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GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
MINISTRY OF COMMUNICATIONS
ROADS AND RAILWAYS DIVISION
ROADS & HIGHWAYS DEPARTMENT

TECHNICAL ASSISTANCE PROJECT PROFORMA (TAPP)
(Recast)

THE STUDY ON CONSTRUCTION OF
THE RAIL-CUM-ROAD BRIDGE OVER THE RIVER RUPSA IN KHULNA

ESTIMATED COST : TK. 620.30 LAKH.

JANUARY / 1 9 9 8

চেকনিষ্ঠ

গণ ০০-১২-১৭ ১৫ তারিখে বরিকলাবা কমিশনের ভৌত সবকাঠিখো মাধ্যম অনুষ্ঠিত
প্রাক পরবেক / পানুঃ মজবানগু সতার লালোচনা ও সিদ্ধান্তের লালোকে প্রযুক্ত বাবশ্যবনী ।

সতার সিদ্ধান্ত	প্রযুক্ত ব্যবশ্যবনী
১) বরাদ্দকৃত ও সহায়ক কার্গারীদের সংগে, ছাড়াপে ও বেতন আতাদি বাস্তুবস্তু হলেও প্রাপ্য পূর্বক প্রকল্পের বায়ু নির্ধারণ করিতে হইবে ।	১) মজুক ও কনবক পমিৎগুর কর্তৃক প্রযুক্ত পুন টি এ পি পি টি যোগাযোগ মজবানগু প্রেরন করিলে ইহার উপর জাশান সরকারের (সাইকা, তাগানী) দাবাশ পনুয়ে পঠিত) প্রতিবিধি-দের সংগে কল্যুস মজা লালো লালোচনার পর তাদের চাহিদা মোতাবেক এক টি এ পি পি প্রবণন করতঃ বরিকলাবা কমিশনে প্রেরন করা হু । পাশাপাশি দেশ/মংশহার চাহিদা অনুযায়ী অনুমোদিত বা প্রইলে ইশা তাগদের তাহে গ্রহনযোগ্য হইবে বা । এমতাবশ্যক কোন সংগের পরিবর্তন বা অন্য প্রাপ্য প্রকল্প বাস্তুবস্তুবে পমিকপুতা দেবা দিতে বছর । ইহার কোন হেরকর পরমাণ দাবানী প্রতিবিধিদের সংগে পুনঃ লালোচনার মাধ্যমে করা য়েতে পারে কিনু তাতে কোন হুন লাভ হবে বলে প.ব. হু বা । কারণ এ বিষয়ে দাটা মংশহার সংগে একাধিক লালো লালোচনা হুয়েছে । তাদের সংগে যোগাযোগ মজবানগু লালোচনার সর্বশেষ সতার কার্গাবিবরণী সংযুক্তি- 'ক' তে দাওয়া হইল ।
২) তাগান (সাইকা) এর কার্গির সহায়তা লালোকে কনব যোগাযোগ মজবানগু হেরফনী ভিত্তিতে পমিকপুতা মংশধর বিভাগকে অনুপ্রোধ করা হইবে ।	২) যোগাযোগ মজবানগু কর্তৃক ইতোমধ্যে এ বাগদের ঘশ্যবন বদলেব গ্রহন করা হইয়ুছে এবং উল্লেখযোগ্য অগ্রগতি সাধিত হইয়ুছে ।
৩) উল্লেখক সিদ্ধান্তের লালোকে টিএপিপি পূর্বক ঠন করিয়া বরিকলাবা কমিশনে অনুমোদনের কনব বেগ করিতে হইবে ।	৩) সতার সিদ্ধান্তের লালোকে প্রয়োজনীয় ব্যাখ্যা সপুনিত চেকনিষ্ঠ মহ সতার কার্গাবিবরণী সংযুক্তি- 'খ' তে প্রদানপূর্বক পুনর্গঠিত টিএপিপি যোগাযোগ মজবানগুর মাধ্যমে বরিকলাবা কমিশনে প্রেরনের উদ্যোগ গ্রহন করা হইয়ুছে ।

TAPP FORMAT

PART-A PROJECT ID (1)	PROJECT NO. (2) TA	TAPP DATE October 1997	REVISED (3)				
PROJECT TITLE (4) The study on Construction of Rail-cum-Road Bridge over Rupsa in Khulna.							
ADM. MINISTRY/DIVISION (5) Roads & Railways Division, Ministry of Communication		EXECUTIVE AGENCY (6) Roads and Highways Department.					
SECTOR (7) Road & Road Transport		Sub-Sector :					
PROJECT MANAGER (8) Executive Engineer, RHD Bridge Design Division-II West Sarak Bhaban, Ramna, Dhaka		TAPP PREPARED BY (9) Executive Engineer, RHD Planning Division, Sarak Bhaban, Ramna, Dhaka PHONE/ADDRESS 955 1702					
PART B PROJECT DATES	PLANNED START MM YY(10) May 1998 (Tentative Schedule)	PLANNED COMPLETION MM YY (11) June 1999 (Tentative Schedule)					
PART C PROJECT FINANCING: TA		DONOR: Japanese Grant/Bilateral or Multilateral grant/Assistance					
LOCAL COST SOURCE (13) GOB	FOREIGN EXCHANGE SOURCE(14) Japanese Grant/Bilateral or Multilateral grant/Assistance	CURRENCY/RATE(15) US \$ = Tk 45.65					
PROJECT COST	TOTAL COST (16)	LE COST (17)	Tk. COST (18)	GOB COST (19)	PROJECT AID (20)	RPA (21)	CDSF (22)
FY 1	620.30	561.00	59.30		620.30	59.30	
FY 2							
FY 3							
FY 4							
FY 5							
TOTAL	620.30	561.00	59.30		620.30	59.30	
FINANCIAL ARRANGEMENTS WITH DONOR (23) NONE <input checked="" type="checkbox"/> DISCUSSED <input type="checkbox"/>							
NAME/DESIGNATION OF DONOR CONTACT (24)							
FINANCING AFTER COMPLETION OF PROJECT		FUNDS REQUIRED (25) Funds required for Construction of the bridge.					
MODE OF FINANCING (26) GRANT <input type="checkbox"/>		GOB ADP BUDGET <input type="checkbox"/>	REVENUE <input type="checkbox"/>				
DONOR LOAN							
SELF FINANCING % (27)							

IAPP PART I-E-I	PROJECT DESCRIPTION (28)
	<p>Major rivers (namely, Jamuna, Ganges, Padma and Meghna) dividing the country Bangladesh into four major parts, each of which is crisscrossed by thousands of affluent and effluents of the major rivers, have obstructed development of land transport in Bangladesh. Great effort has been exerted by the government in the construction of bridges as well as improvement of the roads through a series of five year plans with international cooperation.</p> <p>Dhaka-Chittagong was already connected by the construction of Meghna Bridge and Meghna-Gunji Bridge. After completion of on-going Jamuna Bridge and proposed Paksey Bridge, the road network will connect the eastern and western area of the country. Further, with the construction of Rupsa Bridge, Chittagong, Dhaka, Khulna and Mongla are into-linked without river interruption.</p> <p>On the other hand, Moulta Port is located in the south-western part of the country and is to play an expanded role in near future with favorable international circumstances, in which Nepalese is expected to turn substantial amount of cargo from Calcutta to Mongla port. Currently congested Rupsa ferry can not accommodate the increasing transportation.</p> <p>Although apparent needs exist for the construction of Rupsa Bridge locally as well as regionally, the government should deliberately select the type and route of the bridge from technological, social, economic and financial point of view. In order to provide some program and alternatives of the bridge construction with the government, a study on the construction of the Rail-cum-Road bridge over the river Rupsa in Khulna in consideration of integral components of surrounding transportation development and increasing traffic to the east and the north, and further to Nepal.</p>

PART - D - 2 PROJECT OBJECTIVE (29)

The objectives of the study are to formulate a master plan for integral components of transport development surrounding the Rupsa rail-cum-road bridge and to prepare the construction plan of it.

CONSEQUENCES IF NOT APPROVED (30)

- The congestion of the ferry terminal at Rupsa ghat will be deteriorated and ruin the development of the local community.
- The road network will not be connected to the south-western part of Bangladesh without river interruption and cargo transportation network will remain inefficient.
- The on-going international sub-regional cooperation among SAARC countries will not function effectively.
- Mongla port will not be utilized to its full potential capacity.

LINKAGE TO OTHER PROJECTS/ ORGANIZATIONS (31)

Organizations : Bangladesh Railway, Mongla Port Authority

PART - E PROJECT OUTPUT (IN QUANTITATIVE OR QUALITATIVE TERMS) (32)

PREPARATORY ASSISTANCE:

The study report will assist in formulating a plan for construction of a Road-cum-rail Bridge over the river Rupsa in Khulna.

TECHNOLOGY TRANSFER

This study will provide necessary information in formulating a project to GOB. GOB Counterpart officials, being associated with foreign Experts will be trained so that they can conduct such studies by themselves in future.

TRAINING: NIL

MANAGEMENT IMPROVEMENT:

Same as technology transfer

INSTITUTIONAL SUPPORT: NIL

ACTION EXPECTED AFTER COMPLETION OF THE PROJECT (33)

This study will provide the basis (i) for GOB to prepare a PCP & PP for the investment project and (ii) for the Donor to appraise the proposal.

PART F-1		PROJECT INPUT PERSONNEL		
EXPATRIATE CONSULTANTS (34) Details of Annexure		MAN-MONTHS 60	NO. OF CONSULTANTS 13	COST/MAN-MONTHS Tk. 8.00 Lakh
TASKS AND QUALIFICATION REQUIRED (35) Details of Terms of Reference (TOR) and activities of the consultants have been shown as annex -1				
JUSTIFICATION There is a considerable shortage of local experts in this field and they are not much familiar to handle such type of big and complicated project independently. Engagement of expatriate experts will be required to cover up this skill gap and will enable local consultants to take up such projects independently in future through transfer of technology.				
LOCAL CONSULTANTS (36)		MAN-MONTHS	NO. OF CONSULTANTS	COST/MAN-MONTHS.
TASKS AND QUALIFICATIONS REQUIRED (37)		Nil		
PROJECT INPUT PERSONNEL				
PROJECT PERSONNEL, GOB (38) Existing RHD setup will be utilized		MAN-MONTHS	NO. OF PERSONNEL	COST/MAN-MONTHS
NO. OF SEAT AVAILABLE (39) FULL TIME Same as (38)	NO. OF STAFF AVAILABLE (40) PART TIME		NO. OF STAFF TO BE RECRUITED (41)	
TASKS AND QUALIFICATIONS REQUIRED (42)				
PROJECT PERSONNEL, OTHERS (43)		MAN-MONTHS	NO. OF PERSONNEL	COST/MAN-MONTH
TASKS AND QUALIFICATION REQUIRED				
ESTIMATED (44) PERSONNEL COST	EXPATRIATE CONSULTANTS	LOCAL CONSULTANTS	PROJECT PERSONNEL GOB	PROJ. PERSONNEL OTHERS
EY 1	480.00			
EY 2				
EY 3				
EY 4				
EY 5				
GRAND TOTAL	480.00			
<p>• EY means Bangladesh financial year.</p> <p>In case the Government of Japan conducts the feasibility study, the Japanese expatriate personnel (Japanese consultants) who may be selected by and contracted with JICA will choose and contract with the local consultant(s) and the project personnel others (local project staff), if necessary.</p>				

PART F-2		PROJECT INPUT EQUIPMENT		
SPECIFICATION OF ITEMS (45)		QUANTITY	COST	
1. Equipment and other items:				
2. Office Equipment				
a. Photocopy Machine		1		7.00
b. Computer		4		11.00
c. Fax		1		2.00
d. Transportation		5		27.00
e. Stationary and others		U.S.		19.00
Note: Photocopy machine, computer, facsimile and transportation may be on rental/payment basis. Other equipment if necessary are to be determined by JICA.				
		TOTAL	TK	66.00
Lakh				
ANNUAL PHASING OF ESTIMATED COSTS (46)		TOTAL		
F/Y 1	F/Y 2	F/Y 3	F/Y 4	F/Y 5
TK 66.00 Lakh				

PART E-3

PROJECT INPUT TRAINING

SPECIFICATION (47)

INSTITUTION (48)

NO. OF (49)
PARTICIPANTS

COST (50)

ANNUAL PHASING OF ESTIMATED COSTS (51)

TOTAL

F/Y 1

F/Y 2

F/Y 3

F/Y 4

F/Y 5

PART F-4		PROJECT INPUT OTHERS		
SPECIFICATION (52)		COST (In-lakh Taka)		
1. OUT OF POCKET EXPENSES				
Expatriate Staff				
i. International Travel		13.00		
ii. Misc. Travel expenses (at per)		2.00		
iii. Income tax for expatriate		38.00		
2. OFFICE ACCOMMODATION, STATIONERY & CONTINGENCY				
i. Hire charge of office space including services & facilities in Dhaka. at Tk. 1.05 Lakh per month.		6.30		
ii. Office consumable & Telecommunication including telex, Fax, Postage etc. at Tk. 25,000/- Per month.		1.50		
3. MISC. EXPENSES	L.S.	13.50		
TOTAL		Tk. 74.30		
ANNUAL PHASING OF ESTIMATED COSTS (53)				
FY 1	FY 2	FY 3	FY 4	FY 5
74.30				
PROVISION IN FIVE YEAR PLAN (54)		PROVISION IN ADP / ATAP (55)		
Yes		Not included in ADP.		
No. of ENCLOSURE/ ANNEXURE : I, II, III				

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24/2/16

(Md. Abdul Fazel Kafi)
EXECUTIVE ENGINEER, RHD
Planning Division (P&D)
Sarak Bhaban, Ramna, Dhaka.

(Handwritten signature)
24/2/16

(M.M. Masudul Haque)
SUPERINTENDING ENGINEER, RHD
Planning & Programming Circle,
Sarak Bhaban, Ramna, Dhaka.

(Handwritten signature)
25/2/16

(Md. Saegujul Islam)
ADDITIONAL CHIEF ENGINEER, RHD
Planning & Development,
Sarak Bhaban, Ramna, Dhaka.

(Handwritten signature)
25/2/16

(Anwar Hossain)
CHIEF ENGINEER
Roads & Highways Department
Sarak Bhaban, Ramna, Dhaka.

(Handwritten signature)
8/2/16

কো. এ. এ. মিতাবুল হক
মুখ-সহকারী
সড়ক ও বেসরকারি বিভাগ
বোম্বাইয়েস মহলায়
গণপ্রজাতন্ত্রী বাংলাদেশ সরকার

1 要請書 (TOR)

TERMS OF REFERENCE FOR THE STUDY ON CONSTRUCTION OF THE RAIL-CUM-ROAD BRIDGE OVER THE RIVER RUPSA IN KHULNA

1. BACKGROUND

Major rivers (namely, Jamuna, Ganges, Padma and Meghna) dividing the country Bangladesh into four major parts, each of which is crisscrossed by thousands of affluent and effluents of the major rivers, have obstructed development of land transport in Bangladesh. Great effort has been exerted by the government in the construction of bridges as well as improvement of the roads through a series of five year plans with international cooperation.

Dhaka-Chittagong was already connected by the construction of Meghna Bridge and Meghna-Gamuti Bridge. After completion of on-going Jamuna Bridge and proposed Paksey Bridge, the road network will connect the eastern and western area of the country, further, with the construction of Rupsha Bridge, Chittagong, Dhaka, Khulna and Mongla are into-linked without river interruption.

On the other hand, Mongla Port is located in the south-western part of the country and is to play an expanded role in near future with favorable international circumstances, in which Nepalese is expected to turn substantial amount of cargo from Calcutta to Mongla port. Currently congested Rupsha ferry can not accommodate the increasing transportation.

Although apparent needs exist for the construction of Rupsha rail-cum-road Bridge locally as well as regionally, the government should deliberately select the type and route of the bridge from technological, social, economic and financial point of view. In order to provide some program and alternatives of the bridge construction with the government, a study on the construction of the Rupsha bridge in consideration of integral components of surrounding transportation development and increasing traffic to the east and the north, and further to Nepal.

2. OBJECTIVE

The objectives of the study are to formulate a master plan for integral components of transport development surrounding the Rupsha rail-cum-road bridge and to prepare the construction plan of it.

3. SCOPE OF WORKS

1. Introduction

In response to the request of the government of the Peoples Republic of Bangladesh (hereinafter referred to as "Bangladesh") the government of Japan has decided to conduct the study on Construction of the rail-cum-road bridge over the river Rupsa in Khulna (hereinafter referred to as " the Study") in accordance with the relevant laws and regulations in force in Japan.

Accordingly, Japan International Cooperation Agency (hereinafter referred to as "JICA") the official agency responsible for the implementation of the technical cooperation programs of the Government of Japan, will undertake the study in close cooperation with the Government of Bangladesh.

The Present document sets forth the scope of work for the Study.

ii. Objectives of the study

The objectives of the study are as follows:

1. To formulate a master plan for integral components of transport /development surrounding the Rupsha rail-cum-road bridge.
2. To formulate a plan for construction of the rail-cum-road bridge over the river Rupsa in Khulna and
3. To conduct a feasibility study on the project

iii. Study Area

The study area shall cover Khulna city.

iv. Scope of the study

In order to achieve the objectives mentioned above, the study shall cover the following items:

Analysis of existing conditions

- a. Collection and review of existing data, information and reports related to the Study.
 1. Socio-economic, natural and environmental conditions
 2. Traffic data on land transportation river crossing ferry and inland water traffic (International transit traffic for India, Nepal and Bhutan)
 3. Engineering data on roads, railway and bridges
 4. Inventory of roads
 5. Back-ground data and information on the Development Plan of the Khulna and Mongla Port Area
 6. Bangladeshi transport sector study, Bangladesh transport Model System, Mongla Port Area development Study and others relevant reports.
 7. Other data, information and reports relevant to the study
- b. Traffic surveys
 1. Traffic survey of road and ferry
 2. Survey on the existing road railway inland waterway networks and ferry operations relevant to the study
 3. OD survey at Mongla port
- c. Survey on Mongla Port
 1. Survey on ferrighat traffic movement
 2. Survey on facilities, cargo handling capacity and future development plan.
- d. Survey on railway
 1. Survey on facilities, rolling stock, maintenance, management, and further development plan
- e. Survey on general conditions of land use and ownership
- f. Natural conditions survey (Topographical, geological and hydrological survey)
- g. Identification of the problems to be solved

Master plan study

- h. Projection of socio-economic framework
 - 1. Zoning and Projection of socio-economic framework (Including sub-regional countries)
- i. Projection of the future traffics
 - 1. Formulation of present passenger and commodities OD matrices
 - 2. Modal split analysis
 - 3. Formulation of future road, rail and inland waterway OD matrices passenger and by commodity
 - 4. Traffic assignment
 - 5. Projection of the road and rail traffics
 - 6. Projection of the bridge traffics
- j. Formulation of a master plan for road, bridge and railway development Mongla-Khulna route in consideration of regional development plan.
- k. Setting up of criteria for planning and designing
- l. Formulation of the alternative plans of the bridge
 - 1. Selection of the route and crossing points of the bridge and evaluation
 - 2. Review and evaluation of technical requirement of the bridge considering its negative impact on inland water navigation
 - 3. Formulation of the alternative design of the bridge
- m. Initial environmental examination (IEE) (including social impact)
- n. Rough estimation of construction cost
 - 1. Formulation of rough construction work plan
 - 2. Estimation of rough construction cost
- o. Selection of the best alternative
 - 1. Estimation of the rough economic benefit
 - 2. Initial calculation of cost-benefit
 - 3. Evaluation of other factors such as environmental impact inland water navigation and others, if necessary
 - 4. Overall evaluation of alternatives

Feasibility study

- p. Additional natural, environmental and social conditions survey
- q. Resettlements plan
- r. Formulation of the bridge construction plan of the best alternative
 - 1. Preliminary design of the best alternative
 - 2. Formulation of the implementation plan

- s. Estimation of project cost
 - 1. Estimation of construction cost
 - 2. Estimation of cost for project preparation and others
- t. Environmental impact assessment (EIA) including social impact
- u. Economic analysis of the project
- v. Financial analysis of the project (for toll bridge)
- w. Formulation of the management and operation scheme of the bridge
- x. Overall project evaluation and recommendations

4. STUDY SCHEDULE

The Study shall be carried out in accordance with the attached tentative study schedule.

5. REPORTS

JICA shall prepare and submit the following reports in English to the Government of Bangladesh:

- i. Inception report: Thirty (30) copies at the commencement of the study in Bangladesh
- ii. Progress report: Thirty (30) copies within four (4) months after commencement of the study
- iii. Interim report: Thirty (30) copies within eight (8) months after commencement of the study
- iv. Draft final Report: Thirty (30) copies within thirteen (13) months after commencement of the study

Bangladesh side shall submit its comments on the Draft Final Report within one (1) month after receipt of the Draft Final Report

- v. Final Report: Fifty (50) copies within two (2) months after receipt of written comments on the Draft Final Report

6. UNDERTAKING OF THE GOVERNMENT OF BANGLADESH

The Government of Bangladesh will accord privileges, exemption and other benefits to the Japanese study team (hereinafter referred to as "the team")

- I. To facilitate smooth conducts of the Study, the government of Bangladesh shall take the following necessary measures:
 - a. To secure the safety of the team for the Study
 - b. To permit the members of the team to enter leave and sojourn in Bangladesh for the duration of their assignment therein and exempt them from foreign registration requirements consular fees
 - c. To exempt the members of the Team from tax duties and other charges on equipment machinery and other materials brought into and out of Bangladesh for the implementation of the Study.
 - d. To exempt the members of the Team from income tax and other charges of any kind imposed on or connection with any emoluments or allowance paid to the member of the team for their services in connection with the implementation of the Study.
 - e. To provide necessary facilities to the Team for the remittance as well as utilization of the fund introduce into Bangladesh from Japan in connection with the implementation of the study

- e. To secure permission for entry into private properties or restricted areas for the conduct of the study
 - f. To provide the Team with all data and document (including photographs, and customs data) related to the study and to secure permission for the Team to take all of them out of Bangladesh to Japan;
 - h. To provide medical services as needed. Its expenses will be chargeable on the member of the Team.
2. The Government of Bangladesh shall bear claims if any arises against the members of the team resulting from occurring in the course of or otherwise connected with the discharge of their duties in the implementation of the study except when such claims arise from gross negligence or will full misconduct on the part of the members of the team.
3. Ministry of Communication of the Government of Bangladesh (hereinafter to as "MOC") shall act as the counterpart agency to the Team and chair the steering committee comprising other organizations concerned for the smooth implementation of the study
4. The MOC, at its expense, provide the Team with the following, in cooperation with other related organizations concerned:
 - a. Available data and information related to the study
 - b. Counterpart personnel necessary for the study
 - c. Suitable office space with necessary furniture in Dhaka and
 - d. Credentials or identification cards

7. UNDERTAKING OF JICA

For the implementation of the study, JICA shall take the following measures :

1. To dispatch at its own expense the Team to Bangladesh
2. To pursue technology transfer to the Bangladesh counterpart personnel in the course of the study.

8. CONSULTATION

JICA and the Ministry shall consult with each other in respect of any matter that may arise from or in connection with the study.

**The study on construction of the Rail-cum-Road Bridge over the river Rupsa in Khulna,
Bangladesh
Man-month schedule**

DESCRIPTION	NO	M/M
1. Team Leader/Bridge Planning/Transport and Freight Planning		6.0
2. Transport Survey and Analysis/Demand Forecast		6.0
3. Railway Planning and Design		4.5
4. Port Survey		3.5
5. Bridge Design		6.0
6. Bridge Foundation Design		5.0
7. Road Planning, Design and Maintenance		7.5
8. Construction Planning/Cost Estimation		4.5
9. Environmental Survey		3.0
10. Natural Condition Survey (Topographical survey)		2.5
11. Natural Condition Survey (Geological and Hydrological)		2.5
12. Economic and Financial Analysis		4.0
13. Land Use Survey		4.0
	Total	60.0

COST ABSTRACT

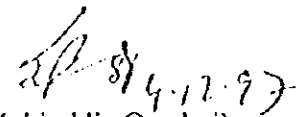
SLNO.	ITEM	FE	GOB	TOTAL
1	2	3	4	5
A	Personnel cost			
1.	Expatriate Consultant - 60 man	480.00		480.00
B.	Project Input Equipment			
1.	Office Equipment	66.00		66.00
C	Project Input others			
1.	International travel	13.00		13.00
2.	Misc travel Expenses (at par)	2.00		2.00
3.	Income Tax for Expatriate		38.00	38.00
4.	Hire charge office spare including services and facilities in Dhaka		6.30	6.30
5.	Contingencies		15.00	15.00
	Total	561.00	59.30	620.30

Government of the People's Republic of Bangladesh
Ministry of Communications
Roads & Railways Division
St. Section.

No. RRD/Sr/RUPSA-47/97- 279

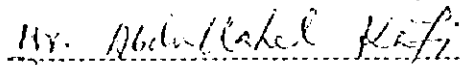
Dated: 4/12/1997.

The undersigned is directed to send herewith a copy of Minutes of the meeting chaired by Joint Chief, Roads and Railways Division, M/O Communications on 1st December, 1997 at 10 AM. to discuss some matters related to the TAPP for Feasibility Study of Construction of The Bridge Over The River Rupsha in Khulna.


(Abu Md. Mohiuddin Quaderi)
Research Officer.

Distribution:

- 1) Chief Engineer, RHD.
- 2) Addl. C.E(P&D), RHD.
- 3) Addl. C..E(Bridge), RHD.
- 4) Supdt. Engineer(P&D), RHD.
- 5) Mr. Yoshio Fukuda, Deputy Resident Representative, Japan International Cooperation Agency (JICA), Plot No. NW(C)1, Road NO -62/63, Gulsan, Dhaka - 1212. TEL: 873351-3, FAX: 883398.
- 6) Mr. Hitachi Sanda, First Secretary, Embassy of Japan.



Mr. Abdul Kader Kafi,
C.E. (P&D) RHD, DHAKA

Copy for information to :

1. P.S to Secretary, Roads & Railways Division.
2. Personal Officer to Joint Chief, Roads & Railways Division.
3. Personal Officer to Deputy Chief(Eco), Roads & Railways Division.
4. Senior Asstt. Secretary(Admn), Roads & Railways Division.



GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
MINISTRY OF COMMUNICATIONS
ROADS & RAILWAYS DIVISION
Statistics section

Sub: Minutes of the meeting of "TAPP For Feasibility Study Of Construction Of The Bridge Over The River Rupsha In Khulna."

A meeting was held under the Chairmanship of Joint Chief to discuss some matters related to the TAPP for feasibility Study of construction of the Road-cum-Rail Bridge over the river Rupsha in Khulna dated 1.12.97, in the conference room of M/O. Communication. List of the participants is enclosed as Annexure-A.

Welcoming the participants the Chairman said that Rupsha Bridge will connect the Khulna and also Mongla Port with Dhaka and rest of the country. Present Govt. is highly interested to construct this Bridge as early as possible. Chairman also paid thanks to the Japan Govt. to take part as a development partner of Bangladesh especially in the road sector. He said that this meeting has been convened to finalise the TAPP.

Joint Chief said that the present Govt. is committed to the nation to construct Road cum Rail Bridge over the river Rupsha. So we are proceeding according to that decision. He said that the draft TAPP is named as "The Study On Construction Of The Bridge Over The River Rupsha In Khulna". It should be changed as "The Study On Construction Of The Road Cum Rail Bridge Over The River Rupsha In Khulna". Mr. YOSHIO FUKUDA, Deputy representative of JICA said that, from their side there is no objection. Mr. HITACHI SANDA, First Secretary, Embassy of Japan (EOJ), said that feasibility Study will be both Road cum Rail Bridge and Road bridge but Study will select which bridge will be economically feasible.

Chairman said that in original TAPP cost/Man Month for expatriate consultant was considered as 8.00 lakh, but it was corrected by mission as 3.00 lakh/Man Month. He also said that the cost of the study is a big problem now since the TAPP will have to be

side said that they now have no objection to take this cost at 8.00 lakh/Man months. Chairman further said that for the increase of this cost, the total cost will be increased. They said that it will be no problem .

The First Secretary of EOI said, if GOB fail to finalize the TAPP within the middle of the January ,1998 problem will be arise for next Dhaka Meeting of the Mission. Joint Chief said that we shall try our best to take necessary action for approval of the TAPP within December '97.

After detailed discussion the following decision were taken :

- (a) The name of the TAPP will be " The Study On Construction Of Road-Cum-Rail Bridge Over The River Rupsha In Khulna"
- (b) Cost of the expatriate consultant will be 8.00 lakh/Man Month.
- (c) Roads & Railways division will take necessary measure for the approval of the TAPP within the 31st December ,1997.
- (d) RHD will send the TAPP to the Ministry within 4th December,1997

Thereafter , the meeting ended with thanks to all from the chair .

Sd- -

(A.N.M. Sirajul Islam)
Joint Chief.

অনলাইন শুল্কী বাংলাদেশ সরকার
 পরিকল্পনা কমিশন
 দ্বীপ অবকাঠামো বিভাগ
 সড়ক পরিবহন উইং

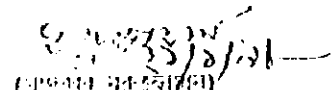
১৫/০৫/২০২০

স্মারক : ১১-৩১-১০/৩৫

বিষয়: সড়ক পরিবহন, সংশ্লিষ্ট পরিকাঠামো পরিকল্পনা সভার কার্যবিবরণী।

স্মারক ১১-৩১-১০/৩৫ স্মারকের পরিকল্পনা কমিশনের সভার (দ্বীপ অবকাঠামো) স্মারক পরিচালনা ও কৌশলীয় পরিকল্পনা উদ্দেশ্যে পরিচালিত সড়ক পরিবহন/সংশ্লিষ্ট পরিকাঠামো/সংশ্লিষ্ট পরিকল্পনা সভার "সড়ক পরিবহন উইং স্মারক-১১-৩১-১০/৩৫" বিষয়ে বিবেচিত সকল বিষয় (সিএনসি) সংক্রান্ত কার্যবিবরণী সভার অন্তর্গত ও সংশ্লিষ্ট বিষয়সমূহ সংক্রান্ত কার্যবিবরণী প্রস্তুত করা হয়েছে।

সংসদার্থী: ১। কার্যবিবরণী।


 (সভার সভাপতি)
 সড়ক পরিবহন উইং

বিস্তারিত:

- ১। সড়ক পরিবহন উইং সড়ক পরিবহন, সংশ্লিষ্ট পরিকাঠামো, সড়ক পরিবহন উইং
- ২। সড়ক পরিবহন উইং সড়ক পরিবহন, সংশ্লিষ্ট পরিকাঠামো, সড়ক পরিবহন উইং
- ৩। সড়ক পরিবহন উইং সড়ক পরিবহন, সংশ্লিষ্ট পরিকাঠামো, সড়ক পরিবহন উইং
- ৪। সড়ক পরিবহন উইং সড়ক পরিবহন, সংশ্লিষ্ট পরিকাঠামো, সড়ক পরিবহন উইং
- ৫। সড়ক পরিবহন উইং সড়ক পরিবহন, সংশ্লিষ্ট পরিকাঠামো, সড়ক পরিবহন উইং
- ৬। সড়ক পরিবহন উইং সড়ক পরিবহন, সংশ্লিষ্ট পরিকাঠামো, সড়ক পরিবহন উইং
- ৭। সড়ক পরিবহন উইং সড়ক পরিবহন, সংশ্লিষ্ট পরিকাঠামো, সড়ক পরিবহন উইং
- ৮। সড়ক পরিবহন উইং সড়ক পরিবহন, সংশ্লিষ্ট পরিকাঠামো, সড়ক পরিবহন উইং
- ৯। সড়ক পরিবহন উইং সড়ক পরিবহন, সংশ্লিষ্ট পরিকাঠামো, সড়ক পরিবহন উইং
- ১০। সড়ক পরিবহন উইং সড়ক পরিবহন, সংশ্লিষ্ট পরিকাঠামো, সড়ক পরিবহন উইং
- ১১। সড়ক পরিবহন উইং সড়ক পরিবহন, সংশ্লিষ্ট পরিকাঠামো, সড়ক পরিবহন উইং
- ১২। সড়ক পরিবহন উইং সড়ক পরিবহন, সংশ্লিষ্ট পরিকাঠামো, সড়ক পরিবহন উইং
- ১৩। সড়ক পরিবহন উইং সড়ক পরিবহন, সংশ্লিষ্ট পরিকাঠামো, সড়ক পরিবহন উইং
- ১৪। সড়ক পরিবহন উইং সড়ক পরিবহন, সংশ্লিষ্ট পরিকাঠামো, সড়ক পরিবহন উইং
- ১৫। সড়ক পরিবহন উইং সড়ক পরিবহন, সংশ্লিষ্ট পরিকাঠামো, সড়ক পরিবহন উইং

অন্য সংশ্লিষ্ট কার্যসমূহ:

- ১। সড়ক পরিবহন উইং সড়ক পরিবহন, সংশ্লিষ্ট পরিকাঠামো, সড়ক পরিবহন উইং
- ২। সড়ক পরিবহন উইং সড়ক পরিবহন, সংশ্লিষ্ট পরিকাঠামো, সড়ক পরিবহন উইং
- ৩। সড়ক পরিবহন উইং সড়ক পরিবহন, সংশ্লিষ্ট পরিকাঠামো, সড়ক পরিবহন উইং
- ৪। সড়ক পরিবহন উইং সড়ক পরিবহন, সংশ্লিষ্ট পরিকাঠামো, সড়ক পরিবহন উইং

(সভার সভাপতি)
 সড়ক পরিবহন উইং

গণপ্রজাতন্ত্রী বাংলাদেশ সরকার
পরিকল্পনা কমিশন
ভৌত অবকাঠামো বিভাগ
সড়ক পরিবহন উইং

নিয়ম : ৩০-১২-৯৭ তারিখে অনুষ্ঠিত প্রাক-একনেক/সান্তঃমন্ত্রণালয়/এসপিইসি সভার
কার্যবিবরণী।

গত ৩০-১২-৯৭ তারিখে পরিকল্পনা কমিশনের ভৌত অবকাঠামো বিভাগের সদস্য জনাব
আবিন্দুল হক চৌধুরীর সভাপতিত্বে একটি প্রাক-একনেক/সান্তঃমন্ত্রণালয় সভা অনুষ্ঠিত হয়। সভায়
সড়ক ও রেলপথ বিভাগের অন্যান্য প্রকল্পের মধ্যে নিম্নোক্ত কারিগরী সহায়তা প্রকল্পটি বিবেচিত
হয়। সভায় উপস্থিত কর্মকর্তাদের তালিকা পরিশিষ্ট 'ক'-এ দেওয়া হইল।

প্রকল্পের নাম	:	রূপসা নদীর উপর রোড-কাম-রেলসেতু নির্মাণের বিস্তারিত নকশা ও সমীক্ষা (টিএপিপি)।।	
প্রাকল্পিত নাম(বাক টাকায়) :	জিওবি বৈদেশিক সাহায্য	আর পিএ	মোট
	৫৬১.০০	৫৯.৩০	৬২০.৩০
বাস্তবায়নকাল	:	মে, ১৯৯৮ হইতে জুন, ১৯৯৯ পর্যন্ত।	
উদ্যোগী মন্ত্রণালয়/ সংস্থা	:		
মন্ত্রণালয় / বিভাগ	:	যোগাযোগ মন্ত্রণালয় / সড়ক ও রেলপথ বিভাগ।	
বাস্তবায়নকারী সংস্থা	:	সড়ক ও জনপথ (সওজ) অধিদপ্তর।	

১.১ উপস্থাপনা :

মন্ত্রণালয়ের প্রতিনিধি প্রকল্পটি উপস্থাপন করিয়া বলেন যে, সংস্থা সমুদ্র বন্দরের গুরুত্ব দিন
দিন বৃদ্ধি পাচ্ছে। রূপসা নদীর উপর সেতু না থাকায় খুলনার সাথে সংস্থা বন্দরের সরাসরি কোন
যোগাযোগ সম্ভব নাহে নিম্নায় উক্ত বন্দরটি পূর্ণ মাত্রায় ব্যবহার করা যাচ্ছে না। এতদন্যতীত
দেশের পার্শ্বাঞ্চলের ও উত্তরাঞ্চলের সরাসরি সড়ক ও রেলপথে যোগাযোগ স্থাপনের জন্য খুলনায়
রূপসা নদীর উপর সড়ক-কাম-রেল সেতু নির্মাণ করা প্রকল্পী হইয়া পড়িয়াছে। প্রস্তাবিত সেতুটি
নির্মিত হইলে সার্বিক সুবিধাদি সুবিধা হইবে এবং মালামাল পরিবহনের সময় ও ব্যয় বহুলাংশে হ্রাস
পাইবে। উক্ত প্রকল্পের সমীক্ষা পরিচালনার জন্য জাপানের (জাইকা) সার্বিক সহায়তা পাওয়ার
সম্ভাবনা বিদ্যমান।

১.১ আয়োচনা :

প্রকল্পের আয়োচিত ব্যয় সম্পর্কে পরিকল্পনা কমিশনের ভৌত অবকাঠামো বিভাগের প্রধান মহাশয়ত বাস্তব করিয়া বলেন যে, অন্যান্য কারিগরী সহায়তা প্রকল্পের পরামর্শকদের বেতন-ভাতাদির তুলনায় বিবেচ্য প্রকল্পের পরামর্শকদের বেতন-ভাতাদি অধিক হারে ধরা হইয়াছে। এই সকল ব্যয় বাস্তবসম্মতভাবে স্থাপন করার বিষয়ে সভা একমত পোষণ করে। তাহাছাড়া কর্মচারীর সংখ্যা ও জনমাস বৈদেশিক পরামর্শকের সাপে সংগতি রাখিয়া নিয়োগ করা প্রয়োজন এই মর্মে সভায় একমত পোষণ করা হয়। অর্থনৈতিক সম্পর্ক বিভাগের প্রতিনিধির নিকট প্রকল্পের অর্গায়ন সম্পর্কে জানিতে চাওয়া হইলে তিনি বলেন যে, উক্ত সমীক্ষা প্রকল্পের জন্য জাপানের আর্থিক সহায়তা পাওয়ার সম্ভাবনা রহিয়াছে। আগামী ২৪-২৫ শে জানুয়ারী '৯৮ তে দাতা দেশের সাপে এই বিষয়ে আয়োচনা অনুষ্ঠিত হইবে। এর পূর্বেই প্রকল্পের টিএপিপি সংশ্লিষ্ট কর্তৃপক্ষের অনুমোদন প্রয়োজন।

১.৩ সিদ্ধান্ত :

নিম্নোক্ত শর্ত প্রকল্পটি অনুমোদনের জন্য সুপারিশ করা হয় :

- (১) পরামর্শক ও সহায়ক কর্মচারীদের সংখ্যা, জনমাস ও বেতন-ভাতাদি বাস্তবসম্মতভাবে হ্রাসপূর্ণক প্রকল্পের ব্যয় নির্ধারণ করিতে হইবে।
- (২) জাপান (শ্রমিক) এর আর্থিক সহায়তা লাভের জন্য যোগাযোগ মন্ত্রণালয় অধীনস্থ উক্তিতে অর্থনৈতিক সম্পর্ক বিভাগকে অনুরোধ জানাইবে।
- (৩) উপরোক্ত আয়োচনা টিএপিপি পুনর্গঠন করিয়া পরিকল্পনা কমিশনে অনুমোদনের জন্য পেশ করিতে হইবে।

মুদ্রিত/ -
২০-০২-৯৮ ইং

আনিসুন্দর হক চৌধুরী
সদস্য
ভৌত অবকাঠামো
পরিকল্পনা কমিশন।

১৩.১১.১১ উঃ জমিরে পরিকল্পনা কমিশনে অসুস্থি ৫ পাক-পত্রিকা/শাস্ত্রসম্বলনাম/প্রসিদ্ধি
 পটায় উপস্থিত কর্মকর্তাবৃন্দের তালিকা

সড়ক ও সেতু-বিভাগ, সেতুসেতু মন্ত্রণালয়

- ১। জনাব আমজাদ, শিলাখুবা ইমদাদ, যুগ্ম-পদাধী
- ২। জনাব মোঃ মুকম্ব হক, উপ-পদাধী
- ৩। জনাব এ.এ.এম, শোখাররফ হোসেন, উপ-পদাধী
- ৪। জনাব কামাল উদ্দিন আহমদ, সহকারী সচিব
- ৫। আবু মোঃ মঈ উদ্দিন কাজেমী, প্রধান কর্মকর্তা

বাহাদুর পরিকল্পনা ও মন্ত্রণালয় বিভাগ

- ১। জনাব আবদুল হক, উপ-পরিচালক

অর্থনৈতিক মন্ত্রণালয়, অর্থ মন্ত্রণালয়

- ১। আবুল হোসেন, মিনিয়র সহকারী সচিব, আপন-২।

অর্থ বিভাগ, অর্থ মন্ত্রণালয়

- ১। জনাব আবদুল হোসেন, মিনিয়র সহকারী সচিব

পারি শাস্ত্র মন্ত্রণালয়

- ১। জনাব মোঃ মুন্সীর রহমান, উপ-পদাধী

কৃষি বিভাগ, পরিকল্পনা কমিশন

- ১। জনাব কামাল উদ্দিন আহমদ, উপ-পদাধী, মোঃ উইঃ

কার্যক্রম বিভাগ, পরিকল্পনা কমিশন

- ১। জনাব মোহাম্মদ শফিকউদ্দিন, সহকারী পদাধী

বাহাদুর সড়ক পরিবহন কর্তৃপক্ষ

- ১। জনাব মনিয়র আহমদ, উপ-পরিচালক

সড়ক ও সেতু মন্ত্রণালয়

- ১। জনাব এ.এ.এম, শিলাখুবা রহমান, অতিরিক্ত প্রধান প্রকৌশলী
- ২। জনাব এ.এ.এম, মদুয়া, প্রকল্প পরিচালক, অতিরিক্ত প্রধান প্রকৌশলী
- ৩। জনাব এ.এ.এম, আব্দুল হক, তত্ত্বাবধায়ক প্রকৌশলী (প্র্যানিং)
- ৪। জনাব শিখার উদ্দিন আহমদ, প্রকল্প পরিচালক (তত্ত্বাবধায়ক প্রকৌশলী)
- ৫। জনাব আবদুল হক কাজী, নির্বাহী প্রকৌশলী (প্র্যানিং)
- ৬। জনাব শিখার উদ্দিন আহমদ, পরিচালক, সড়ক গবেষণাগার, শিলাখুবা
- ৭। জনাব মোঃ হোসেন খান, উপ-নির্ভায়ক প্রকৌশলী

বৌদ্ধ শাস্ত্রালয়ে বিভাগ, পরিকল্পনা কমিশন

- ১। জনাব মনিয়র ইমদাদ খান, নির্ভায়ক পদাধী
- ২। জনাব মোঃ মঈ উদ্দিন আহমদ, যুগ্ম-পদাধী, সড়ক পরিবহন উইঃ
- ৩। জিঃএম আহমদ মোঃ মঈ, উপ পদাধী, সড়ক পরিবহন উইঃ
- ৪। জনাব মঈ উদ্দিন আহমদ, সহকারী পদাধী, সড়ক পরিবহন উইঃ
- ৫। জনাব মোঃ হোসেন উদ্দিন, সহকারী পদাধী, সড়ক পরিবহন উইঃ
- ৬। জিঃএম শফিকউদ্দিন আহমদ, প্রধান কর্মকর্তা, সড়ক পরিবহন উইঃ

SCOPE OF WORK
FOR
THE STUDY
ON
CONSTRUCTION OF THE BRIDGE OVER THE RIVER RUPSA IN KHULNA
(Phase 1)
IN
THE PEOPLES REPUBLIC OF BANGLADESH
AGREED UPON BETWEEN
ECONOMIC RELATIONS DIVISION OF THE MINISTRY OF FINANCE
AND
JAPAN INTERNATIONAL COOPERATION AGENCY

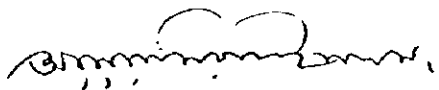
Dhaka, 29 March, 1998



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REPUBLIC OF BANGLADESH

I . INTRODUCTION

In response to the request of the Government of the Peoples Republic of Bangladesh (hereinafter referred to as " Bangladesh ") for the Study on Construction of the Rail-cum-road Bridge over the river Rupsa in Khulna, the Government of Japan has decided to conduct the Study on Construction of the Bridge over the river Rupsa in Khulna (hereinafter referred to as "the Study ") in accordance with the relevant laws and regulations in force in Japan.

Accordingly, Japan International Cooperation Agency (hereinafter referred to as "JICA"), the official agency responsible for the implementation of the technical cooperation programs of the Government of Japan, will undertake the Study in close cooperation with the Government of Bangladesh.

The present document sets forth the Scope of Work for the Study.

II . OBJECTIVES OF THE STUDY

The objectives of the Study are as follows;

- (1) To formulate a master plan for integral components of transport development surrounding the Rupsa bridge, and,
- (2) To formulate a plan for construction of the bridge over the river Rupsa in Khulna.

III. STUDY AREA

The study area shall cover Khulna and Mongla.

IV. SCOPE OF THE STUDY

[1]The Basic Policy of the Study :

- (1) Type and route of the bridge (Rail-cum-road/road bridge) shall be determined not only by economical and financial evaluation but also social impact, such as resettlements of housing and residents, loss of farm land and so on.
- (2) Alternatives will be considered considering many options including development of Inland Container depots in view of future traffic forecast.
- (3) River crossing point will be carefully selected so that the

bridge will last for a long time.

(4) Natural conditions data (including that of siltation) will be collected mainly through past data and interviews.

[2] Items of the Study

In order to achieve the objectives mentioned above, the Study shall cover the following items;

Analysis of existing conditions

1. Collection and review of existing data, information and reports related to the Study.

- (1) Socio-economic, natural and environmental conditions
- (2) Traffic data on land transportation, river crossing ferry and inland water traffic including international transit traffic for India, Nepal and Bhutan
- (3) Engineering data on roads, railways and bridges
- (4) Inventory of roads
- (5) Inventory of railways which may have relation with the possible transit traffic to/from Nepal, Bhutan and India through Mongla Port
- (6) Development plans of Khulna city and Mongla Port area
- (7) Relevant reports (Bangladesh Transport Sector Study, Bangladesh Transport Model System, Mongla Port Area Development Study and other relevant reports, etc.)
- (8) Siltation data of Mongla Port and its access channel including preliminary estimation of dredging cost
- (9) Other data and information relevant to the Study

2. Traffic surveys

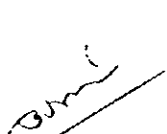
- (1) Traffic survey of road, ferry, railway and inland-water transportation (including transit traffic to/from India, Nepal, and Bhutan)
- (2) OD survey at Khulna and Mongla Port area

3. Survey on Mongla Port

- (1) Survey on freight traffic movement
- (2) Survey on facilities including cement factories, cargo handling capacity and future development plan

4. Survey on railways

- (1) Survey on facilities, rolling stock, maintenance and operation
- (2) Review of future development plan



- (3) Analysis of management and financial conditions
- (4) Review of past financial/operational problems and constraints of earlier railway bridges projects
- 5. Survey on general conditions of land use and issues related to land acquisition of possible project sites
- 6. General research for possible locations of inland container depot
- 7. Natural conditions survey at the candidate sites (especially topographical, geological and hydrological survey, historical records of river bank's erosion, flood, siltation, velocity in heavy stream of the river and scouring)
- 8. Identification of the problems to be addressed

Master plan study

- 9. Zoning and Projection of socio-economic framework (including Sub-regional countries)
- 10. Projection of the future traffics with the target year of 2015 (including transit traffic to/from India, Nepal, and Bhutan)
 - (1) Preliminary analysis of sub-regional international traffic
 - (2) Formulation of present passenger and commodities OD matrices
 - (3) Modal split analysis
 - (4) Formulation of future road, rail and inland waterway OD matrices of passenger and by commodity
 - (5) Traffic assignment
 - (6) Projection of the road and rail traffics
 - (7) Projection of the bridge traffic
- 11. Setting up of criteria for planning and designing
- 12. Formulation of a master plan for integral components of transport development surrounding the Rupsa bridge (Target year 2015)
- 13. Initial environmental examination (IEE)
- 14. Initial examination of social impacts with particular emphasis on resettlements of houses and residents, loss of private inland-water transport operators, ferry users, farm land, etc.)
- 15. Formulation of alternative plans of the bridge
 - (1) Review and evaluation of technical requirements of the bridge considering its negative impact on inland water navigation
 - (2) Formulation of alternative plans of type (road and rail-cum-road bridge), route, crossing point and general design of the bridge

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16. Preliminary estimation of the costs and the benefits
 - (1) Formulation of preliminary construction work plan
 - (2) Estimation of preliminary construction and maintenance cost
 - (3) Estimation of the preliminary economic benefit
17. Preliminary assessment of the proposed bridge projects with due consideration of financial, economic, social and environmental aspects
18. Determination of the priority of the alternatives
19. Proposal for the scope of Feasibility study of the best alternative

V . STUDY SCHEDULE

The Study, shall be carried out in accordance with the attached tentative study schedule.

VI . REPORTS

JICA shall prepare and submit the following reports in English to the Government of Bangladesh.

(1) Inception Report

Thirty (30) copies at the commencement of the study in Bangladesh.

(2) Progress Report

Thirty (30) copies within two (2) months after commencement of the Study.

(4) Interim Report

Thirty (30) copies within four (4) months after commencement of the Study.

(5) Draft Final Report

Thirty (30) copies within six (6) months commencement of the Study. Bangladesh side shall submit its comments on the Draft Final Report within one (1) month after receipt of the Draft. Final Report .

(6) Final Report

Fifty (50) copies within two (2) months after receipt of



written comments on the Draft Final Report.

VII. UNDERTAKING OF THE GOVERNMENT OF BANGLADESH

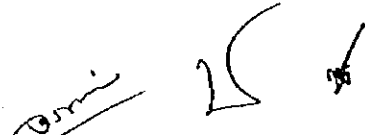
The Government of Bangladesh will accord privileges, exemption and other benefits to the Japanese Study Team (hereinafter referred to as "the Team")

1. To facilitate smooth conducts of the Study, the Government of Bangladesh shall take the following necessary measures;

- 1) To secure the safety of the Team for the Study
- 2) To permit the members of the Team to enter, leave and sojourn in Bangladesh for the duration of their assignment therein , and exempt them from foreign registration requirements consular fees.
- 3) To exempt the members of the Team from tax ,duties and other charges on equipment , machinery and other materials brought into and out of Bangladesh for the implementation of the Study.
- 4) To exempt the members of the Team from income tax and other charges of any kind imposed on or connection with any emoluments or allowance paid to the member of the Team for their services in connection with the implementation of the Study.
- 5) To provide necessary facilities to the Team for the remittance as well as utilization of the fund introduced into Bangladesh from Japan in connection with the implementation of the Study.
- 6) To secure permission for entry into private properties or restricted areas for the conduct of the Study.
- 7) To provide Team with all data and document (including photographs, and customs data) related to the Study, and to secure permission for the Team to take all of them out of Bangladesh to Japan; and,
- 8) To provide medical services as needed. Its expenses will be chargeable on the member of the Team.

2. The Government of Bangladesh shall bear claims, if any arises against the members of the Team resulting from, occurring in the course of, or otherwise connected with the discharge of their duties in the implementation of the Study, except when such claims arise from gross negligence or willful misconduct on the part of the members of the Team.

3. Roads and Highways Department under the Ministry of Communication



of the Government of Bangladesh (hereinafter referred to as "RHD") shall act as the counterpart agency to the Team and Ministry of Communication shall chair the steering committee comprising other organizations concerned for the smooth implementation of the Study.

4. The MOC, at its expense, provide the Team with the following, in cooperation with other related organizations concerned;

- 1) available data and information related to the Study.
- 2) counterpart personnel necessary for the Study.
- 3) suitable office space with necessary furniture in Khulna, and
- 4) credentials or identification cards.

VIII. UNDERTAKING OF JICA

For the implementation of the Study, JICA shall take the following measures :

1. To dispatch, at its own expense, the Team to Bangladesh.
2. To pursue technology transfer to the Bangladesh counterpart personnel in the course of the Study.

IX. CONSULTATION

JICA and the MOC shall consult with each other in respect of any matter that may arise from or in connection with the Study.



Appendix 1

TENTATIVE SCHEDULE

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Work in Bangladesh	▨				▨									
Work in Japan	□		□					□						
Report Presentation	△ IC/R		△ PR/R		△ IT/R	△ DF/R		△ F/R						

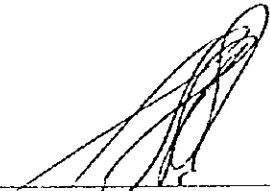
IC/R: Inception Report
 PR/R: Progress Report
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MINUTES OF MEETING
FOR
THE STUDY
ON
CONSTRUCTION OF THE BRIDGE OVER THE RIVER RUPSA IN KHULNA
(Phase 1)
IN
THE PEOPLES REPUBLIC OF BANGLADESH
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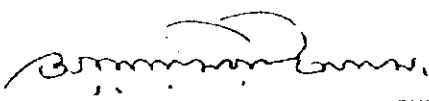
Dhaka, 29 March, 1998




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REPUBLIC OF BANGLADESH

A. INTRODUCTION

1. Japan International Cooperation Agency (JICA) dispatched the Preparatory Study Team (hereinafter referred to as "the Mission") for the Study on Construction of the Bridge over the River Rupsa in Khulna (Phase 1) (hereinafter referred to as "the Study"), headed by Dr. Yuzo Akatsuka, from 19 to 31 March, 1998.

2. The Mission had a series of meetings to discuss the Scope of Work for the Study from 21 to 29 March with related agencies, viz. the Economic Relations Division (ERD) of the Ministry of Finance, Planning Commission, the Ministry of Communications (MOC), Roads and Highways Department (RHD), the Ministry of Shipping, Bangladesh Railway, Mongla Port and Khulna Development Authority, and Asian Development Bank. This Minutes of Meeting summarizes the results of discussions. The list of participants is shown in the Attachment.

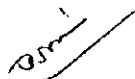

B. RESULTS OF DISCUSSIONS

1. Phasing of the Study

Since there are many options and alternatives to be looked into before forming up the scope for the Feasibility Study, Bangladesh side agreed to phase the Study in two stages. In Phase 1, a Master Plan Study will be conducted to examine the alternatives for the proposed Rupsa bridge and to establish the priority among the alternatives. The Master Plan Study will be followed by the Feasibility Study in Phase 2 for the selected alternatives with a view to arriving at the optimum solution for the proposed Rupsa bridge. Bangladesh side requested the Feasibility Study to be undertaken at the earliest, and the Mission agreed to convey that request to the Ministry of Foreign Affairs of the Japanese Government and JICA HQ for their consideration.

2. Schedule of the Study

Since construction of the Rupsa bridge is one of the high-priority projects in Bangladesh, Bangladesh side requested that the Study should be carried out at the earliest and shortest possible for its



early completion. The Mission replied that it will be technically difficult to shorten the period since it requires considerable amount of time to examine so many alternatives and thoroughly covering each of the alternatives not only from technical, operational and managerial view points but with due consideration to economic, financial, social, and environmental aspects of these alternatives. However, if the Master Plan Study (Phase 1) is conducted thoroughly and its conclusions are agreed upon by all the parties concerned soon after the completion of the Master Plan Study, the period of the Feasibility Study (Phase 2) could be shortened to some extent. The Mission undertook to convey that request of the Bangladesh side to the Ministry of Foreign Affairs and JICA HQ.

3. Social and Environmental Aspects

The Mission stressed the needs and importance of thoroughly examining social dimensions and environmental impacts of the proposed bridge projects, in addition to technical, economic and financial aspects in determining the optimal alternatives, in particular covering issues and problems concerning relocation and resettlements of population, houses and other facilities, impact on river-crossing passengers and loss of productive land in the affected areas. Bangladesh side agreed to such examinations.

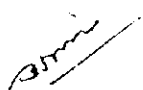
4. Target Year

It is agreed by both sides to set the target year 2015 for the projection of future traffic in the Master Plan Study.

5. Findings of the Field Study in Khulna

(1) Route alignments to be studied

RHD Khulna was of the view that the consultant should study all possible route alignments within the corridor as shown in Alignment A and B as per attached, while Khulna Development Authority preferred the route as indicated on their map to be studied thoroughly as the following reasons;



- 1) The route has been fully studied by KDA and authorized in the Khulna Development Master Plan.
- 2) The route is within the corridors defined by Alignments A and B, and is nearly overlapping with Alignment A.
- 3) The route form a bypass to the Highway from Jessore to Mongla Port which pass through Khulna City avoiding heavy traffic.
- 4) The route pass through mostly vacant plots and therefore nearly free from possible relocation and resettlements issues of the people, housing, productive land which will be affected by the proposed Bridge Project.
- 5) The Bridge site will be close enough to accommodate the daily commuting traffic over the Rupsa River, and therefore local communities in the both sides of the river will greatly benefit.
- 6) The route plan has been cleared by Khulna authorities concerned such as Ministry of Land and,
- 7) The land areas along the proposed route have been designated as the land for the Khulna development, thereby facilitating the acquisition of land areas.

(2) Possible Location of Rail Inland Container Depot

In order to facilitate rail transport of the container and other cargoes utilizing existing rail-lines in case the Rail-cum Road bridge is found not feasible, possibility of building inland links between railways, highways and waterways was discussed, including possible inland container depots between Khulna and Jessore. District representatives of Bangladesh Railway suggested Khulna could be the site to be studied for developing Inland Container Depots though they favored such facilities to be located at Mongla Port with the railway extension from Khulna to Mongla through the Rail-cum Road bridge.

(3) Study Areas and Issues to be focused

Both sides agreed that the Study Team will focus the areas and issues mentioned above.

The bottom of the page contains several handwritten signatures and initials. On the left, there are three distinct signatures. On the right, there is a larger, more complex signature that appears to be a stylized name or set of initials.

6. Maps and Relevant Data

For the quick implementation of the Study as requested by the Bangladesh side, the Mission requested the Ministry of Communications to supply, if available, maps of 1/2,500-1/5,000 or an aerial photograph of 1/10,000 and relevant data and information at the commencement of the Study. If any hired documents are given to the Study Team, then those documents are to be returned to RHD before their departure to Japan.

7. Implementation of the Study

(1) Steering Committee

Both sides agreed that the Steering Committee will be organized under the chairmanship of Ministry of Communication, consisting of members of relevant ministries and organizations such as Economic Relations Division of the Ministry of Finance, Planning Commission, Roads and Highways Department, Bangladesh Railways, Ministry of Shipping, Mongla Port Authority, Bangladesh Inland Water Transport Authority (BIWTA), Khulna Development Authority, Ministry of Environment and Forest and so on.

(2) Meetings of the Organizations and Parties concerned

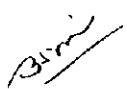
To facilitate coordination and cooperation, if necessary, among concerned organizations and parties, the Mission expressed the desire that MOC should hold periodical meetings among organizations and parties concerned such as World Bank, Asian Development Bank and so on.

(3) Dissemination of the Study Findings

In order to inform the results of the Study to related ministries and organizations including NGOs, seminars will be held by JICA at the important stages of the Study.

8. Facilitation of the Study

To keep smooth implementation of the Study, the Mission requested MOC to provide appropriate office space, as available in Khulna,



for the mobilization of the Study Team.

9. Counterpart Personnel

Counterpart personnel who will cooperate with the Study Team will be selected from the related ministries and organizations on a part-time basis in the following fields, having one full-time Team Leader from RHD;

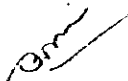
- 1) Road engineer,
- 2) Railway engineer,
- 3) Port engineer,
- 4) Bridge engineer,
- 5) Transport economist,
- 6) Social development specialist,
- 7) Environmental specialist,
- 8) Regional Development specialist, and,
- 9) Inland water transport specialist.

Additional Chief Engineer of RHD Khulna Zone will act as a coordinator.

10. Exemption of Tax

In connection with the undertaking of the Bangladesh Government regarding exemption of duties, taxes, etc. as mentioned in Article VII, section 3 and 4, the Bangladesh side expressed the view that a sub-section may be added hereinafter as quoted below which indicate that the counterpart agency will cover the cost of tax, duties and other charges on behalf of the Study Team, in case the exemption of such tax and others is not possible under existing rules and regulations of the Government of Bangladesh. Further, the Bangladesh side requested to change the title of Article VII "Undertaking of the Government of Bangladesh" to "Responsibility of the Government of Bangladesh".

However, in the light of possible delay of the Study, the Bangladesh side withdrew the view. Instead they expressed their desire that the Japanese government review these clauses for future projects with a due consideration as stated above. The Mission agreed to



convey the Bangladesh side's wish to the Ministry of Foreign Affairs and JICA HQ.

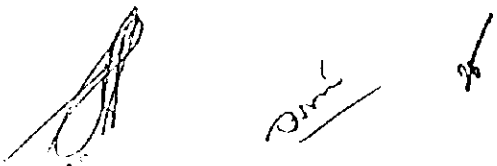
[It is understood among Economic Relations Division, Ministry of Communication and the Executing Agency, Roads and Highways Department, that during the project period, in case that exemption from custom duty, tax and other charges cannot be granted, such tax, duties, etc. should be borne by the Executing Agency.]

11. Counterpart Training

The Mission explained about the Counterpart Training Program of JICA, and Bangladesh side requested to arrange participation in that program. The Mission undertook to convey that request to JICA HQ.

ATTACHMENT:

1. LIST OF PARTICIPANTS
2. ROUTE ALIGNMENTS MAP



LIST OF PARTICIPANTS

I. The Bangladesh side[1]The Economic Relations Division (ERD), Ministry of Finance

- | | |
|-------------------|---------------------------------|
| 1. Suhel Ahmed | Additional Secretary |
| 2. A. Aziz Sarkar | Deputy Secretary |
| 3. Abul Hossain | Senior Assitant Secretary Japan |

[2]Planning Commission

- | | |
|---------------------------|-----------------------------|
| 1. Sheikh Moinuddin Ahmed | Joint Chief, Transport Wing |
|---------------------------|-----------------------------|

[3]Ministry of Communications (MOC)

- | | |
|-------------------------|---|
| 1. Syed Rezaul Hayat | Secretary |
| 2. A.N.M. Serajul Islam | Joint Chief, Roads and Railways Division |
| 3. MD. Nurul Haque | Deputy Chief, Roads and Railways Division |

[4]Roads and Highways Department (RHD)

- | | |
|--------------------------|--|
| 1. A.S.M Manzoor | Additional Chief Engineer, Technical Services |
| 2. Md. Fazlul Haque | Additional Chier Engineer Road and Highway Khulna Zone |
| 3. Md.Abdul Batin | Superintending Engineer, Planning and Design, Khulna |
| 4. Md.Mahabubar Rahman | Superinteding Engineer, Planning, Khulna |
| 5. Md.Mushurraf Hussain | Executive Engineer, Jessore Road Division |
| 6. Md. Ashraf-uf-Islam | Executive Engineer, Bridge Design Division2, West, Dhaka |
| 7. Ashraful Islam Khan | Executive Engineer, Khulna Division |
| 8. Khitish Ch. Mojumder | XEN,P&D, Khulna |
| 9. Md.Kamruzzaman | Sub-divisional Engineer, Planning and Design |
| 10.Md.Abdul Hamid | Assistant Engineer, Khulna |
| 11.Magsudur-Rahman Salim | Senior Security Officer, Khulna Zone |

[5] Ministry of Shipping

1. Abdur Razzak Deputy Chief

[6] National Board of Revenue (NBR), Ministry of Finance

1. Md. Saiful Islam Second Secretary (Customs)

[7] Bangladesh Railway

1. Md. Syed Hossain Additional Director General
2. A.K.M. Mushfiqur Rahman Additional Chief Engineer (Bridge)
3. A.N.M. Khasru Bridge Engineer (West), Paksey
4. Ahmed Ullah Miah Divisional Engineer-1, Paksey

[8] Mongla Port

1. Sharif Atiqur Rahman Member (Engg. and Dev.)
2. Md. Mossarref Hossain, FCA Member (Finance)
3. A.N.H. Taiyarz Chief Engineer (Marine)
4. Md. Ruhul Amin Sheikh Chief Engineer (M&E)
5. Md. Shariullah Khan Chief Engineer (Civil & Hydraulic)
6. Md. Jahangir Kabir Secretary (B&PR)
7. SM Fazlul Haque Manager (Administration)
8. Lutfur Rahman Traffic Manager
9. Md. Delware Hossain Deputy Traffic Manager, MPA
Dry Port Benapole, Jessore
10. Md. Tabibar Rahman Director (Adw)
11. Shaikh Masudullah Evaluation Officer (Planning)
12. M.A. Jinnah Public Relations Officer


[9] Khulna Development Authority

1. Abdul Jabbar Executive Engineer (Project)
2. Md. Khalilur Rahman Planning Officer
3. Md. Amir Ali Miah Assistant Secretary
4. Md. Akter Mahmud Urban Planner
5. Dr. Nurul Islam Nazem Master Plan Project
6. Akhter Husain Chowdhury Master Plan Project

II. The Japanese side

[1] JICA Preparatory Study Team

1. Dr. Yuzo AKATSUKA Dean/Professor, Faculty of
(Leader/Transportation Planning) Regional Development Studies,



2. Gohei TOKUNAGA
(Bridge Planning)

3. Hidetsugu MOCHIZUKI
(Road Planning)

4. Noboru TANEDA
(Transportation Planning)

5. Katsuhide NISHIZONO
(Port Planning)

6. Keiichi OKITSU
(Study Planning)

7. Kunio OHASHI
(Transportation Survey/ Natural
Conditions Survey/ Environmental
Survey)

Toyo University
Deputy Manager, Engineering
Management Division, Engineering
Department, Honshu-Shikoku
Bridge Authority Construction
Manager of Structural
Engineering Division,
Construction Department, Shikoku
Regional Bureau, Japan Highway
Public Corporation
Assistant Chief, First
Construction Section, First
Construction Division, Kanto
Regional Bureau, Japan Railway
Construction Public Corporation
Section Chief, International
Affairs Office, Ports and
Harbour Bureau, Ministry of
Transportation
First Development Study
Division, Social Development
Study Department, JICA
Mitsui Consultants Co., Ltd.

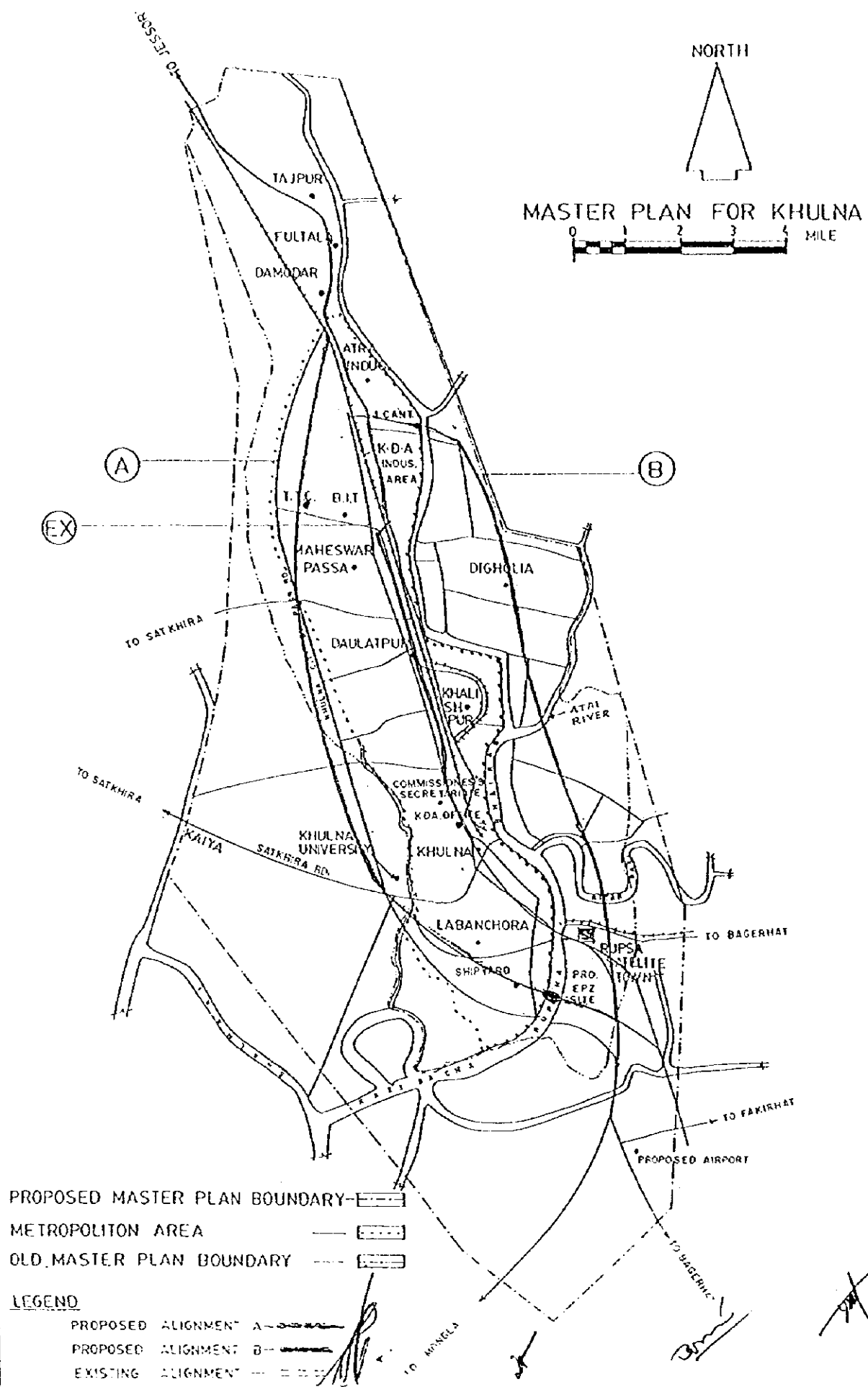
[2]Embassy of Japan

1. Yoshikazu KANEKO
2. Hitoshi SANADA
3. Tateki ISHIDA

Ambassador
First Secretary
Second Secretary

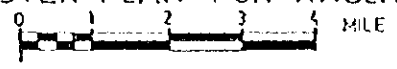
[3]JICA Bangladesh Office

1. Yuji OKAZAKI, Resident Representative
2. Senich KIMURA, Additional Resident Representative
3. Yoshio FUKUDA, Deputy Resident Representative



NORTH

MASTER PLAN FOR KHULNA



PROPOSED MASTER PLAN BOUNDARY - - - - -
 METROPOLITAN AREA [shaded box]
 OLD MASTER PLAN BOUNDARY

LEGEND
 PROPOSED ALIGNMENT A - - - - -
 PROPOSED ALIGNMENT B - - - - -
 EXISTING ALIGNMENT - - - - -

バングラデシュ国ルブシャ橋事前調査団

団長所感

1. 調査団は3月21日より29日にわたってバングラデシュ側(バ側)関係機関と協議を重ねるとともにKhluna～Mongla地域の運輸交通の現状調査、Jamuna橋、第1、第2Megna橋の現地調査ならびに本格調査に備えて資料収集を行った。これらの協議や調査を踏まえて、バ側とルブシャ橋本格調査のS/Wについて合意し、さらに補足すべき諸点については合意事項をM/Mに記録した。
2. S/Wに関しては調査団の日本出発に先立って用意したS/W案と本質的に異なることなく、M/Mにおいて記録した主要事項は下記のとおりである。
 - (1) Phasing of the Study : 事前調査団案どおりにM/Pをフェーズ1、F/Sをフェーズ2で実施する。
 - (2) Schedule of the Study : 早期・短期実施の要望があったが事前調査団案どおりで合意。
 - (3) Social and Environmental Aspects : 事前調査団原案どおり、重要性について確認した。
 - (4) Target Year : 事前調査団原案どおり合意 (2015年)
 - (5) Route Alignments to be studied : M/Mの地図に示したAlignmentA及びBで囲まれた地域内に含まれる適当な路線案を検討することで合意した。
 - (6) Possible Location of Inland Rail Container Depot (ICD) : 鉄道併用橋が不相当と評価された場合であっても、Khulna市内の適当な場所にICDを設け、既存の鉄道網との連絡を図り将来のコンテナ輸送等に備える方法について調査。
 - (7) 調査の順調な進捗を図るためSteering Committeeを設けるとともに、関係機関との連携を促進するため定期的な協議の場を設け、さらに調査結果を関係NGO等を含む地元の諸機関等を招いてセミナーを開催することに合意したこと。
3. 調査団はギブリア大蔵大臣、ラーマンERD次官を表敬訪問し各位よりルブシャ橋の社会経済的な重要性ならびに政治的意義についての意見を拝聴する機会を得た。
4. 各省庁や関係団体の実務担当者レベルの間でも鉄道併用橋が望ましいとの期待感に表明されたが、いずれもより以上に大切なことは橋梁の形式を問わずルブシャ橋が早期に実現することであり、本格調査の早期着手、短期完了のためにあらゆる協力を惜しまないとの意思の表明が共通していた。
5. 橋梁形式を判断するのは時期尚早ではあるが、Megnaの2橋を観察した結果、多くの人々に利用され、景観にも優れ、維持補修も容易な上記2橋と同様な形式が望ましいとの印象を得た。
6. 調査団は所期の調査を日程案どおりに終了し、3月29日にS/WとM/Mに関係機関代表者の署名を得て、翌30日大使館に上記の結果を報告し帰途についた。

3 資料収集リスト

番号	資料の名称	形態	収録 ページ	発行機関	備考
1	1996 Statistical Yearbook of Bangladesh Seventh Edition, Nov 1997, Bangladesh Bureau Statistics	図書		Bangladesh Bureau of Statistics	
2	Preliminary Perspective Plan for Bangladesh 1995-2010, July 1995, Planning Commission	図書		Planning Commission	
3	Urban Poverty Monitoring Survey, Dec 1995, Bangladesh Bureau Statistics	図書		Bangladesh Bureau of Statistics	
4	Bangladesh Integrated Transport System Study Draft final, Planning Commission Oct 1997	図書		Planning Commission	
5	IDA Bangladesh Port System Development Project Master Plan and Trade Facilitation Study Funded by IDA, Jan 1988	図書		Chittagong Port Authority	
6	ADB Ports Upgrading Project, Draft Final Report Part 1, Executive Summary March 1998, Mott MacDonald Ltd and Associates	図書		ADB	
7	ADB Ports Upgrading Project, Draft Final Report Part 1, March 1998, Mott MacDonald Ltd and Associates	図書		ADB	
8	ADB Ports Upgrading Project, Draft Final Report Part 1, March 1998, Mott MacDonald Ltd and Associates	図書		ADB	
9	TOR for Consulting Services for Preparation of Structure Plan and Detailed Area Plan, Dec 1994	図書		Khulna Development Authority	
10	TOR for Consulting Services for Preparation of Structure Plan and Detailed Area Plan, Dec 1994	図書		Khulna Development Authority	
11	Maps of Master Plan for Khulna, Scale 1:100,000	図書		GEODESEC	
12	Map of Bangladesh Transport Network 1:1,000,000 3rd Edition 1997	図書		RHD	
13	Road Map of Bangladesh R&D Scale 1:100,000	図書		RHD	
14	ADB TOR for Feasibility Studies and Design Consultants for the Third Road Improvement Project, Bhangra-Khulna Highway	図書		ADB	
15	Vehicle Operation Costs for Bangladesh, IDC and Economics Circle RHD, May 1997	図書		Planning Commission	
16	Bangladesh Railway File	図書			
17	1. Cost Benefit Analysis, Background of Mongla Port, Bangladesh Railway	図書			
18	2. Bangladesh Railway P.P. Rehabilitation of Main Line West Zone	図書			
19	3. Bangladesh Railway P.P. Reopening of Jessor-Benapole Branch Line	図書			
20	4. Bangladesh Railway P.P. Extension of Inland Container Depot at Dhaka	図書			
21	5. Bangladesh Railway P.P. Rehabilitation of Main Line East Zone	図書			
22	6. Brief on Mongla Port Authority, Mongla Bagerhat	図書		MONGLA PORT AUTHORITY	
23	Small Area Atlas of Bangladesh, Khulna District, Nov 1989, Bangladesh Bureau of Statistics	図書		Bangladesh Bureau of Statistics	
24	Zila Atlas of Bangladesh Vol-4 Khulna and Barisal Division, GEODESEC Consultants and Services Ltd, Jan 1997	図書		GEODESEC	
25	SARRC Chamber of Commerce and Industry, Information Handbook 1996-97	図書		SAARC	
26	National Environmental Management Action Plan (NEMAP) 1995, Ministry of Environment and Forest, 3 Vol	図書		NEMAP	
27	Introduction to Environmental Laws of Bangladesh, Abdus Sattar Syed 1998	図書		ABDUS SATTAR SYED	
28	Laws Regulating Environment in Bangladesh, Dec 1996, Mohiuddin Farooque	図書		BELA	
29	Law and Custom on Forests in Bangladesh, Issues and Remedies, April 1997, Mohiuddin Farooque	図書		BELA	
30	Towards Rural Development and Environmental Conservation in Bangladesh, Dec 1996, BARD	図書		BARD	
31	People, Development and Environment Complex Interlinkages in Bangladesh, IUCN Nov 1992	図書		IUCN	
32	Bangladesh Endangered Fish I, II, III, Bird I, migratory Bird, Shrimps IUCN	図書		IUCN	
33	The Geography of the Soils of Bangladesh, Hugh Brammer, 1996	図書		UNIVERSITY PRESS LIMITED	
34	Salient Feature, Jamuna Multipurpose Bridge Project	図書			
35	Greater Dhaka Metropolitan Area Integrated Transport Study, Mid term Report, Oct 1993	図書		MID TERM REPORT	
36	Local Government in Bangladesh, Kamal Siddiqui, Revised edition 1995	図書		UNIVERSITY PRESS LIMITED	
37	In Quest of Development, Akhtar Hossain and Salim Rashid, Nov 1996	図書		UNIVERSITY PRESS LIMITED	
38	The Country Boats of Bangladesh, Social and Economic Development, Erik G. Jansen 1994	図書		UNIVERSITY PRESS LIMITED	
39	Managing to Empower, The Gramen Banks Experience of Poverty Alleviation, 1995	図書		UNIVERSITY PRESS LIMITED	
40	BRAC 1996	図書		BRAC	
41	PROSHICA Advocacy for Eradication of Poverty and Promotion of Sustainable Development	図書		IDPAA	
42	SHELTECH Consultants Ltd Company Profile	図書		SCPL	
43	An Introduction to BCL Bangladesh Consultants Limited	図書		Bangladesh Consultants Limited	
44	Bangladesh Consultants Ltd Profile	図書		Bangladesh Consultants Limited	
45	Development Consultants Company Ltd Profile	図書		IDDC	

4 主要面会者リスト

I 日本側関係者

日本大使館

金子 義和
真田 仁
石田 樹

特命全権大使
一等書記官
二等書記官

JICAバングラデシュ事務所

岡崎 有二
木邨 洗一
福田 義夫

JICAバングラデシュ事務所長
JICAバングラデシュ事務所次長
JICA 事務所

OECD ダッカ駐在員事務所

須藤 智徳

駐在員

II バングラデシュ政府関係者

The Economic Relations Division (ERD), Ministry of Finance

Suhel Ahmed
A. Aziz Sarkar
Abul Hossain

Additional Secretary
Deputy Secretary
Senior Assitant Secretary Japan

Planning Commission

Sheikh Moinuddin Ahmed

Joint Chief, Transport Wing

Ministry of Communications(MOC)

Syed Rezaul Hayat
A.N.M. Serajul Islam
MD. Nurul Haque

Secretary
Joint Chief, Roads and Railways Division
Deputy Chief, Roads and Railway Division

Roads and Highways Department (RHD)

A.S.M. Manzoor	Additional Chief Engineer, Technical Services
Md. Fazlul Haque	Additional Chief Engineer Road and Highway Khulna Zone
Engr. Md. Nurul Huda	Superintending Engineer, Environment Circle RHD
Moizuddin Ahmed Jaigirdar	Superintending Engineer, Bridge Design Circle RHD
Md. Abdul Batin	Superintending Engineer, Planning and Design, Khulna
Md. Mahabubar Rahman	Superintending Engineer, Planning Khulna
Md. Mushurraf Hussain	Executive Engineer, Jessore Road Division
Md. Ashraf-uf-Islam	Executive Engineer, Bridge Design Division 2, West, Dhaka
Ashraful Islam Khan	Executive Engineer, Khulna Division
Khitish Ch. Mojumder	XEN, P&D, Khulna
Md. Kamruzzaman	Sub-divisional Engineer, Planning and Design
Md. Abdul Hamid	Assistant Engineer, Khulna
Maqsudur-Rahman Salim	Senior Security Officer, Khulna Zone

Ministry of Shipping

Abdur Razzak	Deputy Chief
--------------	--------------

National Board of Revenue (NBR), Ministry of Finance

Md. Saiful Islam	Second Secretary (Customs)
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Bangladesh Railway

Md. Syed Hossain	Additional Director General
A.K.M. Mushfiqur Rahman	Additional Chief Engineer (Bridge)
A.N.M. Khasru	Bridge Engineer (West), Paksey
Ahmed Ullah Mia	Divisional Engineer -1, Paksey

Mongla Port

Sharif Atiqur Rahman	Member (Engg. and Dev.)
Md. Mossarref Hossain, FCA	Member (Finance)
A.N.H. Taiyarz	Chief Engineer(Marine)
Md. Ruhul Amin Sheikh	Chief Engineer(M&E)
Md. Shariullah Khan	Chief Engineer (Civil & Hydraulic)
Md. Jahangir Kabir	Secretary(B&PR)
SM Fazlul Haque	Manager (Administration)
Lurfur Rahman	Traffic Manager
Md. Delaware Hossain	Deputy Traffic Manager, MPA Dry Port Benapole, Jessore
Md. Tabibar Rahman	Director(Adw)
Shaikh Masudullah	Evaluation Officer(Planning)
M.A. Jinnah	Public Relations Officer

Khulna Development Authority

Abdul Jabbar	Executive Engineer (Project)
Md. Khalilur Rahman	Planning Officer
Md. Amir Ali Miah	Assistant Secretary
Md. Akter Mahmud	Urban Planner
Dr. Nurul Islam Nazem	Master Plan Project(Consultant)
Akhter Husain Chowdhury	Master Plan Project(Consultant)

III NGO

BRAC

Dr. Salehuddin Ahmed	Deputy Executive Director
M. Ghulam Sattar	Manager Research and Evaluation Division

PRSHIKA

Mahbubul Karim	Head of Institute and Director (Programmes), Institute for Development Policy Analysis and Advocacy
----------------	---

IV 国際機関

ADB

Francis B. Narayan
John F. Brooks

Deputy Resident Representative
Senior Project Implementation officer

World Bank

K.M. Maqsoodul Mannan

Transport Specialist

V コンサルタント

Bangladesh Consultants Ltd.

Mr. Mahbub Haque

Managing Director

Development Design Consultants Ltd.

Dr. Mustafa

Director

SHELTECH Consultants Ltd.

Salma A. Shafi

Managing Director

REQUIRED DATA AND QUESTIONNAIRE
FOR
THE STUDY
ON
CONSTRUCTION OF THE BRIDGE OVER THE RIVER RUPSA IN KHULNA
IN
THE PEOPLE'S REPUBLIC OF BANGLADESH

March.1998

Japan International Cooperation Agency (JICA)

1. NECESSARY REPORTS AND DATA

1. The Preparatory Study Team considers that relevant documents, reports Statistics listed in the attached Table 1 must be important to this Study
So, please provide us with these statistics and reports during our stay in Bangladesh.

Table 1 THE LIST OF NECESSARY DOCUMENTS AND REPORTS

National Statistics, Policy and Regulations

- 1 FINAL Fifth 5-year Plan Document 1997-2002 (Transport Sector)プロ形収集資料 Draft のまま
- 2 Statistics on transit cargo traffic for India, Nepal and Bhutan (Please provide import and export data through Kakarvita-Banglabanda Route)
.....SARRC Chamber of Commerce and Industry にイタダキ過去 6 ヶ月の暫定期間と正式トラジ カルト承認後の計 8 ヶ月間に 9,000 Ton の
Fertilizer が、モングラ港を経由してネパールに、陸路 Kakarvita-Banglabanda Route 経由で輸入された。通行は土、日の 2 日間。
- 3 Statistics on import and export cargo through Benapole Dry Port by commodity.....資料 16 参照 1991～19976 年間の合計輸出入統計
- 4 Environmental Policy 1992.....資料 22 729 頁
- 5 The Bangladesh Environmental Preservation Ordinance 1989.....資料
- 6 UNDP National Environmental Management Action Plan.....資料 20 738 Page
- 7 Environmental Guideline.....R&H に Road and Environment Circle が 1997 年末に設立されたが、Environment & Resettlement 担当が未定
- 8 IUCN National Conservation Strategy資料 720 頁 22 Unofficial English Version of the Bangladesh Environmental Conservation Act.1995
- 9 ESCAP Coastal Environmental Management: Plan for Bangladesh.....プロ形収集資料参照
- 10 National Forest Policy 1991...
- 11 Industrial Policy 1991.....不明
- 12 Forest Act 1990.....資料 22 The Forest Act, 1927
- 13 Bangladesh Wildlife (Preservation) Act 1974.....資料 22 The Bangladesh Wild Life (Preservation) Order.1973
- 14 Protection and Conservation of Fish(amended) Ordinance 1982
- 15 Territorial Water and Maritime Zone Act 1974.....資料 22 The Territorial Water and Maritime Zones Rules,1977
- 16 Town improvement Act 1953.. 資料 20The Khulna Development Authority Ordinance,1961. The Khulna City Corporation Ordinance.1984
- 17 Shop and Establishment Act 1965.....資料 22
- 18 Motor vehicle law and regulations.....資料 22 The Motor Vehicle Ordinance,1983
- 19 Others.....資料 22 The Inland Water Transport Authority Ordinance,1958. The Government Fisheries(Protection) Ordinance,1959 等

Project Report

- 1 ADB Road Improvement Project Master Plan-2 1991
- 2 WB Comprehensive Review of the Transport Sector in 1991
- 3 Finland, Mongia Port Complex Development Study in 1991
- 4 SAARC (South Asian Association of Regional Cooperation) Study on Transport Infrastructure and Transit Facilities, by Japan Fund in 1993
1～4の資料は未収集 資料4に関してはJapan Fundにより国際開発センターが実施した旨確認
- 5 WB Bangladesh Dhaka Eastern Bypass Study 1997 ……現在 STUDY 中
- 6 WB Bangladesh Transport Sector Study 1997 ……資料4 Bangladesh
- 7 WB Bangladesh Port System Development Project Master Plan Trade Facilitation 1998 ……資料5
- 8 ADB Bangladesh Port Upgrading Project 1998 ……資料6、7
- 9 ADB Feasibility Study and Design Consultants for the Third Road Improvement Project 1998 (Dhaka -Mawa-Khulina Road) ……資料13
- 10 Mongia Port Dredging Project 1998 ……モングラ港当局によれば承認待ち
- 11 On-going Dhaka Railway Container Depot Project (Chittagong Port Authority) ……資料15 写真21 参照ほぼ完成に近い
- 12 Railway Rehabilitation Project Between Benapole and Jessore (Line closed 1965) ……資料15
- 13 Railway Rehabilitation Project for Khulna and Parbatipur Section ……資料15
- 14 Railway Transit Cargo Transport Project from Khulna -Rohanpur -Raxaul (india) Dry Port ……不明
- 15 Others…資料9 TOR for Consulting Services for Preparation of Structure Plan and Detailed Area Plan . Ongoing by SHELTECH Consultants

2. The Preparatory Study Team also would like to collect information on availability of documents or maps listed in the attached Table 2, during our stay in Bangladesh.

—○ mark in the “Request of Availability” is the Data / Item which the Preparatory Study Team strongly requests to get during the stay in Bangladesh for the smooth conduct of the Study.

—If attached materials are not in English, please write down notes in English on materials for understanding by the mission.

—Please mark ○ for the Data / Item in the “Availability” which is available.

—Please mark X for the Data / Item in the “Availability” which is not available.

以下 Page 1～Page 12 まではプロ形の再確認で Page 13～15 の Social Dimension に関しては今回事前調査にて確認

III. ORGANIZATIONS CONCERNING THE IMPLEMENTATION OF THE STUDY 1

Data / Item	Request of Availability	Availability		Name of Reports & Files
		Availability	Place of Data Available	
<p>1. Agencies in charge of and / or concerned with the followings :</p> <ol style="list-style-type: none"> 1) Permission to aerial photo taking 2) Custody of topographic maps and aerial photos 3) Area conservation 4) Geological data / information <p>Please state :</p> <p>—Name of Agencies and Departments</p> <p>—Name and position of the responsible persons in charge for the Japanese Study Team to contact</p> <p>2. Organization to supervise and steer the management of the Study</p> <p>3. Roads and Railway related budget</p> <ol style="list-style-type: none"> 1) Road and Railway construction budget 2) Road and Railway maintenance budget <p>4. Road and Bridge related cost</p> <ol style="list-style-type: none"> 1) Construction cost by type of road, bridge and location 2) Maintenance cost by type of road, bridge and location 3) Construction material costs 4) Unit costs for major work 	<p>Request of Availability</p>	<p>Availability</p> <p><input type="radio"/></p> <p><input type="radio"/></p> <p><input type="radio"/></p> <p><input type="radio"/></p> <p><input type="radio"/></p> <p><input type="radio"/></p> <p><input type="radio"/></p> <p><input type="radio"/></p>	<p>Place of Data Available</p> <p>MOD</p> <p>DG, SPARSO</p> <p>MOL / MOFE</p> <p>HDM, RHD</p> <p>MOC</p> <p>MOC</p> <p>ACE (P & D) RHD</p> <p>DO</p> <p>DO</p> <p>DO</p> <p>DO</p>	<p>Name of Reports & Files</p>

MOD — Ministry of Defence

MOL — Ministry of Land

MOFE — Ministry of Forest & Environment

IV. ENVIRONMENTAL ISSUES 1

Data / Item	Request of Availability	Availability		Name of Report & Files
		Availability	Place of Data Available	
<p>1. Legislation</p> <p>1) Responsible ministry or agency related to environmental policies and standards</p> <p>2) Laws / guidelines related to environmental policies and standards</p> <p>3) Environmental quality standards on air pollution, water pollution, soil pollution, noise, vibration and offensive odor including emission / effluent standards</p> <p>—Standards values and penalties</p> <p>—Monitoring system and its responsible agency</p> <p>4) Laws / guidelines related to environmental impact assessment (EIA)</p> <p>— Role and Function of Ministry of Forest in Environmental Assessment and Organization Chart</p> <p>—Type / size of activities for EIA</p> <p>—<u>Procedure of ISE and EIA</u></p>	<p>○</p> <p>○</p> <p>○</p> <p>○</p> <p>○</p>	<p>MOFE</p> <p>DO</p> <p>DEPC</p> <p>DO</p> <p>DO</p> <p>MOFE / DEPC</p> <p>DO</p> <p>DO</p>	<p>MOFE / DEPC</p> <p>DO</p> <p>DO</p> <p>DO</p> <p>DO</p> <p>DO</p>	
<p>2. International convention on environmental conservation</p> <p>—Ramsar Convention : affiliated on 19____</p> <p>—Convention for the protection of the World Culture and Natural Heritage : affiliated on 19____</p> <p>—Washington Convention : affiliated on 19____</p> <p>—United Nations convention on the law of the sea : affiliated on 19____</p> <p>—Bassl Convention : affiliated on 19____</p>	<p>○</p>	<p>MOFE / DEPC</p> <p>DO</p> <p>DO</p> <p>DO</p> <p>DO</p> <p>DO</p>	<p>MOFE / DEPC</p> <p>DO</p> <p>DO</p> <p>DO</p> <p>DO</p> <p>DO</p>	

DEPC — Department of Environment & Pollution Control

Data / Item	Request of Availability	Availability		Name of Report & Files
		Availability	Place of Data Available	
<ul style="list-style-type: none"> --Regulation of emission gas --Present water quality --Regulation on effluent --Present condition of soil contamination --Regulation for prevention of soil contamination --Present condition of noise and vibration --Regulation for prevention of noise and vibration 	○	○	DEPC .DO. .DO. .DO. .DO. .DO. .DO.	
<ul style="list-style-type: none"> 4) Present organization executing environment study and environmental impact assessment (EIA) <ul style="list-style-type: none"> 1) Organization executing environment study <ul style="list-style-type: none"> --governmental organization / university --private sector 2) Organization executing EIA <ul style="list-style-type: none"> --governmental organization / university --private sector 3) Experience of execution of environmental study and EIA 	○	○	DEPC / BUET .DO. DEPC / BUET DEPC / BUET	
<ul style="list-style-type: none"> 5) Environmental impact assessment (EIA) of the proposed project <ul style="list-style-type: none"> 1) Environmental factors / items to be expected affecting environments by the proposed project 2) Necessity of EIA in the proposed project 	×	×	Not available .DO. .DO.	

BUET — Bangladesh University of Engineering & Technology

Data / Item	Request of Availability	Availability		Name of Report & Files
		Availability	Place of Data Available	
<p>1 List of registered consulting firm in and actual results and terms of :</p> <ul style="list-style-type: none"> --Environmental survey --Topographic survey --Soil / Geotechnical survey --Traffic survey --Socio-economic survey 	<input type="radio"/>	<input type="radio"/>	MOFE / DEPC SOB GSOB HDM / RHD NGO Bureau	
<p>2 Cost of investigation and survey</p> <ul style="list-style-type: none"> --Environmental survey (water quality, noise, etc.) --Topographic survey, sounding survey --Boring, laboratory soil test, seabed material survey --Origin-destination survey --Socio-economic survey --Salary for consultants 	<input type="radio"/>	<input type="radio"/>	DEPC SOB GSOB RHD NGO Bureau Concerned Agencies	
<p>3 Bidding rate for :</p> <ul style="list-style-type: none"> --Environmental specialist --Surveyor --Geotechnical engineer --Traffic engineer --Economist, etc. 	<input type="radio"/>	<input type="radio"/>	RIID DO DO DO DO	

Data / Item	Request of Availability	Availability		Name of Report & Files
		Availability	Place of Data Available	
<p>1. Future budgetary plan for the implementation of the Project</p> <p>2. Any specific restrictions related to the Study</p> <p>3. Availability of the Government's equipment / instruments / apparatus for the Study</p> <p>1) List up Equipment / instruments / apparatus which are available for the Study by the following category with the following information :</p> <p>a) Category</p> <p>— Instrument for geodetic survey</p> <p>— Apparatus for geological / soil investigation</p> <p>— Apparatus for traffic survey</p> <p>— Computer</p> <p>— Services vehicle</p> <p>— Others</p> <p>b) Information</p> <p>— Name</p> <p>— Type (or model / maker)</p> <p>— Characteristics (or capacity)</p> <p>— Number of units</p> <p>— Condition</p>	<p>○</p> <p>×</p> <p>×</p>	<p>MOC</p> <p>ML</p> <p>ML</p>		

OTHER INFORMATION 2

Data / Item	Request of Availability	Availability		Name of Report & Files
		Availability	Place of Data Available	
4 Availability of construction materials (soil / sand / aggregate, timber, cement / concrete, steel / materials & products, etc.)	Request of Availability	<input type="radio"/>	BRRL	
5 Opinions of alternative routes		<input type="radio"/>	RHD	

BRRL — Bangladesh Road Research Laboratory (RHD)

	<p>-Common property resources and assets, and its management</p> <p>-Pattern of settlement (housing proximity by kinship or caste, etc.) social ties, residential patterns, etc.)</p> <p>1.) Who are the stakeholders?</p> <p>2) Are the objectives of the project consistent with their needs, interest, and capacities?</p> <p>3) What social and cultural factors affect the ability of stakeholders to participate or benefit from the operations proposed?</p> <p>4) What is the impact of the project or program on the various stakeholders, particularly on women and vulnerable group?</p> <p>5) What are the social risks (Lack of commitment or capacity and incompatibility with existing condition) that affect the success of the project or program?</p> <p>6) What institutional arrangements are needed for participation and project delivery?</p> <p>7) Are there adequate plans for building the capacity required for each?</p>	<p>X</p> <p>X</p> <p><input type="radio"/></p> <p>X</p> <p>X</p> <p>X</p> <p>X</p> <p>X</p>	<p>User/KA.RHD/ Gov. Agency/Donor</p> <p>Needs to be identified</p> <p>Do</p> <p>Do</p> <p>Do</p> <p>Do</p> <p>Do</p>
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6 ローカルコンサルタントリスト

R&H及びADB等への当該調査に関するローカル・コンサルタント能力調査のヒアリングによれば、能力のある会社組織のコンサルタント及びNGOは以下の通り
尚、実施機関であるR&Hにおけるコンサルタント登録制度はない。

コンサルタント名	住 所	通 信 先		特徴、主な実績/実績
		TEL	FAX	
専 業 Bangladesh Consultant Ltd. 34 Dhanmondi RA, Road 16 Dhaka 1209, Bangladesh		880-2-815018 815019	880-2-812580	ADB: Mongia Port Area Dev. Study, F/S Daka-Mawa-Bhanga-Khulna Highway Jamuna Bridge Project 日本海外コンサルタントとのProjectが多い
Shetech Consultants(Pvt.)Ltd. House No.59/B, Road No.16 Dhanmondi Residential Area Dhaka - 1209, Bangladesh		880-2-819451 9114478	880-2-819451	現在 Khaina Development Authority の M/Pを実施中。M/Pでは当該調査に関連した 各種交通量調査、社会環境調査、地形図作成 等が含まれている。 Jamunaの住民移転にも関わっている。
Development Design Consultants Ltd. 23 New Skaton Road, Dhaka-1000, Bangladesh		880-2-833619 405477 405980	880-2-832907	数年前バングラデシュ政府がルピシヤ道路橋の建設 を決定した際、設計施工管理をR&Hより受注 したが、資金難のためプロジェクトは中止になった。
NGO BRAC 75 Mohakhali Dhaka 1212, Bangladesh		880-2-884180 884187	880-2-883542 883614	Jamuna Bridge Projectの住民移転において、 NGOとしての中立的な立場で、調査段階から 実施まで担当した。 但し、コンサルタントではない。
Proshika I/I-Ga, Section-2, Mirpur Dhaka 1216, Bangladesh		880-2-805812 803398 806015	880-2-805811	自然環境調査の担当組織がある。

7 IUCN環境データ

7-1 Birds of Bangladesh-1

7-2 Birds of Bangladesh-2

7-3 Migratory Birds in Bangladesh-1

7-4 Fish of Bangladesh-1

7-5 Fish of Bangladesh-2

7-6 Prawns,Shrimps,Lobsters and Crabs of Bangladesh-1

বাংলাদেশের পাখি - ১
BIRDS OF BANGLADESH - 1



ব্রাহ্মী কীট (BRAHMANNY KITE)
Haliaeetus leucorhynchus 49 cm



খাম্বা বুন (SPOTTED BUNTING)
Actinoplosia hypoleuca 60 cm



খাম্বা বুন (CRESTED SERPENT EAGLE)
Sphenorhynchus crissalis 70 cm



খাম্বা বুন (PHEASANT-TAILED JACANA)
Hydrophasianus chirurgus 58 cm



খাম্বা বুন (GREEN FRUIT PIGEON)
Tourna phoeniceus 33 cm



খাম্বা বুন (ROSE-COLOURED PARAKEET)
Ptilinopus roseus 37 cm



খাম্বা বুন (COMMON KINGFISHER)
Alcedo althia 18 cm



খাম্বা বুন (CHESTNUT-HEADED BEE-EATER)
Merops leschenaulti 22 cm



খাম্বা বুন (GOLDEN-BACKED WOODPECKER)
Dinopium benghalense 27 cm



খাম্বা বুন (SCARLET MINIVET)
Ptilinopus plumbeus 21 cm



খাম্বা বুন (BLACK-HEADED ORIOLE)
Oriolus chinensis 25 cm



খাম্বা বুন (HILL MYNA)
Gracula religiosa 26 cm



খাম্বা বুন (RED-WHISKERED BULBUL)
Pycnonotus jocosus 20 cm



খাম্বা বুন (GOLD-FRONTED LEAFBIRD)
Chloropsis aurifrons 19 cm



খাম্বা বুন (MAGPIE ROBIN)
Copsychus saularis 20 cm



খাম্বা বুন (WHITE-CRESTED LAUGHING THRUSH)
Catantopus leucophaea 28 cm



খাম্বা বুন (DULL-RUMPED BUNTING)
Nectarinia sepioides 18 cm



খাম্বা বুন (RED MUNIA)
Estrelia amandae 10 cm



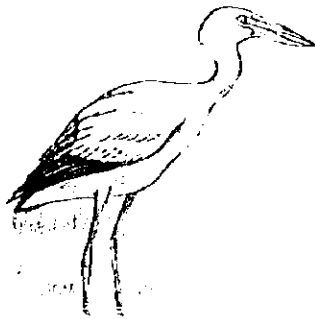
খাম্বা বুন (HOUSE SPARROW)
Passer domesticus 15 cm

7-1 Birds of Bangladesh-1

Published by:
IUCN BANGLADESH COUNTRY OFFICE
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2 Central Invertebrate Department and
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4 Centre for Applied Zoology, Bangladesh
Ministry of Environment and Forest
5 World Conservation Society
6 Bangladesh Society of Ornithology
7 Wildlife Society of Bangladesh



খড়ক পাখি, খড়ক স্তম্ব, গৌরী পাখি (OPENBILL STORK)
Ardeotis ostralis (80 cm)



খড়ক পাখি, খড়ক স্তম্ব (PADDY BIRD, POND HERON)
Actitis hypoleucos (45 cm)



খড়ক পাখি (LESSER WHISTLING TEAL)
Dendrocygna javanica (42 cm)



খড়ক পাখি, খড়ক স্তম্ব (LITTLE CORMORANT)
Phalacrocorax minor (50 cm)



খড়ক পাখি (MOORHEN)
Gallinula chloropus (30 cm)



খড়ক পাখি (RED WATTLED LAPWING)
Vanellus indicus (23 cm)



খড়ক পাখি (GREAT HORNED OWL, EAGLE OWL)
Bubo bubo (60 cm)



খড়ক পাখি, খড়ক স্তম্ব (LESSER PIED KINGFISHER)
Ceyx melanoptera (30 cm)



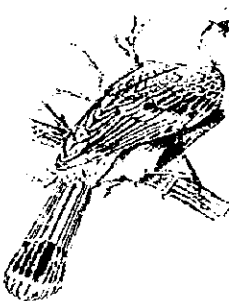
খড়ক পাখি, খড়ক স্তম্ব (INDIAN RIVER TERN)
Sterna bergii (40 cm)



খড়ক পাখি (NODDY)
Eudynamis scolopacea (42 cm)



খড়ক পাখি (PARADISE FLYCATCHER)
Terpodroma paradisi (22 cm)



খড়ক পাখি (GREAT PIED HORNBILL)
Buceros bicalcaratus (125 cm)



খড়ক পাখি (SHRIKE)
Copsychus saularis (27 cm)



খড়ক পাখি (BLACK DRONGO)
Dicrurus adsimilis (30 cm)



খড়ক পাখি (COPPER SMITH)
Myiophobus aeneus (15 cm)



খড়ক পাখি (HOPOE)
Upupa epops (30 cm)



খড়ক পাখি (INDIAN ROLLER, BLUE JAY)
Coccyzus bergii (30 cm)



খড়ক পাখি (TAILOR BIRD)
Artibeus ruber (30 cm)



খড়ক পাখি (BAY WEAVER BIRD)
Ploceus philippina (15 cm)

7-2 Birds of Bangladesh-2

Published by:
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Fax: 8824214, 8824114
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প্রকাশিত করে: বাংলাদেশের পাখি
১৯ তেজগাঁও রোড, ঢাকা-১২১৫
১৯ তেজগাঁও রোড, ঢাকা-১২১৫
১৯ তেজগাঁও রোড, ঢাকা-১২১৫
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Co-ordinator with a
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7-3 Migratory Birds in Bangladesh-1



বাংলাদেশে অতিথি পাখী - ১
MIGRATORY BIRDS IN BANGLADESH - 1.

শিল্পী: সফিকুল হক
Illustrator:
Safiqul Haque
Series: 9



নোয়াইল, বড় ডাক Northern Shoveller
Anas platyrhynchos 45 cm



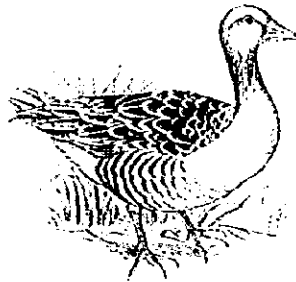
নোয়াইল, কৃষ্ণ, কুঁচ Tufted Pochard
Aythya leucorhynchos 44 cm



ডাক ডাক Pintail
Anas platyrhynchos 48 cm



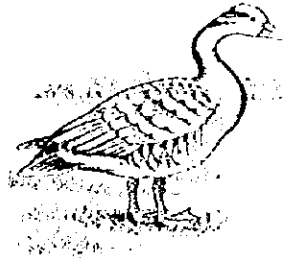
নোয়াইল ডাক Common Teal
Anas crecca 31 cm



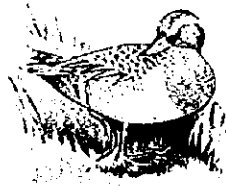
গরু গরু Greylag Goose
Anser anser 80 cm



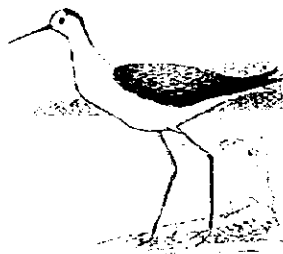
গরু গরু Ruddy Shelduck
Tadorna ferruginea 65 cm



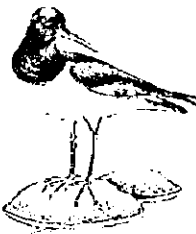
গরু গরু Bar-headed Goose
Anser indicus 75 cm



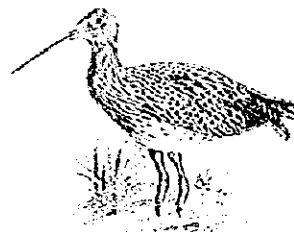
নোয়াইল Garganey
Anas querquedula 40 cm



গরু গরু Black-winged Stint
Actitis hypoleucos 31 cm



নোয়াইল Cystercatcher
Himantopus asiaticus 42 cm



গরু গরু Western Curren
Numenius arquata 56 cm



নোয়াইল Black-tailed Godwit
Limosa limosa 45 cm



গরু গরু Little Ringed Plover
Charadrius dominicus 18 cm



গরু গরু Tawny Eagle
Eagle 45 cm



গরু গরু Pallid Harrier
Circus pallidus 48 cm



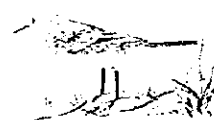
গরু গরু Golden Plover
Pluvialis dominica 25 cm



গরু গরু Common Snipe
Gallinago gallinago 24 cm



গরু গরু Little Stint
Gallinago pusilla 18 cm



গরু গরু Yellow-headed Wagtail
Motacilla citreola 16 cm



গরু গরু White Wagtail
Motacilla alba 17 cm

Note: Lengths illustrated in maximum length

7-3 Migratory Birds in Bangladesh-1

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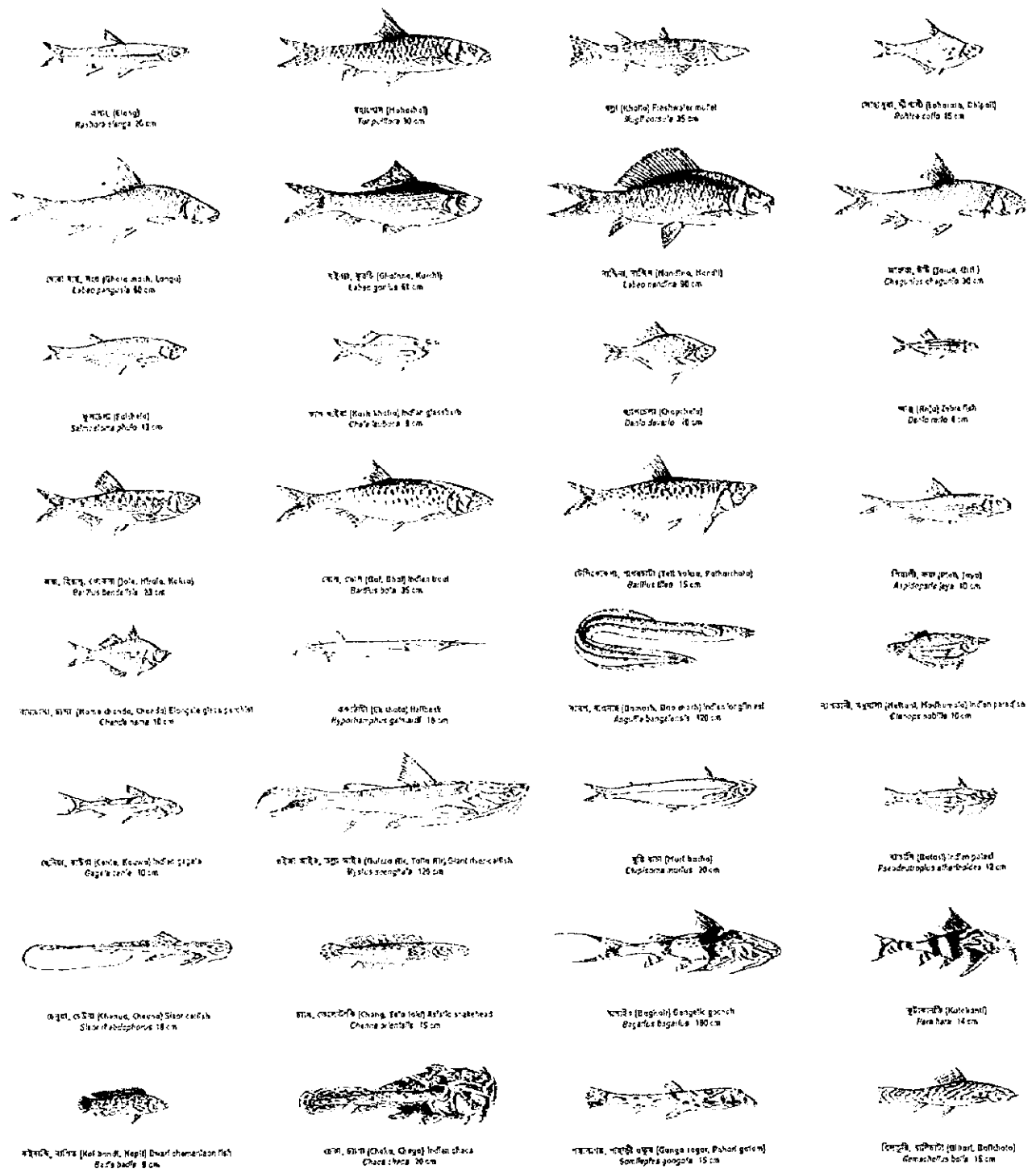
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বাংলাদেশের মাছ - ২
FISHES OF BANGLADESH - 2



7-5 Fish of Bangladesh-2

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Drawings: Md. Masudul Alam, Dhaka. Prepared by: Md. Masudul Alam, Dhaka. July 1996

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7-6 Prawns, Shirimps, Lobsters and Crabs of Bangladesh-1



বাংলাদেশের চিংড়ি, লবণী ও কঁকড়া-১
 PRAWNS, SHRIMPS, LOBSTERS AND CRABS OF BANGLADESH-1

প্রকৃতি সংরক্ষণ
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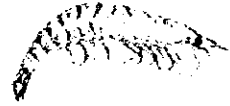
বড় চিংড়ি (ব্রহ্মচিংড়ি) *Macrobrachium macrobrachium* 34 cm



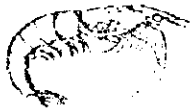
সাদা চিংড়ি (চন্দ্রচিংড়ি) *Penaeus monodon* 31 cm



সাদাচন্দ্র চিংড়ি (ব্রহ্মচিংড়ি) *Penaeus semisulcatus* 25 cm



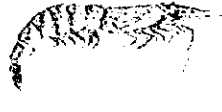
চন্দ্রচিংড়ি (কুম্ভচিংড়ি) *Penaeus japonicus* 18 cm



সাদাচন্দ্র চিংড়ি (ব্রহ্মচিংড়ি) *Penaeus indicus* 23 cm



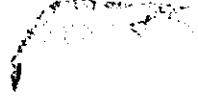
চন্দ্রচিংড়ি (ব্রহ্মচিংড়ি) *Metapenaeus marseulani* 18 cm



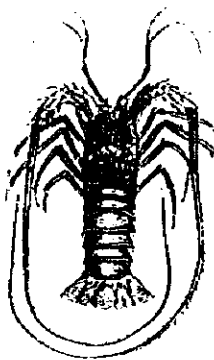
বড় চন্দ্র চিংড়ি (ব্রহ্মচিংড়ি) *Metapenaeus setiferus* 17 cm



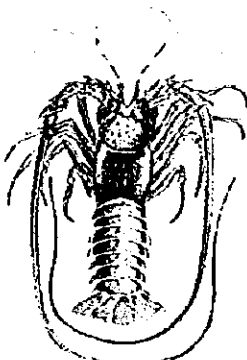
বড় চিংড়ি (ব্রহ্মচিংড়ি) *Metapenaeus setiferus* 16 cm



চন্দ্র চিংড়ি (ব্রহ্মচিংড়ি) *Metapenaeus setiferus* 19 cm



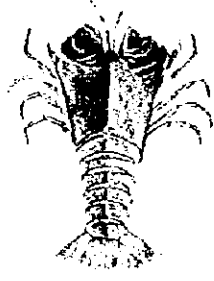
ব্রহ্মচিংড়ি (ব্রহ্মচিংড়ি) *Paralithodes setiferus* 18 cm



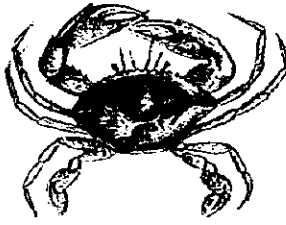
ব্রহ্মচিংড়ি (ব্রহ্মচিংড়ি) *Paralithodes setiferus* 30 cm



ব্রহ্মচিংড়ি (ব্রহ্মচিংড়ি) *Paralithodes setiferus* 26 cm



ব্রহ্মচিংড়ি (ব্রহ্মচিংড়ি) *Paralithodes setiferus* 25 cm



সাদা কঁকড়া (ব্রহ্মকঁকড়া) *Scylla serrata* 31 cm



সাদা কঁকড়া (ব্রহ্মকঁকড়া) *Decapoda penaeiformis* 8 cm



সাদা কঁকড়া (ব্রহ্মকঁকড়া) *Decapoda penaeiformis* 8 cm



সাদা কঁকড়া (ব্রহ্মকঁকড়া) *Decapoda penaeiformis* 10 cm



সাদা কঁকড়া (ব্রহ্মকঁকড়া) *Chyborus chrysocheilus* 18 cm

Note: Length given is maximum length

7-6 Prawns, Shrimps, Lobsters and Crabs of Bangladesh-1

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