0	0	0.0	27.0	50	10.0	90	13.5	0	0.0	0	0.0	23.5	50.5	5
RR - 1 Debidwar - Iszagram	100	15.0	50	10.0	20	1.0	0	0.0	26.0	40	8.0	90	13.5	25	1.9	30	2.3	25.7	51.7	3
RR - 2 Fultali - Chowmuhani	50	7.5	45	9.0	20	1.0	0	0.0	17.5	20	4.0	80	12.0	0	0.0	60	4.5	20.5	38.0	10
FB - B Sepera - Sultanpur	50	7.5	50	10.0	20	1.0	0	0.0	18.5	50	10.0	80	12.0	25	1.9	30	2.3	26.2	44.7	7
FB - B Yusufpur - Prigonj	100	15.0	30	6.0	20	1.0	40	4.0	26.0	50	10.0	70	10.5	25	1.9	30	2.3	24.7	50.7	4
FB - B Charbakar - Nabiabad G.C.C.R.	75	11.3	50	10.0	60	3.0	40	4.0	28.3	30	6.0	70	10.5	25	1.9	30	2.3	20.7	49.0	6
RR - 3 Monghata - Modonogor	0	0.0	60	12.0	60	3.0	0	0.0	15.0	50	10.0	60	9.0	25	1.9	60	4.5	25.4	40.4	9
FB - B Jaarfargonj - Bborokarnta	0	0.0	60	12.0	20	1.0	0	0.0	13.0	40	8.0	60	9.0	50	3.8	30	2.3	23.1	36.1	11
RR - 4 Debidwar - Atapur	0	0.0	60	12.0	60	3.0	0	0.0	15.0	50	10.0	50	7.5	50	3.8	60	4.5	25.8	40.8	8
RR - 5 Fultali - Khiraikandi	0	0.0	65	13.0	60	3.0	0	0.0	16.0	30	6.0	50	7.5	0	0.0	30	2.3	15.8	31.8	14
RR - 6 Virallah - Modhumura	50	7.5	50	10.0	60	3.0	0	0.0	20.5	30	6.0	40	6.0	0	0.0	30	2.3	14.3	34.8	13
RR - 7 Boroalompur - Dharni	25	3.8	40	8.0	20	1.0	0	0.0	12.8	30	6.0	30	4.5	0	0.0	0	0.0	10.5	23.3	16
RR - 8 Lokhipur - Barashaighor	25	3.8	50	10.0	60	3.0	0	0.0	16.8	50	10.0	20	3.0	25	1.9	0	0.0	14.9	31.7	15
RR - 9 Tebaria - Choma	0	0.0	80	16.0	60	3.0	0	0.0	19.0	60	12.0	10	1.5	0	0.0	30	2.3	15.8	34.8	12
RR - 10 Jafargonj - Rajamaher	0	0.0	50	10.0	20	1.0	0	0.0	11.0	20	4.0	0	0.0	0	0.0	30	2.3	6.3	17.3	17
RR - 11 Hossainpur - Bakosar	0	0.0	40	8.0	20	1.0	0	0.0	9.0	20	4.0	0	0.0	0	0.0	30	2.3	6.3	15.3	18
RR - 12 Barur - Biranmondol	0	0.0	30	6.0	20	1.0	0	0.0	7.0	10	2.0	0	0.0	0	0.0	30	2.3	4.3	11.3	20
RR - 13 Sibunogor - Sultanpur	0	0.0	35	7.0	20	1.0	0	0.0	8.0	30	6.0	0	0.0	0	0.0	0	0.0	6.0	14.0	19

**Table G.1.10 Population Served and Estimated Farm Land Area  
(Kachua Upazila) (1/6)**

No.	Name of Road	Geocode	Total Population	Weight	Population	Area of Mauza	RIA	Ratio of F/L	Farm Area
1	Feeder-A Kachua- Kalipara Road	07-071	6,991	0.38	2,621	1,680	630	80.9%	510
		07-775	3,557	0.33	1,185	642	214	80.9%	173
		31-793	721	1.00	721	86	86	80.9%	70
		31-053	556	1.00	556	78	78	80.9%	63
		31-225	833	1.00	833	151	151	80.9%	122
		31-438	1,060	1.00	1,060	146	146	80.9%	118
		31-497	594	1.00	594	101	101	80.9%	82
		31-568	1,647	0.50	823	328	164	80.9%	133
		31-272	404	0.50	202	383	192	80.9%	155
		31-829	1,717	1.00	1,717	328	328	80.9%	265
		31-841	499	1.00	499	102	102	80.9%	83
		31-965	608	0.50	304	127	64	80.9%	51
		31-112	825	1.00	825	126	126	80.9%	102
		31-746	1,495	0.50	747	298	149	80.9%	121
		31-479	856	0.50	428	257	129	80.9%	104
		23-450	205	1.00	205	57	57	80.9%	46
		23-740	3,279	0.40	1,311	726	290	80.9%	235
		63-882	1,476	0.50	738	359	180	80.9%	145
		63-580	894	0.50	447	184	92	80.9%	74
		63-041	877	1.00	877	172	172	80.9%	139
		63-610	2,185	0.33	728	459	153	80.9%	124
		63-491	2,920	0.25	730	583	146	80.9%	118
		63-574	629	0.50	314	184	92	80.9%	74
63-906	896	1.00	896	88	88	80.9%	71		
				19,361		3,928		3,178	
2	Feeder-B Kachua Upazila Parishad Road	55-248	471	0.50	235	112	56	80.9%	45
		55-533	860	0.67	573	211	141	80.9%	114
					808		197		159

No.	Name of Road	Geocode	Total Population	Weight	Population	Area of Mauza	RIA	Ratio of F/L	Farm Area	
3	Feeder-B Kachua- Sachar G.C.C Road	47-029	1,602	1.00	1,602	290	290	80.9%	235	
		47-349	1,672	1.00	1,672	645	645	80.9%	522	
		47-485	359	1.00	359	34	34	80.9%	28	
		47-586	557	1.00	557	187	187	80.9%	151	
		87-088	475	1.00	475	164	164	80.9%	133	
		87-313	2,487	0.75	1,865	809	607	80.9%	491	
		87-734	3,200	0.67	2,133	900	600	80.9%	485	
		15-207	8,140	0.30	2,442	2,281	684	80.9%	554	
		15-195	5,518	0.13	689	1,726	216	80.9%	175	
		71-811	6,323	0.17	1,053	1,221	204	80.9%	165	
						12,847		3,630		2,937
		4	Rural Road 1 Kachua- Kashimpur Road	55-082	2,087	0.50	1,043	481	241	80.9%
55-118	789			1.00	789	193	193	80.9%	156	
55-213	269			0.67	179	247	165	80.9%	133	
55-248	471			0.50	235	112	56	80.9%	45	
55-319	1,851			1.00	1,851	424	424	80.9%	343	
55-355	1,472			1.00	1,472	271	271	80.9%	219	
55-533	860			0.25	215	211	53	80.9%	43	
55-538	2,269			0.33	756	477	159	80.9%	129	
55-592	440			1.00	440	80	80	80.9%	65	
55-598	476			1.00	476	163	163	80.9%	132	
55-615	3,918			0.50	1,959	978	489	80.9%	396	
55-693	925			0.50	462	269	135	80.9%	109	
55-681	232			1.00	232	109	109	80.9%	88	
				10,109		2,536		2,052		
5	Rural Road 2 Kachua- Raganthpur Road	55-538	2,269	0.67	1,512	477	318	80.9%	257	
		55-426	5,145	0.88	4,501	1,643	1,438	80.9%	1,163	
				6,013		1,756		1,420		

Table G.1.10 Population Served and Estimated Farm Land Area  
(Kachua Upazila) (2/6)

No.	Name of Road	Geocode	Total Population	Weight	Population	Area of Mauza	RIA	Ratio of F/L	Farm Area
6	Rural Road 3 Kachua-Nowabpur Road	47-106	258	1.00	258	79	79	80.9%	64
		47-396	1,655	0.33	551	320	107	80.9%	86
		47-444	275	1.00	275	63	63	80.9%	51
		47-544	4,506	0.33	1,502	399	133	80.9%	108
		39-983	4,327	0.60	2,596	1,075	645	80.9%	522
						5,182		1,027	
7	Rural Road 4 Sachar-Amirabad Road	71-811	6,323	0.25	1,580	1,221	305	80.9%	247
		71-787	4,587	0.20	917	1,170	234	80.9%	189
		71-171	2,611	0.20	522	835	167	80.9%	135
		71-912	2,348	1.00	2,348	573	573	80.9%	464
		71-977	546	1.00	546	110	110	80.9%	89
		79-130	2,078	0.50	1,039	554	277	80.9%	224
						6,952		1,666	
8	Rural Road 5 (1/2) Kachua-Teguria Road	47-302	919	1.00	919	140	140	80.9%	113
		47-544	4,506	0.17	751	399	67	80.9%	54
		47-296	320	1.00	320	59	59	80.9%	48
		47-420	308	1.00	308	69	69	80.9%	56
		47-586	557	0.33	185	187	62	80.9%	50
		47-710	174	1.00	174	73	73	80.9%	59
		39-935	5,066	0.50	2,533	1,235	618	80.9%	500
		39-645	1,257	0.14	179	551	79	80.9%	64
		39-989	895	1.00	895	104	104	80.9%	84
		39-994	1,223	1.00	1,223	284	284	80.9%	230
		87-023	1,259	1.00	1,259	500	500	80.9%	405
		87-823	2,015	1.00	2,015	380	380	80.9%	307
						10,761		2,434	

No.	Name of Road	Geocode	Total Population	Weight	Population	Area of Mauza	RIA	Ratio of F/L	Farm Area
9	Rural Road 6 Pipalkora-Rahimanagar Road	07-124	604	1.00	604	134	134	80.9%	108
		07-142	199	1.00	199	33	33	80.9%	27
		07-219	1,867	0.33	622	386	129	80.9%	104
		07-236	2,285	0.33	761	689	230	80.9%	186
		07-254	167	1.00	167	45	45	80.9%	36
		07-408	2,268	0.33	756	603	201	80.9%	163
		07-456	317	1.00	317	45	45	80.9%	36
		07-467	216	1.00	216	141	141	80.9%	114
		07-621	1,093	1.00	1,093	222	222	80.9%	180
		07-764	809	1.00	809	461	461	80.9%	373
		07-775	3,557	0.67	2,371	642	428	80.9%	346
		07-781	349	0.50	174	130	65	80.9%	53
		07-805	524	1.00	524	80	80	80.9%	65
		07-846	641	1.00	641	182	182	80.9%	147
07-971	114	1.00	114	53	53	80.9%	43		
				9,368		2,448		1,981	
10	Rural Road 7 Baratolaganu-Moonoharpur Road	23-017	1,531	0.40	612	282	113	80.9%	91
		23-521	1,205	1.00	1,205	193	193	80.9%	156
		23-663	1,398	0.25	349	432	108	80.9%	87
		23-722	1,994	1.00	1,994	322	322	80.9%	260
		23-858	993	0.50	496	119	60	80.9%	48
				4,656		793		643	
11	Rural Road 8 Palkhal-Aliara Road	94-047	2,485	0.67	1,656	547	365	80.9%	295
		94-473	118	1.00	118	46	46	80.9%	37
		94-527	1,209	1.00	1,209	331	331	80.9%	268
		94-657	1,235	1.00	1,235	239	239	80.9%	193
		87-065	765	1.00	765	203	203	80.9%	164
				4,983		1,184		958	



Table G.1.10 Population Served and Estimated Farm Land Area  
(Kachua Upazila) (3/6)

No.	Name of Road	Geocode	Total Population	Weight	Population	Area of Mauza	RIA	Ratio of F/L	Farm Area
12	Rural Road 9 Kachua- Barharish Road	55-248	471	0.33	157	112	37	80.9%	30
		63-035	3,405	0.33	1,135	697	232	80.9%	188
		63-159	421	1.00	421	186	186	80.9%	150
		63-230	1,635	0.33	545	531	177	80.9%	143
		63-284	109	1.00	109	58	58	80.9%	47
		63-491	2,920	0.50	1,460	583	292	80.9%	236
		63-610	2,185	0.20	437	459	92	80.9%	74
		63-752	937	1.00	937	230	230	80.9%	186
				5,201		1,304		1,055	
13	Rural Road 10 Palyiri- Darbeshgonj Road	63-325	3,866	0.40	1,546	686	274	80.9%	222
		63-331	1,292	1.00	1,292	372	372	80.9%	301
		63-230	1,635	0.67	1,090	531	354	80.9%	286
		63-651	1,628	0.50	814	284	142	80.9%	115
		63-817	438	1.00	438	332	332	80.9%	269
		63-835	1,506	1.00	1,506	228	228	80.9%	184
		63-882	1,235	0.50	617	359	180	80.9%	145
				7,303		1,882		1,522	
14	Rural Road 11 Uzani- Borogonj Road	39-515	1,278	0.50	639	246	123	80.9%	100
		39-935	5,066	0.50	2,533	1,235	618	80.9%	500
		39-983	4,327	0.25	1,081	1,075	269	80.9%	217
		87-313	2,487	0.25	621	809	202	80.9%	164
		87-189	1,101	1.00	1,101	392	392	80.9%	317
				5,975		1,604		1,297	

No.	Name of Road	Geocode	Total Population	Weight	Population	Area of Mauza	RIA	Ratio of F/L	Farm Area
15	Rural Road 12 Loyamehaer- Aliara Road	15-005	851	1.00	851	184	184	80.9%	149
		15-100	3,737	1.00	3,737	1,444	1,444	80.9%	1,168
		15-195	5,518	0.88	4,828	1,726	1,510	80.9%	1,222
		15-509	668	1.00	668	231	231	80.9%	187
		15-207	8,140	0.30	2,442	2,281	684	80.9%	554
		15-799	605	0.50	302	80	40	80.9%	32
		15-852	1,084	0.50	542	274	137	80.9%	111
						13,370		4,231	
16	Rural Road 13 Sachar- Modhupur Road	79-148	2,777	0.80	2,221	817	654	80.9%	529
		79-704	427	1.00	427	62	62	80.9%	50
		79-758	4,738	1.00	4,738	1,052	1,052	80.9%	851
				7,386		1,768		1,430	
17	Rural Road 14 Sachar-Ragdoil-Bayek Road	71-811	6,323	0.33	2,107	1,221	407	80.9%	329
		71-787	4,587	0.40	1,834	1,170	468	80.9%	379
		71-171	2,611	0.80	2,088	835	668	80.9%	540
		71-414	972	1.00	972	275	275	80.9%	222
				7,001		1,818		1,471	
18	Rural Road 15 Palakhal- Kadla Road	87-337	848	1.00	848	177	177	80.9%	143
		87-633	1,888	0.50	944	661	331	80.9%	267
		55-290	1,528	0.50	764	429	215	80.9%	174
		55-355	1,472	0.50	736	271	136	80.9%	110
		55-426	5,145	0.08	428	271	23	80.9%	18
		55-598	476	0.50	238	163	82	80.9%	66
				3,958		962		778	

Table G.1.10 Population Served and Estimated Farm Land Area  
(Kachua Upazila) (4/6)

No.	Name of Road	Geocode	Total Population	Weight	Population	Area of Mauza	RIA	Ratio of F/L	Farm Area
19	Rural Road 16 Bachaya- Prashannakap Road	87-633	1,888	0.50	944	661	331	80.9%	267
		94-769	1,256	0.92	2,984	942	864	80.9%	699
		94-959	5,782	0.50	2,891	1,561	781	80.9%	631
					6,819		1,975		1,597
20	Rural Road 17 Baraiara- Modhupur Road	79-011	1,795	1.00	1,795	395	395	80.9%	320
		79-076	567	0.50	283	114	57	80.9%	46
		79-130	2,078	0.50	1,039	554	277	80.9%	224
		79-183	640	1.00	640	41	41	80.9%	33
		79-260	0	1.00	0	64	64	80.9%	52
		79-343	984	1.00	984	168	168	80.9%	136
		79-604	1,269	1.00	1,269	176	176	80.9%	142
		79-929	342	1.00	342	56	56	80.9%	45
			6,352		1,234		998		
21	Rural Road 18 D.C. Road- Jagorpur Road	07-408	2,268	0.33	756	603	201	80.9%	163
		07-219	1,867	0.50	933	386	193	80.9%	156
		07-071	6,991	0.25	1,747	1,680	420	80.9%	340
					3,436		814		659
22	Rural Road 19 Amejan- Poyalgacha Road	07-071	6,991	0.25	1,747	1,680	420	80.9%	340
		07-728	546	0.60	327	132	79	80.9%	64
		07-236	2,285	0.33	761	689	230	80.9%	186
					2,835		729		590
23	Rural Road 20 Batapokari- Ninchar Road	15-207	8,140	0.40	3,256	2,281	912	80.9%	738
		15-864	1,585	0.50	792	422	211	80.9%	171
		15-669	565	1.00	565	228	228	80.9%	184
		15-556	785	1.00	785	68	68	80.9%	55
					5,398		1,419		1,148

No.	Name of Road	Geocode	Total Population	Weight	Population	Area of Mauza	RIA	Ratio of F/L	Farm Area
24	Rural Road 21 Hasibpur-Darbesgonj Road	23-153	1,531	0.33	510	334	111	80.9%	90
		23-384	805	0.60	483	184	110	80.9%	89
		23-918	366	1.00	366	45	45	80.9%	36
		23-740	3,279	0.40	1,311	726	290	80.9%	235
		63-325	3,866	0.20	773	686	137	80.9%	111
		63-278	393	1.00	393	92	92	80.9%	74
		63-390	454	1.00	454	269	269	80.9%	218
		63-610	2,185	0.50	1,092	56	28	80.9%	23
			5,382		1,083		876		
25	Rural Road 22 Uzani- Singdda Road	39-645	1,257	0.57	718	551	315	80.9%	255
		39-698	913	1.00	913	182	182	80.9%	147
		39-983	4,327	0.20	865	1,075	215	80.9%	174
					2,496		712		576
26	Rural Road 23 Ragunathpur- Modhupur Road	94-959	5,782	0.50	2,891	1,561	781	80.9%	631
		55-082	2,087	0.50	1,043	481	241	80.9%	195
		55-136	1,022	1.00	1,022	170	170	80.9%	138
		55-290	1,528	0.50	764	429	215	80.9%	174
		55-426	5,145	0.04	214	1,643	68	80.9%	55
		55-639	925	0.50	462	269	135	80.9%	109
					6,396		1,608		1,301
27	Rural Road 24 Kachua-College-Beipur Road	47-544	4,506	0.17	751	399	67	80.9%	54
		63-562	636	1.00	636	104	104	80.9%	84
		63-574	629	0.50	314	184	92	80.9%	74
		63-900	2,361	0.50	1,180	638	319	80.9%	258
					2,881		582		470
28	Rural Road 25 Ragdoit- Gograbari Road	71-811	6,323	0.42	2,634	1,221	509	80.9%	412
		71-787	4,587	0.40	1,834	1,170	468	80.9%	379
				4,468		977		790	

Table G.1.10 Population Served and Estimated Farm Land Area  
(Kachua Upazila) (5/6)

No.	Name of Road	Geocode	Total Population	Weight	Population	Area of Mauza	RIA	Ratio of F/L	Farm Area
29	Rural Road 26 Akasia-Dumoria Road	55-213	269	0.33	89	247	82	80.9%	67
		55-432	963	1.00	963	271	271	80.9%	219
		55-615	3,918	0.50	1,959	978	489	80.9%	396
		55-675	676	1.00	676	142	142	80.9%	115
					3,687	984		796	
30	Rural Road 27 Pathair-Aliara Road	79-148	2,777	0.20	555	817	163	80.9%	132
		79-367	1,130	1.00	1,130	163	163	80.9%	132
		15-864	1,585	0.50	792	422	211	80.9%	171
		15-716	1,072	1.00	1,072	385	385	80.9%	311
		15-799	605	0.50	302	80	40	80.9%	32
		15-852	1,084	0.50	542	274	137	80.9%	111
		94-047	2,485	0.33	828	547	182	80.9%	148
				5,221	1,282		1,037		
31	Rural Road 28 Palakhal-Charatbanga Road	87-734	3,200	0.33	1,066	900	300	80.9%	243
		94-870	3,783	1.00	3,783	927	927	80.9%	750
		94-769	3,256	0.08	271	942	79	80.9%	64
				5,120	1,306		1,056		
32	Rural Road 29 Tetua-Borochoh Road	39-645	1,257	0.29	359	551	157	80.9%	127
		39-201	940	1.00	940	228	228	80.9%	184
				1,299	385		312		
33	Rural Road 30 Rahimanagar-Paranpur Road	31-242	934	0.50	467	222	111	80.9%	90
		31-402	442	0.33	147	123	41	80.9%	33
		31-746	1,495	0.50	747	298	149	80.9%	121
		63-035	3,405	0.67	2,270	697	465	80.9%	376
		63-461	1,019	0.50	509	329	165	80.9%	133
				4,140	930		753		

No.	Name of Road	Geocode	Total Population	Weight	Population	Area of Mauza	RIA	Ratio of F/L	Farm Area
34	Rural Road 31 Monoharpur-Lowkora Road	31-272	404	0.50	202	383	192	80.9%	155
		31-373	620	1.00	620	225	225	80.9%	182
		31-361	1,556	1.00	1,556	47	47	80.9%	38
		31-503	488	1.00	488	66	66	80.9%	53
		31-568	1,647	0.50	823	328	164	80.9%	133
		31-687	1,546	1.00	1,546	387	387	80.9%	313
		31-242	934	0.33	311	222	74	80.9%	60
		31-402	442	0.33	147	123	41	80.9%	33
		31-965	608	0.50	304	127	64	80.9%	51
		63-461	1,019	0.50	509	329	165	80.9%	133
		63-651	1,628	0.50	814	284	142	80.9%	115
63-947	352	1.00	352	71	71	80.9%	57		
				7,672	1,637		1,324		
35	Rural Road 32 Koa-Domoria Road	55-533	860	0.00	0	211	0	80.9%	0
		63-491	2,920	0.20	584	583	117	80.9%	94
		63-325	3,866	0.40	1,546	686	274	80.9%	222
				2,130	391		316		
36	Rural Road 33 Koraiish-Khidda Road	47-544	4,506	0.33	1,502	399	133	80.9%	108
		47-396	1,655	0.60	993	320	192	80.9%	155
		47-094	775	1.00	775	158	158	80.9%	128
		47-059	430	1.00	430	75	75	80.9%	61
		47-692	75	1.00	75	13	13	80.9%	11
		47-530	1,400	0.50	700	345	173	80.9%	140
		39-266	509	1.00	509	197	197	80.9%	159
		39-515	1,278	0.50	639	246	123	80.9%	100
				5,623	1,064		860		

Table G.1.10 Population Served and Estimated Farm Land Area  
(Kachua Upazila) (6/6)

No.	Name of Road	Geocode	Total Population	Weight	Population	Area of Mauza	RIA	Ratio of F/L	Farm Area
37	Rural Road 34 Monkhola-Kaitine Road	47-953	1,616	1.00	1,616	400	400	80.9%	324
38	Rural Road 35 Hossainpur-Chanyini Road	07-071	6,991	0.13	873	1,680	210	80.9%	170
		07-627	367	1.00	367	67	67	80.9%	54
		07-307	227	1.00	227	52	52	80.9%	42
		07-236	2,285	0.50	1,142	689	345	80.9%	279
					2,609		674		545
39	Rural Road 36 Rahima Nagar Subidpur via Menir Bazar	63-900	2,361	0.50	1,180	638	319	80.9%	258
		23-153	1,531	0.60	918	334	200	80.9%	162
		23-177	137	1.00	137	62	62	80.9%	50
		23-165	289	1.00	289	103	103	80.9%	83
		23-017	1,531	0.60	918	282	169	80.9%	137
		23-379	1,310	1.00	1,310	338	338	80.9%	273
		23-663	1,398	0.75	1,048	432	324	80.9%	262
		23-384	805	0.40	322	184	74	80.9%	60
		23-888	135	1.00	135	49	49	80.9%	40
		23-923	840	1.00	840	183	183	80.9%	148
				7,097		1,821		1,473	

**Table G.1.10 Population Served and Estimated Farm Land Area  
(Nabinagar Upazila) (1/5)**

No.	Name of Road	Geocode	Total Population	Weight	Population	Area of Mauza	RIA	Ratio of F/L	Farm Area
	Feeder-A	36-970	3,445	0.50	1,722	732	366	81.8%	299
		36-102	125	1.00	125	22	22	81.8%	18
		36-494	928	0.33	309	396	132	81.8%	108
		31-633	8,016	0.14	1,145	1,561	223	81.8%	182
		36-536	1,391	1.00	1,391	329	329	81.8%	269
		27-446	10,468	0.25	2,617	3,421	855	81.8%	700
		27-144	5,919	1.00	5,919	362	362	81.8%	296
		94-735	3,540	1.00	3,540	673	673	81.8%	551
		94-030	3,323	1.00	3,323	347	347	81.8%	284
		94-651	1,455	1.00	1,455	61	61	81.8%	50
						21,546		3,370	
1	Feeder-B Nabinagar - B. Baria	49-705	7,767	0.17	1,294	965	161	81.8%	132
		45-910	1,726	1.00	1,726	542	542	81.8%	443
		45-301	2,210	1.00	2,210	574	574	81.8%	470
		45-042	1,251	1.00	1,251	257	257	81.8%	210
		45-277	2,505	1.00	2,505	603	603	81.8%	493
				8,986		2,137		1,748	
2	Feeder-B Nabinagar - Bancharampur	94-934	7,397	0.33	2,432	2,075	692	81.8%	566
		67-802	6,678	0.75	5,008	1,456	1,092	81.8%	893
		67-621	2,686	0.33	895	707	236	81.8%	193
		85-940	4,442	0.25	1,110	1,300	325	81.8%	266
		85-470	1,855	1.00	1,855	468	468	81.8%	383
		85-771	1,384	1.00	1,384	56	56	81.8%	46
		85-096	774	1.00	774	64	64	81.8%	52
				13,458		2,932		2,399	

No.	Name of Road	Geocode	Total Population	Weight	Population	Area of Mauza	RIA	Ratio of F/L	Farm Area
3	RR-1 Kairafa College - Mohesh Road	40-506	4,988	0.50	2,494	1,498	749	81.8%	613
		40-434	0	1.00	0	221	221	81.8%	181
		40-868	0	1.00	0	69	69	81.8%	56
		40-590	2,592	1.00	2,592	346	346	81.8%	283
		40-578	0	1.00	0	60	60	81.8%	49
		40-777	4,507	0.67	3,004	868	579	81.8%	473
				8,090		2,024		1,655	
4	RR-2 Jenudpur - Jamuna River	36-657	1,117	0.50	558	661	331	81.8%	270
		63-271	2,157	0.67	1,438	331	221	81.8%	181
		63-904	3,412	0.17	568	749	125	81.8%	102
		63-241	1,848	0.40	739	634	254	81.8%	207
		36-675	1,069	0.88	935	117	102	81.8%	84
				4,238		1,032		844	
5	RR-3 Karaitbari - Rashullabad	36-440	2,028	1.00	2,028	422	422	81.8%	345
		36-542	1,964	1.00	1,964	510	510	81.8%	417
		63-904	3,412	0.40	1,364	749	300	81.8%	245
				5,356		1,232		1,007	
6	RR-4 Majara Girt's School - mubishara	72-926	3,564	0.50	1,782	674	337	81.8%	276
		72-560	2,764	1.00	2,764	1,135	1,135	81.8%	928
		72-645	1,381	0.33	460	320	107	81.8%	87
		72-795	840	1.00	840	188	188	81.8%	154
		72-850	3,862	0.80	3,089	1,209	967	81.8%	791
		72-289	871	0.50	435	406	203	81.8%	166
		72-066	1,515	0.75	1,136	810	608	81.8%	497
		72-331	1,862	0.50	931	161	81	81.8%	66
		72-072	1,040	0.50	520	228	114	81.8%	93
				11,957		3,739		3,058	

**Table G.1.10 Population Served and Estimated Farm Land Area  
(Nabinagar Upazila) (2/5)**

No.	Name of Road	Geocode	Total Population	Weight	Population	Area of Mauza	RIA	Ratio of F/L	Farm Area
7	RR-5 Baishmuja Bazar - Gajirkandi via Birgoan	18-295	582	1.00	582	74	74	81.8%	61
		18-892	571	1.00	571	122	122	81.8%	100
		18-036	1,623	1.00	1,623	219	219	81.8%	179
		18-156	1,882	0.13	235	1,122	140	81.8%	115
		45-988	3,332	1.00	3,332	658	658	81.8%	538
		45-379	1,241	1.00	1,241	121	121	81.8%	99
		45-596	3,302	0.40	1,321	849	340	81.8%	278
		18-174	1,767	0.50	884	533	267	81.8%	218
				9,788		1,940		1,587	
8	RR-6 Jenudpur - Bhauriard (Jenudpur - Bitghar)	31-633	8,016	0.43	3,435	1,561	669	81.8%	547
		31-422	2,198	0.20	439	528	106	81.8%	86
		31-458	23	0.50	11	696	348	81.8%	285
		22-820	2,146	0.60	1,287	591	355	81.8%	290
		22-862	5,745	0.38	2,154	109	41	81.8%	33
			7,326		1,518		1,242		
8	RR-6 Jenudpur - Bhauriard (Bitghar - Bhauriard)	22-355	2,703	1.00	2,703	486	486	81.8%	398
		22-253	926	0.67	617	262	175	81.8%	143
		22-180	26	1.00	26	77	77	81.8%	63
		22-958	3,143	0.38	1,178	558	209	81.8%	171
			4,524		947		775		
9	RR-7 Barikandi Launch Ghat - Jalii	04-663	51	1.00	51	217	217	81.8%	178
		04-464	9,793	0.40	3,917	1,968	787	81.8%	644
		09-500	2,215	1.00	2,215	485	485	81.8%	397
		09-048	1,221	1.00	1,221	58	58	81.8%	47
		09-090	763	1.00	763	59	59	81.8%	48
		09-205	1,575	1.00	1,575	424	424	81.8%	347
		09-548	130	1.00	130	55	55	81.8%	45
		09-922	0	1.00	0	185	185	81.8%	151
			9,872		2,270		1,857		

No.	Name of Road	Geocode	Total Population	Weight	Population	Area of Mauza	RIA	Ratio of F/L	Farm Area
10	RR-8 Jafarpur - Januna River	27-446	10,468	0.63	6,543	3,421	2,138	81.8%	1,749
11	RR-9 Norshingpur - Chitti	54-259	1,903	1.00	1,903	145	145	81.8%	119
		54-367	1,978	1.00	1,978	404	404	81.8%	330
		54-729	2,632	0.50	1,316	1,115	558	81.8%	456
			5,197		1,107		905		
12	RR-10 Link Road (R&H - Mohesh Road)	90-681	3,572	1.00	3,572	252	252	81.8%	206
		90-530	4,428	0.33	1,476	556	185	81.8%	152
			5,048		437		358		
13	RR-11 Lourfatapur - Kaligonj Bazar	31-422	2,198	0.20	439	528	106	81.8%	86
		31-633	8,016	0.14	1,145	1,561	223	81.8%	182
		31-012	3,993	0.33	1,331	1,019	340	81.8%	278
			2,915		668		547		
14	RR-12 Dhari - Shreerapur - Lahari	67-518	2,758	1.00	2,758	548	548	81.8%	448
		67-621	2,686	0.67	1,790	707	471	81.8%	386
			4,548		1,019		834		
15	RR-13 Aliabad - Gopalpur	94-934	7,297	0.33	2,432	2,075	692	81.8%	566
		94-416	6,072	0.40	2,428	1,579	632	81.8%	517
			4,860		1,323		1,082		
16	RR-14 Shamagram - Solimgonj	85-940	4,442	0.50	2,221	1,300	650	81.8%	532
		85-844	3,328	0.50	1,764	917	459	81.8%	375
		85-928	2,803	0.50	1,401	39	20	81.8%	16
		85-615	1,250	1.00	1,250	163	163	81.8%	133
		04-603	971	1.00	971	155	155	81.8%	127
		04-952	2,983	1.00	2,983	497	497	81.8%	407
		09-108	3,963	0.83	3,302	650	542	81.8%	443
			13,892		2,485		2,032		

**Table G.1.10 Population Served and Estimated Farm Land Area  
(Nabinagar Upazila) (3/5)**

No.	Name of Road	Geocode	Total Population	Weight	Population	Area of Mauza	RIA	Ratio of F/L	Farm Area
17	RR-15 Mohesh Road - Goalı - Rasulpur	40-084	0	1.00	0	75	75	81.8%	61
		40-391	1,703	1.00	1,703	487	487	81.8%	398
		40-506	4,988	0.50	2,494	1,498	749	81.8%	613
		22-862	5,745	0.25	1,436	109	27	81.8%	22
		22-307	152	1.00	152	68	68	81.8%	56
		22-337	1,398	1.00	1,398	423	423	81.8%	346
		22-397	129	1.00	129	132	132	81.8%	108
		22-958	3,148	0.33	1,049	558	186	81.8%	152
		90-898	3,131	0.60	1,878	981	589	81.8%	481
		90-874	1,117	1.00	1,117	121	121	81.8%	99
		90-512	1,120	1.00	1,120	157	157	81.8%	128
		13-018	619	1.00	619	197	197	81.8%	161
		13-524	237	1.00	237	161	161	81.8%	132
		13-343	560	1.00	560	150	150	81.8%	123
		13-150	4,174	0.20	834	2,572	514	81.8%	421
		58-609	4,295	1.00	4,295	1,614	1,614	81.8%	1,320
		58-789	342	1.00	342	39	39	81.8%	32
		58-723	502	1.00	502	285	285	81.8%	233
		58-584	1,896	1.00	1,896	695	695	81.8%	569
		58-808	2,253	0.50	1,126	986	493	81.8%	403
				22,887		7,162		5,859	
18	RR-16 Dashmouja - Jenudpur	36-494	928	0.67	618	396	264	81.8%	216
		63-271	2,157	0.33	719	396	132	81.8%	108
					1,337		396		324
19	RR-17 R&H Road - Kazimabad via Bolachang Bazar	27-446	10,468	0.25	2,617	3,421	855	81.8%	700

No.	Name of Road	Geocode	Total Population	Weight	Population	Area of Mauza	RIA	Ratio of F/L	Farm Area
20	RR-18 Rashullahbad - Ratanpur via Mullah	67-982	1,885	0.33	628	530	177	81.8%	145
		67-693	2,121	1.00	2,121	651	651	81.8%	533
		72-482	1,392	1.00	1,392	327	327	81.8%	267
		72-826	3,564	0.60	2,138	674	404	81.8%	331
					6,279		1,559		1,275
21	RR-19 Nurjahanpur - Muktarampur	04-464	9,793	0.60	5,876	1,968	1,181	81.8%	966
		04-783	0	1.00	0	426	426	81.8%	348
		09-108	3,963	0.17	660	650	108	81.8%	89
					6,536		1,715		1,403
22	RR-20 Maniknagar Launch Ghat - Khagatoa Bazar	85-717	4,773	1.00	4,773	1,622	1,622	81.8%	1,327
		85-928	2,803	0.50	1,401	39	20	81.8%	16
		85-844	917	0.17	152	917	153	81.8%	125
		85-940	4,442	0.25	1,110	1,300	325	81.8%	266
		85-325	692	1.00	692	340	340	81.8%	278
		72-560	2,764	0.20	552	1,135	227	81.8%	186
			8,128		2,459		2,012		
23	RR-21 Dhapunia - Shibpur High School	90-530	4,428	0.33	1,476	556	185	81.8%	152
24	RR-22 Monipur - Natghar Bazar - (Monipur - Mohesh)	13-198	133	1.00	133	355	355	81.8%	290
		13-404	872	1.00	872	73	73	81.8%	60
		13-150	7,174	0.60	4,304	2,572	1,543	81.8%	1,262
		13-699	1,970	1.00	1,970	355	355	81.8%	290
				7,279		2,326		1,903	
24	RR-22 Monipur - Natghar Bazar (Mohesh - Natghar Bazar)	58-753	4,516	0.33	1,505	1,649	550	81.8%	450
		58-361	676	0.00	0	196	0	81.8%	0
				1,505		550		450	

Table G.1.10 Population Served and Estimated Farm Land Area  
(Nabinagar Upazila) (4/5)

No.	Name of Road	Geocode	Total Population	Weight	Population	Area of Mauza	RIA	Ratio of F/L	Farm Area
25	RR-23 Kaligoanj - Dobachail	31-186	31	1.00	31	234	234	81.8%	191
		31-012	3,993	0.67	2,662	1,019	679	81.8%	556
		31-422	2,198	0.20	439	528	106	81.8%	86
		36-970	3,445	1.00	3,445	732	732	81.8%	599
		36-078	1,064	1.00	1,064	177	177	81.8%	145
		63-235	1,022	0.50	511	293	147	81.8%	120
		63-452	602	1.00	602	337	337	81.8%	276
		63-880	3,919	0.14	560	1,114	159	81.8%	130
		72-126	1,517	1.00	1,517	242	242	81.8%	198
		72-072	1,040	0.50	520	228	114	81.8%	93
		72-850	3,862	0.30	1,158	1,209	363	81.8%	297
		72-066	1,515	0.33	505	810	270	81.8%	221
		72-331	1,962	0.33	654	161	54	81.8%	44
				13,668		3,613		2,955	
26	RR-24 Rajapur - Gopalpur South Para	94-416	6,072	0.40	2,429	1,579	632	81.8%	517
27	RR-25 Krishnagar - Balushat	45-596	3,302	0.60	1,981	849	509	81.8%	417
28	RR-26 Nabinagar - Bogdaha	49-060	5,030	1.00	5,030	1,612	1,612	81.8%	1,319
29	RR-27 Aalanagar - Charitapang - Islampur	94-024	3,621	1.00	3,621	999	999	81.8%	817
		54-217	3,158	1.00	3,158	368	368	81.8%	301
		54-711	2,608	1.00	2,608	516	516	81.8%	422
		54-729	2,632	0.50	1,316	1,115	558	81.8%	456
				10,703		2,441		1,996	

No.	Name of Road	Geocode	Total Population	Weight	Population	Area of Mauza	RIA	Ratio of F/L	Farm Area
30	RR-28 Birgoan - Kadarkala	18-554	711	1.00	711	145	145	81.8%	119
		18-174	1,767	0.50	884	533	267	81.8%	218
		18-759	1,695	1.00	1,695	116	116	81.8%	95
		18-916	418	1.00	418	54	54	81.8%	44
		18-428	530	0.60	318	365	219	81.8%	179
		18-156	1,882	0.33	627	1,122	374	81.8%	306
				4,653		647		529	
31	RR-29 Shahapur Veterinary Hospital - Kaligonj Dobachail Road	72-850	3,862	0.10	386	1,209	121	81.8%	99
		72-229	541	1.00	541	100	100	81.8%	82
				927		221		181	
32	RR-30 Botachang Bazar - Nabinagar/ Bancharampur Road	27-976	942	1.00	942	250	250	81.8%	205
33	RR-31 Nabinagar - Aalanagar	49-705	7,767	0.20	1,553	965	193	81.8%	158
34	RR-32 Imambari - Sharda via Narui	90-313	1,654	1.00	1,654	526	526	81.8%	430
		40-192	3,176	1.00	3,176	565	565	81.8%	462
		40-741	1,297	1.00	1,297	334	334	81.8%	273
		40-886	243	1.00	243	39	39	81.8%	32
				6,370		1,464		1,198	
35	RR-33 Barail - Nilokhi	09-765	2,015	1.00	2,015	382	382	81.8%	312
36	RR-34 Moheshpur Launch Ghat - Gori Goan via Bitgar	22-639	3,819	1.00	3,819	685	685	81.8%	560
		22-820	4,442	0.40	1,776	591	236	81.8%	193
		22-862	5,745	0.37	2,125	109	40	81.8%	33
		40-006	0	1.00	0	294	294	81.8%	240
				7,720		1,256		1,027	



**Table G.1.10 Population Served and Estimated Farm Land Area  
(Nabinagar Upazila) (5/5)**

No.	Name of Road	Geocode	Total Population	Weight	Population	Area of Mauza	RIA	Ratio of F/L	Farm Area
37	RR-35 Dhara Bannga - Solimgonj	09-108	3,963	0.17	660	650	108	81.8%	89
38	RR-36 Konjghat - Maniknagar	04-464	9,793	0.60	5,876	1,968	1,181	81.8%	966
		04-783	0	1.00	0	426	426	81.8%	348
					5,876		1,607		1,314
39	RR-37 Durgarampur Launch Ghat - Keshorepur	18-156	4,428	0.33	1,476	1,122	374	81.8%	306
		18-349	1,152	1.00	1,152	77	77	81.8%	63
		18-428	530	0.40	212	365	146	81.8%	119
							597		488
40	RR-38 Lourfatepur - Hazipur	31-422	2,198	0.40	879	528	211	81.8%	173
41	RR-39 Shamua - Rasullabad via Gaganathpur	67-802	6,678	0.17	1,113	1,456	243	81.8%	199
		63-904	3,412	0.43	1,467	749	322	81.8%	263
		63-241	1,848	0.60	1,108	634	380	81.8%	311
		63-880	3,919	0.86	3,359	1,114	955	81.8%	781
		63-235	1,022	0.50	511	293	147	81.8%	120
				7,558		2,046		1,674	
42	RR-40 Kanikara - Merukuta Bazar via Bagaura	90-330	4,428	0.33	1,476	556	185	81.8%	152
		90-627	134	1.00	134	289	289	81.8%	236
		90-488	1,581	1.00	1,581	108	108	81.8%	88
		90-994	2,423	1.00	2,423	303	303	81.8%	248
		90-054	2,696	1.00	2,696	721	721	81.8%	590
		90-162	0	1.00	0	428	428	81.8%	350
		90-168	0	1.00	0	429	429	81.8%	351
42'		13-856	3,049	0.50	1,525	367	184	81.8%	150
		13-669	1,970	0.20	394	542	108	81.8%	89
				10,229		2,755		2,254	

No.	Name of Road	Geocode	Total Population	Weight	Population	Area of Mauza	RIA	Ratio of F/L	Farm Area
43	RR-41 Pandabnagar - Merukuta via Malaj	36-657	1,117	1.00	1,117	661	661	81.8%	541
44	RR-42 Kurchar - Boruhit	58-808	2,253	0.50	1,126	986	493	81.8%	403
		58-753	4,516	0.50	2,258	1,649	825	81.8%	674
		58-361	676	0.50	338	196	98	81.8%	80
		58-747	467	0.50	233	254	127	81.8%	104
		58-832	447	0.50	223	217	109	81.8%	89
		58-120	554	0.50	277	128	64	81.8%	52
				4,455		1,715		1,403	
45	RR-43 Karaibari - Barikhala	31-633	8,016	0.29	2,290	1,561	446	81.8%	365

Table G.1.10 Population Served and Estimated Farm Land Area  
(Bancharampur Upazila) (1/3)

No.	Name of Road	Geocode	Total Population	Weight	Population	Area of Mauza	RIA	Ratio of F/L	Farm Area
1	FB-1 Homna - Marichakandi	87-612	2,775	1.00	2,775	554	554	89.4%	495
		87-867	3,711	1.00	3,711	755	755	89.4%	675
		87-701	5,783	0.67	3,858	1,746	1,164	89.4%	1,041
		87-969	2,426	1.00	2,426	154	154	89.4%	138
		07-140	5,220	0.50	2,610	1,314	657	89.4%	587
		07-165	751	1.00	751	83	83	89.4%	74
		07-535	1,798	1.00	1,798	404	404	89.4%	361
		07-420	3,102	1.00	3,102	517	517	89.4%	462
		51-918	4,500	1.00	4,500	508	508	89.4%	454
		51-446	2,378	0.20	475	1,281	256	89.4%	229
		51-255	5,389	0.50	2,694	841	421	89.4%	376
		43-395	10,380	0.14	1,554	2,686	384	89.4%	343
		43-127	1,042	1.00	1,042	52	52	89.4%	46
		43-051	0	1.00	0	50	50	89.4%	45
		43-739	2,415	1.00	2,415	271	271	89.4%	242
		43-229	0	1.00	0	525	525	89.4%	469
		43-943	1,741	0.67	1,160	438	292	89.4%	261
43-038	0	1.00	0	45	45	89.4%	40		
				34,871		7,091		6,340	
2	FB-2 Salimgonj - Kariakandi	73-025	5,251	0.30	1,575	1,022	307	89.4%	274
		73-523	546	1.00	546	54	54	89.4%	48
		73-561	871	0.33	290	335	112	89.4%	100
		80-816	4,308	0.80	3,446	1,133	906	89.4%	810
		80-994	1,816	0.50	908	336	168	89.4%	150
		43-395	10,880	0.43	4,662	2,686	1,151	89.4%	1,029
		14-433	4,060	1.00	4,060	646	646	89.4%	578
		14-204	2,286	1.00	2,286	609	609	89.4%	544

No.	Name of Road	Geocode	Total Population	Weight	Population	Area of Mauza	RIA	Ratio of F/L	Farm Area
		14-637	4,631	0.67	3,087	1,090	727	89.4%	650
					20,860		4,679		4,183
3	FB-3 Bancharampur - Nabinagar	21-790	474	1.00	474	229	229	89.4%	205
		36-471	2,673	1.00	2,673	404	404	89.4%	361
		36-382	1,758	1.00	1,758	183	183	89.4%	164
		36-714	888	1.00	888	208	208	89.4%	186
		36-650	2,003	1.00	2,003	218	218	89.4%	195
		36-727	3,735	1.00	3,735	681	681	89.4%	609
		29-089	1,098	1.00	1,098	187	187	89.4%	167
		29-676	2,807	1.00	2,807	620	620	89.4%	554
		29-408	7,470	0.40	2,988	1,162	465	89.4%	416
				18,424		3,195		2,856	
4	RR-1 Bancharampur - Dariachar	07-140	5,220	0.50	2,610	1,314	657	89.4%	587
		07-331	4,727	0.80	3,781	1,203	962	89.4%	860
		94-242	5,942	1.00	5,942	1,290	1,290	89.4%	1,153
		94-102	6,012	0.33	2,004	1,392	464	89.4%	415
				14,337		3,373		3,016	
5	RR-2 Ujunchar - Dariachar - Bahorechar	07-331	4,727	0.20	945	1,203	241	89.4%	215
		94-625	3,158	1.00	3,158	570	570	89.4%	510
		87-701	5,788	0.33	1,929	1,746	582	89.4%	520
				6,032		1,393		1,245	
6	RR-3 Bashgari - Durgapur	14-153	3,697	1.00	3,697	703	703	89.4%	628

**Table G.1.10 Population Served and Estimated Farm Land Area  
(Bancharampur Upazila) (2/3)**

No.	Name of Road	Geocode	Total Population	Weight	Population	Area of Mauza	RIA	Ratio of F/L	Farm Area
7	RR-4 Bahadurpur - Gokulnagar	29-408	7,470	0.40	2,988	1,162	465	89.4%	416
		43-012	3,647	1.00	3,647	883	883	89.4%	789
8	RR-5 Bancharampur - Kalainagar Launch Ghat	43-599	1,407	1.00	1,407	320	320	89.4%	286
					5,054		1,203		1,075
9	RR-6 Jobonganj Bazar - Bishnarampur	73-114	2,329	1.00	2,329	443	443	89.4%	396
		73-484	2,009	1.00	2,009	252	252	89.4%	225
		73-956	3,481	1.00	3,481	673	673	89.4%	602
			7,819			1,368		1,223	
10	RR-7 Bishnarampur - Jaikaliapur	73-025	5,251	0.60	3,150	1,022	613	89.4%	548
		73-030	555	1.00	555	164	164	89.4%	147
		73-191	2,437	1.00	2,437	394	394	89.4%	352
		73-561	871	0.67	580	335	223	89.4%	200
		80-548	2,934	0.75	2,200	486	365	89.4%	326
			8,922			1,759		1,573	
11	RR-8 Ulukandi - Paharikandi	80-778	909	1.00	909	232	232	89.4%	207
		80-816	4,308	0.20	861	1,133	227	89.4%	203
		80-994	1,816	0.50	908	336	168	89.4%	150
		43-943	1,741	0.33	580	438	146	89.4%	131
			3,258			773		691	
12	RR-9 Shalimabad - Junarchar	21-178	4,522	1.00	4,522	655	655	89.4%	586
		21-306	6,922	1.00	6,922	1,008	1,008	89.4%	901
		21-357	1,835	1.00	1,835	353	353	89.4%	316

No.	Name of Road	Geocode	Total Population	Weight	Population	Area of Mauza	RIA	Ratio of F/L	Farm Area
		21-574	2,289	0.50	1,144	576	288	89.4%	257
		21-663	0	1.00	0	251	251	89.4%	224
		21-769	0	1.00	0	65	65	89.4%	58
		21-950	1,442	1.00	1,442	614	614	89.4%	549
					5,865			3,234	
13	RR-10 Charlahani - Purbahary via Guaratoli	58-841	9,108	1.00	9,108	1,436	1,436	89.4%	1,284
14	RR-11 Fardabad - Junarchar	58-459	8,268	0.50	4,134	1,860	930	89.4%	831
		21-574	2,289	0.50	1,144	576	288	89.4%	257
					5,278	1,218		1,089	
15	RR-12 Kalainagar Launch Ghat - Rupashdi	36-344	3,262	1.00	3,262	1,080	1,080	89.4%	966
		36-382	1,758	1.00	1,758	183	183	89.4%	164
		65-892	7,906	0.50	3,953	1,101	551	89.4%	492
		65-076	994	1.00	994	35	35	89.4%	31
				9,967		1,849		1,653	
16	RR-13 Rupashdi - Burberia	65-880	5,783	0.50	2,891	1,142	571	89.4%	510
17	RR-14 Rupashdi - Ashraifbad	21-790	474	1.00	474	229	229	89.4%	205
		21-063	1,575	1.00	1,575	60	60	89.4%	54
		21-829	977	1.00	977	574	574	89.4%	513
		21-905	890	1.00	890	1,129	1,129	89.4%	1,009
				3,916		1,992		1,731	

Table G.1.10 Population Served and Estimated Farm Land Area  
(Bancharampur Upazila) (3/3)

No.	Name of Road	Geocode	Total Population	Weight	Population	Area of Mauza	RIA	Ratio of F/L	Farm Area
18	RR-15 Sanipur - Pawuli	36-318	853	1.00	853	201	201	89.4%	180
		36-803	3,995	1.00	3,995	684	684	89.4%	611
19	RR-16 Sunarampur - Stantonpur	51-255	5,389	0.50	2,694	1,944	972	89.4%	869
		51-446	2,378	0.80	1,902	1,281	1,025	89.4%	916
20	RR-17 Barakandi - Jaikalipur Launch Ghat	80-548	2,934	0.25	733	486	122	89.4%	109
21	RR-18 Darjokandi - Gukolnagar via Imamnagar	29-408	7,470	0.20	1,494	1,162	232	89.4%	208
22	RR-19 Bahorchar South Para - Bahorchar	94-102	6,012	0.33	2,004	1,392	464	89.4%	415
23	RR-20 Rupashdi - Kaurpur	65-880	5,783	0.50	2,891	1,142	571	89.4%	510
24	RR-21 Hosainpur Road	21-510	2,172	1.00	2,172	537	537	89.4%	480
RHD		58-459	8,268	0.50	4,134	1,860	930	89.4%	831
		65-892	7,906	0.50	3,953	1,101	551	89.4%	492
		21-752	2,036	1.00	2,036	178	178	89.4%	159
					10,123	1,659			1,483

**Table G.1.10 Population Served and Estimated Farm Land Area  
(Debidwar Upazila) (1/4)**

No.	Name of Road	Geocode	Total Population	Weight	Population	Area of Mauza	RIA	Ratio of F/L	Farm Area
1	FB Madhya - Companygonj	29-670	836	1.00	836	102	102	82.0%	84
		29-987	2,732	0.50	1,366	637	319	82.0%	261
		53-268	3,893	0.50	1,946	817	409	82.0%	335
		53-070	2,727	0.50	1,363	391	196	82.0%	160
		53-105	2,397	0.67	1,598	496	331	82.0%	271
		59-084	1,959	0.67	1,306	535	357	82.0%	292
		59-959	3,240	0.13	405	775	97	82.0%	79
		77-797	9,703	0.14	1,386	2,503	358	82.0%	293
		77-296	1,037	1.00	1,037	128	128	82.0%	105
		77-966	1,054	1.00	1,054	203	203	82.0%	166
		83-853	2,285	0.50	1,142	568	284	82.0%	233
		83-176	4,651	0.33	1,550	1,119	373	82.0%	306
		83-134	559	0.33	186	130	43	82.0%	36
						15,175		3,198	
2	FB Kalikapur - Istagram	11-479	3,564	0.33	1,188	1,072	357	82.0%	293
		11-684	2,365	1.00	2,365	590	590	82.0%	484
		11-860	1,619	0.67	1,079	347	231	82.0%	190
		11-875	3,432	0.67	2,288	690	460	82.0%	377
		95-903	3,470	1.00	3,470	1,022	1,022	82.0%	838
		95-994	354	0.67	236	205	137	82.0%	112
		47-592	1,442	0.50	721	377	189	82.0%	155
		47-374	4,312	1.00	4,312	1,096	1,096	82.0%	899
		47-910	1,984	0.50	992	247	124	82.0%	101
		47-225	1,167	1.00	1,167	279	279	82.0%	229
		47-818	4,221	0.25	1,055	912	228	82.0%	187
		47-550	1,248	1.00	1,248	83	83	82.0%	68
						20,121		4,795	

No.	Name of Road	Geocode	Total Population	Weight	Population	Area of Mauza	RIA	Ratio of F/L	Farm Area
3	FB Barat- Gobindpur	77-416	661	1.00	661	166	166	82.0%	136
		77-797	9,703	0.40	3,881	2,503	1,001	82.0%	821
		83-917	5,310	0.20	1,062	1,262	252	82.0%	207
		83-853	2,285	0.50	1,142	568	284	82.0%	233
		83-719	743	0.67	495	146	97	82.0%	80
		83-176	4,651	0.20	930	1,119	224	82.0%	184
				8,171		2,025		1,660	
4	RR Debidwar - Istagram	05-282	1,828	0.50	914	514	257	82.0%	211
		05-127	4,768	0.33	1,589	1,066	355	82.0%	291
		11-479	3,564	0.20	712	1,072	214	82.0%	176
		11-381	1,481	0.75	1,110	110	83	82.0%	68
		89-423	9,186	0.67	6,124	2,071	1,381	82.0%	1,132
		89-430	1,025	0.50	512	210	105	82.0%	86
		89-515	1,775	1.00	1,775	255	255	82.0%	209
		95-007	2,834	0.20	566	579	116	82.0%	95
		95-705	1,167	0.67	778	275	183	82.0%	150
95-973	5,956	0.40	2,382	1,557	623	82.0%	511		
				16,462		3,572		2,929	
5	RR Fultali - Chowmuhani	77-797	9,703	0.25	2,425	2,503	626	82.0%	513
		77-296	1,037	0.20	207	128	26	82.0%	21
		77-966	1,054	0.25	263	203	51	82.0%	42
		77-649	2,004	0.67	1,336	487	325	82.0%	266
		35-345	1,759	0.67	1,172	465	310	82.0%	254
		35-303	1,769	0.33	589	296	99	82.0%	81
35-331	9,574	0.10	957	2,557	256	82.0%	210		

**Table G.1.10 Population Served and Estimated Farm Land Area  
(Debidwar Upazila) (2/4)**

No.	Name of Road	Geocode	Total Population	Weight	Population	Area of Mauza	RIA	Ratio of F/L	Farm Area
5		71-536	1,360	0.67	906	232	155	82.0%	127
		71-606	1,154	0.33	384	213	71	82.0%	58
		71-889	563	0.20	112	130	26	82.0%	21
		71-642	3,956	0.40	1,582	318	127	82.0%	104
		71-896	1,078	1.00	1,078	185	185	82.0%	152
		71-748	621	0.25	155	102	26	82.0%	21
						11,166		2,281	
6	FB Sepera - Sultanpur	47-465	1,048	1.00	1,048	185	185	82.0%	152
		47-578	1,108	0.50	554	217	109	82.0%	89
		47-366	1,868	0.20	373	320	64	82.0%	52
		47-726	1,419	0.33	473	183	61	82.0%	50
		47-592	1,442	0.20	288	377	75	82.0%	62
		47-910	1,984	0.25	496	247	62	82.0%	51
		47-246	2,499	0.10	249	648	65	82.0%	53
						3,481		620	
6		53-444	6,055	0.25	1,513	1,359	340	82.0%	279
		53-268	3,893	0.40	1,557	817	327	82.0%	268
				3,070		667		547	
7	FB Yusufpur - Prigonj	11-479	3,564	0.17	594	1,072	179	82.0%	147
8	FB-6 Charbakar - Nabibad G.C.C.R.	65-254	222	0.50	111	92	46	82.0%	38
		65-472	2,177	0.17	362	490	82	82.0%	67
		65-945	247	1.00	247	42	42	82.0%	34
		65-063	565	0.25	141	95	24	82.0%	19

No.	Name of Road	Geocode	Total Population	Weight	Population	Area of Mauza	RIA	Ratio of F/L	Farm Area	
8		71-451	641	0.50	320	70	35	82.0%	29	
		71-388	5,608	0.14	801	1,270	181	82.0%	149	
		17-712	363	1.00	363	47	47	82.0%	39	
		17-677	2,838	0.20	567	494	99	82.0%	81	
		17-169	3,104	0.75	2,328	637	478	82.0%	392	
		23-183	266	0.50	133	42	21	82.0%	17	
		23-691	3,669	0.25	917	598	150	82.0%	123	
						6,290		1,204		987
9	RR Monghata - Modonogor	41-077	2,124	0.50	1,062	469	235	82.0%	192	
		41-635	1,215	0.50	607	300	150	82.0%	123	
		41-543	4,328	0.40	1,731	1,244	498	82.0%	408	
		41-613	1,416	0.50	708	444	222	82.0%	182	
		41-839	1,895	0.67	1,263	269	179	82.0%	147	
		23-508	2,805	0.50	1,402	533	267	82.0%	219	
		23-691	3,669	0.25	917	598	150	82.0%	123	
		23-148	3,019	0.50	1,509	578	289	82.0%	237	
		23-042	1,824	0.20	364	341	68	82.0%	56	
		23-776	3,784	1.00	3,784	651	651	82.0%	534	
				13,347		2,708		2,220		
10	FB Jaafargonj - Bborokama	71-324	529	1.00	529	146	146	82.0%	120	
		71-402	2,511	1.00	2,511	490	490	82.0%	402	
		17-338	47	0.50	24	109	55	82.0%	45	
		17-204	3,406	0.50	1,703	621	311	82.0%	255	
		17-289	3,248	0.60	1,949	661	397	82.0%	325	
		17-169	3,104	0.40	1,242	637	255	82.0%	209	

**Table G.1.10 Population Served and Estimated Farm Land Area  
(Debidwar Upazila) (3/4)**

No.	Name of Road	Geocode	Total Population	Weight	Population	Area of Mauza	RIA	Ratio of F/L	Farm Area
10		23-148	3,019	0.50	1,509	578	289	82.0%	237
		23-049	1,513	1.00	1,513	251	251	82.0%	206
					10,979		2,192		1,798
11	RR Debidwar - Atapur	29-197	938	0.50	469	212	106	82.0%	87
		53-444	6,055	0.10	605	1,359	136	82.0%	111
		59-663	2,111	0.13	263	501	63	82.0%	51
		59-733	2,737	0.33	912	500	167	82.0%	137
		35-331	9,574	0.20	1,914	2,557	511	82.0%	419
		35-303	1,769	0.25	442	296	74	82.0%	61
		41-635	1,215	0.60	4,605	300	1,057	82.0%	866
		41-077	2,124	0.50	1,062	469	235	82.0%	192
		41-613	1,416	0.33	472	444	148	82.0%	121
		41-924	843	0.50	421	171	86	82.0%	70
		41-098	363	0.50	181	98	49	82.0%	40
		83-014	1,433	1.00	1,433	371	371	82.0%	304
				12,779		3,001		2,461	
12	RR Fultali - Khirakandi	71-091	253	1.00	253	79	79	82.0%	65
		71-748	621	0.67	414	102	68	82.0%	56
		71-388	5,608	0.13	701	1,270	159	82.0%	130
				1,368		306		251	
12'		71-606	1,154	0.50	577	213	107	82.0%	87
		41-783	1,481	0.60	888	353	212	82.0%	174
		35-331	9,574	0.25	2,393	2,557	639	82.0%	524
		35-303	1,769	0.50	884	296	148	82.0%	121
		35-345	1,759	0.50	879	465	233	82.0%	191

No.	Name of Road	Geocode	Total Population	Weight	Population	Area of Mauza	RIA	Ratio of F/L	Farm Area
12'		35-882	824	1.00	824	140	140	82.0%	115
		35-938	873	1.00	873	305	305	82.0%	250
		77-825	1,319	0.67	879	289	193	82.0%	158
		83-599	1,286	1.00	1,286	204	204	82.0%	167
		83-176	4,651	0.20	930	1,119	224	82.0%	184
					10,413		2,404		1,971
				11,781		2,709		2,222	
13	RR Virallah - Modhumura	65-155	3,628	0.33	1,209	776	259	82.0%	212
		29-141	4,395	0.10	439	901	90	82.0%	74
		59-762	906	0.50	453	232	116	82.0%	95
		59-663	2,111	0.33	703	501	167	82.0%	137
		59-832	1,197	0.60	718	204	122	82.0%	100
		59-733	2,737	0.25	684	500	125	82.0%	103
		59-959	3,240	0.50	1,620	775	388	82.0%	318
		59-084	1,959	0.33	653	535	178	82.0%	146
		59-628	732	1.00	732	272	272	82.0%	223
		35-331	9,574	0.07	638	2,557	170	82.0%	140
				7,211		1,717		1,548	
14	RR Boroalompur - Dhami	53-444	6,055	0.25	1,513	1,359	340	82.0%	279
		59-112	1,310	1.00	1,310	189	189	82.0%	155
		59-733	2,737	0.25	684	500	125	82.0%	103
		59-959	3,240	0.20	648	775	155	82.0%	127
		59-564	1,307	1.00	1,307	276	276	82.0%	226
		35-331	9,574	0.07	638	2,557	170	82.0%	140
				6,100		1,255		1,029	

Table G.1.10 Population Served and Estimated Farm Land Area  
(Debidwar Upazila) (4/4)

No.	Name of Road	Geocode	Total Population	Weight	Population	Area of Mauza	RIA	Ratio of F/L	Farm Area	
15	RR Lokhipur - Barashaighor	05-846	1,198	0.67	798	562	375	82.0%	307	
		05-021	1,360	1.00	1,360	320	320	82.0%	262	
		05-127	4,768	0.40	1,907	1,066	426	82.0%	350	
		05-458	0	1.00	0	37	37	82.0%	30	
		05-359	1,263	1.00	1,263	307	307	82.0%	252	
		05-769	1,699	1.00	1,699	427	427	82.0%	350	
		11-740	860	1.00	860	156	156	82.0%	128	
		11-860	1,619	0.40	647	347	139	82.0%	114	
					8,534			2,187		1,793
							1,072	179	82.0%	147
15		11-479	3,364	0.17	594	110	110	82.0%	90	
		11-381	1,481	1.00	1,481	690	345	82.0%	283	
		11-875	3,432	0.50	1,716	2,071	690	82.0%	566	
		89-423	9,186	0.33	3,062	771	514	82.0%	421	
		89-571	2,335	0.67	1,556	210	84	82.0%	69	
		89-430	1,025	0.40	410	579	386	82.0%	317	
		95-007	2,834	0.67	1,889	275	55	82.0%	45	
		95-705	1,167	0.20	233	1,557	519	82.0%	426	
		95-973	5,956	0.33	1,985					
					12,926			2,882		2,363
								21,460		
						5,069		4,156		
16	RR Tebaria - Chotna	17-204	3,406	0.50	1,703	621	311	82.0%	255	
		17-289	3,248	0.40	1,299	661	264	82.0%	217	
		17-677	2,838	0.33	946	494	165	82.0%	135	
		17-169	3,104	0.13	388	637	80	82.0%	65	
		17-620	2,333	0.33	777	414	138	82.0%	113	
		41-543	4,328	0.50	2,164	1,244	622	82.0%	510	
		41-952	2,193	0.80	1,754	444	355	82.0%	291	
					9,031			1,934		1,586

No.	Name of Road	Geocode	Total Population	Weight	Population	Area of Mauza	RIA	Ratio of F/L	Farm Area
17	RR Jafarganj - Rajmahar	65-585	1,853	1.00	1,853	273	273	82.0%	224
		65-472	2,177	0.17	362	490	82	82.0%	67
		71-867	483	1.00	483	98	98	82.0%	80
		71-451	279	0.50	139	70	35	82.0%	29
		71-388	5,608	0.25	1,402	1,270	318	82.0%	260
		71-536	1,360	0.20	272	232	46	82.0%	38
		35-331	9,574	0.25	2,393	2,557	639	82.0%	524
		35-345	1,759	0.14	251	465	66	82.0%	54
		77-649	2,004	0.40	801	487	195	82.0%	160
		77-797	9,703	0.20	1,940	2,503	501	82.0%	410
					9,896			2,253	
18	RR Hossainpur - Bakosar	65-472	2,177	0.33	725	490	163	82.0%	134
		65-063	565	0.50	282	95	48	82.0%	39
		65-755	789	1.00	789	143	143	82.0%	117
		65-155	3,628	0.50	1,814	776	388	82.0%	318
		59-663	2,111	0.25	527	501	125	82.0%	103
		53-444	6,055	0.33	2,018	1,359	453	82.0%	371
		53-105	2,397	0.17	399	496	83	82.0%	68
			6,554			1,403		1,150	
19	RR Barur - Biranmondol	17-677	2,838	0.33	946	494	165	82.0%	135
		17-931	2,004	0.40	801	487	195	82.0%	160
		17-620	2,333	0.33	777	414	138	82.0%	113
			2,524			497		408	
20	RR Sibunogor - Sultanpur	95-973	5,956	0.33	1,985	1,557	519	82.0%	426
		47-522	2,575	0.60	1,545	588	353	82.0%	289
		47-465	1,048	0.50	524	186	93	82.0%	76
		47-726	1,419	0.50	709	183	92	82.0%	75
			4,763			1,056		866	



Table G.1.1.1 Calculation of Benefit for Economic Evaluation (Kachua)

NAME OF ROAD	Length (Km)	COST		Benefit (1)		Benefit (2)		Benefit (3)		Total Benefit			
		Cost Per Km	Population Served	Estimated Passengers	User Cost Saving	Food Balance	Movement of Food Grain	Reduction of TC/Cost	Subsidiary of Benefit		Farm Production to be Increased	Income from Agriculture	
FB - A Kachua- Kapiara Road	13.29	29,741	2,237.8	103,333	7,690,461	-25.0	-37,674	4,005,449	11,695,910	1,271	953	3,813,600	15,509,510
FB - B Kachua- Ujazala Parishad Road	1.70	10,010	5885.2	243,791	835,521	125.0	-6,095	82,889	918,409	64	48	190,800	1,109,209
FB - B Kachua- Sachaser G.C.C Road	15.51	105,213	6790.0	66,592	2,776,293	107.5	-2,830	351,168	3,127,461	1,175	881	3,524,400	6,651,861
RR - 1 Kachua- Kachampur Road	14.50	69,299	4803.4	17,424	679,098	125.0	-436	50,528	729,626	1,014	761	3,043,200	3,772,826
RR - 2 Kachua- Fogantapur Road	6.50	49,231	7389.4	12,884	6,155	125.0	-321	16,671	240,729	704	528	2,110,800	2,351,529
RR - 3 Kachua- Nowabpur Road	8.00	36,905	4613.1	16,948	8,135	100.0	-847	54,224	418,683	332	249	997,200	1,415,883
RR - 4 Sachaer- Amirabad Road	5.50	37,347	6790.4	32,159	475,439	125.0	-804	35,375	510,814	539	404	1,617,600	2,128,414
RR - 5 Kachua- Tegura Road	12.00	61,757	5146.4	10,761	5,165	100.0	-538	51,653	398,760	788	591	2,362,800	2,761,560
RR - 6 Pipulokar-Rahimnagar Road	20.00	80,106	4003.3	9,368	4,497	125.0	-234	37,472	541,096	792	594	2,377,200	2,918,296
RR - 7 Barotlagom-Monoharpur Road	11.50	52,787	4590.2	4,656	2,235	75.0	-349	32,126	176,053	257	193	771,600	947,653
RR - 8 Palakhal- Allira Road	6.50	42,647	6561.1	4,983	2,392	150.0	0	87,063	87,063	383	287	1,149,600	1,236,663
RR - 9 Kachua- Babarshi Road	11.00	60,315	5483.2	5,201	2,496	75.0	-390	34,327	188,110	422	317	1,266,000	1,454,110
RR - 10 Paigiri- Darabegonj Road	8.00	44,693	5586.6	7,303	3,505	75.0	-548	35,054	192,098	609	457	1,826,400	2,018,498
RR - 11 Uzani- Bexgonj Road	9.00	53,160	5906.7	5,975	2,868	150.0	0	144,547	144,547	389	389	1,556,400	1,700,947
RR - 12 Layanaher- Allira Road	11.00	61,455	5586.8	13,370	6,418	75.0	-1,003	88,242	483,566	1,370	1,028	4,111,200	4,594,766
RR - 13 Sachaer- Modhupur Road	5.50	32,088	5834.2	7,386	3,545	125.0	-185	8,125	117,219	572	429	1,716,000	1,893,319
RR - 14 Sachaer-Begoni-Bayek Road	8.00	47,125	5890.6	7,001	3,360	125.0	-175	11,202	161,751	588	441	1,765,200	1,906,951
RR - 15 Palakhal- Kadia Road	6.50	42,647	6561.1	3,938	1,900	150.0	0	69,154	69,154	311	233	933,600	1,002,754
RR - 16 Bschaya- Prashannakap Road	6.50	38,058	5853.1	6,819	3,273	100.0	-341	17,729	136,871	639	479	1,916,400	2,053,271
RR - 17 Bararia- Modhupur Road	5.50	45,238	8225.1	6,352	3,049	125.0	-159	6,987	100,895	399	299	1,197,600	1,298,495
RR - 18 D.C. Road- Jagopur Road	8.00	28,259	3544.9	3,436	1,649	125.0	-86	5,498	79,385	264	198	790,800	870,185
RR - 19 Amojan- Poyalgacha Road	10.00	38,840	3884.0	2,835	1,361	125.0	-71	5,670	81,875	236	177	708,000	789,875
RR - 20 Baimpokari- Nindpur Road	8.00	65,167	8145.9	5,398	2,591	75.0	-405	25,910	141,989	459	344	1,377,600	1,519,589
RR - 21 Hasiampur-Darabegonj Road	8.00	47,936	5992.0	5,382	2,583	125.0	-155	8,611	124,346	350	263	1,051,200	1,175,546
RR - 22 Uzani- Sigidda Road	8.00	53,011	6626.4	2,496	1,198	125.0	-62	3,994	57,668	230	173	691,200	748,868
RR - 23 Ragunahpur- Modhupur Road	8.50	43,060	5065.9	6,396	3,070	100.0	-320	21,746	167,882	520	390	1,561,200	1,729,082
RR - 24 Kachua-College-Bepur Road	5.00	34,510	6902.0	2,881	1,383	75.0	-216	8,643	47,364	188	141	564,000	611,364
RR - 25 Raigobil- Gograbari Road	4.00	28,018	7004.5	4,468	2,145	125.0	-112	3,574	51,614	316	237	948,000	999,614
RR - 26 Akani- Dumoria Road	8.00	41,871	5233.9	3,687	1,770	125.0	-92	5,899	85,184	318	239	955,200	1,040,384
RR - 27 Pathair-Allira Road	6.50	38,875	5980.8	5,221	2,506	87.5	-326	16,968	108,190	415	311	1,244,400	1,352,590
RR - 28 Palakhal- Charabanga Road	6.50	43,331	6666.3	5,120	2,458	100.0	-256	13,312	102,769	422	317	1,267,200	1,569,969
RR - 29 Tenu- Borochow Road	3.50	31,226	8921.7	359	172	125.0	-9	251	3,629	125	94	374,400	378,029
RR - 30 Rahimnagar-Paranpur Road	5.00	26,838	5367.6	4,140	1,987	75.0	-311	12,420	68,062	301	226	903,600	971,662
RR - 31 Monoharpur- Lovitkor Road	6.50	41,013	6309.7	7,672	3,683	75.0	-575	29,921	163,966	530	397	1,588,800	1,752,766
RR - 32 Kos- Dentoia Road	3.50	19,576	5593.1	2,560	1,229	75.0	-192	5,376	29,460	126	95	379,200	408,660
RR - 33 Korniish- Khidda Road	3.50	19,774	5649.7	6,563	3,150	100.0	-328	9,188	70,933	344	258	1,092,000	1,102,933
RR - 34 Mochhola- Kalline Road	2.50	23,009	9203.6	1,616	776	75.0	-121	6,914	13,284	130	97	388,800	402,084
RR - 35 Hossainpur-Changini Road	13.25	50,184	3787.5	2,609	1,252	125.0	-65	6,914	99,336	218	164	654,000	733,836
RR - 36 Rahima Nigoe Subidpur via Meair Bazar	1.30	48,937	37643.8	7,097	3,407	75.0	-532	5,536	30,335	589	442	1,767,600	1,797,935

Table G.1.11 Calculation of Benefit for Economic Evaluation (Nabinagar)

NAME OF ROAD	Length (Km)	Cost		Benefit (1)		Benefit (2)		Benefit (3)		Sub-subs of Benefit	Benefit From Agriculture	Total Benefit
		Cost Per Km	Benefit Per Km	Population Served	Estimated Passenger Saving	Food Balance	Movement of Food Grain	Reduction of TC/Cost	Farm Production to be Increased			
FB - 1 Nabinagar - B.Baria	4.73	31,035	6,561.3	50,270	24,129	639,138	165.0	754	28,533	667,671	504	2,765,271
FB - 2 Nabinagar - Bancharampur	12.87	49,292	3830.0	82,567	39,672	2,896,369	157.5	619	63,758	2,920,127	960	5,798,927
RR - 1 Kabis College - Mohesh Road	9.00	47,489	5276.6	8,090	3,883	195,713	175.0	202	14,562	210,275	497	2,196,275
RR - 2 Jenuapur - Jannala River	7.00	34,110	4872.9	4,238	2,034	79,742	280.0	212	11,866	91,609	338	1,104,409
RR - 3 Karabari - Rashullabad	6.50	28,181	4335.5	5,356	2,571	93,580	175.0	134	6,963	100,543	400	1,308,943
RR - 4 Majana Girl's School - Bithishara	7.00	43,131	6161.6	11,957	5,739	224,963	125.0	-299	16,740	241,723	917	3,911,523
RR - 5 Baikunja Bazar - Gujizandhi via Bigoan	4.00	29,723	7430.8	14,819	7,113	159,334	142.5	-111	3,557	162,890	635	2,967,290
RR - 6 Jenuapur - Bhanard	13.00	75,439	5699.2	19,570	9,394	683,854	112.5	-734	76,323	760,177	807	3,180,577
RR - 7 Baribandi Launch Ghar - Jallid	8.00	39,395	4904.4	9,872	4,739	212,287	75.0	-740	47,386	259,673	743	2,488,073
RR - 8 Jafapur - Jannala River	5.00	22,505	4501.0	6,543	3,141	87,938	125.0	-164	6,543	94,481	700	2,095,300
RR - 9 Narsingpur - Chini	3.50	17,001	4857.4	5,197	2,495	48,893	125.0	-130	3,638	52,531	362	1,138,531
RR - 10 Link Road (R&H - Mohesh Road)	7.00	65,120	9302.9	67,339	32,323	1,257,051	125.0	-163	94,275	1,351,325	143	10,059,013
RR - 11 Lourampur - Kalgionj Bazar	5.00	30,552	6110.4	4,548	2,185	42,788	75.0	-219	8,745	47,923	164	704,523
RR - 12 Dhand - Shuvarpur - Labari	3.50	17,001	4857.4	5,197	2,495	48,893	125.0	-130	3,638	52,531	362	1,138,531
RR - 13 Alabad - Gopapur	4.00	27,604	6901.0	4,860	2,333	52,253	125.0	-122	6,543	58,796	433	1,296,400
RR - 14 Sharngram - Solingonj	7.33	28,310	3862.2	31,443	15,093	619,523	57.5	-2,908	170,553	790,076	813	2,438,400
RR - 15 Mohesh Road - Gooli - Rasulpur	19.50	120,856	6197.7	55,701	26,756	2,919,597	162.5	696	108,616	3,028,213	2,344	10,059,013
RR - 16 Doshmouja - Jenuapur	4.50	29,979	6462.0	1,337	642	16,172	225.0	100	3,610	19,782	130	388,800
RR - 17 R&H Road - Kanimabad via Bolachung Bazar	4.00	20,811	5202.2	2,617	1,256	28,138	125.0	-65	2,694	30,832	280	870,232
RR - 18 Raullabad - Rasapur via Mulla	6.00	31,163	5193.8	21,132	10,143	340,809	125.0	-528	25,358	366,167	510	1,896,167
RR - 19 Nurjhapur - Muktarapur	5.00	23,759	4751.8	6,536	3,137	87,844	75.0	-490	19,608	107,452	561	1,791,052
RR - 20 Manikgar Lawach Ghar - Khatgora Bazar	7.50	37,922	5056.3	8,128	3,901	163,960	25.0	-1,016	60,960	224,920	805	2,639,220
RR - 21 Dhapura - Shilpur High School	5.00	23,759	4751.8	1,476	708	19,837	125.0	-57	1,476	21,313	61	182,400
RR - 22 Monipur - Nanchur Bazar	12.00	64,967	5413.9	8,784	4,216	283,537	225.0	659	63,245	346,782	761	2,630,182
RR - 23 Kalgionj - Dohachai	13.50	105,255	7796.7	18,224	8,747	661,294	150.0	0	0	661,294	180	1,202,294
RR - 24 Rajapur - Gopapur South Park	4.50	26,742	5942.7	2,429	1,166	29,381	125.0	-61	2,186	31,567	187	3,571,567
RR - 25 Krishnagar - Balabadi	2.00	10,351	5175.5	1,981	951	10,658	175.0	50	792	11,442	287	631,842
RR - 26 Nabinagar - Karibah Bazar	5.50	25,233	4373.8	5,030	2,414	74,364	125.0	-126	5,533	79,897	125	500,400
RR - 27 Alungar - Churlapang - Jalampur	9.00	44,370	4952.2	10,703	5,137	258,527	125.0	-268	19,265	278,192	528	1,860,592
RR - 28 Bhatgora - Koderbhal	3.50	19,338	5252.1	4,653	2,233	43,775	75.0	-249	9,771	53,547	798	2,448,747
RR - 29 Shapur Veterinary Hospital - Kalgionj Dohachai	3.00	20,892	6697.3	927	445	7,475	125.0	-23	536	8,032	212	642,832
RR - 30 Bolachung Bazar - Nabinagar/Bancharampur Road	3.00	17,864	5954.7	942	452	7,596	125.0	-24	565	8,161	82	254,161
RR - 31 Nabinagar - Adumagar	2.50	16,391	6556.4	1,553	745	10,436	125.0	-39	777	11,213	63	189,600
RR - 32 Inambani - Sharda via Narai	5.00	23,324	5664.8	6,370	3,058	83,613	175.0	159	6,570	91,983	479	1,497,600
RR - 33 Barai - Nilokhi	5.00	23,759	4751.8	2,015	967	27,082	75.0	-151	6,045	33,127	125	374,400
RR - 34 Mohapur Launch Ghar - Gooli via Bilgar	6.00	24,479	4079.8	7,720	3,706	124,508	125.0	-193	9,264	133,772	411	1,364,172
RR - 35 Dhara Banga - Solingonj	2.50	16,391	6556.4	660	317	4,453	75.0	-50	990	5,443	36	112,225
RR - 36 Koneghar - Manikgar	7.50	37,922	5056.3	5,876	2,820	118,460	75.0	-441	26,442	144,902	526	1,576,800
RR - 37 Durgapur Launch Ghar - Khatgora	6.00	29,044	4840.7	2,840	1,363	45,804	142.5	-21	1,022	46,826	195	385,600
RR - 38 Lowrapur - Hazipur	4.50	26,742	5942.7	879	422	10,632	75.0	-66	2,273	13,906	69	207,600
RR - 39 Subarna - Ranulabad via Gaganathpur	7.50	37,922	5056.3	7,588	3,628	152,369	175.0	189	11,337	163,706	670	2,172,506
RR - 40 Kankara - Merakua Bazar via Bagura	8.00	39,395	4924.4	10,229	4,910	219,964	150.0	0	0	219,964	902	2,704,800
RR - 41 Pandabagar - Morcha via Malal	4.50	26,742	5942.7	1,117	536	13,511	225.0	84	3,016	16,527	162	649,200
RR - 42 Kuchhar - Borchi	6.50	34,974	5380.6	4,455	2,138	77,838	225.0	334	17,375	95,212	561	1,683,600
RR - 43 Karabari - Barbhal	4.00	20,811	5202.2	2,290	1,099	24,622	125.0	-57	1,832	26,454	146	464,454

Table G.1.11 Calculation of Benefit for Economic Evaluation (Bancharampur)

NAME OF ROAD	Length (Km)	COST		Benefit (1)			Benefit (2)		Benefit (3)		Total Benefit			
		Cost	Cost Per Km	Population Served	Population Estimated	User Cost Saving	Food Balance	Movement of Food Grain	Reduction of T/Cost	Sub-sal of Benefit		Farm Production Land to be Increased	Benefit From Agriculture	
FB - B Honna - Marichakandi	22.40	121,206	5411.0	133,114	63,894	8,014,924	107.5	-5,657	1,013,792	9,028,716	2,536	1,902	7,608,000	16,636,716
FB - B Salimganj - Kariakandi	19.20	119,366	6217.0	33,773	16,211	1,743,011	132.5	-591	90,782	1,833,793	1,673	1,255	5,019,600	6,853,393
FB - B Bancharampur - Nabinagar	19.20	86,207	4489.9	90,552	43,465	4,673,352	135	-1,338	208,632	4,881,984	1,142	857	3,427,200	8,309,184
RR - 1 Bancharampur - Darischar	11.20	46,771	4176.0	14,337	6,882	431,624	100	-717	64,230	495,854	1,206	905	3,619,200	4,115,054
RR - 2 Ujanchar - Danischar - Bahorechar	11.20	56,374	5033.4	6,032	2,895	181,597	125	-151	13,512	195,109	498	374	1,494,000	1,689,109
RR - 3 Bishgari - Durgapur	6.40	19,456	3040.0	3,697	1,775	63,600	125	-92	4,732	68,332	251	188	753,600	821,932
RR - 4 Bahadurpur - Gokulnagar	8.00	29,515	3689.4	2,988	1,434	64,254	175	75	4,781	69,035	166	125	499,200	568,235
RR - 5 Bancharampur - Kalainagar Launch Ghat	8.00	21,667	2708.4	5,054	2,426	108,681	75	-379	24,259	132,940	430	323	1,290,000	1,422,940
RR - 6 Jobonganj Bazar - Bishnarampur	8.00	30,902	3862.7	7,819	3,753	168,140	75	-586	37,531	205,671	489	367	1,467,600	1,673,271
RR - 7 Bishnarampur - Jalkalipur	12.80	34,763	2715.9	8,922	4,283	306,974	75	-669	68,521	375,495	629	472	1,887,600	2,263,095
RR - 8 Ulukandi - Paharikandi	8.00	25,306	3163.3	3,258	1,564	70,060	150	0	0	70,060	276	207	829,200	899,260
RR - 9 Shalimabad - Junarchar	19.20	71,180	3707.3	15,865	7,615	818,786	75	-1,190	182,765	1,001,551	1,156	867	3,469,200	4,470,751
RR - 10 Charakhandi - Purbahaty via Guaratoli	9.60	38,579	4018.6	9,108	4,372	235,030	125	-228	17,487	252,517	514	385	1,540,800	1,793,317
RR - 11 Farisabad - Junarchar	6.40	29,835	4630.5	5,278	2,533	90,798	125	-132	6,756	97,554	436	327	1,306,800	1,404,354
RR - 12 Kalainagar Launch Ghat - Rupashdi	6.40	27,262	4259.8	30,135	14,465	518,418	125	-753	38,573	556,991	661	496	1,983,600	2,540,591
RR - 13 Rupashdi - Burberia	8.00	19,468	2433.5	2,891	1,388	62,168	125	-72	4,626	66,794	204	153	612,000	678,794
RR - 14 Rupashdi - Ashrafabad	9.60	43,006	4479.8	3,916	1,880	101,052	75	-294	22,556	123,608	712	534	2,137,200	2,260,808
RR - 15 Sazipur - Parandli	9.60	43,104	4490.0	4,848	2,327	125,102	125	-121	9,308	134,410	316	237	949,200	1,083,610
RR - 16 Sunarampur - Shantipur	9.60	48,586	5081.0	4,956	2,379	127,839	125	-124	9,516	137,404	714	536	2,142,000	2,279,404
RR - 17 Barakandi - Jalkalipur Launch Ghat	6.40	26,074	4074.1	733	352	12,610	225	55	2,815	15,425	44	33	130,800	146,225
RR - 18 Danakandi - Gukollnagar via Imannagar	6.40	26,071	4073.6	1,494	717	25,702	175	37	1,912	27,614	83	62	249,600	277,214
RR - 19 Bahorechar South Para - Bahorechar	3.20	12,751	3984.7	2,004	962	17,238	125	-50	1,283	18,520	166	125	498,000	516,520
RR - 20 Rupashdi - Kaupur	3.20	14,595	4560.9	2,891	1,388	24,867	125	-72	1,850	26,717	204	153	612,000	638,717
RR - 21 Hossainpur Road	4.80	19,428	4047.5	2,172	1,043	28,024	75	-163	6,255	34,279	192	144	576,000	610,279

Table G.1.11 Calculation of Benefit for Economic Evaluation (Debidwar)

NAME OF ROAD	Length (Km)	COST		Benefit (1)			Benefit (2)		Reduction of T/Cost	Six-fold of Benefit	Benefit (3)		Benefit From Assemblage	Total Benefit
		Cost	Cost Per Km	Population Served	Estimated Passengers	User Cost Saving	Food Balance	Movement of Food Grain			Reduction of T/Cost	Farm Land to be Increased		
FB - B Madhya - Companygonj	16.40	88,128	5373.7	33,256	15,963	1,466,049	142.5	-249	32,724	1,498,774	1,049	787	3,146,400	4,645,174
FB - B Kalkapur - Isagram	12.00	69,674	5806.2	22,503	10,801	725,841	117.5	-731	70,208	796,048	1,573	1,180	4,718,400	5,514,448
FB - B Barat - Gobindpur	8.20	55,465	6764.0	8,171	3,922	180,102	150	0	0	180,102	664	498	1,992,000	2,172,102
RR - 1 Debidwar - Isagram	16.80	64,731	3853.0	18,844	9,045	850,942	125	-471	63,314	914,256	1,172	879	3,514,800	4,429,056
RR - 2 Fulali - Chowmuhani	20.30	66,400	3270.9	11,166	5,360	609,288	145	-56	9,067	618,355	748	561	2,244,000	2,862,355
RR - 3 Sepera - Sultanpur	6.00	19,579	3263.2	6,551	3,144	105,655	125	-164	7,861	113,516	422	317	1,267,200	1,380,716
RR - 4 Yusufpur - Prigonj	2.50	12,928	5171.2	594	285	3,992	125	-15	297	4,289	59	44	176,400	180,689
RR - 5 Charbakar - Nabiabad G.C.C.R.	10.10	39,052	3866.5	6,290	3,019	170,766	175	157	12,706	183,472	395	296	1,184,400	1,367,872
RR - 6 Monghata - Modonogor	12.10	39,923	3299.4	13,347	6,407	434,109	175	334	32,300	466,408	888	666	2,664,000	3,130,408
RR - 7 Jafargonj - Bborekamia	11.40	47,060	4128.1	10,979	5,270	336,432	175	274	25,032	361,464	719	539	2,157,600	2,519,064
RR - 8 Debidwar - Atapur	12.40	60,044	4842.3	20,921	10,042	697,308	175	523	51,883	749,191	984	738	2,953,200	3,702,391
RR - 9 Fulali - Khirakandi	14.90	67,254	4513.7	11,781	5,655	471,843	200	589	70,215	542,058	889	667	2,666,400	3,208,458
RR - 10 Virallah - Modhumura	9.90	42,437	4286.6	14,334	6,880	381,454	135	-215	17,029	398,483	619	464	1,857,600	2,256,083
RR - 11 Boroalompur - Dhamni	9.10	41,862	4600.2	28,064	13,471	686,476	125	-702	51,077	737,553	412	309	1,234,800	1,972,353
RR - 12 Lokhipur - Barshaighor	20.30	98,870	4870.4	21,460	10,301	1,170,995	125	-537	87,128	1,258,123	1,662	1,247	4,987,200	6,245,323
RR - 13 Tebaria - Choina	5.20	16,043	3085.2	9,031	4,335	126,232	175	226	9,392	135,624	634	476	1,903,200	2,038,824
RR - 14 Jafargonj - Rajmahar	17.40	70,495	4051.4	15,737	7,554	736,054	175	393	54,766	790,820	739	554	2,216,400	3,007,220
RR - 15 Hossainpur - Bakosar	11.20	45,975	4104.9	6,554	3,146	197,312	125	-164	14,681	211,993	460	345	1,380,000	1,591,993
RR - 16 Barur - Biranmondol	12.00	52,078	4339.8	2,524	1,212	81,414	125	-63	6,058	87,472	163	122	489,600	577,072
RR - 17 Sibonogor - Sultanpur	7.80	31,302	4013.1	4,763	2,286	99,863	100	-238	14,861	114,724	346	260	1,039,200	1,153,924

Table G.1.12 IRR Construction Costs of Road (Kachua)

NAME OF ROAD	Embankment		Pavement		Tree Planting		Turffing		Structure Works		TOTAL AMOUNT
	Work Volume (Cub.meter)	Total Cost Amount	Work Volume (Meter)	Total Cost Amount	Work Volume (Meter)	Total Cost Amount	Work Volume (Meter)	Total Cost Amount	Total Nos	Total Amount	
FB - A Kachua-Kalipara Road	100,000	57 5,700	13,300	1,424 18,939	13,300	287 3,817	13,300	96.6 1,285	0	0	29,741
FB - B Kachua-Upazila Parishad Road	15,000	57 855	1,700	1,424 2,421	1,700	287 488	1,700	96.6 164	2	6,082	10,010
FB - B Kachua-Sachser G.C.C Road	175,000	57 9,975	15,500	1,424 22,072	15,500	287 4,449	15,500	96.6 1,497	26	67,320	105,213
RR - 1 Kachua-Kashimpur Road	162,000	57 9,224	14,500	1,424 20,648	14,500	287 4,162	14,500	96.6 1,401	13	26,954	62,399
RR - 2 Kachua-Ragunthpur Road	73,000	57 4,161	6,500	1,424 9,256	6,500	287 1,866	6,500	96.6 628	15	33,420	49,331
RR - 3 Kachua-Nowatapur Road	90,000	57 5,130	8,000	1,424 11,392	8,000	287 2,296	8,000	96.6 773	10	17,314	36,905
RR - 4 Sachser-Amirabadi Road	72,000	57 4,104	5,500	1,424 7,832	5,500	287 3,444	5,500	96.6 531	9	23,301	37,947
RR - 5 Kachua-Teguria Road	134,000	57 7,638	12,000	1,424 17,088	12,000	287 3,444	12,000	96.6 1,159	14	32,428	61,757
RR - 6 Pipulkore-Rahmanagar Road	210,000	57 11,970	20,000	1,424 28,480	20,000	287 5,740	20,000	96.6 1,932	18	31,964	80,106
RR - 7 Baratalagan-Monoharpur Road	121,000	57 6,897	11,500	1,424 16,376	11,500	287 3,301	11,500	96.6 1,111	14	25,102	52,787
RR - 8 Palkhali- Alhara Road	73,000	57 4,161	6,500	1,424 9,256	6,500	287 1,866	6,500	96.6 628	12	26,736	42,647
RR - 9 Kachua-Patharishi Road	123,000	57 7,011	11,000	1,424 15,664	11,000	287 3,157	11,000	96.6 1,063	15	33,420	60,315
RR - 10 Palgiri- Derbesagonj Road	90,000	57 5,130	8,000	1,424 11,392	8,000	287 2,296	8,000	96.6 773	14	25,102	44,693
RR - 11 Uzani-Borgonj Road	100,000	57 5,700	9,000	1,424 12,816	9,000	287 2,583	9,000	96.6 869	14	31,192	53,160
RR - 12 Leyamchaer- Alhara Road	143,000	57 8,151	11,000	1,424 15,664	11,000	287 3,157	11,000	96.6 1,063	15	33,420	61,455
RR - 13 Sachser-Modhupur Road	72,000	57 4,104	5,500	1,424 7,832	5,500	287 1,579	5,500	96.6 531	8	18,042	32,088
RR - 14 Sachser-Ragdoi-Bayek Road	104,000	57 5,928	8,000	1,424 11,392	8,000	287 2,296	8,000	96.6 773	12	26,736	47,125
RR - 15 Palakhali- Kasila Road	73,000	57 4,161	6,500	1,424 9,256	6,500	287 1,866	6,500	96.6 628	12	26,736	42,647
RR - 16 Bachaya- Prashantnagar Road	85,000	57 4,845	6,500	1,424 9,256	6,500	287 1,866	6,500	96.6 628	11	21,463	38,058
RR - 17 Barairar- Modhupur Road	72,000	57 4,104	5,500	1,424 7,832	5,500	287 1,579	5,500	96.6 531	14	31,192	45,238
RR - 18 D.C. Road- Jagepur Road	84,000	57 4,788	8,000	1,424 11,392	8,000	287 2,296	8,000	96.6 773	5	9,110	28,259
RR - 19 Amojan- Poyalgachin Road	105,000	57 5,985	10,000	1,424 14,240	10,000	287 2,870	10,000	96.6 966	8	14,779	38,840
RR - 20 Batpokari- Nindpur Road	104,000	57 5,928	8,000	1,424 11,392	8,000	287 2,296	8,000	96.6 773	20	44,778	65,167
RR - 21 Hariharpur-Darbesagonj Road	90,000	57 5,130	8,000	1,424 11,392	8,000	287 2,296	8,000	96.6 773	15	28,345	47,936
RR - 22 Uzani- Singida Road	90,000	57 5,130	8,000	1,424 11,392	8,000	287 2,296	8,000	96.6 773	15	33,420	53,011
RR - 23 Ragunathpur- Modhupur Road	95,000	57 5,415	8,500	1,424 12,104	8,500	287 2,440	8,500	96.6 821	10	22,280	43,060
RR - 24 Kachua-College-Beipur Road	56,000	57 3,192	5,000	1,424 7,120	5,000	287 1,435	5,000	96.6 483	8	22,280	34,510
RR - 25 Ragdoi- Gograbari Road	52,000	57 2,864	4,000	1,424 5,696	4,000	287 1,148	4,000	96.6 386	8	17,824	28,018
RR - 26 Alania- Dumoria Road	90,000	57 5,130	8,000	1,424 11,392	8,000	287 2,296	8,000	96.6 773	10	22,280	41,871
RR - 27 Peuhar- Alhara Road	85,000	57 4,845	6,500	1,424 9,256	6,500	287 1,866	6,500	96.6 628	8	22,280	38,875
RR - 28 Palakhali- Charabanga Road	85,000	57 4,845	6,500	1,424 9,256	6,500	287 1,866	6,500	96.6 628	12	26,736	43,331
RR - 29 Tena- Berochow Road	39,000	57 2,223	3,500	1,424 4,984	3,500	287 1,005	3,500	96.6 338	12	22,676	31,226
RR - 30 Rahmanagar-Paranpur Road	53,000	57 3,021	5,000	1,424 7,120	5,000	287 1,435	5,000	96.6 483	8	14,779	26,838
RR - 31 Monoharpur- Lowkora Road	73,000	57 4,161	6,500	1,424 9,256	6,500	287 1,866	6,500	96.6 628	12	25,102	41,013
RR - 32 Koa- Domoria Road	37,000	57 2,109	3,500	1,424 4,984	3,500	287 1,005	3,500	96.6 338	5	11,140	19,576
RR - 33 Korash- Khidda Road	37,000	57 2,109	3,500	1,424 4,984	3,500	287 1,005	3,500	96.6 338	6	11,338	19,774
RR - 34 Monkhola- Kalline Road	26,000	57 1,482	2,500	1,424 3,560	2,500	287 718	2,500	96.6 242	9	17,007	23,009
RR - 35 Hossainpur-Changini Road	139,000	57 7,923	13,300	1,424 18,939	13,300	287 3,817	13,300	96.6 1,285	10	18,220	50,184
RR - 36 Rahima Nagar Subdipar via Meaur Bazar	146,000	57 8,322	13,000	1,424 18,512	13,000	287 3,731	13,000	96.6 1,256	9	17,116	48,937

Table G.1.12 IRR Construction Cost of Road ( Nabinagar )

(Unit: 1,000 Taka)

NAME OF ROAD	Embankment			Pavement			Tree Planting			Tuffing			Structure Works			TOTAL AMOUNT
	Work Volume	Unit	Total	Work Volume	Unit	Total	Work Volume	Unit	Total	Work Volume	Unit	Total	Work	Unit	Total	
	(Cubic-meters)		Amount	(Meter)		Amount	(Meter)		Amount	(Meter)		Amount	Area		Amount	
FB - 1 Nabinagar - B Baria	35,000	57	1,995	4,700	1,424	6,693	4,700	287	1,349	4,700	96.6	454	2	20,544	31,035	
FB - 2 Nabinagar - Bancharampur	13,000	57	741	12,900	1,424	18,370	12,900	287	3,702	12,900	96.6	1,246	10	25,233	49,292	
RR - 1 Khatia College - Mubesh Road	180,000	57	10,260	9,000	1,424	12,816	9,000	287	2,593	9,000	96.6	869	8	20,961	47,489	
RR - 2 Jemadpur - Jannula River	140,000	57	7,980	7,000	1,424	9,968	7,000	287	2,009	7,000	96.6	676	6	13,477	34,110	
RR - 3 Karibari - Reshulabed	130,000	57	7,410	6,500	1,424	9,256	6,500	287	1,866	6,500	96.6	628	4	9,021	28,181	
RR - 4 Majhara Gola School - Bhabhanara	140,000	57	7,980	7,000	1,424	9,968	7,000	287	2,009	7,000	96.6	676	10	22,498	43,131	
RR - 5 Basimajhi Bazar - Gajipendi via Birgout	80,000	57	4,560	4,000	1,424	5,696	4,000	287	1,148	4,000	96.6	386	8	17,933	29,723	
RR - 6 Jemadpur - Bhanuarat	286,000	57	16,302	13,000	1,424	18,512	13,000	287	3,751	13,000	96.6	1,256	15	33,658	73,639	
RR - 7 Barikandi Launch Ghat - Jallid	160,000	57	9,120	8,000	1,424	11,592	8,000	287	2,296	8,000	96.6	773	7	15,814	39,395	
RR - 8 Jaispur - Jamma River	78,000	57	4,446	5,000	1,424	7,120	5,000	287	1,435	5,000	96.6	483	4	9,021	22,505	
RR - 9 Narsingpur - Chini	70,000	57	3,990	3,500	1,424	4,984	3,500	287	1,005	3,500	96.6	338	3	6,684	17,001	
RR - 10 Link Road (R&H - Mubesh Road)	200,000	57	11,406	7,000	1,424	9,968	7,000	287	2,009	7,000	96.6	676	12	41,067	65,120	
RR - 11 Lourfarpur - Kaligoni Bazar	100,000	57	5,700	5,000	1,424	7,120	5,000	287	1,435	5,000	96.6	483	7	15,814	30,552	
RR - 12 Dhari - Shreempur - Lahari	70,000	57	3,990	3,500	1,424	4,984	3,500	287	1,005	3,500	96.6	338	3	6,684	17,001	
RR - 13 Alitabad - Gopelpur	80,000	57	4,560	4,000	1,424	5,696	4,000	287	1,148	4,000	96.6	386	7	15,814	27,604	
RR - 14 Shamagan - Solimganj	146,000	57	8,322	7,300	1,424	10,395	7,300	287	2,095	7,300	96.6	705	3	6,793	28,310	
RR - 15 Mohesh Road - Gooli - Rasulpur	792,000	57	41,724	19,500	1,424	27,768	19,500	287	5,397	19,500	96.6	1,884	17	43,883	120,656	
RR - 16 Dashmouja - Jemadpur	90,000	57	5,130	4,500	1,424	6,408	4,500	287	1,292	4,500	96.6	435	7	15,814	29,079	
RR - 17 R&H Road - Kazimabad via Bolechang Bazar	80,000	57	4,560	4,000	1,424	5,696	4,000	287	1,148	4,000	96.6	386	4	9,021	20,811	
RR - 18 Raulhabad - Retampur via Mullih	120,000	57	6,840	6,000	1,424	8,544	6,000	287	1,722	6,000	96.6	580	6	13,477	31,163	
RR - 19 Nurjahanpur - Muktarapur	100,000	57	5,700	5,000	1,424	7,120	5,000	287	1,435	5,000	96.6	483	4	9,021	23,759	
RR - 20 Manikgar Launch Ghat - Kingtota Bazar	150,000	57	8,550	7,500	1,424	10,680	7,500	287	2,153	7,500	96.6	725	7	15,814	37,922	
RR - 21 Dharamia - Shibpur High School	100,000	57	5,700	5,000	1,424	7,120	5,000	287	1,435	5,000	96.6	483	4	9,021	23,759	
RR - 22 Morpur - Nachar Bazar	240,000	57	13,680	12,000	1,424	17,088	12,000	287	3,444	12,000	96.6	1,159	13	29,596	64,967	
RR - 23 Kaligoni - Dobachhal	270,000	57	15,390	13,500	1,424	19,224	13,500	287	3,875	13,500	96.6	1,304	29	63,462	105,255	
RR - 24 Rajapur - Gypapur South Para	90,000	57	5,130	4,500	1,424	6,408	4,500	287	1,292	4,500	96.6	435	6	13,477	26,742	
RR - 25 Krimagar - Bahabur	40,000	57	2,280	2,000	1,424	2,848	2,000	287	574	2,000	96.6	193	2	4,456	10,351	
RR - 26 Nabinagar - Kazimabad Bazar	110,000	57	6,270	5,500	1,424	7,832	5,500	287	1,579	5,500	96.6	531	4	9,021	25,233	
RR - 27 Alamagar - Charfapung - Islampur	180,000	57	10,260	9,000	1,424	12,816	9,000	287	2,593	9,000	96.6	869	8	18,042	44,570	
RR - 28 Bikagan - Katakhal	70,000	57	3,990	3,500	1,424	4,984	3,500	287	1,005	3,500	96.6	338	4	9,021	19,338	
RR - 29 Shahpur Veterinary Hospital - Kalligeni Dhoachhal	60,000	57	3,420	3,000	1,424	4,272	3,000	287	861	3,000	96.6	290	5	11,249	20,992	
RR - 30 Bolechang Bazar - Nabinagar/Sherapur Road	60,000	57	3,420	3,000	1,424	4,272	3,000	287	861	3,000	96.6	290	4	9,021	17,864	
RR - 31 Nabinagar - Alamagar	50,000	57	2,850	2,500	1,424	3,560	2,500	287	718	2,500	96.6	242	4	9,021	16,391	
RR - 32 Insambel - Sherat via Nani	100,000	57	5,700	5,000	1,424	7,120	5,000	287	1,435	5,000	96.6	483	6	13,586	28,304	
RR - 33 Barail - Nilokhi	100,000	57	5,700	5,000	1,424	7,120	5,000	287	1,435	5,000	96.6	483	4	9,021	23,759	
RR - 34 Mohadpur Launch Ghat - Geri Coasa via Birgar	120,000	57	6,840	6,000	1,424	8,544	6,000	287	1,722	6,000	96.6	580	3	6,793	24,479	
RR - 35 Dhara Barga - Solimganj	50,000	57	2,850	2,500	1,424	3,560	2,500	287	718	2,500	96.6	242	4	9,021	16,391	
RR - 36 Konaighat - Manikgar	150,000	57	8,550	7,500	1,424	10,680	7,500	287	2,153	7,500	96.6	725	7	15,814	37,922	
RR - 37 Durgapur Launch Ghat - Keshorepur	120,000	57	6,840	6,000	1,424	8,544	6,000	287	1,722	6,000	96.6	580	5	11,358	29,044	
RR - 38 Lourfarpur - Hazipur	90,000	57	5,130	4,500	1,424	6,408	4,500	287	1,292	4,500	96.6	435	6	13,477	26,742	
RR - 39 Sahatma - Reshulabed via Gagnatapur	150,000	57	8,550	7,500	1,424	10,680	7,500	287	2,153	7,500	96.6	725	7	15,814	37,922	
RR - 40 Kambari - Merukta Bazar via Bagaura	160,000	57	9,120	8,000	1,424	11,592	8,000	287	2,296	8,000	96.6	773	7	15,814	39,395	
RR - 41 Paddabagar - Merukta via Malid	90,000	57	5,130	4,500	1,424	6,408	4,500	287	1,292	4,500	96.6	435	6	13,477	26,742	
RR - 42 Kuricher - Benishit	130,000	57	7,410	6,500	1,424	9,256	6,500	287	1,866	6,500	96.6	628	7	15,814	34,974	
RR - 43 Karibari - Barikhal	80,000	57	4,560	4,000	1,424	5,696	4,000	287	1,148	4,000	96.6	386	4	9,021	20,811	

Table G.1.12 Construction Cost of Road (Bancharampur)

(Unit: 1,000 Taka)

NAME OF ROAD	Embankment		Pavement		Tree Planting		Turffing		Structure Works		TOTAL AMOUNT				
	Work Volume (Cubimeter)	Total Cost Amount	Work Volume (Meter)	Total Cost Amount	Work Volume (Meter)	Total Cost Amount	Work Volume (Meter)	Total Cost Amount	Nos	Total Amount					
FB - B Hirona - Marichakandi	560,000	57	31,920	22,400	1,424	31,898	22,400	287	6,429	22,400	96.6	2,164	12	48,795	121,206
FB - B Salingorj - Kariakandi	348,000	57	19,836	19,200	1,424	27,341	19,200	287	5,510	19,200	96.6	1,855	20	64,824	119,366
FB - B Bancharampur - Nabnagar	349,000	57	19,893	19,200	1,424	27,341	19,200	287	5,510	19,200	96.6	1,855	9	31,608	86,207
RR - 1 Bancharampur - Darachar	150,000	57	8,550	11,200	1,424	15,949	11,200	287	3,214	11,200	96.6	1,082	8	17,976	46,771
RR - 2 Ujanchar - Darachar - Bahorechar	100,000	57	5,700	11,200	1,424	15,949	11,200	287	3,214	11,200	96.6	1,082	11	30,429	56,374
RR - 3 Bashganj - Durgapur	19,200	57	1,094	6,400	1,424	9,114	6,400	287	1,837	6,400	96.6	618	3	6,793	19,456
RR - 4 Bahadurpur - Gokhnagar	24,000	57	1,368	8,000	1,424	11,392	8,000	287	2,296	8,000	96.6	773	5	13,686	29,515
RR - 5 Bancharampur - Kalanagar Launch Ghat	24,000	57	1,368	8,000	1,424	11,392	8,000	287	2,296	8,000	96.6	773	2	5,838	21,667
RR - 6 Jobongaj Bazar - Bishnarapur	24,000	57	1,368	8,000	1,424	11,392	8,000	287	2,296	8,000	96.6	773	4	15,073	30,902
RR - 7 Bishnarapur - Jankalipur	38,400	57	2,189	12,800	1,424	18,227	12,800	287	3,674	12,800	96.6	1,236	5	9,437	34,763
RR - 8 Unukandi - Paharakandi	24,000	57	1,368	8,000	1,424	11,392	8,000	287	2,296	8,000	96.6	773	5	9,477	25,306
RR - 9 Shalimabad - Junarchar	57,600	57	3,283	19,200	1,424	27,341	19,200	287	5,510	19,200	96.6	1,855	16	33,191	71,180
RR - 10 Charahani - Purbahaty via Guaratoli	28,800	57	1,642	9,600	1,424	13,670	9,600	287	2,755	9,600	96.6	927	11	19,585	38,579
RR - 11 Faridabad - Junarchar	19,200	57	1,094	6,400	1,424	9,114	6,400	287	1,837	6,400	96.6	618	6	16,972	29,635
RR - 12 Kalanagar Launch Ghat - Rupashdi	19,200	57	1,094	6,400	1,424	9,114	6,400	287	1,837	6,400	96.6	618	2	14,599	27,262
RR - 13 Rupashdi - Buberia	24,000	57	1,368	8,000	1,424	11,392	8,000	287	2,296	8,000	96.6	773	3	3,639	19,468
RR - 14 Rupashdi - Ashrafabad	28,800	57	1,642	9,600	1,424	13,670	9,600	287	2,755	9,600	96.6	927	11	24,012	43,006
RR - 15 Sarifpur - Farauli	28,800	57	1,642	9,600	1,424	13,670	9,600	287	2,755	9,600	96.6	927	7	24,110	43,104
RR - 16 Sunarapur - Shantipur	28,800	57	1,642	9,600	1,424	13,670	9,600	287	2,755	9,600	96.6	927	13	29,592	48,586
RR - 17 Barakandi - Jankalipur Launch Ghat	19,200	57	1,094	6,400	1,424	9,114	6,400	287	1,837	6,400	96.6	618	6	13,411	26,074
RR - 18 Darakandi - Gukolnagar via Imannagar	19,200	57	1,094	6,400	1,424	9,114	6,400	287	1,837	6,400	96.6	618	4	13,408	26,071
RR - 19 Bahorechar South Para - Bahorechar	9,600	57	547	3,200	1,424	4,557	3,200	287	918	3,200	96.6	309	2	6,420	12,751
RR - 20 Rupashdi - Kaupur	9,600	57	547	3,200	1,424	4,557	3,200	287	918	3,200	96.6	309	4	8,264	14,595
RR - 21 Hossainpur Road	14,400	57	821	4,800	1,424	6,835	4,800	287	1,378	4,800	96.6	464	4	9,930	19,428

Table G.1.12 IRR Construction Cost of Road (Debidwar)

(Unit: 1,000 Taka)

NAME OF ROAD	Road Classification	Embankment			Pavement			Tree Planting			Tuffing			Structure Works		TOTAL AMOUNT
		Work Volume (Cubimeter)	Unit	Total Cost Amount	Work Volume (Meter)	Unit	Total Cost Amount	Work Volume (Meter)	Unit	Total Cost Amount	Work Volume (Meter)	Unit	Total Cost Amount	Nos	Total Amount	
1	Madhya - Companygonj	160,000	57	9,120	16,400	1,424	23,354	16,400	287	4,707	16,400	96.6	1,584	20	49,363	88,128
2	Kalikapur - Itasgram	116,000	57	6,612	12,000	1,424	17,088	12,000	287	3,444	12,000	96.6	1,159	16	41,371	69,674
3	Barat - Gobindpur	76,000	57	4,332	8,200	1,424	11,677	8,200	287	2,353	8,200	96.6	792	14	36,311	55,465
4	Debidwar - Itasgram	92,000	57	5,244	16,800	1,424	23,923	16,800	287	4,822	16,800	96.6	1,623	14	29,119	64,731
5	Fultaji - Chowmuhani	111,000	57	6,327	20,300	1,424	28,907	20,300	287	5,826	20,300	96.6	1,961	15	23,379	66,400
6	Separa - Saitapur	59,000	57	3,363	6,000	1,424	8,544	6,000	287	1,722	6,000	96.6	580	2	5,370	19,579
7	Yusufpur - Prigonj	19,000	57	1,083	2,500	1,424	3,560	2,500	287	718	2,500	96.6	242	4	7,325	12,928
8	Charbakar - Nabibasi G.C.C.R.	86,000	57	4,902	10,100	1,424	14,382	10,100	287	2,899	10,100	96.6	976	11	15,893	39,052
9	Monghara - Modonogor	66,000	57	3,762	12,100	1,424	17,230	12,100	287	3,473	12,100	96.6	1,169	9	14,289	39,923
10	Jaafarganj - Bhorokanta	60,000	57	3,420	11,400	1,424	16,234	11,400	287	3,272	11,400	96.6	1,101	15	23,033	47,060
11	Debidwar - Anapur	86,000	57	4,902	12,400	1,424	17,658	12,400	287	3,559	12,400	96.6	1,198	19	32,727	60,044
12	Fultaji - Khirakandi	103,000	57	5,871	14,900	1,424	21,218	14,900	287	4,276	14,900	96.6	1,439	18	34,450	67,254
13	Vrallah - Modhumura	68,000	57	3,876	9,900	1,424	14,098	9,900	287	2,841	9,900	96.6	956	11	20,666	42,437
14	Borolompur - Dhamti	62,000	57	3,534	9,100	1,424	12,958	9,100	287	2,612	9,100	96.6	879	12	21,879	41,862
15	Lokhipur - Barshaighor	154,000	57	8,778	20,300	1,424	28,907	20,300	287	5,826	20,300	96.6	1,961	26	53,398	98,870
16	Tebaria - Chona	33,000	57	1,881	5,200	1,424	7,405	5,200	287	1,492	5,200	96.6	502	3	4,763	16,043
17	Jafarganj - Rajmahar	120,000	57	6,640	17,400	1,424	24,778	17,400	287	4,994	17,400	96.6	1,681	18	32,202	70,495
18	Hossampur - Bakosar	66,000	57	3,762	11,200	1,424	15,949	11,200	287	3,214	11,200	96.6	1,082	13	21,968	45,975
19	Banur - Biraniondol	75,000	57	4,275	12,000	1,424	17,088	12,000	287	3,444	12,000	96.6	1,159	18	26,112	52,078
20	Sibunogor - Sultampur	46,000	57	2,622	7,800	1,424	11,107	7,800	287	2,299	7,800	96.6	753	7	14,581	31,902