

Roads and Highways Department (RHD)

Preparatory Survey for Dhaka-Chaittagong Highway (N-1) Bridge Construction and
Rehabilitation Project
Kanchpur Bridge and Meghna-Gomti Bridge

Consultation meeting with potential affected people and other stakeholders

Date: 15.3.2012 at 10.30 am
Venue : Shenpara, Kanchpur,
Sonargao, Narayanganj

A meeting was held on the 15th March 2012 at 10.30 am at the Kanchpur Bridge location (Shenpara), Sonargaon, Narayanganj on Terms of Reference for Social and Environmental Impact Assessment. The Meeting was presided over by the Kanchpur Union Parishad Chairman Md. Alhaj Fazlul Haque. Among others Mr. Md. Shamsul Alam Superintending Engineer, RHD, Mr. Tushar Kanti Shaha Executive Engineer, RHD, Shimrail, Narayanganj, Md. Rejaul Karim Executive Engineer, Bridge Maintenance Division, RHD, Dhaka, Ms. Rehana Haque Executive Engineer, RHD, Dhaka, Ms. Johora Sultana SDE, RHD, Dhaka, Abdur Rahman Kawser SDE, RHD, Narayanganj, Takeo SHOJI Japanese Environmental Specialist of the JICA Study Team, Md. Nahid Muniruddin, Natural Environmental Engineer (Local) and Kh. Khairul Matin Social Environmental Engineer (Local) JICA Study Team and more than 30 local people were present in the meeting (list of the participants attached in Appendix-A). In the consultation meeting the local people were informed about the goals and objectives of the. The Superintending Engineer welcomed all participants in the discussion session and described the project including its different components. It was disclosed that the Japan Bank for International Cooperation (JICA) will finance the project Mr. Takeo SHOJI described importance of the consultation meeting and emphasizes on the social and environmental issues to be addressed during project preparation, implementation and operation & maintenance stage.

Md. Abu Nahid Munirudding and Kh. Khairul Matin presented the environmental and social issues using flip charts. It was discussed that the construction of the project may be started by early 2014. The project will include main bridge, approach road, service area, stake yard, etc.

Kh. Khairul Matin informed the participants that,

- New land acquisition is not required for construction of the proposed bridges and for this overall impact on the community will be minimized.
- These bridges will be constructed in RHD land acquired for the existing bridges
- Some residential households, commercial enterprises and common properties are found within the proposed area those are required relocation before starting civil construction
- A detailed socioeconomic survey and inventory of assets through structured questionnaires are being conducted among the households within and surrounded the project area.

- The cut-off date for conducting this survey is
 - March 8, 2012 for Kanchpur Bridge
 - March 15, 2012 for Meghna Bridge &
 - March 15 , 2012 for Meghna-Gomti Bridge
- The residential households are to be relocated in new location due to the project
- Commercial enterprises would be relocated for continuing business
- They have to search alternative livelihood for the time being
- Wage labourers may lose their job for some days/weeks
- The vulnerable households/ women headed households may experience adverse impacts due to the project
- The commercial enterprises may be closed for some days/weeks
- Besides, some other adverse impacts/ challenges may be encountered during construction of the bridge

Md. Abu Nahid Muniruddin informed the participants that the proposed bridge construction project may impact or effect on the following important environmental components (IECs) during various phases of the project:

- Topography and Geology may be changed due to the project
- Soil Erosion and scouring in the river bed may take place
- Inland Water Transportation may disturbed during construction of the bridge
 - River hydrology may be changed
 - Impacts on Biota and ecosystems
 - Effects on Global Warming
- Air Pollution
- Water Contamination
- Soil Pollution
- Waste
- Noise and Vibration
- Ground Subsidence
- Odor
- Bottom Sediment
- Landscape

A large percentage of participants were concerned that the existing water quality of the Shitalakhya river is very poor due to the effluent discharges from all the industries situated on the upstream and downstream which include, fertilizers, textiles, jute mills, soap factory, pulp

and paper mill etc. These Industrial pollution often creates very severe localized environmental problems, which affect human health, aesthetic and local ecosystems. Due to the industrial effluents, there is no fish in the river Shitalkahya. Most of them also opined that noise, vibration, and dust will be the major issues during construction.

The Environmental Specialist pointed out that impact on the project upon ambient air, noise quality, soil quality, water quality is being assessed through collection of primary baseline data. EMP will provide instructions limiting environmental qualities to comply with the standards and penalties for violation.

Almost everybody said that they will support the project and advised the JICA Team to take precautions in the environmental mitigation to avoid the various impacts anticipated during the preconstruction, construction and operation stages of the project and to ensure protection of the sensitive locations like mosque, mazar, graveyard etc. of the areas.

The Environmental Specialist informed that the design and layout of the main bridge and approach roads etc. when finalized will consider the anticipated adverse impacts. EMP will cover specific measures to follow during the construction process in protecting religious and other sensitive locations.

The participants expressed their views in favor of the project. They are well known about the contribution of the JICA in this project. The affected people told that they have been living in the present location for more than two decades and most of them have no alternative land for relocation. Most of them are wage laborers and rickshaw/van puller. Some of the women are living there who have no husband or adult son to shoulder the household responsibility. According to their statement, most of them are vulnerable in terms of income. About 14 RHD employees are living within the proposed site in their own structure but they have constructed some temporary sheds and rented out to others. About 120 residential and commercial enterprises are found in the proposed site (both ends of the Kanchpur bridge). After threadbare discussion on the issues the floor was open for all to express opinion about the mitigation measures of the probable social and environmental impacts as discussed earlier.

It was found that the people are mainly concern about their relocation and assistance to be provided by the project for relocation in new site.

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The Chairman of the Kanchpur Union Parishad thanked to all especially the Japan Government for extending support in this project and urged again relocation of the affected poor households in a cluster manner if there is any provision in the project.

The Superintending Engineer informed the participants that their opinion have been noted down and would be discussed with the project authority. The principle is to assist the affected persons in their relocation as per Donor's guideline and they should be relocated by their own before starting civil construction. The affected persons were insisted to search alternative location from now as they have about 2 years time in hand to relocate.

The meeting was closed with a vote of thanks from the chair.

Appendix-A: Attendance Sheet

Preparatory Survey for Dhaka-Chittagong National Highway (N-1) Bridge Construction
and Rehabilitation Project Kanchpur, Meghna and Meghna-Gomti Bridge

Consultation meeting with affected people and other stakeholders
(Attendance Sheet)

Date: March 15, 2012, Time 10.30 am
Venue: Kanchpur Bridge (Shenpara), Ctg.
end
Union: Kanchpur, Upazila: Sonargaon,
District: Narayanganj

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Roads and Highways Department (RHD)

Preparatory Survey for Dhaka-Chaittagong Highway (N-1) Bridge Construction and Rehabilitation Project
Kanchpur Bridge and Meghna-Gomti Bridge

Consultation meeting with potential affected people and other stakeholders

Date: 15 .3.2012 at 02.30 pm
Venue : Tetuitala Bazar, Meghna Ghat,
Baliakandi, Gazaria, Munshiganj

A meeting was held on the 15th March 2012 at 2.30 pm the Kanchpur Bridge location (Shenpara), Sonargaon, Narayanganj on Terms of Reference for Social and Environmental Impact Assessment. The Meeting was presided over by the Hazi Abdul Aziz Dewan (affected person), Tetuitala, baliakandi, Gazaria, Munshiganj. Mrr. Md. Shamsul Alam Superintending Engineer, RHD, Mr. Tushar Kanti Shaha Executive Engineer, RHD, Shimrail, Narayanganj, Md. Rejaul Karim Executive Engineer, Bridge Maintenance Division, RHD, Dhaka, Ms. Rehana Haque Executive Engineer, RHD, Dhaka, Ms. Johura Sultana SDE, RHD, Dhaka, Abdur Rahman Kawser SDE, RHD, Narayanganj, Takeo SHOJI Japanese Environmental Specialist of the JICA Study Team, Md. Nahid Muniruddin, Natural Environmental Engineer (Local) and Kh. Khairul Matin Social Environmental Engineer (Local) JICA Study Team and more than 50 local people were present in the meeting (list of the participants attached in Appendix-A) In the consultation meeting the local people were informed about the goals and objectives of the. The Superintending Engineer welcomed all participants in the discussion session and described the project including its different components. It was disclosed that the Japan Bank for International Cooperation (JICA) will finance the project Mr. Takeo SHOJI described importance of the consultation meeting and emphasizes on the social and environmental issues to be addressed during project preparation, implementation and operation & maintenance stage.

Md. Abu Nahid Munirudding and Kh. Khairul Matin presented the environmental and social issues using flip charts. It was discussed that the construction of the project may be started by early 2014. The project will include main bridge, approach road, service area, stake yard, etc.

Kh. Khairul Matin informed the participants that;

- New land acquisition is not required for construction of the proposed bridges and for this overall impact on the community will be minimized.
- These bridges will be constructed in RHD land acquired for the existing bridges
- Some residential households, commercial enterprises and common properties are found within the proposed area those are required relocation before starting civil construction
- A detailed socioeconomic survey and inventory of assets through structured questionnaires are being conducted among the households within and surrounded the project area.

- The cut-off date for conducting this survey is
 - March 8, 2012 for Kanchpur Bridge
 - March 15, 2012 for Meghna Bridge &
 - March 15 , 2012 for Meghna-Gomti Bridge
- The residential households are to be relocated in new location due to the project
- Commercial enterprises would be relocated for continuing business
- They have to search alternative livelihood for the time being
- Wage labourers may lose their job for some days/weeks
- The vulnerable households/ women headed households may experience adverse impacts due to the project
- The commercial enterprises may be closed for some days/weeks
- Besides, some other adverse impacts/ challenges may be encountered during construction of the bridge

Md. Abu Nahid Muniruddin informed the participants that the proposed bridge construction project may impact or effect on the following important environmental components (IECs) during various phases of the project:

- Topography and Geology may be changed due to the project
- Soil Erosion and scouring in the river bed may take place
- Inland Water Transportation may disturbed during construction of the bridge
 - River hydrology may be changed
 - Impacts on Biota and ecosystems
 - Effects on Global Warming
- Air Pollution
- Water Contamination
- Soil Pollution
- Waste
- Noise and Vibration
- Ground Subsidence
- Odor
- Bottom Sediment
- Landscape

The participants opined that the existing water quality of the Meghna river is not good due to untreated effluent discharges from two chemical industries. They requested that a sound environmental mitigation plan be prepared to address the various impacts anticipated during the

pre-construction, construction and implementation stages and to ensure the protection of natural water bodies (river, canals etc.).

The Environmental Specialist pointed out that impact on the project upon ambient air, noise quality, soil quality, water quality is being assessed through collection of primary baseline data. EMP will provide instructions limiting environmental qualities to comply with the standards and penalties for violation.

Almost everybody said that they will support the project and advised the JICA Team to take precautions in the environmental mitigation to avoid the various impacts anticipated during the preconstruction, construction and operation stages of the project and to ensure protection of the sensitive locations like mosque, mazar, graveyard etc. of the areas.

The Environmental Specialist informed that the design and layout of the main bridge and approach roads etc. when finalized will consider the anticipated adverse impacts. EMP will cover specific measures to follow during the construction process in protecting religious and other sensitive locations.

The participants expressed their views in favor of the project. They are well known about the contribution of the JICA in this project. They are also known that the existing Meghna and Meghna-Gomti Bridge were constructed with financial assistance from Japan. The affected people told that they have been living/ dealing in the present location for more than three decades and most of them have no alternative land for relocation. The existing bazaar is established long ago and now it is being auctioned in every year by Upazila Administration. This is the only market in this area. Some poor people are living beside the market in a slum on RHD land. They are willing to offer their possession for constructing the bridge but required relocation in anywhere nearer to the present location. About 300 shops and more than 100 residential households are there. Most of the people living in the project area are vulnerable and they earn their livelihood by wage laboring, brick & stone cheeping, fishing etc. Some of the women are living there who have no husband or adult son to shoulder the household responsibility. According to their statement, most of them are vulnerable in terms of income. After threadbare discussion on the issues the floor was open for all to express opinion about the mitigation measures of the probable social and environmental impacts as discussed earlier.

It was found that the people are mainly concern about their relocation and assistance to be provided by the project for relocation in new site.

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The Superintending Engineer informed the participants that the project will look in to the matter to avoid unnecessary displacement. He told that opinion of the people have been noted down and would be discussed with the project authority. The principle of the project is to assist the affected persons in their relocation as per Donor's guideline and they should be relocated by their own before starting civil construction. The affected

Annex 4 Minutes of TOR meeting

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persons were insisted to search alternative location from now as they have about 2 years time in hand to relocate.

The meeting was closed with a vote of thanks from the chair.

Appendix-A: Attendance Sheet

**Preparatory Survey for Dhaka-Chittagong National Highway (N-1) Bridge
Construction and Rehabilitation Project Kanchpur, Meghna and Meghna-Gomti
Bridge
Consultation Meeting with affected persons and other stakeholders
Attendance Sheet**

Date: 15/03/2012 Time: 12.30 pm
Venue: Tetuitala Bazar Union: Baliakandi
Upazila : Gazaria, District: Munshiganj

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Roads and Highways Department (RHD)

Preparatory Survey for Dhaka-Chaittagong Highway (N-1) Bridge Construction and Rehabilitation Project Kanchpur Bridge and Meghna-Gomti Bridge

Consultation meeting for disclosure of RAP and EIA policy to the affected people and other stakeholders

Date: 01.8.2012 at 2.30 pm
Venue: Kanchpur Bridge (Chittagong end) Senpara, Sonargaon, Narayanganj

A stakeholder meeting (Second Stage) was held on disclosure of the RAP and EIA policy of the project on the August 01, 2012 at 2.30 pm at Kanchpur bridge Chittagong end (under abutment), Senpara, Sonargaon, Narayanganj. The Meeting was presided over by Mr. Md. Ashraful Alam, Superintending Engineer, Bridge Maintenance Division, RHD. Among others Ms. Rowshanara Khanam, Superintending Engineer, Social and Environment Circle, RHD, Md. Rejaul Karim, Executive Engineer, Bridge Maintenance Division, RHD, Dhaka, Mr. Yoshimitsu Hiyama, JICA expert, RHD, Mr. Joshio Kimura, Economist, JICA Study Team, Takeo SHOJI Japanese Environmental Specialist of the JICA Study Team, Md. Nahid Muniruddin, Natural Environmental Engineer (Local) and Kh. Khairul Matin Social Environmental Engineer (Local) JICA Study Team and more than 71 local people were present in the meeting (list of the participants attached in Appendix-A).

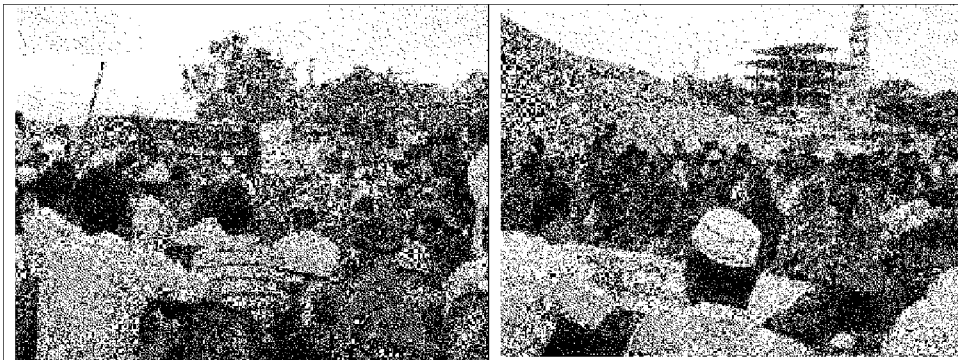
In the consultation meeting the RAP and EIA policy (mitigation measures of the project impacts) were disclosed to the affected people using flip chart. The affected people were informed about the meeting through publishing in the newspaper, personal contact from Union leaders verbally, announcement in the mosque, etc. The issues disclosed in the meeting were project components and revised alignment by which some people who were registered by previous census as affected people, become as not affected, cut off-date declared during the survey (informed as finally revised to 16th March from 08th March 2012), Methodologies adopted during survey, findings of the survey, entitlement matrix as prescribed in the RAP, Grievance redress mechanism, compensation payment procedure, relocation requirements & options, timeline of relocation after payment of compensation, etc. The findings of the environmental survey and proposed mitigation measures of any adverse impacts were also disclosed in the meeting.

Mr. Md. Ashraful Alam, Superintending Engineer welcomed all participants in the discussion session and described the project including its different components. It was disclosed that the Japan Bank for International Cooperation (JICA) will finance the project.

The following issues were disclosed in the meeting

- a. The new bridge will be constructed parallel to the existing bridge within 30 meter to the downstream.
- b. No new land acquisition will be required for any components of this project. All of the project activities will be done in RHD land.
- c. Cut-off date of the census survey was 08 March 2012. It was declared in the first stage consultation meeting.

- d. Methodologies of the survey such as census and socioeconomic survey, inventory of affected assets, video filming and sketch mapping of all affected structures and other properties
- e. Findings of the survey and impact of the project
- f. Compensation package as prescribed in the RAP was also disclosed in the meeting as follows-
 - i. Replacement value of the affected structures, trees and other assets
 - ii. Transfer grants and re-installation grants for structure
 - iii. Grants for alternative housing
 - iv. Grants for loss of business
 - v. Moving assistance for tenants businessmen
 - vi. Grants for vulnerable households
 - vii. Grants for female headed households
 - viii. Grants for wage earners
 - ix. Training on income generating activities for eligible members of vulnerable HHs
 - x. Owners will be allowed to take all salvaged materials free of cost
 - xi. Eligible affected persons will be preferentially employed in civil construction
- g. Grievance redress mechanism and right to submit grievances to the Grievance Redress Committee
- h. Compensation payment procedure and role of PAPs, IA and RHD in making payment



Disclosure meeting at Kanhpur Bridge location

Regarding Environmental impacts and mitigation measures, the Environmental Specialist explained that that about 27 major environmental and social concerns have identified in this project and accordingly mitigation measures have been proposed. It was discussed that the impacts are broadly classified into following 4 categories that will be faced during preconstruction, construction and operation stage:

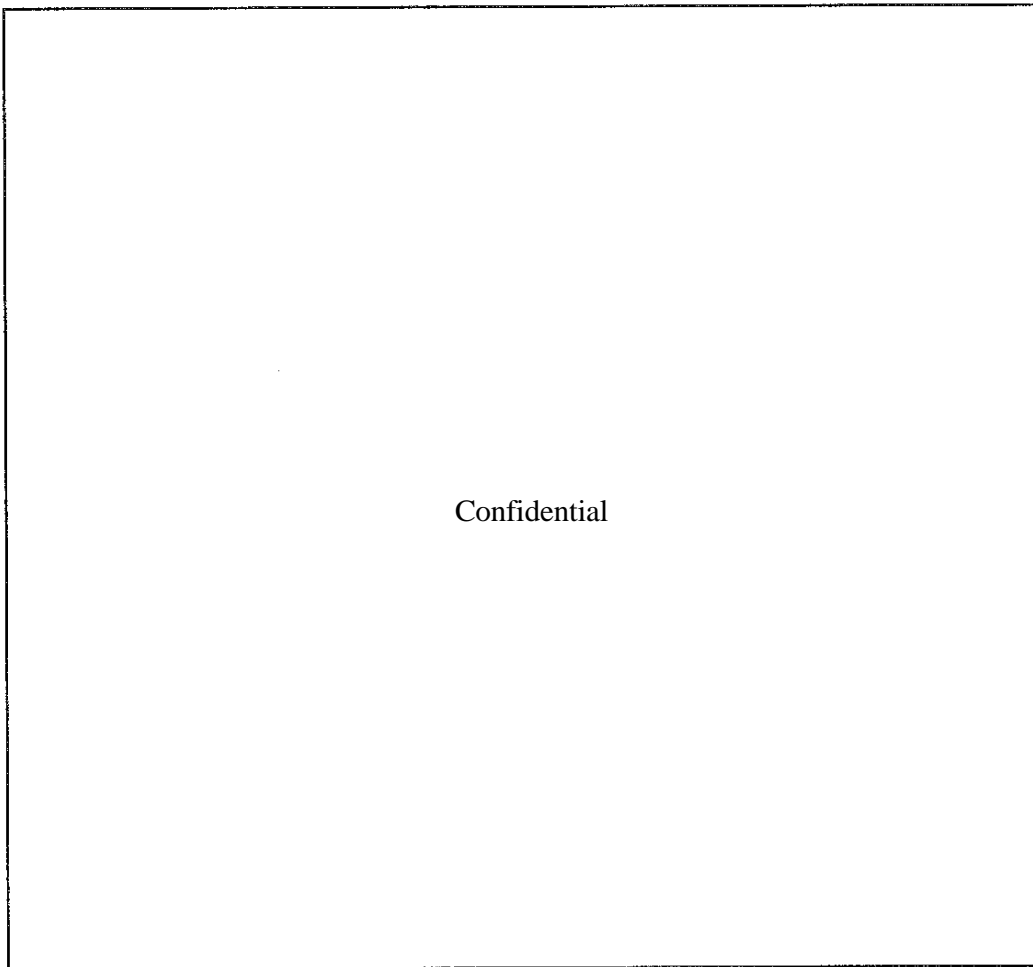
- Social Environment
- Natural Environment
- Ecological Environment
- Environmental Pollution

The Social Specialist has explained impacts on social environment. The Environmental Specialist explained the impacts on natural and ecological environment and environmental pollution.

Environmental Impact/Issue	Mitigation Measures
• Cultural Heritage	No mitigation measures are required
• Accident	<ul style="list-style-type: none"> • Follow BRTA rules and Regulations • Preparation of Health and Safety Management Plan (HSMP) including prevention of traffic accidents
• River Erosion and Siltation	• Construction of sheet pile steel pipe foundation to encounter scouring
• River Transport	• Follow BIWTA navigation rules and regulations
• Hydrology	• River Traffic control and ensure lighting device Not required
• Biota and ecosystem	<ul style="list-style-type: none"> • Prohibit leaking of oils from construction vessels including of emergency removal system of leaked oils • Plantation of 3 times of trees to be cut; Tree planting will be carried out through the RHD Tree-planting Unit, in conformity with their existing guidelines
• Global Warming	• No mitigation measures are required
• Air Pollution	• Implement dust suppress plan and routine mitigation measure shall be taken to emitting equipments during construction
• Surface and Ground Water Pollution	<ul style="list-style-type: none"> • Increase retention time of the outflow hydraulic fills to increase sedimentation, thus, reduce sediment load to the river • Removal of Arsenic from newly constructed Wells
• Soil pollution	• Oil storage shall be with concrete floor and oil fence
• Waste	<ul style="list-style-type: none"> • Contractor will be required to facilitate proper reuse and disposal plan, and manage the construction waste • Dumping of waste at approved dumping sites
• Noise and Vibrations	<ul style="list-style-type: none"> • Enforce noise emission standards • Regulate the construction process • Install barrier if required
• Ground Subsidence	• No action required
• Offensive Odor	Proper treatment of camp waste and proper maintenance of heavy equipment etc
• Bottom sediment	Treatment of liquid waste before discharged
• Landscape	Vegetation of the slope surface of embankment

After disclosing the policy of the RAP and EIA the participants were requested to put comments or question on the project policy. The affected people raised some questions about the policy and impact mitigation measures. All of the questions were on resettlement and compensation issues. There were no questions raised on the environmental issues

Details of the questions and answers are presented below-



The Meeting was closed with a vote of thanks from the Chair.

Appendix-A: Attendance Sheet

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Preparatory Survey for Osaka-Ciutagong National Highway (N-6) Bridge Construction and
Rehabilitation Project (Mancheur, Meghna and Guroi Bridge)

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(Attendance Sheet)

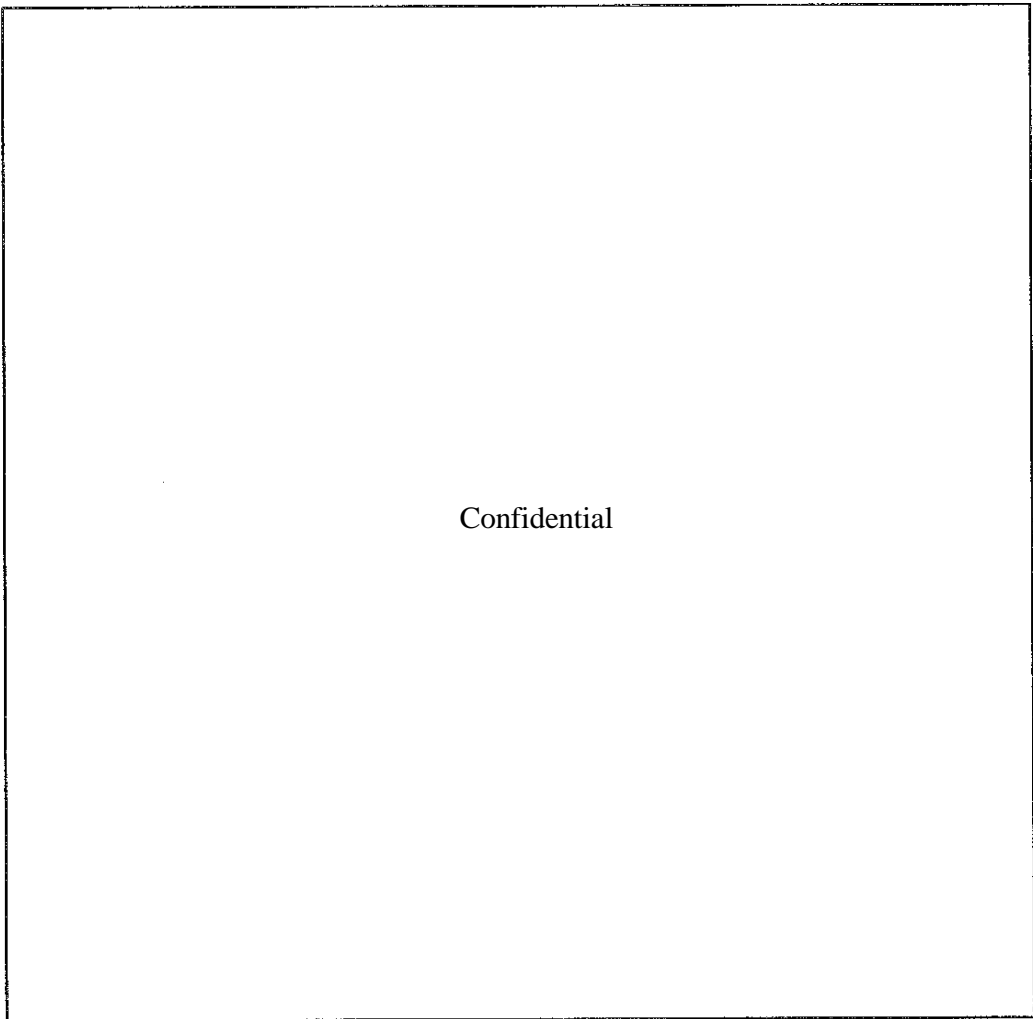
সভার সভাপতি

সভার সচিব

সভার অতিথি

সভার অতিথি

সভার অতিথি



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Preparatory Study for Shikha Chitragangri National Highway (NH) Bridge Construction and
Rehabilitation Project Kanchpur, Meghna and Gami Bridge

সংসদ পরিদর্শন কার্যক্রম
Attendance Sheet

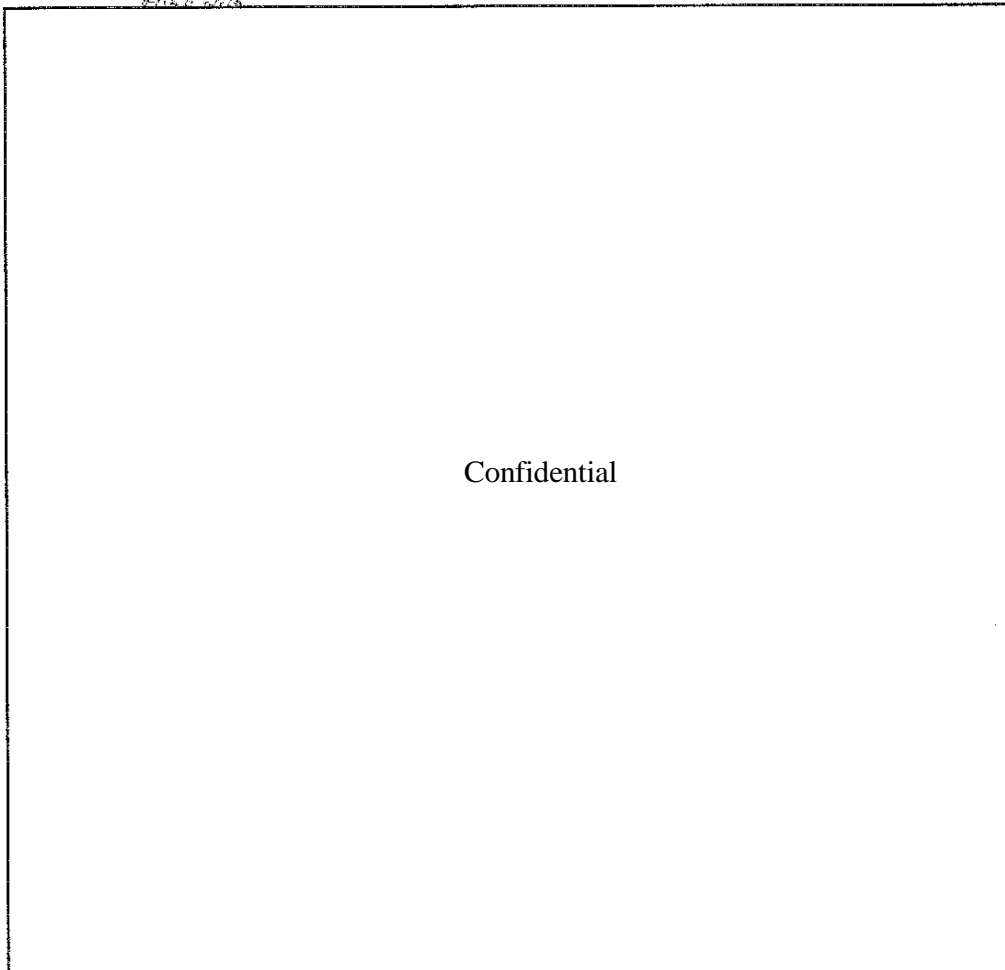
সংসদ ২-০০/১৭

তারিখ: ১০/১৩/১৩২ ২১

সংসদ সদস্য *[Signature]*
১৩১২

সভাপতি *[Signature]*

সংসদ *[Signature]*



Preparatory Survey for Shikoku Expressway National Highway 10th Bridge Construction and
Rehabilitation Project (Municipal Maghara and Gumi Bridge)

出席者名簿 (Attendance Sheet)

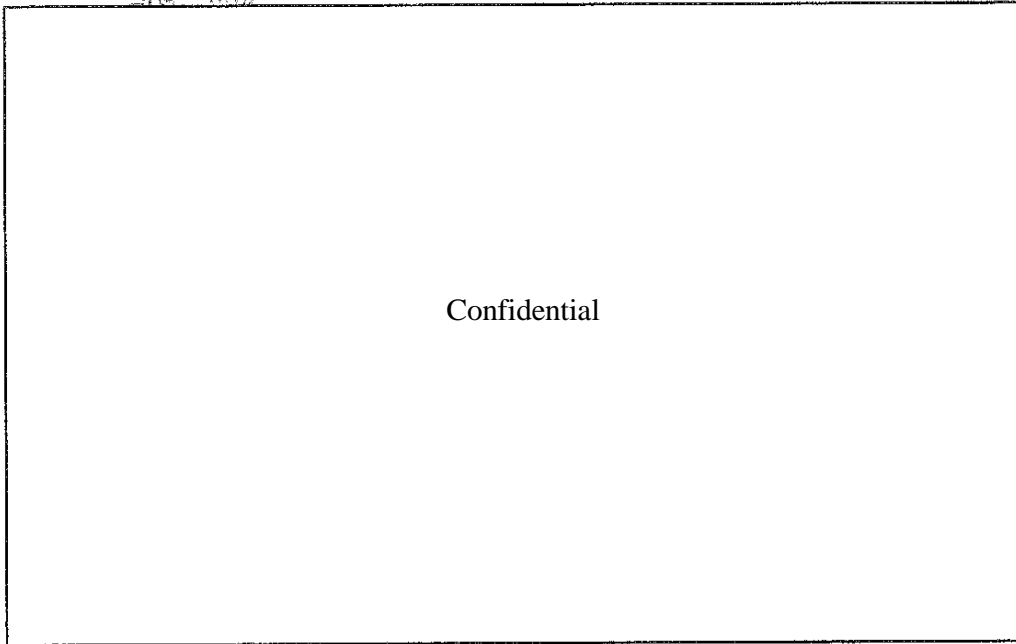
出席者名 (Attendee Name)

出席日時 (Attendance Date)

出席場所 (Attendance Location)

出席理由 (Attendance Reason)

出席者印 (Attendee Seal)



Roads and Highways Department (RHD)

Preparatory Survey for Dhaka-Chaittagong Highway (N-1) Bridge Construction and Rehabilitation Project
Kanchpur Bridge and Meghna-Gomti Bridge

Consultation meeting for disclosure of RAP and EIA policy to the affected people and other stakeholders

Date: 01.8.2012 at 12.00 pm
Venue: Meghna Bridge (Chittagong end)
Baluakandi, Gozaria, Munshiganj

A stakeholder meeting (Second Stage) was held on disclosure of the RAP and EIA policy of the project on the August 01, 2012 at 12.00 pm at Meghna bridge Chittagong end (RHD Building), Baluakandi, Gozaria, Munshiganj. The Meeting was presided over by Ms. Rowshanara Khanom, Superintending Engineer, Social and Environment Circle, RHD. Among others, Mr. Md. Ashrafal Alam, Superintending Engineer, Bridge Maintenance Division, RHD, Md. Rejaul Karim, Executive Engineer, Bridge Maintenance Division, RIID, Dhaka, Mr. Yoshimitsu Iiyama, JICA expert, RIID, Mr. Joshio Kimura, Economist, JICA Study Team, Takeo SHOJI Japanese Environmental Specialist of the JICA Study Team, Md. Nahid Muniruddin, Natural Environmental Engineer (Local) and Kh. Khairul Matin Social Environmental Engineer (Local) JICA Study Team. Md. Shamsuddin Pradhan (Chairman Baluakandi Union Parishad and Mr. Rafiqul Islam (Chairman Pirojpur Union Parishad) were also present in the meeting. A total of 18 affected people were present in the meeting (list of the participants attached in Appendix-A).

In the consultation meeting the RAP and EIA policy (mitigation measures of the project impacts) were disclosed to the affected people using flip chart. The affected people were informed about the meeting through publishing in the newspaper, personal contact from Union leaders verbally, announcement in the mosque, etc. The issues disclosed in the meeting were project components and revised alignment by which some people who were registered by previous census as affected people, become as not affected, cut off-date declared during the survey (informed as finally revised to 16th March from 08th March 2012), Methodologies adopted during survey, findings of the survey, entitlement matrix as prescribed in the RAP, Grievance redress mechanism, compensation payment procedure, relocation requirements & options, timeline of relocation after payment of compensation, etc. The findings of the environmental survey and proposed mitigation measures of any adverse impacts were also disclosed in the meeting.

Ms. Rowshanara Khanom, Superintending Engineer welcomed all participants in the discussion session and described the project including its different components. It was disclosed that the Japan Bank for International Cooperation (JICA) will finance the project.

The following issues were disclosed in the meeting

- a. The new bridge will be constructed parallel to the existing bridge within 30 meter to the upstream. In this regards 10 meter area will be required within HOI CIM Cement Industries boundary at Dhaka end.

- b. No new land acquisition will be required for any components of this project. All of the project activities will be done in RHD land.
- c. Cut-off date of the census survey was 15 March 2012. It was also declared in the first stage consultation meeting.
- d. Methodologies of the survey such as census and socioeconomic survey, inventory of affected assets, video filming and sketch mapping of all affected structures and other properties.
- e. Findings of the survey and impact of the project.
- f. Compensation package as prescribed in the RAP was also disclosed in the meeting as follows-
 - i. Replacement value of the affected structures, trees and other assets
 - ii. Transfer grants and re-installation grants for structure
 - iii. Grants for alternative housing
 - iv. Grants for loss of business
 - v. Moving assistance for tenants businessmen
 - vi. Grants for vulnerable households
 - vii. Grants for female headed households
 - viii. Grants for wage earners
 - ix. Training on income generating activities for eligible members of vulnerable HHs
 - x. Owners will be allowed to take all salvaged materials free of cost
 - xi. Eligible affected persons will be preferentially employed in civil construction.
- g. Grievance redress mechanism and right to submit grievances to the Grievance Redress Committee
- h. Compensation payment procedure and role of PAPs, IA and RHD in making payment



Disclosure meeting at Meghma Bridge location

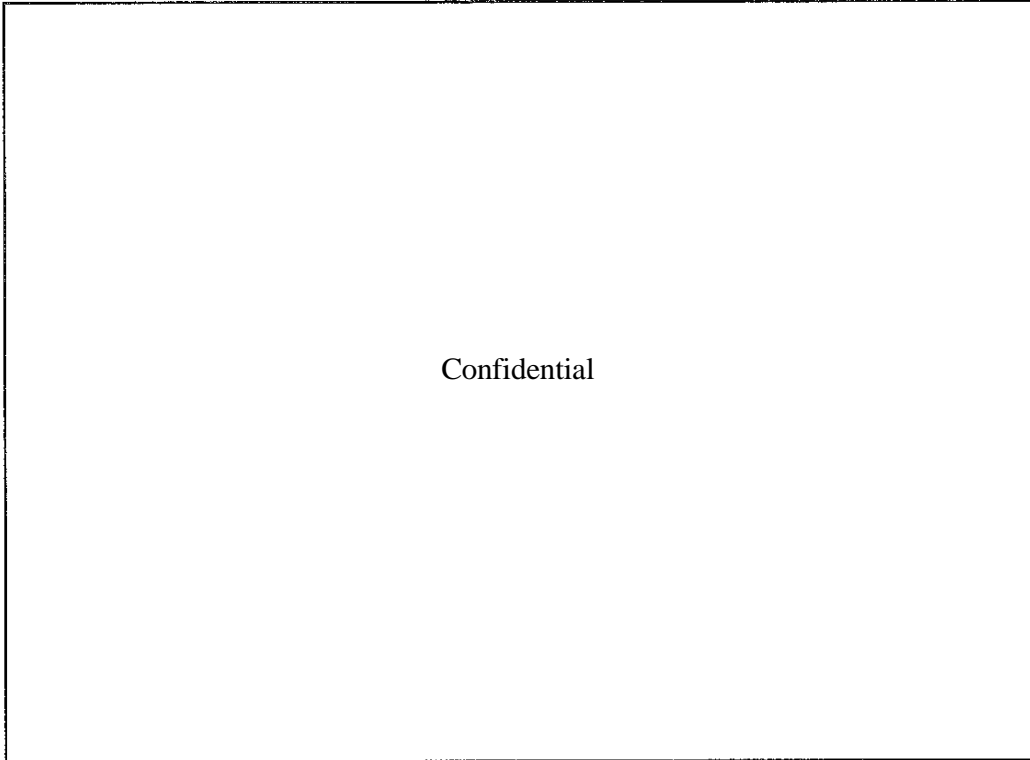
Regarding Environmental impacts and mitigation measures, the Environmental Specialist explained that that about 27 major environmental and social concerns have identified in this project and accordingly mitigation measures have been proposed. It was discussed that the impacts are broadly classified into following 4 categories that will be faced during preconstruction, construction and operation stage:

- Social Environment
- Natural Environment
- Ecological Environment
- Environmental Pollution

The Social Specialist has explained impacts on social environment. The Environmental Specialist explained the impacts on natural and ecological environment and environmental pollution.

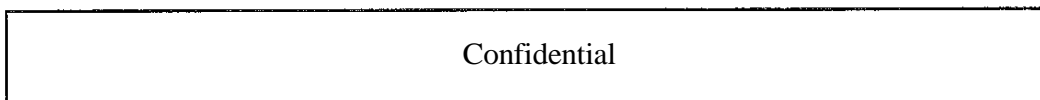
Environmental Impact/Issue	Mitigation Measures
• Cultural Heritage	No mitigation measures are required
• Accident	<ul style="list-style-type: none"> • Follow BRTA rules and Regulations • Preparation of Health and Safety Management Plan (HSMP) including prevention of traffic accidents
• River Erosion and Siltation	• Construction of sheet pile steel pipe foundation to encounter scouring
• River Transport	• Follow BIWTA navigation rules and regulations
• Hydrology	• River Traffic control and ensure lighting device Not required
• Biota and ecosystem	<ul style="list-style-type: none"> • Prohibit leaking of oils from construction vessels including of emergency removal system of leaked oils • Plantation of 3 times of trees to be cut; Tree planting will be carried out through the RHD Tree-planting Unit, in conformity with their existing guidelines
• Global Warming	• No mitigation measures are required
• Air Pollution	• Implement dust suppress plan and routine mitigation measure shall be taken to emitting equipments during construction
• Surface and Ground Water Pollution	<ul style="list-style-type: none"> • Increase retention time of the outflow hydraulic fills to increase sedimentation, thus, reduce sediment load to the river • Removal of Arsenic from newly constructed Wells
• Soil pollution	• Oil storage shall be with concrete floor and oil fence
• Waste	<ul style="list-style-type: none"> • Contractor will be required to facilitate proper reuse and disposal plan, and manage the construction waste • Dumping of waste at approved dumping sites
• Noise and Vibrations	<ul style="list-style-type: none"> • Enforce noise emission standards • Regulate the construction process • Install barrier if required
• Ground Subsidence	• No action required
• Offensive Odor	• Proper treatment of camp waste and proper maintenance of heavy equipment etc
• Bottom sediment	• Treatment of liquid waste before discharged
• Landscape	• Vegetation of the slope surface of embankment

After disclosing of the RAP and EIA policy the participants were requested to put comments or question on the policy. The local Union



The meeting was closed with a vote of thanks from the chair.

Appendix-A:Attendance Sheet



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Preparatory Survey for Osaka-Chicago National Highway (B-1) Bridge Construction and
Signal Station Project Handover, Melpur and Gawa Bridge

ମନୁଷ୍ୟ ଉପସ୍ଥିତି ତାଲିକା
(Attendance Sheet)

ମନୁଷ୍ୟ ନାମ

ମନୁଷ୍ୟ ଦସ୍ତଖତ

ମନୁଷ୍ୟ ପଦାବଳୀ

ମନୁଷ୍ୟ ଦସ୍ତଖତ

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<p>Confidential</p>		
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Roads and Highways Department (RHD)

**Preparatory Survey for Dhaka-Chaittagong Highway (N-1) Bridge Construction and Rehabilitation Project
Kanchpur Bridge and Meghna-Gomti Bridge**

Consultation meeting for disclosure of RAP and EIA policy to the affected people and other stakeholders

Date : 01.8.2012 at 10.00 am
Venue : Gunti Bridge (Chittagong end) Doudkandi, Comilla

A stakeholder meeting (Second Stage) was held on disclosure of the RAP and EIA policy of the project on the 1st August 2012 at 10.00 am at Gunti bridge Chittagong end (under abutment), Doudkandi, Comilla. The Meeting was presided over by Mr. Md. Ashrafal Alam, Superintending Engineer, Bridge Maintenance Division, RHD. Among others Ms. Rowshanara Khanam, Superintending Engineer, Social and Environment Circle, RHD, Mr. Md. Rejaul Karim, Executive Engineer, Bridge Maintenance Division, RHD, Dhaka, Mr. Yoshimitsu Hiyama, JICA expert, RHD, Mr. Joshio Kimura, Economist, JICA Study Team, Mr. Takeo SHOJI, Japanese Environmental Specialist of the JICA Study Team, Mr. Abu Nahid Muniruddin, Natural Environmental Engineer (Local) and Kh. Khairul Matin Social Environmental Engineer (Local) JICA Study Team and more than 30 local people were present in the meeting (list of the participants attached in Appendix-A).

In the consultation meeting the RAP and EIA policy (mitigation measures of the project impacts) were disclosed to the affected people using flip chart. The affected people were informed about the meeting through publishing in the newspaper, personal contact from Union leaders verbally, announcement in the mosque, etc. The issues disclosed in the meeting were project components and revised alignment by which some people who were registered by previous census as affected people, become as not affected, cut off-date declared during the survey (informed as finally revised to 16th March from 08th March 2012), Methodologies adopted during survey, findings of the survey, entitlement matrix as prescribed in the RAP, Grievance redress mechanism, compensation payment procedure, relocation requirements & options, timeline of relocation after payment of compensation, etc. The findings of the environmental survey and proposed mitigation measures of any adverse impacts were also disclosed in the meeting.

Mr. Md. Ashrafal Alam, Superintending Engineer welcomed all participants in the discussion session and described the project including its different components. It was disclosed that the Japan Bank for International Cooperation (JICA) will finance the project.

The following issues were disclosed in the meeting

- a. The new bridge will be constructed parallel to the existing bridge within 30 meter to the downstream.
- b. No new land acquisition will be required for any components of this project. All of the project activities will be done in RHD land.
- c. Cut-off date of the census survey was 15 March 2012. It was declared in the first stage consultation meeting.

- d. Methodologies of the survey such as census and socioeconomic survey, inventory of affected assets, video filming and sketch mapping of all affected structures and other properties
- e. Findings of the survey and impact of the project
- f. Compensation package as prescribed in the RAP was also disclosed in the meeting as follows-
 - i. Replacement value of the affected structures, trees and other assets
 - ii. Transfer grants and re-installation grants for structure
 - iii. Grants for alternative housing
 - iv. Grants for loss of business
 - v. Moving assistance for tenants businessmen
 - vi. Grants for vulnerable households
 - vii. Grants for female headed households
 - viii. Grants for wage earners
 - ix. Training on income generating activities for eligible members of vulnerable HHS
 - x. Owners will be allowed to take all salvaged materials free of cost
 - xi. Eligible affected people will be preferentially employed in civil work
- g. Grievance redress mechanism and right to submit grievances to the Grievance Redress Committee
- h. Compensation payment procedure and role of PAPs, IA and RHD in making payment



Disclosure meeting at Gramti Bridge location

Regarding Environmental impacts and mitigation measures, the Environmental Specialist explained that that about 27 major environmental and social concerns have identified in this project and accordingly mitigation measures have been proposed. It was discussed that the impacts are broadly classified into following 4 categories that will be faced during preconstruction, construction and operation stage:

- Social Environment
- Natural Environment
- Ecological Environment
- Environmental Pollution

The Social Specialist has explained impacts on social environment. The Environmental Specialist explained the impacts on natural and ecological environment and environmental pollution.

Environmental Impact/Issue	Mitigation Measures
• Cultural Heritage	No mitigation measures are required
• Accident	<ul style="list-style-type: none"> • Follow BRTA rules and Regulations • Preparation of Health and Safety Management Plan (HSMP) including prevention of traffic accidents
• River Erosion and Siltation	• Construction of sheet pile steel pipe foundation to encounter scouring
• River Transport	<ul style="list-style-type: none"> • Follow BIWTA navigation rules and regulations • River Traffic control and ensure lighting device
• Hydrology	Not required
• Biota and ecosystem	<ul style="list-style-type: none"> • Prohibit leaking of oils from construction vessels including of emergency removal system of leaked oils • Plantation of 3 times of trees to be cut down; Tree planting will be carried out through the RHD Tree-planting Unit, in conformity with their existing guidelines
• Global Warming	• No mitigation measures are required
• Air Pollution	• Implement dust suppress plan and routine mitigation measure shall be taken to emitting equipments during construction
• Surface and Ground Water Pollution	<ul style="list-style-type: none"> • Increase retention time of the outflow hydraulic fills to increase sedimentation, thus, reduce sediment load to the river • Removal of Arsenic from newly constructed Wells
• Soil pollution	• Oil storage shall be with concrete floor and oil fence
• Waste	<ul style="list-style-type: none"> • Contractor will be required to facilitate proper reuse and disposal plan, and manage the construction waste • Dumping of waste at approved dumping sites
• Noise and Vibrations	<ul style="list-style-type: none"> • Enforce noise emission standards • Regulate the construction process • Install barrier if required
• Ground Subsidence	• No action required
• Offensive Odor	• Proper treatment of camp waste and proper maintenance of heavy equipment etc
• Bottom sediment	• Treatment of liquid waste before discharged
• Landscape	• Vegetation of the slope surface of embankment

After disclosure of the RAP and EIA policy the participants were requested to raise comments/questions on the policy. At least 3 affected people raised their voices on the compensation payment process and project facilities
The issues so far raised by the participants are presented below-

Confidential

The meeting was closed with a vote of thanks from the chair.

Appendix-A: Attendance Sheet

<p>Confidential</p>

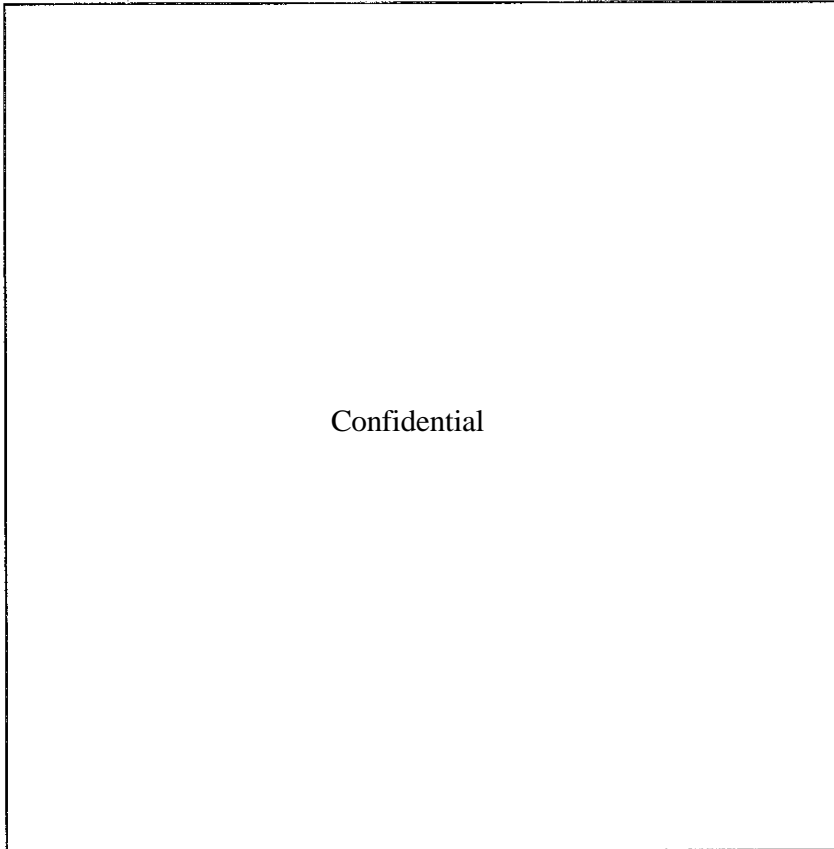
Programme Review for Shikō Chūgoku National Highway (N-1) Bridge Construction and
Operation Project (Kansai Region and Chūgoku District)

環境省建設省
（国土交通省）

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建設省



Environmental Survey for Davao-Chicago National Highway (N-1) Bridge Construction and
Rehabilitation Project (Kandaba, Maguindao and Davao City)

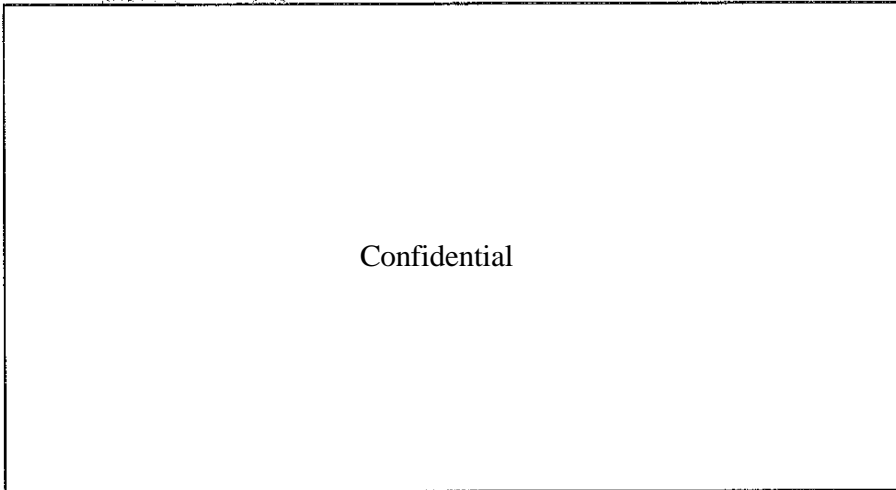
Attestation Sheet

2018/08/02

Page No.

Page No.

Page No.



Annex 7 EIA disclosure meeting for woman

1/3

Roads and Highways Department (RHD)

Preparatory Survey for Dhaka-Chaittagong Highway (NH-1) Bridge Construction and Rehabilitation Project
Kanchpur, Meghna and Gomti Bridges

Consultation meeting for disclosure of RAP and EIA policy to the affected people and other stakeholders

Since woman seldom discloses her mind in public, women were gathered and expressed their opinions each venue at the last half of the 3rd stakeholder's meetings.

Brief Overview of the 3rd Stakeholder's Meeting for Woman

Dates	1 September, 2012		
Time	3 : 00 pm	12:30am	10:30am
Venue	(Kanchpur Site) Shenpara, Kanchpur, Sonargaon, Narayanganj	(Meghna Site) Chittagong end, Bahakandi, Gazaria, Munshiganj	(Gumti Site) Chittagong end, Daudkand, Comilla
How accessible the venue was to the stakeholders	Meetings were held in the center of most probable settlements to be displaced by the project		
Method of notification	Invitation letters, advertisement on newspaper, mosque announcement and personal contact		
Method of consultation	Verbal explanation first in general by the host and individual question/ answer by the participants		
Language spoken	Bengali		
Contents/agenda of the presentation	<p>In the consultation meeting, policies of the RAP and EIA (mitigation measures of the project impacts) were disclosed to the affected people using flip chart. On August 01, 2012, these policies were disclosed, but due to JICA requirements and some changes in the policy, disclosure of the policy requires again.</p> <p>The affected people were informed about the meeting through publishing in the national daily newspaper (Both Bengali and English daily), personal contact, announcement in the mosque, etc. The disclosed issues in the meeting were project components and alignment, out off-date declared during the survey (16 March 2012), methodologies adopted during survey, findings of the survey, entitlement matrix as prescribed in the RAP, grievance redress mechanism, compensation payment procedure, relocation requirements & options, timeline of relocation after payment of compensation, etc.</p> <p>The findings of the environmental survey and proposed mitigation measures of any adverse impacts were also disclosed in the meeting</p>		
Used documents/materials for the explanation	Flip-chart		
Summary of opinion	<p>The opinions of women each venue are shown as below:</p> <p>(Kanchipur Site)</p> <p>Family and Income:</p> <p>1.TASLIMA: family of 5 members; 3 out of them earn income</p> <p>2.CHAN BANU: family of 4 members; 1 out of them earn income</p>		

	<p>3.ZOHURA BEGUM: family of 2 members, all of them earn income 4.MEHER BANTI: family of 4 members; 1 out of them earn income 5.SHEFALY: family of 4 members; 1 out of them earn income 6.SHEFALI: family of 4 members; 1 out of them earn income 7.SUR BANU: family of 5 members; 1 out of them earn income 8.ANQWARA: family of 8 members; 3 out of them earn income 9.KOLPONA: family of 5 members; 1 out of them earn income 10.SHAZEDA: family of 5 members; 1 out of them earn income</p> <p>[Self-relocation] If compensation is paid, the attendants will find their resettlement places by themselves.</p> <p>[Environmental problems such as air pollution, noise, etc.] The attendants were questioned whether or not there was any comment on environmental problems, such as air pollution, noise, etc during construction and during operation. Then, most of them answered that they were not worried about environmental things and there would be no problem for them.</p> <p><u>(Meghna Site)</u> [Family and Income] 1. RENU BIBI: family of 13 members; 6 out of them earn income; the total monthly income is 10000 ~ 20000 2. JOSNA: family of 10 members; 2 out of them earn income; the total monthly income is 3000 ~ 5000 3. SHAIHUR: family of 7 members; 1 out of them earn income; the total monthly income is 5000 4. RABEA: family of 5 members; 1 out of them earn income; the total monthly income is 8000 5. SHAFIA: family of 6 members; 2 out of them earn income; the total monthly income is 12000 6. SHEFALI: family of 8 members; 1 out of them earn income; the total monthly income is 15000 7. RASHIDA: family of 11 members; 4 out of them earn income; the total monthly income is 20000 ~ 30000 8. AKLIMA: family of 6 members; 2 out of them earn income; the total monthly income is 20000 ~ 25000 9. KOHINUR: family of 11 members; 3 out of them earn income; the total monthly income is 20000</p> <p>[Self-relocation] If compensation is paid, the attendants will find their resettlement places by themselves.</p> <p>[Environmental problems such as air pollution, noise, etc.] The attendants were questioned whether or not there was any comment on environmental problems, such as air pollution, noise, etc during construction and during operation. Then, most of them answered that they were not worried about environmental things and there would be no problem for them.</p> <p><u>(Gumti Site)</u> [Family and Income] 1. HALIMA AKTER: family of 13 members; 4 out of them earn income, the total monthly income is 10000 ~ 20000 2. CHAN TARA: family of 7 members; 2 out of them earn income; the total monthly income is 35000</p> <p>[Self-relocation] If compensation is paid, the attendants will find their resettlement places by themselves.</p> <p>[Environmental problems such as air pollution, noise, etc.] The attendants were questioned whether or not there was any comment on environmental problems, such as air pollution, noise, etc during construction and during</p>
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Annex 7 EIA disclosure meeting for woman

3/3

	operation. Then, most of them answered that they were not worried about environmental things and there would be no problem for them.
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The attendants for this meeting is shown in the attendance sheet of Annex-6 and the sheet contains whole attendants (man and woman) of the 3th stakeholder's meetings.

END.

Roads and Highways Department (RHD)

Preparatory Survey for Dhaka-Chattagong Highway (NH-1) Bridge Construction and Rehabilitation
Project
Kanchpur, Meghna and Gomti Bridges

Consultation meeting for disclosure of RAP and EIA policy to the affected people and other stakeholders

Date : 01.9.2012 at 10.00 am
Venue : Gumti Bridge (Chittagong
end) Daudkandi, Comilla

A stakeholder meeting (Third Stage) was held on disclosure of the RAP and EIA policy of the project on September 01, 2012 at 10.00 noon at Gumti bridge site (Chittagong end) Daudkandi, Comilla. The Meeting was presided over by Mr. Md. Golam Mostafa, Narayan Road Division, RHD. Furthermore, Sub-divisional Engineer, Bridge Maintenance Division, RHD, Toshiyuki Konno, Japanese Environmental Specialist of the JICA Study Team, Md. Nahid Muniruddin, Natural Environmental Engineer (Local), Kh. Khairul Matin Social Environmental Engineer (Local) JICA Study Team and 56 local people (male 28 and female 28) were present in the meeting (List of the participants attached in Appendix-A).

In the consultation meeting, policies of the RAP and EIA (mitigation measures of the project impacts) were disclosed to the affected people using flip chart. On August 01, 2012, these policies were disclosed, but due to JICA requirements and some changes in the policy, disclosure of the policy requires again. The affected people were informed about the meeting through publishing in the national daily newspaper (Both Bengali and English daily), personal contact, announcement in the mosque, etc. The disclosed issues in the meeting were project components and alignment, cut off-date declared during the survey (16 March 2012), Methodologies adopted during survey, findings of the survey, entitlement matrix as prescribed in the RAP, grievance redress mechanism, compensation payment procedure, relocation requirements & options, timeline of relocation after payment of compensation, etc. The findings of the environmental survey and proposed mitigation measures of any adverse impacts were also disclosed in the meeting.

The president of the consultation meeting welcomed all participants in the discussion session and described the project including the different components. It was disclosed that the Japan International Cooperation Agency (JICA) will finance the project.

The following issues were disclosed in the meeting

- a. The new bridge will be constructed parallel to the existing bridge within 30 meter to the downstream.
- b. No new land acquisition will be required for any components of this project. All of the project activities will be done in RHD land.
- c. Cut-off date of the census survey was 16 March, 2012.

- d. Methodologies of the survey such as census and socioeconomic survey, inventory of affected assets, video filming and sketch mapping of all affected structures and other properties
- e. Findings of the survey and impact of the project
- f. Compensation package as prescribed in the RAP was also disclosed in the meeting as follows:
 - i. Replacement value of the affected structures, trees and other assets
 - ii. Transfer grants and re-installation grants for structure
 - iii. Grants for alternative housing
 - iv. Grants for loss of business
 - v. Moving assistance for tenants businessmen
 - vi. Grants for vulnerable households
 - vii. Grants for female headed households
 - viii. Grants for wage earners
 - ix. RHD employees will be eligible for compensation and other assistances for the structures erected by themselves
 - x. Training on income generating activities for eligible members of vulnerable **HHs**
 - xi. Owners will be allowed to take all salvaged materials free of cost
- g. Grievance redress mechanism and right to submit grievances to the Grievance Redress Committee
- h. Compensation payment procedure and role of PAPs, IA and RHD in making payment



Regarding Environmental impacts and mitigation measures, the Environmental Specialist explained that that about 27 major environmental and social concerns have identified in this project and accordingly mitigation measures have been proposed. It was discussed that the impacts are broadly classified into following 4 categories that will be faced during preconstruction, construction and operation stage:

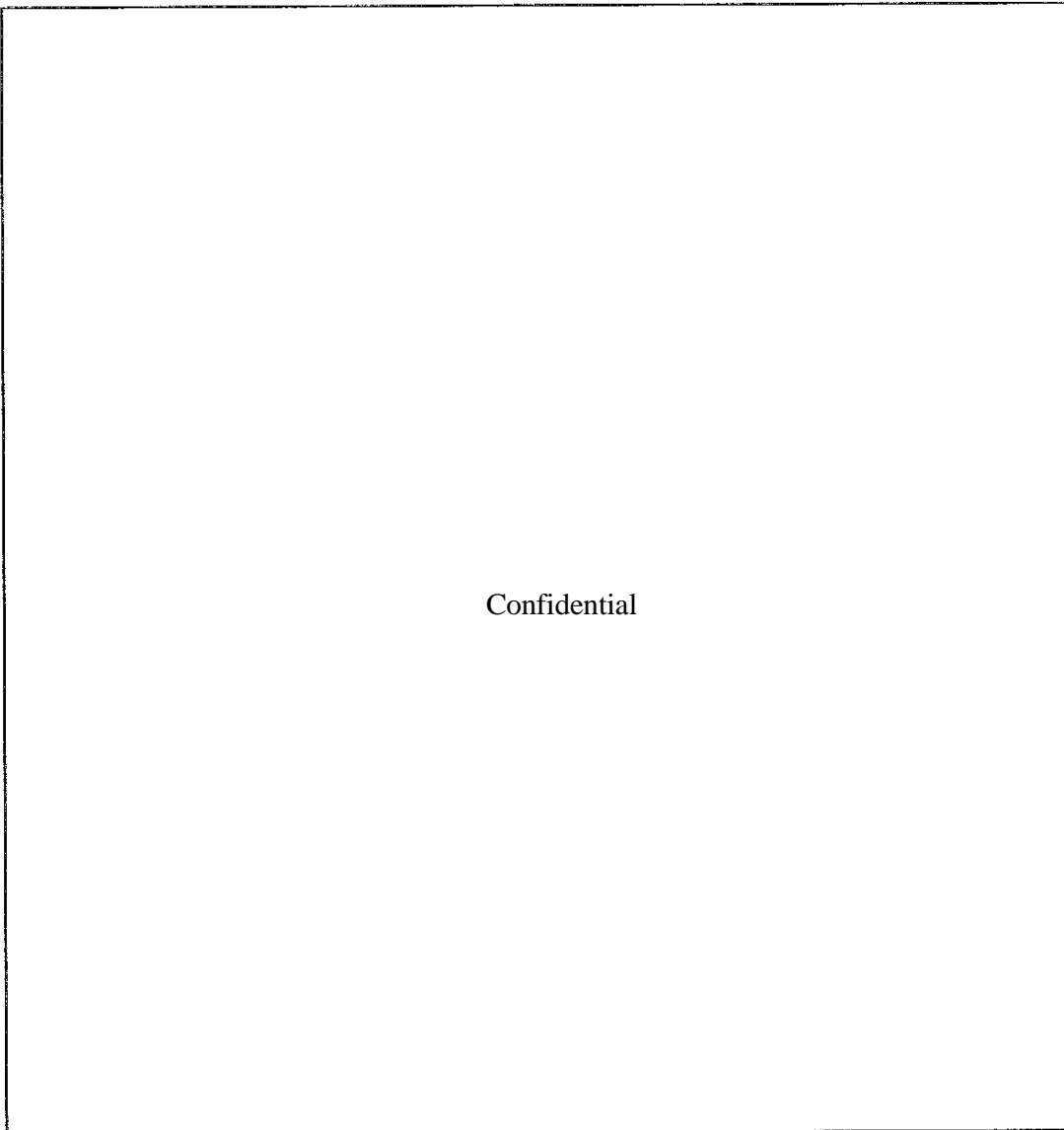
- Social Environment
- Natural Environment
- Ecological Environment
- Environmental Pollution

The Social Specialist has explained impacts on social environment. The Environmental Specialist explained the impacts on natural and ecological environment and environmental pollution.

Environmental Impact/Issue	Mitigation Measures
• Cultural Heritage	No mitigation measures are required
• Accident	<ul style="list-style-type: none"> • Follow BRTA rules and Regulations • Preparation of Health and Safety Management Plan (HSMP) including prevention of traffic accidents
• River Erosion and Siltation	• Construction of sheet pile steel pipe foundation to encounter scouring
• River Transport	• Follow BIWTA navigation rules and regulations
• Hydrology	• River Traffic control and ensure lighting device Not required
• Biota and ecosystem	<ul style="list-style-type: none"> • Prohibit leaking of oils from construction vessels including of emergency removal system of leaked oils • Plantation of 3 times of trees to be cut down; Tree planting will be carried out through the RIID Tree-planting Unit, in conformity with their existing guidelines
• Global Warming	• No mitigation measures are required
• Air Pollution	• Implement dust suppress plan and routine mitigation measure shall be taken to emitting equipments during construction
• Surface and Ground Water Pollution	<ul style="list-style-type: none"> • Increase retention time of the outflow hydraulic fills to increase sedimentation, thus, reduce sediment load to the river • Removal of Arsenic from newly constructed Wells
• Soil pollution	• Oil storage shall be with concrete floor and oil fence
• Waste	<ul style="list-style-type: none"> • Contractor will be required to facilitate proper reuse and disposal plan, and manage the construction waste • Dumping of waste at approved dumping sites
• Noise and Vibrations	<ul style="list-style-type: none"> • Enforce noise emission standards • Regulate the construction process • Install barrier if required
• Ground Subsidence	• No action required
• Offensive Odor	• Proper treatment of camp waste and proper maintenance of heavy equipment etc
• Bottom sediment	• Treatment of liquid waste before discharged
• Landscape	• Vegetation of the slope surface of embankment

After disclosure of the RAP and EIA policy the participants were requested to raise comments/questions on the policy. At least 3 affected people raised their voices on the compensation payment process and project facilities

The issues so far raised by the participants are presented below-



Confidential

The opinion of the participants were sought on the policy so far described in the meeting and requested to put comments on it if there is any confusion or suggestion on it. They raised their voices in favour of the policy and expressed satisfaction on the policy. They requested to implement the policy as it was disclosed

It was ensured that the RAP will be implemented in proper way and hopefully implementation of the RAP will help the APs to uphold their standard of living. There were no issues to discuss more and the meeting was closed with a vote of thanks from the Chair.

Appendix-A: Attendance Sheet

**Preparatory Survey for Dhaka-Chittagong National Highway (NH-1) Bridge Construction and Rehabilitation Project Kanchpur, Meghna and Gumti Bridge
Attendance Sheet**

Time 10 am

Date: 01/09/2012

Venue: Gumti Bridge, Chittagong end
(under abutment)

Thana: Daudkandi

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Preparatory Survey for Dhaka-Chittagong National Highway
(N-1) Bridge Construction and Rehabilitation Project
Kanchpur, Meghna and Gomti Bridge
Attendance Sheet

সময় : ৯/৩০/২০২৪

তারিখ : ৩০/০৭/২০২৪

সভার স্থান : গাম্ভীর

ইউনিয়ন/ওয়ার্ডঃ

থানা : উত্তর কুমিল্লা

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Preparatory Survey for Dhaka-Chittagong National Highway
(N-1) Bridge Construction and Rehabilitation Project
Kanchpur, Meghna and Gomti Bridge
Attendance Sheet

সময় : ২০৬০

সভার স্থান : গোমতি

ইউনিয়ন/ওয়ার্ডঃ

তারিখ : ০৬/০৭/২০২২

থানা : চাঁদপুর

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Preparatory Survey for Dhaka-Chittagong National Highway
(N-1) Bridge Construction and Rehabilitation Project
Kanchpur, Meghna and Gomti Bridge
Attendance Sheet

সময় : *১০:৩০*
সভার স্থান : *১০/১০/১০*

ইউনিয়ন/ওয়ার্ড:

তারিখ : *০৮/১০/২০১২*
থানা : *১০/১০/১০*

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Roads and Highways Department (RHD)

Preparatory Survey for Dhaka-Chaittagong Highway (NH-1) Bridge Construction and Rehabilitation Project

Kanchpur, Meghna and Gomti Bridges

Consultation meeting for disclosure of RAP and EIA policy to the affected people and other stakeholders

Date: 01.09.2012 at 12.00 pm

Venue: Meghna Bridge (Chittagong end)
Baluakandi, Gozaria, Munshiganj

A stakeholder meeting (Third Stage) was held on disclosure of the RAP and EIA policy of the project on September 01, 2012 at 12.00 noon at Meghna Tetutola Bazar (Chittagong end) Baluakandi, Gozaria, Munshiganj. The Meeting was presided over by Mr Farid Uddin Ahmed, Sub-divisional Engineer, Narayanganj Road Division, RHD. Furthermore, Mr. Md. Golam Mostofa, Sub-divisional Engineer, Bridge Maintenance Division, RHD, Toshiyuki Konno, Japanese Environmental Specialist of the JICA Study Team, Md. Nahid Muniruddin, Natural Environmental Engineer (Local), Kh. Khairul Matin Social Environmental Engineer (Local) JICA Study Team and 79 local people (male 18 and female 61) were present in the meeting (list of the participants attached in Appendix-A).

In the consultation meeting, policies of the RAP and EIA (mitigation measures of the project impacts) were disclosed to the affected people using flip chart. On August 01, 2012, these policies were disclosed, but due to JICA requirements and some changes in the policy, they requires disclosing again. The affected people were informed about the meeting through publishing in the national daily newspaper (Both Bengali and English daily), personal contact, announcement in the mosque, etc. The disclosed issues in the meeting were project components and alignment, cut off-date declared during the survey (16 March 2012), Methodologies adopted during survey, findings of the survey, entitlement matrix as prescribed in the RAP, Grievance redress mechanism, compensation payment procedure, relocation requirements & options, timeline of relocation after payment of compensation, etc. The findings of the environmental survey and proposed mitigation measures of any adverse impacts were also disclosed in the meeting.

The president of the consultation meeting welcomed all participants in the discussion session and described the project including the different components. It was disclosed that the Japan International Cooperation Agency (JICA) will finance the project.

The following issues were disclosed in the meeting

1. The new bridge will be constructed parallel to the existing bridge within 30 meter to the upstream.
2. No new land acquisition will be required for any components of this project. All of the project activities will be done in RHD land
3. Cut-off date of the census survey was 16 March, 2012.
4. Methodologies of the survey such as census and socioeconomic survey, inventory of affected assets, video filming and sketch mapping of all affected structures and other properties
5. Findings of the survey and impact of the project
6. Compensation package as prescribed in the RAP was also disclosed in the meeting as follows:
 1. Replacement value of the affected structures, trees and other assets
 2. Transfer grants and re-installation grants for structure
 3. Grants for alternative housing
 4. Grants for loss of business
 5. Moving assistance for tenants businessmen
 6. Grants for vulnerable households
 7. Grants for female headed households
 8. Grants for wage earners
 9. RHD employees will be eligible for compensation and other assistances for the structures erected by themselves
 10. Training on income generating activities for eligible members of vulnerable HHs
 11. Owners will be allowed to take all salvaged materials free of cost
12. Eligible affected persons will be preferentially employed in civil construction Grievance redress

- mechanism and right to submit grievances to the Grievance Redress Committee
13. Compensation payment procedure and role of PAPs, IA and RIID in making payment



Disclosure meeting at Meghna Bridge location

Regarding Environmental impacts and mitigation measures, the Environmental Specialist explained that about 27 major environmental and social concerns have identified in this project and accordingly mitigation measures have been proposed. It was discussed that the impacts are broadly classified into following 4 categories that will be faced during preconstruction, construction and operation stages of the project

1. Social Environment
2. Natural Environment
3. Ecological Environment
4. Environmental Pollution

The Social Specialist has explained impacts on social environment. The Environmental Specialist explained the impacts on natural and ecological environment and environmental pollution.

Environmental Impact/Issue Mitigation Measures

- | | | |
|----|------------------------------------|---|
| 1. | Cultural Heritage | No mitigation measures are required |
| 2. | Accident | 1. Follow BRTA rules and Regulations
2. Preparation of Health and Safety Management Plan (HSMP) including prevention of traffic accidents |
| 1. | River Erosion and Siltation | 1. Construction of sheet pile steel pipe foundation to encounter scouring |
| 2. | River Transport | 1. Follow BWTA navigation rules and regulations
2. River Traffic control and ensure lighting device |
| 3. | Hydrology | Not required |
| 1. | Biota and ecosystem | 1. Prohibit leaking of oils from construction vessels including of emergency removal system of leaked oils
2. Plantation of 3 times of trees to be cut; Tree planting will be carried out through the RHD Tree-planting Unit, in conformity with their existing guidelines |
| 3. | Global Warming | 1. No mitigation measures are required |
| 2. | Air Pollution | 3. Implement dust suppress plan and routine mitigation measure shall be taken to emitting equipments during construction |
| 4. | Surface and Ground Water Pollution | 5. Increase retention time of the outflow hydraulic fills to increase sedimentation, thus, reduce sediment load to the river
6. Removal of Arsenic from newly constructed Wells |
| 1. | Soil pollution | 1. Oil storage shall be with concrete floor and oil fence |
| 2. | Waste | 1. Contractor will be required to facilitate proper reuse and disposal plan, and manage the construction waste
2. Dumping of waste at approved dumping sites |
| 3. | Noise and Vibrations | 4. Enforce noise emission standards
5. Regulate the construction process
6. Install barrier if required |
| 7. | Ground Subsidence | 1. No action required |
| 2. | Offensive Odor | 3. Proper treatment of camp waste and proper maintenance of heavy equipment etc |
| 1. | Bottom sediment | 2. Treatment of liquid waste before discharged |
| 3. | Landscape | 4. Vegetation of the slope surface of embankment |

After disclosing of the RAP and EIA policy the participants were requested to put comments or question on the policy. The local Union

Category of Speakers (Male/Female)	Occupation	Comment/Question	Answer and Policy of Countermeasure
Md. (Male)	Shahjahan (Squatter)	My business is affected by the approach road. How policy of the RAP before displacement many times we will get from the project site. During survey all of from now to dismantle the affected structures have been counted and accordingly budget has been prepared. What is the expected time of starting construction work	At least 15 months will is on hand to dismantle structures. Because, expected

		time of starting the construction is early 2014.
Md. Abul Hassan	Business (Squatter)	We need compensation on time and without hassle. Sufficient time is required after getting compensation.
		Compensation will be paid in cheques (account payee) at the door steps of the affected people. The EPs will be allowed for at least 30 days to stay in the present location after payment of compensation.
Ms. Rasheda Khatun (Female)	Squatters	We are very poor and have a little scope of income. I have adult son but jobless. Is there any provision of getting work in the project.
		During construction of the bridge local people will be deployed (based on eligibility) on priority basis in civil construction on.

The opinion of the participants were sought on the policy so far described in the meeting and requested to put comments on it if there is any confusion or suggestion on it. They raised their voices in favour of the policy and expressed satisfaction on the policy. They requested to implement the policy as it was disclosed

It was ensured that the RAP will be implemented in proper way and hopefully implementation of the RAP will help the APs to uphold their standard of living. There were no issues to discuss more and the meeting was closed with a vote of thanks from the Chair.

Appendix-A: Attendance Sheet

Preparatory Survey for Dhaka-Chittagong National Highway (NH-1) Bridge Construction and Rehabilitation Project Kanchpur, Meghna and Gumti Bridge

Attendance Sheet

Time: 12 pm

Date: 01/09/2012

Venue: Meghna Bridge

Union: Baliakandi

Thana: Gazaria

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Confidential

Confidential

Confidential

Preparatory Survey for Dhaka-Chittagong National Highway
(N-1) Bridge Construction and Rehabilitation Project
Kanchpur, Meghna and Gomti Bridge
Attendance Sheet

সময় : ১১:০০

তারিখ : ০১/০২/২০১৬

সভার স্থান : মেগনা

ইউনিয়ন/ওয়ার্ড:

খানা : ১০৮

Confidential

Preparatory Survey for Dhaka-Chittagong National Highway
(N-1) Bridge Construction and Rehabilitation Project
Kanchpur, Meghna and Gomti Bridge
Attendance Sheet

সময় : ১১:৩০-১২:৩০
সভার স্থান : মেগনা

ইউনিয়ন/ওয়ার্ড:

তারিখ : ০১/০৩/২০২২
থানা : মেগনা

Confidential

**Preparatory Survey for Dhaka-Chittagong National Highway
(N-1) Bridge Construction and Rehabilitation Project
Kanchpur, Meghna and Gomti Bridge
Attendance Sheet**

সময় : ১১:৩০

তারিখ : ০১/০৭/২০২১

সভার স্থান : (N-1)

ইউনিয়ন/ওয়ার্ডঃ

থানা : (N-1)

Confidential

Preparatory Survey for Dhaka-Chittagong National Highway
(N-1) Bridge Construction and Rehabilitation Project
Kanchpur, Meghna and Gomti Bridge
Attendance Sheet

নম্বর : ১০০ ১১৪

তারিখ : ০১/১১/২০২২

সভার স্থান : কচপুর

ইউনিয়ন/ওয়ার্ডঃ

থানা : কচপুর

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Roads and Highways Department (RHD)

Preparatory Survey for Dhaka-Chaittagong Highway (NH-1) Bridge Construction and Rehabilitation Project

Kanchpur, Meghna and Gumti Bridges

Consultation meeting for disclosure of RAP and EIA policy to the affected people and other stakeholders

Date: 01.09.2012 at 2.30 pm

Venue: Kanchpur Bridge (Chittagong end) Senpara, Sonargaon, Narayanganj

A stakeholder meeting (Third Stage) was held on disclosure of the RAP and EIA policy of the project on September 01, 2012 at 2.30 pm at Kanchpur bridge Chittagong end (under abutment), Senpara, Sonargaon, Narayanganj. The Meeting was presided over by Mr. Md. Golam Mostofa, Sub-divisional Engineer, Bridge Maintenance Division, RHD. Furthermore, Mr. Farid Uddin Ahmed, Sub-divisional Engineer, Narayanganj Road Division, RHD, Toshiyuki Konno, Japanese Environmental Specialist of the JICA Study Team, Md. Nahid Muniruddin, Natural Environmental Engineer (Local), Kh. Khairul Matin Social Environmental Engineer (Local) JICA Study Team and 72 local people (male 32 and female 40) were present in the meeting (list of the participants attached in Appendix-A).

In the consultation meeting, policies of the RAP and EIA (mitigation measures of the project impacts) were disclosed to the affected people using flip chart. On August 01, 2012, these policies were disclosed, but due to JICA requirements and some changes in the policy, disclosure of the policy requires again. The affected people were informed about the meeting through publishing in the national daily newspaper (Both Bengali and English daily), personal contact, announcement in the mosque, etc. The disclosed issues in the meeting were project components and alignment, cut-off-date declared during the survey (16 March 2012), Methodologies adopted during survey, findings of the survey, entitlement matrix as prescribed in the RAP, Grievance redress mechanism, compensation payment procedure, relocation requirements & options, timeline of relocation after payment of compensation, etc. The findings of the environmental survey and proposed mitigation measures of any adverse impacts were also disclosed in the meeting.

The president of the consultation meeting welcomed all participants in the discussion session and described the project including the different components. It was disclosed that the Japan International Cooperation Agency (JICA) will finance the project.

The following issues were disclosed in the meeting

1. The new bridge will be constructed parallel to the existing bridge within 30 meter to the downstream
2. No new land acquisition will be required for any components of this project. All of the project activities will be done in RIID land.
3. Cut-off date of the census survey was 16 March, 2012.
4. Methodologies of the survey such as census and socioeconomic survey, inventory of affected assets, video filming and sketch mapping of all affected structures and other properties
5. Findings of the survey and impact of the project
6. Compensation package as prescribed in the RAP was also disclosed in the meeting as follows:
 1. Replacement value of the affected structures, trees and other assets
 2. Transfer grants and re-installation grants for structure
 3. Grants for alternative housing
 4. Grants for loss of business
 5. Moving assistance for tenants businessmen
 6. Grants for vulnerable households
 7. Grants for female headed households
 8. Grants for wage earners
 9. RHD employees will be eligible for compensation and other assistances for the structures erected by themselves
 10. Training on income generating activities for eligible members of vulnerable HHs
 11. Owners will be allowed to take all salvaged materials free of cost
 12. Eligible affected persons will be preferentially employed in civil construction

13. Grievance redress mechanism and right to submit grievances to the Grievance Redress Committee
14. Compensation payment procedure and role of PAPs, IA and RIID in making payment



Disclosure meeting at Kanchpur Bridge location

Regarding Environmental impacts and mitigation measures, the Environmental Specialist explained that about 27 major environmental and social concerns have identified in this project and accordingly mitigation measures have been proposed. It was discussed that the impacts are broadly classified into following 4 categories that will be faced during preconstruction, construction and operation stages of the project:

1. Social Environment
2. Natural Environment
3. Ecological Environment
4. Environmental Pollution

The Social Specialist has explained impacts on social environment. The Environmental Specialist explained the impacts on the following natural and ecological environment and environmental pollution and mitigation measures.

Environmental Impact/Issue	Mitigation Measures
1. Cultural Heritage	No mitigation measures are required
2. Accident	<ol style="list-style-type: none"> 1. Follow BRTA rules and Regulations 2. Preparation of Health and Safety Management Plan (HSMP) including prevention of traffic accidents
1. River Erosion and Siltation	1. Construction of sheet pile steel pipe foundation to encounter scouring
2. River Transport	<ol style="list-style-type: none"> 1. Follow BIWTA navigation rules and regulations 2. River Traffic control and ensure lighting device
3. Hydrology	Not required
1. Biota and ecosystem	<ol style="list-style-type: none"> 1. Prohibit leaking of oils from construction vessels including of emergency removal system of leaked oils 2. Plantation of 3 times of trees to be cut; Tree planting will be carried out through the RHD Tree-planting Unit, in conformity with their existing guidelines
3. Global Warming	1. No mitigation measures are required
2. Air Pollution	3. Implement dust suppress plan and routine mitigation measure shall be taken to emitting equipments during construction
4. Surface and Ground Water Pollution	<ol style="list-style-type: none"> 5. Increase retention time of the outflow hydraulic fills to increase sedimentation, thus, reduce sediment load to the river 6. Removal of Arsenic from newly constructed Wells
1. Soil pollution	1. Oil storage shall be with concrete floor and oil fence
2. Waste	<ol style="list-style-type: none"> 1. Contractor will be required to facilitate proper reuse and disposal plan, and manage the construction waste 2. Dumping of waste at approved dumping sites
3. Noise and Vibrations	<ol style="list-style-type: none"> 4. Enforce noise emission standards 5. Regulate the construction process 6. Install barrier if required
7. Ground Subsidence	1. No action required
2. Offensive Odor	Proper treatment of camp waste and proper maintenance of heavy equipment etc
1. Bottom sediment	Treatment of liquid waste before discharged
2. Landscape	Vegetation of the slope surface of embankment

After disclosing the policy of the RAP and EIA the participants were requested to put comments or question on the project policy. The affected people raised some questions about the policy and impact mitigation measures. All of the questions were on resettlement and compensation issues. There were no questions raised on the environmental issues

Details of the questions and answers are presented below-

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The opinion of the participants were sought on the policy so far described in the meeting and requested to put comments on it if there is any confusion or suggestion on it. They raised their voices in favour of the policy and expressed satisfaction on the policy. They requested to implement the policy as it was disclosed

It was ensured that the RAP will be implemented in proper way and hopefully implementation of the RAP will help the APs to uphold their standard of living. There were no issues to discuss more and the meeting was closed with a vote of thanks from the Chair.

Appendix-A: Attendance Sheet

**Preparatory Survey for Dhaka-Chittagong National Highway (NH-1) Bridge
Construction and Rehabilitation Project Kanchpur, Meghna and Gumti Bridge
Attendance Sheet**

Time:02.30 pm

Date:01-09-2012

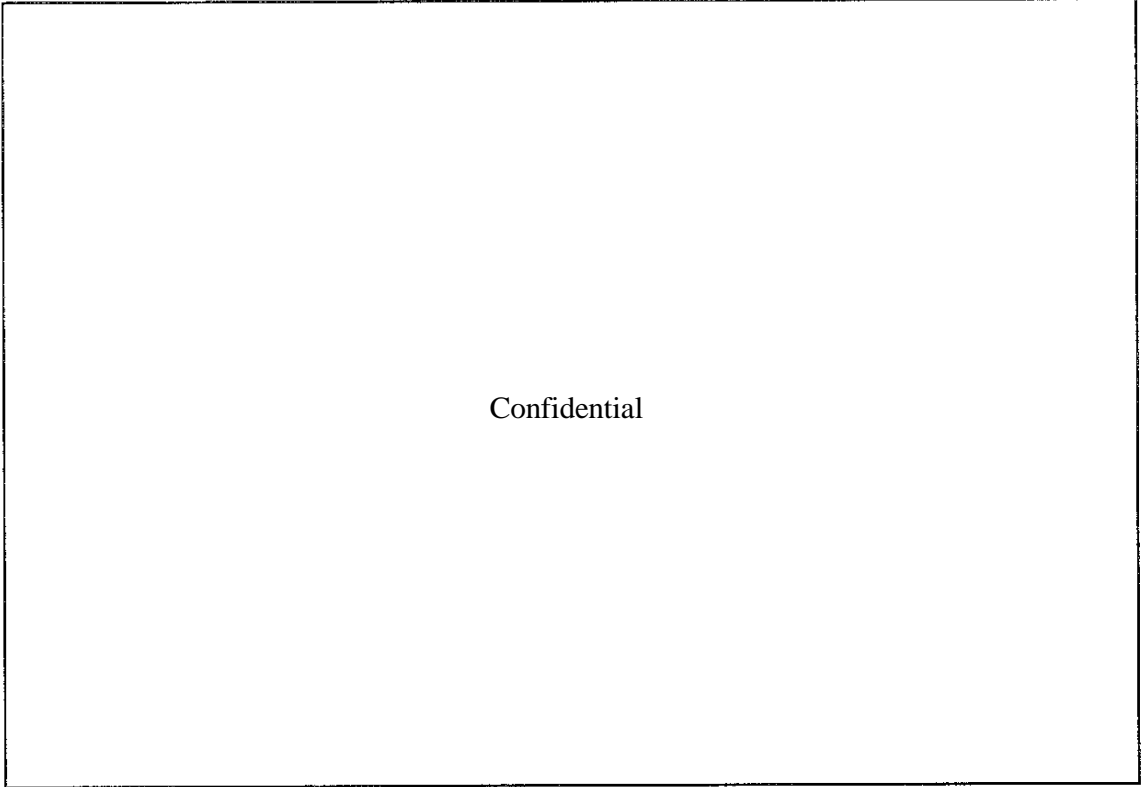
Meeting Place: Kanchpur Bridge

Union:

Thana: Sonargong

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Preparatory Survey for Dhaka-Chittagong National Highway
(N-1) Bridge Construction and Rehabilitation Project
Kanchpur, Meghna and Gomti Bridge
Attendance Sheet

সময় : ২.৩০pm

তারিখ : ০১.০৯.১২

সভার স্থান : কাঁচপুর

ইউনিয়ন/ওয়ার্ডঃ

থানা : পাতালগাঁও

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Preparatory Survey for Dhaka-Chittagong National Highway
(N-1) Bridge Construction and Rehabilitation Project
Kanchpur, Meghna and Gomti Bridge
Attendance Sheet

সময় : ২:৩০ pm

সভার স্থান : ২৫/৬/১০

ইউনিয়ন/ওয়ার্ডঃ

তারিখ : ০১-০৯-২০১২

থানা : (সিমান্দা) ১৫

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**Preparatory Survey for Dhaka-Chittagong National Highway
(N-1) Bridge Construction and Rehabilitation Project
Kanchpur, Meghna and Gomti Bridge
Attendance Sheet**

সময় : ২.৩০ pm

সভার স্থান : ২৪৪৪৩

ইউনিয়ন/ওয়ার্ড

তারিখ : ০১-০৯-০১২

স্বাক্ষর : (স্বাক্ষর)

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Preparatory Survey for Dhaka-Chittagong National Highway
(N-1) Bridge Construction and Rehabilitation Project
Kanchpur, Meghna and Gomti Bridge
Attendance Sheet

সময় : ২:৩০ pm

তারিখ : ০১-০৭-২০১২

সভার স্থান : ২০৬/২০

ইউনিয়ন/ওয়ার্ড:

থানা : (SANTOSH)

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APPENDIX 18.

RAP REPORT

**GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
MINISTRY OF COMMUNICATIONS
ROADS & HIGHWAYS DEPARTMENT (RHD)**

**PREPARATORY SURVEY FOR
DHAKA-CHITTAGONG NATIONAL HIGHWAY NO.1
BRIDGE CONSTRUCTION AND REHABILITATION
PROJECT**

RESETTLEMENT ACTION PLAN

OCTOBER 2012

Prepared by

**ORIENTAL CONSULTANTS CO., LTD.
KATAHIRA & ENGINEERS INTERNATIONAL
On Behalf of
Roads and Highways Department (RHD)**

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Abbreviations and Acronyms

AB	Acquiring Body
ACE	Additional Chief Engineer
AE	Assistant Engineer
AH	Affected Household
AP	Affected Person
ASA	Association for Social Advancement
BA	Bachelor Degree
BBS	Bangladesh Bureau of Statistics
BDT	Bangladesh Taka
BRAC	Bangladesh Rural Advancement Committee
CBE	Commercial and Business Enterprise
CCL	Compensation under Law
CI	Corrugated Iron
CPR	Common Property Resources
CRO	Chief Resettlement Officer
DC	Deputy Commissioner
DCI	Direct Calorie Intake
DOE	Department of Environment
DoF	Department of Fisheries
DCSC	Design and Construction Supervision Consultant
DTL	Deputy Team Leader
DPD	Deputy Project Director
DPM	Deputy Project Manager
EA	Executing Agency
EC	Entitlement Card
EE	Executive Engineer
EMA	External Monitoring Agency
EMU	Environment Management Unit
EP	Entitled Person
ESU	Engineering Service Unit
FGD	Focused Group Discussion
ft	foot / feet (3.28 ft = 1 m)
GDP	Gross Domestic Product
GOB	Government of Bangladesh

GRC	Grievance Redress Committee
HIES	Household Income and Expenditure Survey
HIV/AIDS	Human Immunodeficiency Virus / Acquired Immune Deficiency Syndrome
HH	Household
HSC	Higher Secondary Certificate
IA	Implementing Agency
ID Card	Identify Card
IGA	Income Generating Activities
IOL	Inventory of Losses
IR	Involuntary Resettlement
IWTA	Inland Water Transport Authority
JICA	Japan International Cooperation Agency
JVS	Joint Verification Survey
LGI	Local Government Institution
LGED	Local Government Engineering Department
LMS	Land Market Survey
LIRP	Livelihood and Income Restoration Program
MA	Master Course
M&E	Monitoring & Evaluation
MIS	Management Information System
MOL	Ministry of Land
MOC	Ministry of Communications
NGO	Non-government Organization
NH-1	National Highway No.1
NRS	National Resettlement Specialist
the Ordinance	Acquisition and Requisition of Immovable Property Ordinance 1982
PAH	Project Affected Household
PAP	Project Affected People
PAU	Project Affected Unit
PAVC	Property Assessment and Valuation Committee
PCU	Passenger Car Unit
PIU	Project Implementation Unit
PD	Project Director
PDB	Power Development Board
PIB	Public Information Brochure

PMO	Project Management Office
PPR	Project Progress Report
PPTA	Project Preparatory Technical Assistance
PRA	Participatory Rapid Appraisal
PWD	Public Works Department
R&R	Resettlement and Rehabilitation
RAC	Resettlement Advisory Committee
RAP	Resettlement Action Plan
RB	Requiring Body
RE	Resettlement Expert
RF	Resettlement Framework
RHD	Roads & Highways Department
RO	Resettlement Officer
RoR	Record of Right
ROW	Right-of-Way
RV	Replacement Value
SAE	Sub-Assistant Engineer
SDE	Sub-Divisional Engineer
SE	Superintending Engineer
SES	Socioeconomic Survey
SSC	Secondary School Certificate
TA	Technical Assistance
UP	Union Parishad
TOR	Terms of Reference
VHH	Vulnerable Household
WB	World Bank

EXECUTIVE SUMMARY

The Government of Bangladesh (GoB) has undertaken a project to construct three Bridges on National Highway No.1 (NH-1) i.e. Kanchpur, Meghna and Gumti Bridge including rehabilitation of the existing bridges through the Roads and Highways Department (RHD) under the Ministry of Communications (MOC) with financial assistance from the Japan International Cooperation Agency (JICA). The project involves construction of new bridges parallel to the existing bridges with approach road. The length of the bridges including viaduct are Kanchpur 400 m, Meghna 930 m and Gumti 1,410 m respectively. The overall objective of the Project is to mitigate the increasing traffic demand of NH-1, which can be made by;

- i. Construction of new 2nd Kanchpur Bridge, 2nd Meghna Bridge and 2nd Gumti Bridge together with approach road respectively.
- ii. Rehabilitation of existing Kanchpur Bridge, Meghna Bridge and Gumti Bridge

Land Acquisition and Displacement: Construction of the new bridges and rehabilitation of the existing bridges will require no land acquisition. All components of the project will be constructed on the RHD land. But the project interventions will require displacement of about 278 project affected households (PAHs) including 175 residents (residential 107 and commercial 61, three both residential and commercial squatters, one pond owner, one tree owner and two common properties), 103 tenants (residential 98 and commercial 5), have been affected. Besides, 28 wage laborers (shop workers) will also experience loss of livelihoods.

Significance of Impacts: All physically displaced project affected households (PAHs) will experience significant impacts as a result of displacement. Mitigation of all impacts, including the significant resettlement impacts, will be undertaken through implementation of this Resettlement Action Plan (RAP). The RAP identified, and proposed number of remedial measures for addressing the gaps between national legislation and the requirements of Development Partner (such as JICA)'s Policy on Involuntary Resettlement.

Indigenous People: There are no indigenous people (tribal or ethnic minority) within the affected population..

Compensation and Entitlements: The affected persons (APs) will be compensated for their affected structure, trees, cropping field, ponds, business, both squatters and tenants staying on the government land. Compensation is to be paid by the RHD through an NGO/consulting firm

to be engaged by the Design and Construction Supervision Consultant (DCSC) to assist RHD in RAP implementation process. Compensation is based on entitlements including: (i) replacement value for structures, tree, etc. and (ii) other resettlement assistance as required such as transfer grants, re-installation grant (except replacement value) and compensation for loss of business/wage due to dislocation etc. Vulnerable households will be eligible for further cash assistance for relocation and resettlement to improve their living condition. RAP Implementing Agency (IA) will assist the APs in searching alternative relocation sites and in the relocation process. The entitlements as per loss category are presented in Table EX-1 below.

Disclosure, Consultation and Participation: The Displaced Persons (DPs) and their community have been consulted for their perception on the compensation payment process, scope and importance of participation in the project process, relocation requirements, etc. While conducting survey and the group discussions, personal contact and community based stakeholder consultation meetings were held at different stages of the project formation to seek opinions of the various stakeholders on the project. At least 2 formal stakeholder consultation meetings were held at Kanchpur and Meghna and 7 focused group meetings were held with different occupational groups in three bridges. Besides, the RAP disclosure meetings were held in three bridge locations on first August 2012.

For first stage and second stage (consultation and disclosure) meetings, the people were informed through a notice published in the national Daily newspapers and verbal notice through community leaders. During the implementation of the RAP more stakeholders consultation and focused group meetings will be held to seek cooperation from various stakeholders in the decision-making and implementation of the RAP. The RAP will be summarized in an information booklet in Bangla (local language) and disclosed to the affected people during implementation period. The APs will participate in the RAP implementation process through representation in the Grievance Redress Committees (GRCs).

Eligibility of Cut-off Date: All of the APs are identified on the RHD land and no new land acquisition is required for the project. This is why the commencement date of census survey is declared as the cut-off date for eligibility of resettlement benefit for the properties standing on the GoB land. In this project the date of commencement of census i.e. 8th March 2012 in Kanchpur Bridge, and 15th March 2012, in Meghna and Gumti Bridge is declared as cut-off date.

Table EX-1 Entitlement Matrix

Table 5.2 Entitlement Matrix

Loss Item 1: LOSS OF PHYSICAL STRUCTURES RESIDENTIAL AND COMMERCIAL (WITHOUT TITLE TO LAND)			
Entitled Persons	Entitlements	Application Guidelines	Additional Services
1. Socially recognized owners (Squatters) of structures built on the ROW as identified by Census	1. Replacement Value ¹ (RV) for structure 2. Transfer Grant @ BDT 7 (seven) per sft ² of affected structure. 3. Utility reconnection assistance @BDT2,000/household 4. Removal grant for billboards as lump sum @ BDT 200,000/ number 5. Special Assistance of a one-time payment as recommended by PAVC for each vulnerable households (VHH) i.e. female-headed, disabled-headed, elderly-headed and hardcore poor household with an amount of BDT 10,000/VHH. 6. BDT 12,000/- as one time grant in addition to other compensation for female headed including disabled/handicapped/widow member family. 7. Skill Training for vulnerable households is provided by IA. 8. Owner will be allowed to take all salvageable materials free of cost.	1. Applicable to all structures located on ROW at cut-off dates. 2. PAVC will record structures and recommend the RV of structures. 3. Compensation will be paid for the structures built by the RHD and employees of RHD. 4. Transfer grant would be paid for only primary structure such as residential house (measured in sq ft). 5. Hardcore poor is defined as the households which income level is lower than BDT 60,000/year ³	1. RAP Implementing Agency (IA) will assist the APs in finding alternative site for relocation.
Implementation Issues			
1. Entitled person will be identified through the Census survey to be conducted by IA and RHD at the detailed design stage. 2. RV of structure will be determined by PAVC 3. Compensation must be paid before EP dismantles and removes the structures as per civil works requirement by RHD through IA.			

¹ As determined based on the result of replacement cost survey conducted by study team and to be recommended by PAVC

² Based on Padma Bridge Project (2010) financed by WB, ADB, JICA and IDB because of the proximity of the area and year the survey conducted, the value used for this project is considered to be applicable in due consideration of recent price level.

³ Based on Southwest Area Integrated Water Resources Planning Management Project (2011) financed by ADB

Loss Item 2: LOSS OF STANDING CROPS/FISH STOCK/ TREE WHO HAVE CONTRACT WITH LAND OWNER			
Entitled Persons	Entitlements	Application Guidelines	Additional Services
1. Socially recognized owners, as have contract documents with land owner, of trees and crops grown on public or other land, as identified by IA and verified by PAVC.	<ol style="list-style-type: none"> 1. The crop owners will be issued 60 days prior notice by the RHD to harvest the crops. If it is not near harvesting period, the expected yield will be compensated at RV. 2. In addition, grants for loss of access (right of cultivating) to cultivable land equivalent to the crop harvested in one harvested season, to be verified by PAVC, RV of fish stock and trees as determined by PAVC 3. Owners will be allowed to harvest crops and fish stock and fell the trees. 4. Dislocation allowance for fish pond @ BDT300/dec. 5. Provisions of lease agreement will supersede above entitlements unless otherwise no conflicts with guidelines stated in this matrix. 	<ol style="list-style-type: none"> 1. Applicable for all crops/fish stock on land/pond within ROW at the time of dispossession. 2. If the tree is planted on the RHD land by taking lease, compensation for trees will be paid following the clause of the lease agreement signed between the parties⁴ 3. RV of trees/crops/fish stock will be recommended by PAVC based on data obtained from forest department/ district agriculture extension office/ district marketing office/fishery department respectively/market survey, etc. for those identified through joint on-site verification by PAVC 	Nil
Implementation Issues:			
Loss of agricultural products (standing crops) will be assessed by PAVC and compensation will be paid by RHD through IA			

⁴ Usually, the lease contract is made to pay half of the total sales (market price) to the land owner. Therefore, half price of planted trees is paid to tree owners. Rest half is not required to be paid since the land owner is RHD

Loss Item 3: LOSS OF STANDING CROPS/FISH STOCK/ TREE WITHOUT TITLE TO LAND OR CONTRACT WITH LAND OWNER			
Entitled Persons	Entitlements	Application Guidelines	Additional Services
1. Actual cultivators, without consent to land owner, as identified in census by IA and verified by PAVC during implementation of RAP.	<ol style="list-style-type: none"> 1. The crop owners will be issued 60 days prior notice by the RHD to harvest the crops. If it is not near harvesting period, the expected yield will be compensated at RV. 2. In addition, grants for loss of access (right of cultivating) to cultivable land equivalent to the crop harvested in one harvested season, to be verified by PAVC. 3. RV of fish stock, and trees as determined by PAVC 4. Owners will be allowed to harvest crops and fish stock and fell the trees. 	<ol style="list-style-type: none"> 1. Applicable for all crops/fish stock on land/pond within ROW at the time of dispossession. 2. RV of trees/crops/fish stock will be recommended by PAVC based on data obtained from forest department/ district agriculture extension office/ district marketing office/fishery department respectively/market survey, etc. for those identified through joint on-site verification by PAVC 	
Implementation Issues: None			

Loss Item 4: LOSS OF INCOME (BUSINESS OWNER, WAGE EARNERS AND RENT-OUT HOUSE OWNER)			
Entitled Persons	Entitlements	Application Guidelines	Additional Services
1. Small shop owner affected by displacement 2. Wage earners affected at business enterprises 3. Owner of rent house/rooms affected by the Project	1. Grants for business loss and/or for loss of rental income with an amount equivalent to three months net income not exceeding BDT. 24,000 ⁵ . or 2. Grant to cover temporary loss of regular wage income @ BDT 250 ⁶ for 90 days and 3. Special Assistance of a one-time payment as recommended by PAVC for each vulnerable households (VHH) i.e. female-headed, disabled-headed, elderly-headed and hardcore poor household with an amount of BDT 10,000/VHH. 4. BDT. 12,000/- as one time grant in addition to other compensation for only female headed without elderly support disabled/ handicapped/widow member family. 5. Skill training for vulnerable households is provided by trainer NGO	1 The need of vulnerable groups will be assessed by IA through the need assessment survey ⁷ in the detailed design stage 2 The owners of rented out premises will be entitled for business loss allowance for each unit of premises rented out to separate families or persons.	1. EPs will be brought under income generation program based on need assessment survey result. 2. EPs will be preferentially employed in civil construction work. 3. EPs who lose structure will also be entitled for loss Item 1. 4. EPs who rent premises will also be entitled for loss Item 5.
Implementation Issues:			
1. IA identifies EPs at census, PVAC verifies the compensation amount, and RHD, thorough IA, pays the compensation. 2. Business losses have been assessed during inventory of losses. All categories of business will be paid equal amount as grant			

⁵ As were estimated based on the maximum average daily income of BDT 250/day x 30 days x 3 months and is a little less than BDT 24,000.

⁶ BDT 250 is likely the average of payment per day according to the socio-economic survey implemented.

⁷ Socio-economic survey made to meet demand and supply. To survey the demands of skills (what skill wanted) from enterprise owner and skills the affected people want to attain.

Loss Item 5: LOSS FOR RENTING RESIDENTIAL AND COMMERCIAL HOUSE/ ROOM			
Entitled Persons	Entitlements	Application Guidelines	Additional Services
1. Rente (who borrows residential structure) as identified by Census and verified by PAVC 2. Rente (who borrows structures) for his business identified by Census and verified by PAVC	1. Rental assistance for both residential and commercial rentee as per the prevalent rate in the form of grant to cover maximum of 3 months rental but not exceeding BDT. 7,500 ⁸ 2. Actual shifting assistance to be determined by PAVC, or BDT 500 per member up to BDT 5,000 per rentee residential household 3. If advance rental payment was already made by rentee to renter, and renter would not reimburse the advanced payment to rentee, then payment of allowance to renter will be deducted from owners' resettlement assistance package and paid back to the rentee up to the ceiling (3 months' allowance) of owners entitlements with GRC approval 4. Right to salvage materials from demolished structure erected by tenant. 5. Special Assistance of a one-time payment as recommended by PAVC for each vulnerable households (VHH) i.e. female-headed, disabled-headed, elderly-headed and hardcore poor household with an amount of BDT 10,000/VHH. 6. BDT. 12,000/- as one time grant in addition to other compensation for only female headed without elderly support disabled/ handicapped/widow member family. 7. Skill training for vulnerable households is provided by trainer NGO	1. Each rentee of affected premises will be entitled for shifting assistance 2. RHD employees erected structures by their own will be compensated as RV allowed taking away salvage materials.	1. EPs will be brought under income generation program. 2. IA assists finding new rent-out house.
Implementation Issues:			
1. IA identifies EPs at census, PVAC verifies the compensation amount, and RHD, thorough IA, pays the compensation. 2. Payment shall be done before physical relocation of EPs.			

⁸ Average rental fee per month is less than BDT 2,500 per month according to socio-economic survey

Loss Item 6: UNFORESEEN ADVERSE IMPACTS (IF APPLICABLE)			
Entitled Persons	Entitlements	Application Guidelines	Additional Services
Households or persons affected by any unforeseen impact identified during implementation of the RAP	Entitlements will be recommended as necessary by GRC.	The unforeseen impacts will be identified through special survey by the PAVC as per request from impacted population. The entitlements will be approved by the Ministry of Communication (MOC)	As appropriate
Implementation Issues:			
The unforeseen impacts and affected persons will be identified with due care as per policy of RAP and proposed to the MOC for approval including quantity of losses, their owners and the entitlements.			

Grievance Redress Mechanism: Through public consultations and distribution of the public information booklet, APs will be informed that they have a right to resolve any grievance/complaints they may have regarding resettlement issues. Grievances will be settled with full representation in GRCs constituted by the Ministry of Communications with representatives from the Executing Agency (EA)- here RHD, the RAP IA to be engaged to assist RHD in RP implementation, local government institutions (LGI) representatives and the APs representatives to be selected by RHD in consultation with IA, LGI representative and Resettlement Specialist/Expert from Design and Construction Supervision Consultant. The APs will call upon the support of the IA to assist them in presenting their grievances to the GRCs. The GRCs will review grievances involving all resettlement benefits, relocation and other assistance. Grievances will be redressed within 21 days from the date of lodging the complaints.

Income Restoration Strategy: Vulnerable Project Affected Households (PAHs) (including hardcore poor and female headed, elderly headed, etc.) will be given additional support for livelihood and income restoration.

Institutional Arrangements: A Project Implementation Unit (PIU) will be established by RHD headed by the Project Director at the rank of Additional Chief Engineer. Superintending Engineer and Executive Engineers will be also in place to handle the project activities. The PIU will be responsible for coordinating and overall execution of the project including payment of compensation/resettlement benefits to the entitled persons (EPs) before relocation. The DCSC will appoint an IA for implementation of the RAP for proper resettlement and rehabilitation of the project affected people before and after relocation.

Table EX 2: Summary of Resettlement Cost for Project

Confidential

Implementation and Monitoring: Internal monitoring of RAP implementation will be the overall responsibility of the PIU and the DCSC/RAP-IA. The EA along with Resettlement Specialist/Expert of the DCSC will independently be monitoring implementation of RAP as per the guideline as well as assessing the ability of project affected households (PAHs) to restore their living standards and livelihoods to pre-project levels. An external monitoring agency will be engaged by RHD during RAP implementation for ongoing verification.

Glossary of Terms

Affected Person (AP): includes any person, affected households (AHs), firms or private institutions who, on account of changes that result from the project will have their (i) standard of living adversely affected; (ii) right, title, or interest in any house, land (including residential, commercial, agricultural, forest, and/or grazing land), water resources, or any other moveable or fixed assets acquired, possessed, restricted, or otherwise adversely affected, in full or in part, permanently or temporarily; and/or (iii) business, occupation, place of work or residence, or habitat adversely affected, with or without displacement.

Assistance: means support, rehabilitation and restoration measures extended in cash and/or kind over and above the compensation for lost assets.

Compensation: means payment in cash or kind for an asset to be acquired or affected by a project at replacement cost at current market value.

Cut-off date: means the date after which eligibility for compensation or resettlement assistance will not be considered is the cut-off date. Date of service of notice under Section 3 of Land Acquisition Ordinance is considered to be the cut-off date for recognition of legal compensation and the starting date of carrying out the census/inventory of losses or any designated date declared by the RHD will be considered as the cut of date for eligibility of resettlement benefit for the properties standing on the GoB land and not covered by Deputy Commissioner (DC). In this Project the dates of commencement of census i.e. 8th March 2012 in Kanchpur and Meghna and 15th March 2012 in Gumti Bridge are declared as cut-off date.

Encroachers: mean those people who move into the project area after the cut-off date and are therefore not eligible for compensation or other rehabilitation measures provided by the project. The term also refers to those extending attached private land into public land.

Entitlement: means the range of measures comprising cash or kind compensation, relocation cost, income restoration assistance, transfer assistance, income substitution, and business restoration which are due to AHs, depending on the type and degree /nature of their losses, to restore their social and economic base.

Eminent Domain: means the regulatory authority of the Government to obtain land for public purpose/interest or use as described in the 1982 Ordinance and Land Acquisition Law.

Household: A household includes all persons living and eating together (sharing the same kitchen and cooking food together as a single-family unit).

Inventory of losses: means the pre-appraisal inventory of assets as a preliminary record of affected or lost assets.

Non-titled: means those who have no recognizable rights or claims to the land that they are occupying and includes people using private or public land without permission, permit or grant i.e. those people without legal title to land and/or structures occupied or used by them. WB's policy explicitly states that such people cannot be denied resettlement assistance.

Project: means Dhaka-Chaittagong National Highway (NH-1) Bridge Construction and Rehabilitation Project

Project Affected Household: combines residential households (HHs), commercial and business enterprises (CBEs), common property resources (CPRs) and other affected entities as a whole.

Relocation: means displacement or physical moving of the APs from the affected area to a new area/site and rebuilding homes, infrastructure, provision of assets, including productive land/employment and re-establishing income, livelihoods, living and social systems

Replacement value: means the value of assets to replace the loss at current market price, or its nearest equivalent, and is the amount of cash or kind needed to replace an asset in its existing condition, without deduction of transaction costs or for any material salvaged.

Resettlement: means mitigation of all the impacts associated with land acquisition including restriction of access to, or use of land, acquisition of assets, or impacts on income generation as a result of displacement due to the Project.

Significant impact: means where 200 or more APs suffer a loss of 10% or more of productive assets (income generating) or physical displacement.

Squatters: means the same as non-titled and includes households, business and common establishments on land owned by the State. Under the project this includes RHD land, slope of the existing road and right of way of the proposed bridge alignments.

Structures: mean all buildings including primary and secondary structures of houses and ancillary buildings, commercial enterprises, living quarters, community facilities and infrastructures, shops, businesses, fences, and walls.

Vulnerable Households: means households that are (i) headed by single woman or woman with dependents and low incomes; (ii) headed by elderly/ disabled people without means of support; (iii) households that fall on or below the poverty line;⁹ (iv) households of indigenous population or ethnic minority; and (v) households of low social group or caste.

⁹ The poverty lines (updated for 2008) to be cited in the RAP as per Bangladesh Bureau of Statistics (BBS) report.

CHAPTER 1. INTRODUCTION

1.1 Description of the National Highway No.1 –Bridges Construction and Rehabilitation (the Project)

The National Highway No.1 (NH-1), namely, Dhaka-Chittagong Highway, is the lifeline for economy of Bangladesh with a capacity of 25,000 Passenger Car Unit (PCU) per day on 2-lane section and 60,000 PCU per day on 4-lane section. The NH-1 will be a part of the Asian Highway that connects with neighboring countries. On this highway, existing Kanchpur, Meghna and Gumti Bridges are major structures, which are the only way to cross Sitalakhya, Meghna and Gumti rivers. But, these bridges, constructed in the year of 1977, 1991 and 1995, respectively, are being deteriorated for several years. Consequently, they need urgent rehabilitations. In addition, the existing bridges were designed and constructed according to the outdated design standard. Therefore, these existing bridges may necessitate seismic retrofitting to withstand earthquake excitations in accordance with current codes.

According to the traffic survey conducted in this study (conducted in February and March, 2012), the NH-1 almost exceeded its traffic volume capacity to 78,000 PCU counted on Kanchpur Bridge and 73,300 PCU on Meghna and Gumti Bridges. Recently, the Government of Bangladesh has decided to widen NH-1 into 4 lanes in order to mitigate excess traffic volume and remove traffic bottlenecks. But, these existing 2-lane bridges are becoming a critical bottleneck for traffic movement through NH-1. It is obvious the existing 2-lane bridges will fail to cope with increased traffic volume of the NH-1 and cause serious traffic congestion. Therefore, the construction of 2nd Kanchpur, 2nd Meghna and 2nd Gumti Bridges are becoming an essential issue.

1.2 Objective and Purpose of the Resettlement Action Plan (RAP)

The objectives of the RAP are:

- a) To assess the nature and magnitude of the likely displacement,
- b) To explore all viable alternative project designs to avoid, where feasible, or minimize displacement,
- c) To assess the legal framework covering resettlement and policies of the government and implementing agencies,
- d) To identify any inconsistencies between such policies and the JICA's policy,

- e) To review past borrower and likely implementing agencies' experience with similar operation,
- f) To discuss with the agencies responsible for resettlement the policies and institutional, legal, and consultative arrangements for resettlement, including measures to address any inconsistencies between government or implementing agency policies and JICA policy and,
- g) To discuss any technical assistance to be provided to the recipient government.

Due to the existing urgency to keep smooth road communication with eastern zone of Bangladesh especially port city Chittagong, the Roads and Highways Department (RHD) has planned to construct three Bridges parallel to the existing Kanchpur, Meghna and Gumti Bridges, the RAP is prepared in accordance with the requirements of the JICA environmental and social considerations. .

This is the RAP for "Dhaka-Chittagong National Highway No.1- Bridges Construction and Rehabilitation Project". The purpose of this RAP is to address the social impact caused by the Project, proposing mitigation measures such as compensation, assistance etc to the Project affected people, content of which RAP was secured by RHD as per the requirement of JICA Guideline. This RAP is based on a detailed baseline survey carried out to understand the existing situation at each of the Project sites in March to July in 2012.

CHAPTER 2. POTENTIAL IMPACTS

2.1 Outline of the Project

The overall objective of the Project is to meet the increasing traffic demand of NH-1, which can be made by

- a) Construction of 2nd Kanchpur Bridge, 2nd Meghna Bridge and 2nd Gumti Bridge together with approach embankment road respectively.
- b) Rehabilitation existing Kanchpur Bridge, Meghna Bridge and Gumti Bridge

Location of the project is shown in Figure 2.1 and Table 2.1.

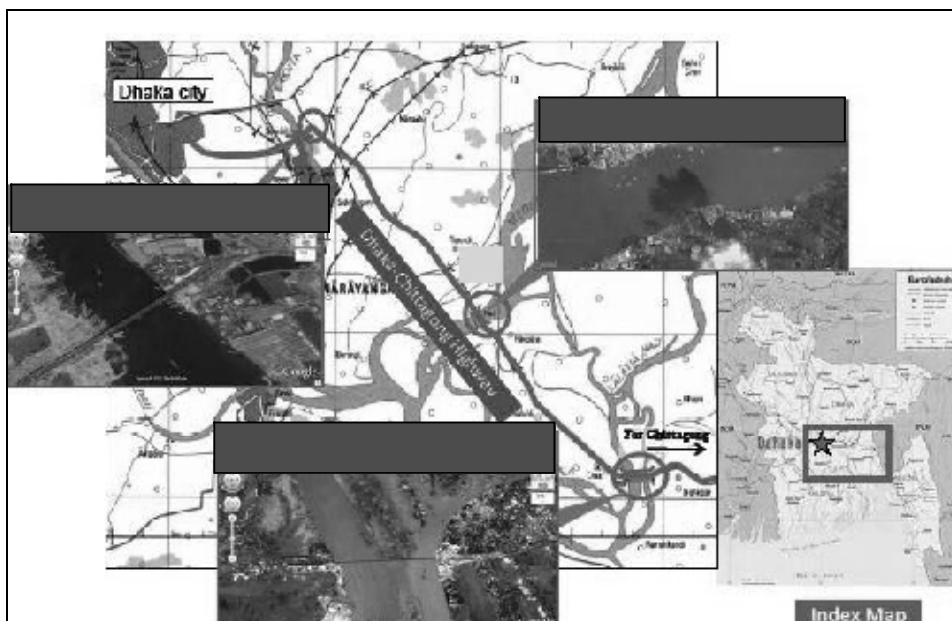


Figure 2.1 Location of the Three Bridges

Table 2.1 Location of the Bridges

Name of the Bridge	Side	District	Upazila	Union
Kanchpur Bridge	Dhaka	Narayanganj	Siddhirganj	Shimrail,
	Chittagong		Sonargaon	Kanchpur
Meghna Bridge	Dhaka	Narayanganj	Sonargaon	Pirojpur
	Chittagong	Munshigonj	Gajaria	Baliakandi
Gumti Bridge	Dhaka	Munshigan	Gajaria	Baushia
	Chittagong	Comilla	Daudkandi Municipality	

The three bridges located in three (3) different districts on NH-1 and their approach roads can

are constructed within RHD land. Additional land acquisition will not be required for the Project components. However, some squatters, tenants, residential households, and commercial enterprises will be affected due to the Project.

Affected areas include locations of construction of new bridges, embankments for approach road, temporary road for construction and construction yards. Among the above the most serious component is the construction of embankment for approach road (permanent impact) and secondly, the installation of construction yard (tentatively impact during construction period only), which cause removal of people outside of those areas. .

Outline of the Project is summarized in Table 2.2.

Table 2.2 Outline of the Project

Description		Kanchpur	Meghna	Gumti
Project Area (m)		1,296.5	1,930.0	2,410.0
Characteristics of 2nd bridges	Length m	396.5	930.0	1,410.0
	Width m	18.4	17.75	17.75
	Navigation clearance m	width: 61m height: 12.2m	width: 75m height: 18m	width: 75m height: 7.5m
Pier of 2nd bridges	Number	5 pier	11 pier	16 pier
	Foundation type	Steel pipe sheet pile	Steel pipe sheet pile	Steel pipe sheet pile
	Foundation width (m)	31.3m x 8.5m	32.44m x 14.97m	29.95m x 13.73m
	Maximum pile length (m)	33m	48m	70m
Characteristics of existing bridges	Length (m)	396.5	930.0	1,410.0
	Width (m)	14.64	9.2	9.2
	Navigation clearance m	width: 61m height: 12.2m	width: 75m height: 18m	width: 75m height: 7.5m
Approach roads to bridges	Length (m)	300m at Dhaka side and 300m at Chittagon side	500m at Dhaka side and 500m at Chittagon side	700m in Dhaka side and 300m in Chittagon side
	Maximum height of embankment (m)	7m at Dhaka side and 12m at Chittagon side	10m at Dhaka side and 9m at Chittagon side	7m at Dhaka side and 6m at Chittagon side

Source: Study Team

Overall plan and typical cross-section of the Project is illustrated in Figure A.4-1 to A.4-3 in Annex-4 while comparison of bridge shape of existing bridges and 2nd bridges are shown in Figures A.4-4 to A.4-6 in Annex-4.

2.2 Alternative Routes and Minimizing Resettlement

Three alternative routes, namely Route A, Route B and Route C were proposed for respective three bridge sites to compare their feasibilities in the view of (1) cost, (2) technical issues and (3) environmental and social issues qualitatively. Alternative routes of each bridge are set as shown in Table 2.3.

Table 2.3 Establishment of Alternative Routes

Alternative Route	Kanchpur Bridge	Meghna Bridge	Gumti Bridge
A	Next to existing bridge at downstream side to lessen relocation.	Next to existing bridge at upstream side to lessen relocation.	Next to existing bridge at downstream side to lessen relocation.
B	Secure distance from exiting bridge at downstream side to avoid scouring effects of exiting bridge.	Secure distance from exiting bridge at upstream side to avoid scouring effects of exiting bridge.	Secure distance from exiting bridge at downstream side to avoid scouring effects of exiting bridge.
C	Next to existing bridge at upstream side opposite to Alternative A.	Secure distance from exiting bridge at upstream side to avoid scouring effects of exiting bridge, and minimize resettlement issue on route B.	Next to existing bridge at upstream side opposite to Alternative A.

Basically, Route A is set near to existing bridge either upstream or downstream whichever relocation is expected to be lesser and Route C is set opposite side of Route A (Kanchpur Bridge, Gumti Bridge) while Route B is set away from exiting bridge to avoid scouring effect of the existing bridge. Then cost, technical issues and environmental and social issues are examined and evaluated. Result of evaluation for each bridge is shown in Table 2.4 to Table 2.6.

Comparison was made based on considering following factors:

Impact on Road User

- 1) Convenience road user

Impact on socio environment

- 2) Resettlement
- 3) Public facility

- 4) Land acquisition
- 5) Traffic safety for vessels
- 6) Economic activity (sand unloading, ferry terminal operation, factory, etc)

Impact on natural environment

- 7) Ecosystem
- 8) Hydrological condition
- 9) Noise/air pollution
- 10) River flow
- 11) Land scape

Other factors

- 12) Obstacle object
- 13) Construction condition
- 14) Project cost

As the results of comparison analysis made above, Route A of each Bridge is found to be most feasible among three (3) alternatives.

Table 2.4 Comparison of Alternative Routes on Kanchpur Bridge

Kanchpur Bridge		Route A	Route B	Route C
Route				
Summary		Next to existing bridge(down stream)	Route that secures distance from existing bridge (down stream)	Next to existing bridge(up stream)
① Convenient to road user		No specific problem ◎	Two intersections are needed at the point of connecting existing road, so it's lower safe △	No specific problem ◎
Impact on Socio-environment	② Resettlement	45 structure (15 houses, 20 shops, 10 stalls) ◎	60 structure (40 houses, 20 shops) ○	60 structure (30 houses, 30 shops) ○
	③ Public facility	No ◎	Mosque relocation △	No ◎
	④ Land acquisition (area, landowner)	0 m ² ◎	5,000 m ² △	2,000 m ² △
	⑤ Traffic safety for vessels	Negligible (one foundation combined with both bridge) ◎	Slightly (two foundations are separated) ○	Negligible (one foundation combined with both bridge) ◎
	⑥ Economic activities (sand unloading, ferry terminal operation, factory etc)	20 shops, 10 stalls 30 Sand loading/unloading workers ○	20 shops 30 Sand loading/unloading workers ◎	30 shops 60 Sand loading/unloading workers △
Impact on natural environment	⑦ Ecosystem	Some impacts to natural fauna and flora during construction ○	Some impacts to natural fauna and flora during construction ○	Some impacts to natural fauna and flora during construction ○
	⑧ Hydrological conditions	Slightly (enlarge scoring if some foundation will be combined) ○	Negligible (scoring will be same around existing bridge) ◎	Slightly (enlarge scoring if some foundation will be combined) ○
	⑨ Noise / air pollution	Moderate impact since some houses are remained along new accesses ○	Moderate impact since some houses are remained along new accesses ○	Moderate impact since some houses are remained along new accesses ○
	⑩ River flow	Negligible (one foundation combined with both bridge) ◎	Slightly (two foundations are separated) ○	Negligible (one foundation combined with both bridge) ◎
	⑪ Landscape	Negligible (two bridges are close) ◎	Slightly (two bridges are separated) ○	Negligible (two bridges are close) ◎
⑫ Obstacle Object (steel towers, water pipe, gas pipe)		No specific problem ◎	No specific problem ◎	No specific problem ◎
⑬ Construction condition		Construction period is shorter comparing to Route B Bridge Length: 400m Earthwork: 47,000m ³ ◎	Construction period is the longest Bridge Length: 540m Earthwork: 102,000m ³ △	Construction period is shorter comparing to Route B Bridge Length: 400m Earthwork: 35,000m ³ ◎
⑭ Project cost		Cheap ◎	Expensive △	Cheap ◎
Evaluation		◎	△	○

Legend ◎ : Excellent, ○ : Good, △ : Poor

Note: Number of structure within the proposed alignment were counted and rounded up based on the number of roofs identified through Google maps and site reconnaissance made

In the Census survey, number of actual affected households of Route A is 231 households, which include one household with several rentees per one structure. It is estimated 5.1 households per one structure on an average. Based on such estimation, that of Route B and Route C is both 308 households. It is therefore Route A is the most feasible due that number of actual affected households is the smallest compared with the other plans.

Table 2.5 Comparison of Alternative Routes on Meghna Bridge

Meghna Bridge	Route A	Route B	Route C	
Route				
Summary	Next to existing bridge(up stream)	Secure distance of 250m upstream near old ferry route	Secure distance of 250m upstream of shifted ferry route Minimize resettlement issue (Ctg. side) on Alignment B	
① Convenient to road user	No specific problem	No specific problem	No specific problem	
Impact on Socio-environment	② Resettlement	10 structure (5 houses, 5 shops)	250 structure (90 houses, 150 shops, 10 stalls)	60 structure (10 houses, 50 shops)
	③ Public facility	No	Mosque relocation	No
	④ Land acquisition (area, landowner)	15m from Holcim Cement boundary (RHD will agree with Holcim Cement)	0 m ²	0 m ²
	⑤ Traffic safety for vessels	Negligible (one foundation combined with both bridge)	Slightly (two foundations are separated)	Slightly (two foundations are separated)
	⑥ Economic activities (sand unloading, ferry terminal operation, factory etc)	5 shops Fishery	150 shops 50 Sand loading/unloading workers Fishery	50 shops 30 Sand loading/inloading workers Fishery
Impact on natural environment	⑦ Ecosystem	Small Plantation Some impacts to natural fauna and flora during construction	Many roadside trees shall be cut	Many roadside trees shall be cut
	⑧ Hydrological conditions	Slightly (enlarge scoring if some foundation in main channel will be combined, but bank erosion will be little)	Slightly (new bridge impact is small, but scoring around existing bridge will be large by protection)	Worst (new bridge scoring will be large because new route is on the deepest river bed, and existing bridge is needed protection)
	⑨ Noise / air pollution	Negligible impact since few houses remaind along new access on Chittagon side	Severe impact since many houses remaind along new accesses A school is located near the new access	Seevere impact since many houses remaind along new accesses A school is located near the new access
	⑩ River flow	Negligible (one foundation combined with both bridge)	Slightly (two foundations are separated)	Slightly (two foundations are separated)
	⑪ Landscape	Negligible (two bridges are close)	Slightly (two bridges are separated ,loss of road side trees)	Slightly (two bridges are separated ,loss of road side trees)
⑫ Obstacle Object (steel towers, water pipe, gas pipe)	No specific problem	No specific problem	No specific problem	
⑬ Construction condition	Construction period is the shortest Bridge Length: 930m Earthwork : 39,000m ³	Construction period is the longest Bridge Length: 1,100m Earthwork : 84,000m ³	Construction period is shorter comparing to Route B Bridge Length: 980m Earthwork : 128,000m ³	
⑭ Project cost	Cheap	Expensive	Expensive	
Evaluation	⊙	△	○	

Legend ⊙ : Excellent, ○ : Good, △ : Poor

Note: Number of structure within the proposed alignment were counted and rounded up based on the number of roofs identified through Google maps and site reconnaissance made

In the Census survey, number of actual affected households of Route A is 19 households, which include one household with several rentees per one structure. It is estimated 1.9 households per one structure on an average. Based on such estimation, that of Route B Plan and Route C Plan is 475 households and 114 households, respectively. It is therefore Route A is the most feasible due that number of actual affected households is the smallest compared with the other plans.

Table 2.6 Comparison of Alternative Routes on Gumti Bridge

Gumti Bridge	Route A	Route B	Route C	
Route				
Summary	Next to existing bridge(down stream)	Route that secures distance from existing bridge(down stream)	Next to existing bridge(up stream)	
① Convenient to road user	No specific problem	No specific problem	No specific problem	
Impact on Socio-environment	② Resettlement 20 structure (5 houses, 15 shops)	80 structure (40 houses, 40 shop s)	20 structure (20 shops)	
	③ Public facility	No	No	
	④ Land acquisition (area, landowner)	0 m ²	0 m ²	32,000m ²
	⑤ Traffic safety for vessels	Negligible (one foundation combined with both bridge)	Slightly (two foundations are separated)	Negligible (one foundation combined with both bridge)
	⑥ Economic activities (sand unloading, ferry terminal operation, factory etc)	15 shops 100 sand loading/unloading workers cultivating farm on sand bars Fishery	40 shops 100 sand loading/unloading workers Fishery	20 shops 100 sand loading/unloading workers cultivating farm on sand bars Fishery
Impact on natural environment	⑦ Ecosystem	Some impacts to natural fauna and flora during construction	Some impacts to natural fauna and flora during construction	Some impacts to natural fauna and flora during construction
	⑧ Hydrological conditions	Slightly (enlarge scoring if some foundation will be combined)	Negligible (scoring will be same around existing bridge)	Slightly (enlarge scoring if some foundation will be combined)
	⑨ Noise / air pollution	No impact since no house remained along new access	Moderate impact since several houses remained along new access	Negligible impact since few houses remained along new access
	⑩ River flow	Negligible (one foundation combined with both bridge)	Slightly (two foundations are separated)	Negligible (one foundation combined with both bridge)
	⑪ Landscape	Negligible (two bridges are close)	Slightly (two bridges are separated)	Negligible (two bridges are close)
⑫ Obstacle Object (steel towers, water pipe, gas pipe)	No specific problem	No specific problem	No specific problem	
⑬ Construction condition	Construction period is shorter comparing to Route B Bridge Length: 1,410m Earthwork : 33,000m ³	Construction period is the longest Bridge Length: 1,390m Earthwork: 41,000m ³	Construction period is shorter comparing to Route B Bridge Length: 1,410m Earthwork: 33,000m ³	
⑭ Project cost	Cheap	Slightly expensive	Cheap	
Evaluation	⊙	△	○	

Legend ⊙ : Excellent, ○ : Good, △ : Poor

Note: Number of structure within the proposed alignment were counted and rounded up based on the number of roofs identified through Google maps and site reconnaissance made

In the Census Survey, number of actual affected households of Route A Plan is 24 households, which include one household with several rentees per one structure. It is estimated 1.2 households per one structure on an average. Based on such estimation, that of Route B Plan and Route C Plan is 96 households and 24 households, respectively. It is therefore Route A is the most feasible due that number of actual affected households is the smaller compared with the other plans.

2.3 Project Impacts

Infrastructure development projects generally displace people involuntarily from their places of work or residence or means of livelihood and thereby create situation leading to severe physical, economic, social and environmental problems. Table 2.7 shows major impacts of losses caused by the Project on the Affected Persons or Households.

Table 2.7 Major Impacts of Losses Caused by the Project

Impacts of Losses
Social impacts
• Loss of residences and business places (Squatter)
• Loss of CPR (Common property resources)
• Loss of pond and tree owners
• Loss of tenants (Business and residences)
• Loss of income for wage labor
Physical assets impacts
• Loss of housings, business shops
• Loss of water pump
• Loss of bill board
• Loss of backfill of fish pond without land title

To address all the above mentioned problems, the RAP will be prepared incorporating some mitigating measures to encounter the negative social and economic impacts to be mentioned as the following chapters.

However this RAP is still tentative nature so that in the detailed design stage, it shall be carried out a detailed study on the RAP, which the losses caused by the Project shall be minimized.

CHAPTER 3. CENSUS AND SOCIOECONOMIC STUDIES

3.1 Methodology for Census and Socioeconomic Survey

The census and a socio-economic survey was carried out in March 2012 to provide requisite details on the project affected households (PAHs) to further assess the magnitude of likely impacts and to identify measures for mitigation of adverse impacts. The survey included (i) Census of the affected households (ii) Socioeconomic survey of the households living in the project surrounded areas (iii) Inventory of losses (IOL) (iv) Replacement cost surveys (v) Video filming of the affected properties (vi) sketch mapping (not to scale) of the affected structure and other assets (vii) community based public consultation, and (viii) focused group discussion with the affected population, etc. The survey identified the households, commercial and business enterprises, tenants (both residential and commercial) and community properties on project right of way.

The socioeconomic survey collected a wide range of data, for example, demography, age/sex distribution, education, occupation, income/poverty data, types of businesses, types and ownership status of affected structures and other assets.

A total of 499 households were surveyed in the project surrounded areas of the three bridges along possible alternative routes with a structured socioeconomic survey questionnaire. The socioeconomic survey covers all categories of people irrespective of occupation, income, age or sex living in the project surrounded area. Data of the socioeconomic survey includes information of households not directly affected by the Project, but information regarding presence of vulnerable people and data needed for formulation of necessary relocation assistance schemes are fairly collected and Resettlement Action Plan that reflects all relocation requirements can be prepared..

The Table 3.1 below presents the bridge wise number of affected households based on the census survey. Out of total affected households 8.2% is female headed and 91.8% is male headed.

Table 3.1 Bridge wise Number of Surveyed Households

Type of Household head	Kanchpur		Meghna		Gumti		Total	
	No.	%	No.	%	No.	%	No.	%
Male Headed HH	235*	91.1	20	100.0	24*	92.3	279	91.8
Female Headed HH	23	8.9	0	0.0	2	7.7	25	8.2
Total Number	258*	100.0	20	100.0	26*	100.0	304**	100.0

Note: * One owner of common property is not included

Source: Study Team, 2012

** Total two owners of common property are not included

3.2 Results of the Census Survey

A total of 274 households or 972 peoples will be relocated due to the project interventions as shown in Table 3.2. Besides, two community properties will also be relocated from the project area. A total of 231 households and shop tenants will be displaced in Kanchpur Bridge, 19 in Meghna Bridge and 24 in Gumti Bridge. In addition to 274 households to be displaced, a total of 28 wage laborers will also lose their sources of livelihood due to the project of which 26 at Kanchpur Bridge and 2 at Gumti Bridge. These peoples and properties are located in RHD owned land and have not official land ownership. Bridge wise impacts are shown in the Table 3.2 below.

Table 3.2 Number of Affected Households

Type of loss	No of PAHs				No of people			
	Kanchpur	Meghna	Gumti	Total	Kanchpur	Meghna	Gumti	Total
Required for Displacement								
1 Residential house owners	100	1	6	107	412	3	19	434
2 Residential rentee	98	0	0	98	313	0	0	313
3 Shop owners	26	17	18	61	98	40	61	199
4 Shop tenants	4	1	0	5	12	4	0	16
5 Residential and shop owner	3	0	0	3	10	0	0	10
Sub Total (1-5)	231	19	24	274	845	47	80	972
Not required for Displacement								
6 Land owners	0	0	0	0	0	0	0	0
7 Land lease right holder	0	0	0	0	0	0	0	0
8 Structure (absentee house or shop) owners not residing in	0	0	0	0	0	0	0	0
9 Seasonal cropper on char	0	0	0	0	0	0	0	0
10 Pond/fish cultivator	1	0	0	1	5	0	0	5
11 Tree owners (including plantation owners)	0	1	0	1	0	6	0	6
12 Wage earners (Employees)	26	0	2	28	26	0	2	28
13 Community owned structures including physical cultural resources	1	1	0	2	1	1	0	2
Sub Total (6-13)	28	2	2	32	32	7	2	41
Grand Total (1-13)	259	21	26	306	877	54	82	1,013

Source: Study Team, 2012

Table 3.3 Number of Vulnerable Households

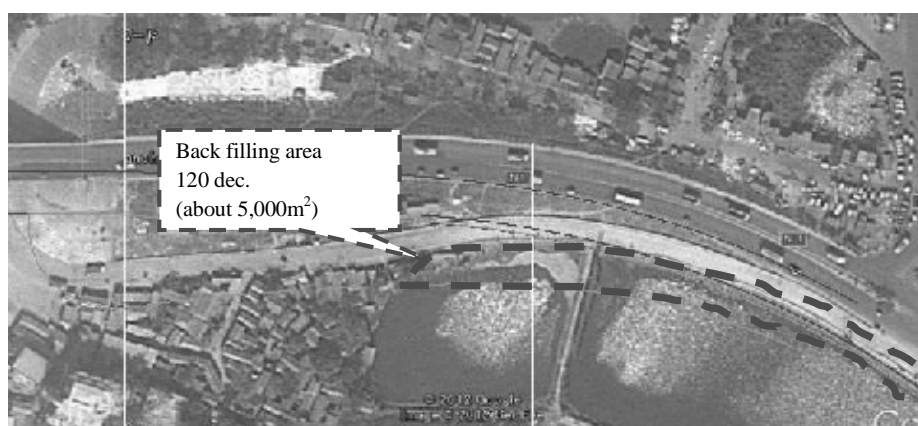
	Kachpur	Meghna	Gumti	Total
Vulnerable family				
Annual income<60,000 and Female headed household	11	0	1	12
Annual income<60,000 Female headed household	2	1	3	6
Female headed household	12	0	1	13
Total vulnerable household	25	1	5	31

Source: Study Team, 2012

3.3 Inventory of Assets

3.3.1 Lands

Figure 3.1 shows location of fish pond that may be affected by the Project at Kanchpur Bridge while Figure 3.2 shows location of plantation area in Meghna Bridge. Land for fishpond and plantation belongs to RHD and there is no land acquisition is required while compensation for fish and tree will be made.



Note: 1dec. = 40m²

Figure 3.1 Location of Fish Pond Affected at Kanchpur Bridge

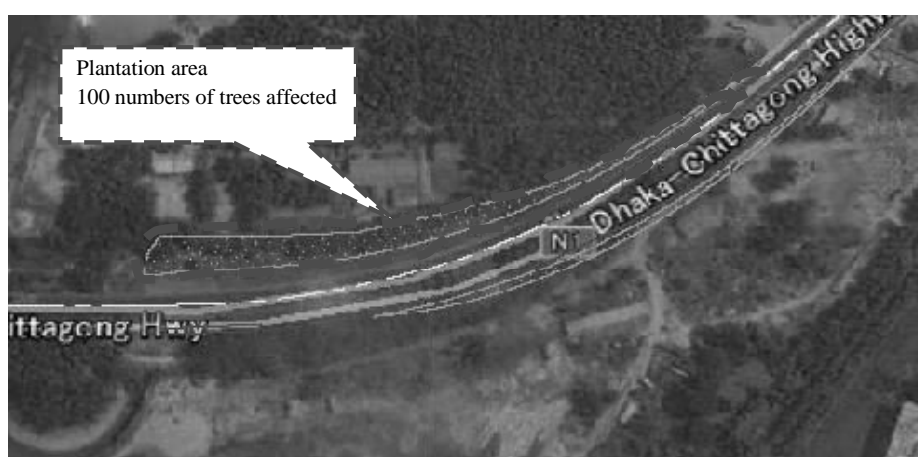


Figure 3.2 Location of Plantation Area Affected at Meghna Bridge

Table 3.4 Area to be Used in Three SitesUnit: m²

		Kanchpur	Meghna	Gumti	Total
Land to be used (all land is inside RHD land)	Road and embankment m ²	21,600	30,000	27,000	78,600
	Construction yard m ²	3,000	25,000	22,000	50,000
	Temporary road m ²	10,000	10,000	4,000	24,000
	Total area m ²	34,600	65,000	53,000	152,600

For the construction of Meghna Bridge, a land (400m x 10m), concrete fence (450m) and a part of store houses presently owned by Holcim Cement Industry are required and included in Table 3.4 and Table 3.5. Land occupied by Holcim Cement Industry is also owned by RHD.

A total of 2,552 square feet (237.3 square meter) semi pucca, 26,335 sft (2,449.2 square meter) tin made, Katcha 803 sft and Thatched 905 sft (84.2 square meter) have been affected by the Project interventions.

3.3.2 Structures

Table 3.5 Number of Structures to be Affected

	Unit	Kachpur			Meghna	Gumti			Total
		Constructed by		RHD owned Structure	Squatters	Constructed by		RHD owned Structure	
		Squatters	RHD Employees	Squatters		Squatters	RHD Employees		
Primary Structures									
Pucca ¹	Sqf	0	0	0	0	0	0	575	575
Semi-Pucca ²	Sqf	1,359	5,730	25,582	988	205	0	432	34,296
Tin Made ³	Sqf	19,815	1,298	4,422	4,732	1,788	115	0	32,170
Katcha ⁴	Sqf	487	1,136	0	0	316	160	0	2,099
Thatched ⁵	Sqf	710	0	0	146	49	0	0	905
Sub-total		22,371	8,164	30,004	5,866	2,358	275	1,007	70,045
Secondary Structures									
Pucca Latrine	No.	4	0	8	0	0	0	0	12
Slab Latrine	No.	24	4	6	0	0	1	0	35
Tube well	No.	8	0	0	0	1	2	0	11
Boundary Wall (Brick 5")	Rft	71	41	0	1,500	0	0	0	1,612
Boundary Wall (Tin made)			0	1520		0		0	1,520
Water Pump	No.	1	0	2	0	0	0	0	3
Bill Board	No.	2	0	0	0	0	0	0	2
Fish pond to be Backfilled	Dec ⁶	120	0	0	0	0	0	0	120

¹ Pucca: Brick built houses.

² Semi Pucca: Brick wall with corrugated iron (CI) sheet roof.

³ Tin Made: Fence and roof is made of corrugated iron sheet.

⁴ Katcha: roof is made of CI sheet and fence is with bamboo, wood, earth, etc.

⁵ Thatched: roof and fence both are made of straw/bamboo etc.

⁶ Dec (=40m²)

3.3.3 Trees

Some Roby crops (mainly wheat and paddy) are produced during winter season under the Gumti Bridge. Some trees are found at Meghna Bridge location (Chittagong side planted by local people by taking lease of the land from RHD. These trees will need to be fallen down for bridge approach road and construction yard. Road side trees and shrubs which have planted by RHD employees around Kanchpur Bridge will also be affected.

Table 3.6 Number of Trees to be Affected

Name of the Bridge	Name of the Tree	Big	Medium	Small	Plant	Total
Kanchpur	Palm	0	3	0	0	3
	Mango	0	66	27	60	153
	Kadom	0	0	1	0	1
	Coconat	0	0	0	1	1
	Betel nut	0	1	0	0	1
	Rain tree	0	2	0	0	2
	Jackfruit	4	7	19	19	49
	Nim	1	2	3	0	6
	Black Berry	0	3	0	0	3
	Sajna	0	1	0	0	1
	Mehogini	3	6	3	0	12
	Mehedi	0	0	7	0	7
	Guava	0	32	11	0	43
	Jambura	0	5	5	0	10
	Papaya	0	9	20	0	29
	Lemon	0	9	0	0	9
	Ata	0	3	2	0	5
	Dalim	0	0	1	0	1
	Doya	1	4	2	0	7
	Banana	40	20	15	0	75
Koroi	0	1	1	0	2	
Subtotal		49	174	117	80	420
Meghna	Rentree	0	0	50	0	50
	Boroi	0	0	20	0	20
	Akashmoni	80	600	1,000	100	1,780
	Subtotal	80	600	1,070	100	1,850
Gumti		0	0	0	0	0
	Subtotal	0	0	0	0	0
Grand total No		129	774	1,187	180	2,270

Remark: Big (diameter:2ft), Nedium(1ft), Small(<1ft) and plant(nursing)

3.3.4 Business and Commercial Activities

A total of 66 business institutions were affected in this project (61 squatters and 5 tenants) of which mostly dealing in tin made structures. Business and commercial activities of these affected institutions are operating retailing shops and their business activities will be affected by the project. At Meghna Bridge 18 business enterprises have been enumerated whereas at Gumti Bridge it is 18 and at Kanchpur Bridge it is 33.

3.4 Results of Socioeconomic Survey

The Socioeconomic survey covers 338 households (67.74%) Meghna Bridge, 142 households (28.46%) in Kanchpur Bridge and 19 households (3.81%) in Gumti Bridge area.

3.4.1 Distribution of Population by Sex

A total of 2,241 people are found in 499 surveyed households (average household size is 4.49), of which 52.07% are males and 47.93% are females. The Table 3.7 below presents the total number households and people surveyed in three bridges.

Table 3.7 Bridge Area Wise Distribution of Households and Population by Sex

Name of the Bridge	HH		Male		Female		Total population	
	No.	%	No.	%	No.	%	No.	%
Kanchpur	142	28.46	282	12.58	286	12.76	568	25.35
Meghna	338	67.74	836	37.30	746	33.29	1582	70.59
Gumti	19	3.81	49	2.19	42	1.87	91	4.06
Total	499	100	1167	52.07	1074	47.93	2241	100

Source: Socioeconomic survey conducted by Study Team, 2012

3.4.2 Duration of Living in the Project Areas

In the Kanchpur Bridge area, 32% of the surveyed households have been staying for 11 to 20 years, 30% households have been staying for less than 10 years and 20% households have been staying for 21 to 30 years. It is found that 13% of households have been staying in the project area for above 40 years. Details on duration of living of the surveyed people in the project areas are shown in Table 3.8.

Table 3.8 Duration of Living in Project Area

Range of year	Kanchpur		Meghna		Gumti		Total	
	No.	%	No.	%	No.	%	No.	%
Up to 10	42	29.58	83	24.56	11	57.89	136	27.25
11 to 20	45	31.69	116	34.32	3	15.79	164	32.87
21 to 30	28	19.72	88	26.04	4	21.05	120	24.05
31 to 40	9	6.34	16	4.73	0	0.00	25	5.01
Above 40	18	12.68	35	10.36	1	5.26	54	10.82
Total	142	100	338	100	19	100	499	100.00

Source: Study Team, 2012

3.4.3 Religion of Affected Households and Population

Distribution of surveyed population by religion under the Project area is presented in Table 3.9. It is found that about 96.70% (2167) surveyed population belong to Islam religion and remaining 3.30% (74 people) belong to Hindu (Sanatan) religion by faith. In the Kanchpur Bridge project area 100% of the surveyed population found Muslim, while in the Meghna Bridge area 96.27% and 3.73% of the surveyed population found Muslim and Hindu respectively. According to the survey a large number (16.48%) of Hindu population were found in Gumti Bridge area.

Table 3.9 Surveyed Population by Religion

Religion	Kanchpur		Meghna		Gumti		Total	
	Population	%	Population	%	Population	%	Population	%
Islam	568	100	1523	96.27	76	83.52	2167	96.70
Hindu	0	0	59	3.73	15	16.48	74	3.30
Total	568	100	1582	100	91	100	2241	100

Source: Study Team, 2012

3.4.4 Age, Education and Occupation

Population by age and sex

The male and female population is almost equal in numbers within the age group 21-30years; male population is slightly higher in numbers than that of female population within the age groups 1-10 years, 31-40 years, and above 60 years. Male population is significantly higher in numbers than that of female population within the age groups 11-20 years and 51-60 years. It should be mentioned here that female population is higher in number than that of male population within the age groups 41-50 years. Details on distribution of the surveyed population by age and sex are shown in Table 3.10.

Table 3.10 Distribution of Surveyed Population by Age and Sex under the Entire Project Area

Age Group	Male		Female		Total	
	Number	%	Number	%	Number	%
1 to 10	275	12.27	259	11.56	534	23.83
11 to 20	244	10.89	212	9.46	456	20.35
21 to 30	207	9.24	205	9.15	412	18.38
31 to 40	153	6.83	138	6.16	291	12.99
41 to 50	124	5.53	147	6.56	271	12.09
51 to 60	104	4.64	57	2.54	161	7.18
Above 60	60	2.68	56	2.50	116	5.18
Total	1167	52.07	1074	47.93	2241	100

Source: Study Team, 2012

Education level

About 19% of the total surveyed population is found illiterate. However, some of the illiterate population can sign their names only. Out of 19% illiterate people, the males are 9.06% while the females are 9.77%. It is found that 31.59% of the people have gone to primary schools while 27.76% have education between class six and class ten. Only 5.35% and 3.17% of the people have completed SSC and HSC level education respectively. Only 1.16% of the people have obtained Bachelor degree while 0.22% of the people have obtained Master degree. However, 0.22% of the people found Hafez-E-Quran. Details about the status of education of the male and female people are shown in Table 3.11.

Table 3.11 Distribution of Population by Education Level under the Entire Project Area

Education level	Male		Female		Total	
	Number	%	Number	%	Number	%
Grade 1 to 5	354	15.80	354	15.80	708	31.59
Grade 6 to 10	317	14.15	305	13.61	622	27.76
SSC	74	3.30	46	2.05	120	5.35
HSC	47	2.10	24	1.07	71	3.17
BA	19	0.85	7	0.31	26	1.16
MA	4	0.18	1	0.04	5	0.22
Hafez	5	0.22	0	0.00	5	0.22
Below Grade 1	144	6.43	118	5.27	262	11.69
No Schooling	203	9.06	219	9.77	422	18.83
Total	1167	52.07	1074	47.93	2241	100

Source: Study Team, 2012

Remark: SSC: Secondary School Certificate
HSC: Higher Secondary Certificate
BA: Bachelor Degree
MA: Master Course
Hafez: Hafez-E-QurAn Course (Muslim School)

The status of education of the surveyed people in Kanchpur, Meghna and Gumti Bridge areas is presented in the following tables (Table 3.12, 3.13 and 3.14). About 18% of the people in Kanchpur Bridge found illiterate. The people who can only sign their names are also considered as illiterate people. Out of 18.13% illiterate people, the illiterate males are 8.27% while the illiterate females are 9.86%. About 34% of the population under the Kanchpur Bridge area has gone to primary schools for their education. It is found that about 28% of the people have education between class six and class ten. Only 3.70% and 2.29% of the people have completed SSC and HSC levels of education respectively. Details about the status of education of the male and female population are shown in Table 3.12.

Table 3.12 Distribution of Population by Education Level in Kanchpur Bridge

Education level	Male		Female		Total	
	Number	%	Number	%	Number	%
Grade 1 to 5	88	15.49	103	18.13	191	33.63
Grade 6 to 10	79	13.91	78	13.73	157	27.64
SSC	11	1.94	10	1.76	21	3.70
HSC	9	1.58	4	0.70	13	2.29
BA	6	1.06	3	0.53	9	1.58
MA	2	0.35	0	0	2	0.35
Hafez	1	0.18	0	0	1	0.18
Below Grade-1	39	6.87	32	5.63	71	12.50
No Schooling	47	8.27	56	9.86	103	18.13
Total	282	49.65	286	50.35	568	100

Source: Study Team, 2012

The status of education of the people under the Meghna Bridge area is shown in Table 3.13. It is found that 18.46% of the people (male 8.91%, female 9.54%) in Meghna Bridge are illiterate. About 31% of the people have gone to primary schools and 28.13% of the people have education between class six and class ten. Only 6.26% and 3.67% of the people have completed SSC and HSC courses respectively. Only 1.07% and 0.19% of the people have obtained Bachelor and Master degrees respectively. However, 0.19% of the people are Hafez-E-QurAn.

Table 3.13 Distribution of Population by Education Level in Meghna Bridge

Education level	Male		Female		Total	
	Number	%	Number	%	Number	%
Grade 1 to 5	250	15.80	235	14.85	485	30.66
Grade 6 to 10	224	14.16	221	13.97	445	28.13
SSC	63	3.98	36	2.28	99	6.26
HSC	38	2.40	20	1.26	58	3.67
BA	13	0.82	4	0.25	17	1.07
MA	2	0.13	1	0.06	3	0.19
Hafez	3	0.19	0	0.00	3	0.19
Below Grade-1	102	6.45	78	4.93	180	11.38
No Schooling	141	8.91	151	9.54	292	18.46
Total	836	52.84	746	47.16	1582	100

Source: Study Team, 2012

The status of education of the people under the Gumti area is presented in Table 3.14. It is found that 29.67% of the people (male 16.48%, female 13.19%) are illiterate. About 35% of the people have gone to primary schools and 21.98% found within the range of education from class six to class ten. Only 1.10% of the people have completed Hafez-E-QurAn course.

Table 3.14 Distribution of Population by Education Level in Gumti Bridge

Education level	Male		Female		Total	
	Number	%	Number	%	Number	%
1 to 5	16	17.58	16	17.58	32	35.16
6 to 10	14	15.38	6	6.59	20	21.98
SSC	0	0	0	0	0	0
HSC	0	0	0	0	0	0
BA	0	0	0	0	0	0
MA	0	0	0	0	0	0
Hafez	1	1.10	0	0	1	1.10
Below Grade-1	3	3.30	8	8.79	11	12.09
No Schooling	15	16.48	12	13.19	27	29.67
Total	49	53.85	42	46.15	91	100

Source: Study Team, 2012

From the above findings on the status of education/literacy of the people, it is found that illiteracy rate of the female is higher than that of male in Kanchpur and Meghna Bridge area. On the contrary, illiteracy rate among male people is found higher in Gumti Bridge area.

Character of the population

An overwhelming number of population under the entire project area is housewives (24.01%) followed by business person (14.86%), daily wage laboring occupation (5.62%), service/employment (5.04%), overseas employment (1.25%), pulling rickshaw and van (1.16%), others (1.07%) and drivers (0.98%). It is found that 24.94%, 11.65%, 4.69% and 3.61% of the population are students, children, unemployed and old people respectively. Details about Character of the male and female population are shown in Table 3.15.

Table 3.15 Distribution of the People by Characters under the Entire Project Area

Present Character of the Population	Male		Female		Total	
	No.	%	No.	%	No.	%
Student	284	12.67	275	12.27	559	24.94
Housewife	0	0.00	538	24.01	538	24.01
Small Retailing Shop Business Person	330	14.73	3	0.13	333	14.86
Child	143	6.38	118	5.27	261	11.65
Day labor	114	5.09	12	0.54	126	5.62
Service	81	3.61	32	1.43	113	5.04
Unemployed	73	3.26	32	1.43	105	4.69
Old people	37	1.65	44	1.96	81	3.61
Overseas Service	26	1.16	2	0.09	28	1.25
Rickshaw/Van Polar	25	1.12	1	0.04	26	1.16
Others	17	0.76	7	0.31	24	1.07
Driver	21	0.94	1	0.04	22	0.98
Disabled	5	0.22	2	0.09	7	0.31
Agriculture	5	0.22	1	0.04	6	0.27
Tailor	1	0.04	5	0.22	6	0.27
Doctor	2	0.09	1	0.04	3	0.13
Fisherman	2	0.09	0	0	2	0.09
Mason	1	0.04	0	0	1	0.04
Total	1167	52.07	1074	47.93	2241	100

Source: Study Team, 2012

Characters of the population in Kanchpur, Meghna and Gumti Bridge are separately shown in

Tables 3.16, 3.17 and 3.18. It is found that an overwhelming number of the population in Kanchpur Bridge area is housewives (22.89%) followed by business person (12.32%), service/employment (10.92%), daily wage laborers (2.82%), pulling van and rickshaws (2.11%), others (1.76%), drivers (1.06%), overseas service (0.53%), agriculture (0.35%) and doctor (0.35%). It is found that 25.00%, 12.50%, 3.70% and 3.52% of the population are students, children, unemployed and old people respectively. Details on Characters of the male and female population are shown in Table 3. 16, Table 3.17 and Table 3.18.

Table 3.16 Distribution of the People by Characters in Kanchpur Bridge Area

Present Character of the Population	Male		Female		Total	
	No.	%	No.	%	No.	%
Student	62	10.92	80	14.08	142	25.00
Housewife	0	0	130	22.89	130	22.89
Child	39	6.87	32	5.63	71	12.50
Small Retailing Shop Business person	67	11.80	3	0.53	70	12.32
Service	47	8.27	15	2.64	62	10.92
Unemployed	19	3.35	2	0.35	21	3.70
Old people	8	1.41	12	2.11	20	3.52
Day labor	13	2.29	3	0.53	16	2.82
Rickshaw/Van Polar	11	1.94	1	0.18	12	2.11
Others	6	1.06	4	0.70	10	1.76
Driver	5	0.88	1	0.18	6	1.06
Overseas service	3	0.53	0	0.00	3	0.53
Doctor	1	0.18	1	0.18	2	0.35
Agriculture	1	0.18	1	0.18	2	0.35
Tailor	0	0	1	0.18	1	0.18
Total	282	49.65	286	50.35	568	100

Source: Study Team, 2012

Characters of the male and female population in the Meghna Bridge area are shown in Table 3.17. Among the total population 24.53% found housewives, followed by business person (15.49%), daily wage laborers (6.45%), service/employment (3.16%), overseas service (1.52%), drivers (0.95%), pulling rickshaw and van (0.88%) and others (0.88%).

Table 3.17 Distribution of the People by Characters in Meghna Bridge Area

Present Character of the Population	Male		Female		Total	
	No.	%	No.	%	No.	%
Student	209	13.21	186	11.76	395	24.97
Housewife	0	0.00	388	24.53	388	24.53
Small Retailing Shop Business person	245	15.49	0	0.00	245	15.49
Child	101	6.38	78	4.93	179	11.31
Day labor	94	5.94	8	0.51	102	6.45
Unemployed	52	3.29	30	1.90	82	5.18
Old people	25	1.58	29	1.83	54	3.41
Service	33	2.09	17	1.07	50	3.16
Overseas service	23	1.45	1	0.06	24	1.52
Driver	15	0.95	0	0.00	15	0.95
Rickshaw/Van Polar	14	0.88	0	0.00	14	0.88
Others	11	0.70	3	0.19	14	0.88
Disabled	5	0.32	2	0.13	7	0.44
Tailor	1	0.06	4	0.25	5	0.32
Agriculture	4	0.25	0	0.00	4	0.25
Fisherman	2	0.13	0	0.00	2	0.13
Doctor	1	0.06	0	0.00	1	0.06
Mason	1	0.06	0	0.00	1	0.06
Total	836	52.84	746	47.16	1582	100

Source: Study Team, 2012

Characters of the population in the Gumti Bridge area are shown in Table 3.18. Among the total population housewives are always large in number (21.98%). This is due to the female of Bangladesh is mostly engaged in households chores. Other occupational groups are mainly male except a few female engaged in tailoring, service, day laboring, etc.

Table 3.18 Distribution of the People by Characters in Gumti Bridge Area

Present Character of the Population	Male		Female		Total	
	No.	%	No.	%	No.	%
Student	13	14.29	9	9.89	22	24.18
Housewife	0	0.00	20	21.98	20	21.98
Small Retailing Shop Business person	18	19.78	0	0.00	18	19.78
Child	3	3.30	8	8.79	11	12.09
Day labor	7	7.69	1	1.10	8	8.79
Old people	4	4.40	3	3.30	7	7.69
Unemployed	2	2.20	0	0	2	2.20
Driver	1	1.10	0	0	1	1.10
Service	1	1.10	0	0	1	1.10
Overseas service	0	0.00	1	1.10	1	1.10
Total	49	53.85	42	46.15	91	100

Source: Study Team, 2012

Occupation of the household heads

It is found from the survey that main occupations of the household heads in the Kanchpur Bridge, Meghna Bridge and Gumti Bridge are small retailing shop business, service, day labor, housewives, pulling van and rickshaws, driving, agriculture, overseas service, fishermen, doctors and others are main occupations of the surveyed household heads in order of numbers and percentages. It is found that 1.13% males and 1.72% females were old people and 0.45% males are disabled. Detail statistical information on occupations of the household heads is shown in Table 3.19.

Table 3.19 Distribution of the Household Heads by Occupation

Occupation	Character	Kanchpur		Meghna		Gumti		Total	
		Male	Female	Male	Female	Male	Female	Male	Female
Business	No.	57	2	201	0	15	0	273	2
	%	47.50	9.09	66.34	0	83.33	0	61.90	3.45
Service	No.	35	7	19	2	0	0	54	9
	%	29.17	31.82	6.27	5.71	0	0	12.24	15.52
Day labor	No.	10	3	43	3	3	0	56	6
	%	8.33	13.64	14.19	8.57	16.67	0	12.70	10.34
Housewife	No.	0	6		25	0	1	0	32
	%	0	27.27	0.00	71.43	0	100	0.00	55.17
Rickshaw/Van Polar	No.	7		7		0	0	14	0
	%	5.83	0	2.31	0.00	0	0	3.17	0.00
Driver	No.	4	0	9		0	0	13	0

	%	3.33	0	2.97	0.00	0	0	2.95	0.00
Old People	No.	1	0	4	1	0	0	5	1
	%	0.83	0	1.32	2.86	0	0	1.13	1.72
Agriculture	No.	1	0	3		0	0	4	0
	%	0.83	0.00	0.99	0.00	0	0	0.91	0.00
Overseas service	No.	0	0	4	0	0	0	4	0
	%	0	0	1.32	0	0	0	0.91	0
Fisherman	No.	0	0	2	0	0	0	2	0
	%	0	0	0.66	0	0	0	0.45	0
Student	No.	0	0	1	1	0	0	1	1
	%	0	0	0.33	2.86	0	0	0.23	1.72
Disabled	No.	0	0	2	0	0	0	2	0
	%	0	0	0.66	0	0	0	0.45	0
Doctor	No.	0	0	1	0	0	0	1	0
	%	0	0	0.33	0	0	0	0.23	0
Others	No.	5	4	7	3	0	0	12	7
	%	4.17	18.18	2.31	8.57	0	0	2.72	12.07
Total	No.	120	22	303	35	18	1	441	58
	%	100	100	100	100	100	100	100	100

Source: Study Team, 2012

3.4.5 Marital Status

The survey was designed, undertaken and analyzed collected data in a way which adequately identify gender differences. Distribution of population of the Project area by sex and marital status is given in Table 3.20. Gender disaggregating marital status shows that out of 555 married males and 548 married females, 5 males (0.90%) and 41 females (7.48%) belong to the age group 11-20 years who are married. It indicates that in spite of several programs of GoB promoting the delay of marriage until after 20 years of age for females, but the adolescent girls in the project area get married within 20 years and also even under 18 years of their age. It is found that numbers of unmarried males and females under the entire surveyed area are 329 and 180 respectively. Out of 329 unmarried males, 239 (72.64%) are the highest that belong to the age group 11-20 years followed by 88 (26.75%) belong to 21-30 the age group. Out of 180 unmarried females, 169 (93.89%) belong to 11-20 years of age followed by 10 (5.56%) belong to 21-30 years. Details on marital status of surveyed population in the entire project area are shown in Table 3.20.

Table 3.20 Marital Status of Affected Male & Female Population under the Entire Project Area

Marital Status	Sex	Character	Age Level						Total
			11 to 20	21 to 30	31 to 40	41 to 50	51 to 60	Above 60	
Married	Male	No.	5	119	151	124	103	53	555
		%	0.90	21.44	27.21	22.34	18.56	9.55	100
	Female	No.	41	187	135	126	37	22	548
		%	7.48	34.12	24.64	22.99	6.75	4.01	100
Unmarried	Male	No.	239	88	2	0	0	0	329
		%	72.64	26.75	0.61	0.00	0.00	0.00	100
	Female	No.	169	10	0	0	1	0	180
		%	93.89	5.56	0.00	0.00	0.56	0.00	100
Widower/ Widow	Male	No.	0	0	0	0	1	7	8
		%	0	0	0	0	12.5	87.5	100
	Female	No.	1	1	1	15	17	34	69
		%	1	1	1	22	25	49	100
Abandoned	Female	No.	1	5	2	6	2	0	16
		%	6.25	31.25	12.50	37.50	12.50	0.00	100
Divorced	Female	No.	0	2	0	0	0	0	2
		%	0	100	0	0	0	0	100

Source: Study Team, 2012

3.4.6 Income and Poverty Dimensions

As per the Statistical Year Book of Bangladesh 2005, average household size is 5.13 and 40.94% of households earn less than BDT 60,000 per year. Average annual income and expenditure of these households are BDT 24,648 and BDT 32,072 respectively. Table 3.22 shows that as per this survey, each of 53 households (10.62%) in the Project area earn less than BDT 60,000 per year. Income level up to BDT 60,000/year has been categorized as vulnerable in “Southwest Area Integrated Water Resources Planning and Management Project (2011) “financed by ADB and this value is adopted to this study because of proximity of the area and reflects current social condition of recent years. These 53 households may be considered as extremely poor and each of 185 households (37.07%) within the range of BDT 60,001 to 120,000 is poor. It should be mentioned that each of 261 households (52.30%) earn above BDT 120,000 is non-poor.

It is found in the Kanchpur Bridge area that each of 21 households (16.90%) earn income less than BDT 60,000 per year. These households are considered as extremely poor. Each of 59 affected

households (41.55%) earns income ranging from BDT 60,001 and 120,000 per year which households are considered as the poor. On the contrary, each of 59 affected households (41.55%) earns income above BDT 120,001 is considered to be the non-poor.

It is found in the Meghna Bridge area that each of 24 households (7.11%) earn income less than BDT 60,000 per year. These households are considered as extremely poor. Each of 120 households (35.50%) earns income ranging from BDT 60,001 and 120,000 per year. These households are considered as the poor households. On the contrary, each of 194 households (57.40%) earns income above BDT 120,001 is considered to be non-poor.

It is found in the Gumti Bridge area that each of 5 households (26.31%) earn income less than BDT 60,000 per year. These households are considered as extremely poor. Each of 6 households (31.58%) earns income ranging from BDT 60,001 and 120,000 per year. These households are considered as the poor households. On the contrary, each of 8 households (42.11%) earns income above BDT 120,001 is considered to be non-poor.

Table 3.21 Distribution of the Households by Annual Income in the Three Bridge Areas

Yearly Income level	Kanchpur		Meghna		Gumti		Total	
	No.	%	No.	%	No.	%	No.	%
Up to TK 30,000	9	6.34	6	1.78	1	5.26	16	3.21
30,001-60000	15	10.56	18	5.33	4	21.05	37	7.41
60,001-90,000	25	17.61	51	15.09	1	5.26	77	15.43
90,001-120,000	34	23.94	69	20.41	5	26.32	108	21.64
Above 120,000	59	41.55	194	57.40	8	42.11	261	52.30
Total	142	100	338	100	19	100	499	100

Source: Study Team, 2012

3.4.7 Yearly Household Expenditure

Table 3.22 shows almost similar trend on yearly household expenditure compared to income in Kanchpur, Meghna and Gumti Bridge areas. In Kanchpur Bridge area, each of 40% of the households has yearly expenditure above BDT 120,000. Each of 29% of the households has yearly expenditure ranged from BDT 60,000 to BDT 90,000. Each of 8% of the households has yearly expenditure within BDT 30,000. In Meghna Bridge area, each of 52% of the households has yearly expenditure above BDT 120,000. It is found that each of 20.41% of the households has yearly expenditure ranged from BDT 90,001-BDT 120,000. Each of 20% of the households has yearly expenditure ranged from BDT 60,001-BDT 90,000. Each of 2.07% of the households has

yearly expenditure within BDT 30,000. In the Gumti Bridge area, each of 47.37% of the households has yearly expenditure above BDT 120,000. Each of 21% of the households has yearly expenditure ranged from BDT 60,001-BDT 90,000 and each of another 21% of the households has yearly expenditure ranged from BDT 30,001-BDT 60,000.

Table 3.22 Distribution of Households by Yearly Expenditure in the Three Bridge Areas

Yearly Expenditure level	Kanchpur		Meghna		Gumti		Total	
	No.	%	No.	%	No.	%	No.	%
Up to TK 30,000	11	7.75	7	2.07	0	0.00	18	3.61
30,001-60000	13	9.15	20	5.92	4	21.05	37	7.41
60,001-90,000	41	28.87	66	19.53	4	21.05	111	22.24
90,001-120,000	20	14.08	69	20.41	2	10.53	91	18.24
Above 120,000	57	40.14	176	52.07	9	47.37	242	48.50
Total	142	100	338	100	19	100	499	100

Source: Study Team, 2012

3.4.8 Access to Electricity

In Kanchpur area, out of 142 households, 128 households (90.14%) have electricity supplied from national grid. In Meghna Bridge area, out of 338 households, 263 households (77.81%) have electricity access from national grid while 2.66% are from solar energy and 19.53% have no any source of electricity. In Gumti Bridge area out of 19 households, 9 households (47.37%) have electricity access from national grid while 5.27% are from solar energy by themselves and 47.37% have no any source (Table 3.23).

Table 3.23 Distribution of Households by Access to Electricity by Type

Name of the Bridge	National Grid		Solar panel		Do not have any type of electricity		Total	
	No of HHs	%	No of HHs	%	No of HHs	%	No of HHs	%
Kanchpur	128	90.14	0	0.00	14	9.86	142	100
Meghna	263	77.81	9	2.66	66	19.53	338	100
Gumti	9	47.37	1	5.26	9	47.37	19	100

Source: Study Team, 2012

3.4.9 Utilization of Electricity

Table 3.24 shows utilization of electricity by the consumers including light, fan and others. The highest utilization of electricity is for light (51.28% in Kanchpur Bridge, 54.75% in Meghna

Bridge and 62.50% in Gumti Bridge) and second highest utilization is for fan (34.08% in Kanchpur Bridge, 32.91% in Meghna Bridge and 25% in Gumti Bridge)

Table 3.24 Use of Electricity for Various Purposes

Type of uses	Kanchpur		Meghna		Gumti		Total	
	No.	%	No.	%	No.	%	No.	%
Light	480	51.28	1078	54.75	30	62.50	1588	53.78
Fan	319	34.08	648	32.91	12	25.00	979	33.15
Others	137	14.64	243	12.34	6	12.50	386	13.07
Total	936	100	1969	100	48	100	2953	100

Source: Study Team, 2012

3.4.10 Water and Sanitation

Percentage distribution of households by main sources of drinking water is shown in Table 3.25. It is found that 90.48% of households use shallow/hand tube wells for drinking water in the Gumti Bridge area followed by 58.41% of households in the Meghna Bridge area that is further followed by 51.39% of households in the Kanchpur Bridge area. It is found that deep tube wells are used by 38% and 22% households for drinking water in the Meghna Bridge and Kanchpur Bridge areas respectively. Over 25% of the population drinks supply water in Kanchpur bridge area.

Table 3.25 Distribution of Households by Source of Drinking Water

Source of water	Kanchpur	Meghna	Gumti
	% of households	% of households	% of households
Shallow/hand tube well	51.39	58.41	90.48
Deep tube well	21.53	38.05	0
Supply	25.69	3.24	4.76
River	1.39	0.29	0
Pond	0	0	0
Canal	0	0	4.76
Rain Water	0	0	0
Total	100	100	100

Source: Study Team, 2012

In Kanchpur Bridge area, about 41% households use pond water for various purposes except drinking followed by 21% households use supply water that is further followed by 16%

households use river water for the same purposes. However, shallow/hand tube wells and deep tube wells are also used by 12.41% and 10.34% households respectively for the same purposes. In the Meghna Bridge area, 45% and 29.14% of households use river and shallow/hand tube well water respectively for the same purpose. However, 18% households use deep tube wells for the same purposes. On the other hand, 58% households in the Gumti Bridge area use river water for the said purpose. It is followed by 32% households use pond water for the said purposes. Details on use of sources of water used by the surveyed households in Kanchpur, Meghna and Gumti Bridge area for various purposes other than drinking are shown in Table 3.26.

Table 3.26 Distribution of Households by Sources of Water for Other Utilization of Water

Source of water	Kanchpur	Meghna	Gumti
	%	%	%
Shallow Tube well	12.41	29.14	0
Deep Tube well	10.34	17.71	0
Supply	20.69	3.43	5.26
River	15.86	44.57	57.89
Pond	40.69	5.14	31.58
Canal	0	0	5.26
Total	100	100	100

Source: Study Team, 2012

The project area wise distribution of households by sanitation facilities is shown in Table 3.27. In the entire project areas, 67.33% households use water sealed slab latrines followed by 21.24% households use pucca (Sanitary) latrines that is further followed by 6.21% households use hanging latrines. In the Kanchpur Bridge area, about 62% households use water sealed slab latrines followed by 32.39% households use pucca latrines. In Meghna Bridge area, about 69% households use water sealed slab latrines followed by 17.46% households use pucca latrines that is further followed by 7.40% households use hanging latrines. In the Gumti Bridge area, about 79% households use water sealed slab latrines followed by 16% households use hanging latrines.

Table 3.27 Distribution of Households by Sanitation Facilities

Use of Toilets	Kanchpur		Meghna		Gumti		Total	
	No.	%	No.	%	No.	%	No.	%
Pucca	46	32.39	59	17.46	1	5.26	106	21.24
Slab	88	61.97	233	68.93	15	78.95	336	67.33
Katcha	2	1.41	17	5.03	0	0	19	3.81
Hang	3	2.11	25	7.40	3	16	31	6.21
Open Space	3	2.11	4	1.18	0	0	7	1.40
Total	142	100	338	100	19	100	499	100

Pucca: Mud wall toilet

Slab: Toilet with concrete ring over the cesspit

Katch: Bamboo wall toilet

Hang: Toilet directly dropping on to ground/pond over silted elevated house

Source: Study Team, 2012

3.4.11 Institutional Loan

Table 3.28 shows distribution of households under the Kanchpur, Meghna and Gumti Bridge areas, those took microcredit from locally active different NGOs and Banks. Different national NGOs such as BRAC, ASA, Grameen Bank, local NGOs/Samity (Society) and private of government Banks have provided loans to the people with a view to uphold their standard of living. Duration of most of the loans is less than 2 years except only 1 loan is for 10 years. In most of the cases minimum size of loans is more than BDT 10,000.

Table 3.28 Microcredit Support Taken by the Surveyed Households

Name of the Bridge	Name of Source	No. HH	Average loan size (BDT)	Minimum size of loan (BDT)	Maximum size of loan (BDT)	Duration for loan (yr)
Kanchpur	BRAC	25	65,920	10,000	400,000	2
	ASA	21	81,429	10,000	450,000	1
	Local NGOs	11	77,818	5,000	500,000	1
	Govt. Banks	3	128,333	10,000	300,000	2
	Grameen Bank	3	21,667	10,000	40,000	1
	Private Bank	1	120,000	120,000	120,000	10
Meghna	Grameen Bank	43	53,384	10,000	500,000	1
	Local NGOs	40	19,075	5,000	70,000	1
	BRAC	34	121,000	3,000	900,000	1
	ASA	29	47,207	10,000	150,000	1

	Private Bank	28	2,514,643	20,000	40,000,000	2
	Govt. Banks	13	44,962	8,000	150,000	2
Gumti	BRAC	5	70,000	20,000	130,000	1
	ASA	2	25,000	20,000	30,000	1
	Local NGO	1	53,000	53,000	53,000	1
	Grameen Bank	1	40,000	40,000	40,000	1

Source: Study Team, 2012

3.4.12 Housing Pattern

Table 3.29 shows that overwhelming percentages of houses (ranging from 75% to 86% of houses) are tin roofed in the project area. It was followed by pucca (concrete roof with brick wall) houses (5%-8%) in these Bridge areas which are further followed by semi-pucca (Tin roofed with brick wall) houses (5%-7%).

Table 3.29 Housing Pattern in the Project in Terms of Housing Material

Type of Structure	Kanchpur		Meghna		Gumti		Total	
	No.	%	No.	%	No.	%	No.	%
Pucca	16	5.14	57	8.25	0	0	73	6.94
Semi-Pucca	22	7.07	34	4.92	0	0	56	5.32
Tin roofed and fenced	260	83.60	516	74.67	43	86	819	77.85
Katcha	7	2.25	44	6.37	3	6	54	5.13
Thatched	6	1.93	40	5.79	4	8	50	4.75
Total	311	100	691	100	50	100	1052	100

Source: Study Team, 2012

3.4.13 Household Assets

The Project area wise household assets are shown in Table 3.30. It is found that furniture, fridges, TVs, and other electronic materials and household accessories are found in the Project areas. Overwhelming numbers of chairs, beds, tables, shelves and dress stands are found in the Project areas. It is found that the highest and the lowest household appliances are found in the Meghna Bridge and Gumti Bridge area respectively compared to Kanchpur Bridge area.

Table 3.30 Household Assets

Household Appliances	Kanchpur		Meghna		Gumti		Total	
	No.	%	No.	%	No.	%	No.	%
Chair	300	18.33	1618	33.99	39	25.83	1957	29.89
Bed	295	18.02	681	14.31	36	23.84	1012	15.46
Table	149	9.10	441	9.26	13	8.61	603	9.21
Almirah	110	6.72	183	3.84	9	5.96	302	4.61
Dress Stand	75	4.58	196	4.12	13	8.61	284	4.34
Fridge	55	3.36	122	2.56	0	0.00	177	2.70
Mobile Phone	215	13.13	529	11.11	17	11.26	761	11.62
Television	106	6.48	216	4.54	6	3.97	328	5.01
DVD Player	25	1.53	37	0.78	1	0.66	63	0.96
Radio	11	0.67	13	0.27	4	2.65	28	0.43
Cassette Player	9	0.55	10	0.21	1	0.66	20	0.31
Iron	19	1.16	17	0.36	0	0.00	36	0.55
stands for electronic equipment	2	0.12	3	0.06	2	1.32	7	0.11
stands for household accessories	266	16.25	694	14.58	10	6.62	970	14.81
Total	1637	100	4760	100	151	100	6548	100

Source: Study Team, 2012

Health care facility

There are several categories health care facilities in the Project surrounded areas such as hospital, clinic, rural dispensary, etc. within the reach of the people. These are mostly found within 5 km except Government Hospital in Kanchpur Bridge area. In other Bridge areas the scenario is almost similar. Details on health care facilities and distance from their residence in the Kanchpur Bridge, the Meghna Bridge and the Gumti Bridge areas are shown in Table 3.31.

Table 3.31 Distance of Healthcare Center

Name of Bridge	Healthcare center	Up to 1 km		1 to 3 km		3 to 5 km		Above 5 km		Total	
		No.	%	No.	%	No.	%	No.	%	No.	%
Kanchpur	Government Hospital	2	1.41	1	0.70	1	0.70	138	97.18	142	100
	Upazila Health complex	3	2.07	19	13.10	65	44.83	58	40.00	145	100
	Private Hospital	105	74.47	24	17.02	7	4.96	5	3.55	141	100
	Rural healthcare center	135	97.12	2	1.44	2	1.44	0	0.00	139	100
	Family care center	122	84.72	5	3.47	2	1.39	15	10.42	144	100
Meghna	Government	2	0.59	2	0.59	4	1.18	330	97.63	338	100

	Hospital										
	Upazila Health complex	3	0.89	21	6.21	81	23.96	233	68.93	338	100
	Private Hospital	84	24.85	98	28.99	31	9.17	125	36.98	338	100
	Rural healthcare center	266	79.17	13	3.87	31	9.23	26	7.74	336	100
	Family care center	237	70.33	23	6.82	2	0.59	75	22.26	337	100
Gumti	Government Hospital	0	0.00	1	5.26	2	10.53	16	84.21	19	100
	Upazila Health complex	1	5.26	2	10.53	12	63.16	4	21.05	19	100
	Private Hospital	3	15.79	13	68.42	2	10.53	1	5.26	19	100
	Rural healthcare center	15	78.95	4	21.05	0	0.00	0	0.00	19	100
	Family care center	18	90.00	2	10.00	0	0.00	0	0.00	20	100

Source: Study Team, 2012

3.4.14 Educational Institutions

A lot of educational institutions are found in the Project area mostly schools, colleges and Madrasah. There is no University in the project area. The educational institutions are mainly located within 5 km except Universities. Islamic religious institutions such as Madrasah and Maktob are also found a bit more in number in the Project area. It is found that overwhelming percentages of primary schools, non-formal education, *Madrassa* and *Maktob* are located within 1 kilometer distance in the Kanchpur Bridge, the Meghna Bridge and the Gumti Bridge area. Available educational institutions in the Kanchpur Bridge, Meghna Bridge and Gumti Bridge and distance from the residence shown in Table 3.32.

Table 3.32 Distance of Educational Institutes

Name of Bridge	Educational institute	Up to 1 km		1 to 3 km		3 to 5 km		>5 km		Total	
		No.	%	No.	%	No.	%	No.	%	No.	%
Kanchpur	University	0	0.00	1	0.71	3	2.13	137	97.16	141	100
	College	45	32.14	46	32.86	43	30.71	6	4.29	140	100
	High School	93	66.43	43	30.71	4	2.86	0	0.00	140	100
	Primary School	128	93.43	9	6.57	0	0.00	0	0.00	137	100
	Non-formal Education	133	97.08	3	2.19	0	0.00	1	0.73	137	100
	Madrasah	129	96.27	4	2.99	1	0.75	0	0.00	134	100
	Maktob	103	100	0	0.00	0	0.00	0	0.00	103	100
Meghna	University	0	0.00	0	0.00	1	0.30	337	99.70	338	100
	College	6	1.77	37	10.91	124	36.58	172	50.74	339	100
	High School	201	59.47	111	32.84	17	5.03	9	2.66	338	100
	Primary School	326	96.74	10	2.97	0	0.00	1	0.30	337	100
	Non formal Education	318	99.07	2	0.62	0	0.00	1	0.31	321	100
	Madrasah	326	98.49	3	0.91	0	0.00	2	0.60	331	100
	Maktob	258	99.61	1	0.39	0	0.00	0	0.00	259	100
Gumti	University	0	0.00	0	0.00	0	0.00	19	100	19	100
	College	0	0.00	0	0.00	13	68.42	6	31.58	19	100
	High School	3	15.79	14	73.68	2	10.53	0	0.00	19	100
	Primary School	19	100	0	0.00	0	0.00	0	0.00	19	100
	Non formal Education	19	100	0	0.00	0	0.00	0	0.00	19	100
	Madrasah	19	100	0	0.00	0	0.00	0	0.00	19	100
	Maktob	15	100	0	0.00	0	0.00	0	0.00	15	100

Source: Study Team, 2012

