APPENDICES

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- 5. Initial Environmental Examination (IEE)
- 6. Design Drawings

1.	Member List of the Study	

Appendix 1 Members of the Study Team

1-1 Preliminary Study (From December 16, 2004 to January 16, 2005)

A	Takasi KATO	Leader	Japan International Cooperation Agency
В	Shigehiko Sugita	Project Coordinator	Japan International Cooperation Agency
С	Toshio ICHIKAWA	Chief Consultant/ Bridge/Road Planner	Nippon Koei Co., Ltd.
D	Kazumasa TADA	Bridge Designer	Nippon Koei Co., Ltd.
E	Yashushi HIGA	Natural Condition Survey Engineer I (Topography / Geology),	Chodai Co., Ltd.
F	Natsuko TOTSUKA	Natural Condition Survey Engineer II (River /Hydrology)	Nippon Koei Co., Ltd.
G	Jun MORISHITA	Construction and Procurement Planner/ Cost Estimation Engineer	Chodai Co., Ltd.

1-2 Draft Report Explanation (From May 15, 2005 to May 23, 2005)

A	Tatsuya Murase	Leader	Japan International
<u> </u>			Cooperation Agency
В	Toshio ICHIKAWA	Chief Consultant/ Bridge/Road Planner	Nippon Koei Co., Ltd.
С	Kazumasa TADA	Bridge Designer	Nippon Koei Co., Ltd.

2.	Study Schedule	

2-1 Preliminary Study Mission Schedule

Date	Week	Leader	Project Coordinator	Chief Consultant/ Bridge•Road Planner	Bridge Design	Survey Engineer II (Topo./Geology)	Survey Engineer II (River/Hydrology)	Construction Planner /Cost Estimate
M D	WCCK	Takashi KATO	Shigehiko SUGITA	Toshio ICHIKAWA	Kazumasa TADA	Yasushi HIGA	Natsuko TOTUKA	Jun Morishita
		Plan	Plan	Plan	Plan	Plan	Plan	Plan
12 16	Thu.	and Natio	istry of Transport and Public Works nal Road Aurhority n report meeting		and	CA, Ministry of Transport a d National Road Aurhority nception report meeting	nd Public Works	
17	Fri.				Investigation of Bridge Sit (Lilongwe-Balaka-Salim			
18	Sat.			(Salima	Investigation of Bridge Sit - Nkhotakota - Bwanje Valle			
19	Sun.			Investigation of Br	idge Sites(Salima~Mangoch	ni—Bakaka—Lilongwe)		
20	Mon.		Discussion with Ministry of Transport and Public Works and NRA			Ministry of Transport and F ational Road Authority (NR		
21	Tus.		Discussion with Ministry of Transport and Public Works and NRA		Ministry of Transport and Pu d National Road Authority	ublic works	Office Works	Office Works
22	Wen.		Preparation of M/D	Preparation	of M/D	Investigation	Investigation	Investigation
23	Thu.	Signing of M/D	Signing of M/D	Signing o	f M/D	Investigation	Investigation	Investigation
24	Fri.		Movement to Zambia	Investigation	Office Works	Investigation	Office Works	Office Works
25	Sat.		Movement	Office Works	Investigation	Investigation	Office Works	Office Works
26	Sun.			Office Works	Investigation	Investigation	Office Works	Office Works
27	Mon.			Office Works	Office Works	Investigation	Office Works	Office Works
28	Tus.			Office Works	Investigation	Investigation	Investigation	Investigation
29	Wen.			Office Works	Investigation	Investigation	Investigation	Investigation
30	Thu.			Office Works	Office Works	Investigation	Office Works	Investigation
31	Fri.			Office Works	Office Works	Office Works	Office Works	Office Works
1 1	Sat.			Meeting	Meeting	Meeting	Meeting	Meeting
2	Sun.			Office Works	Office Works	Investigation	Office Works	Office Works
3	Mon.			Office Works	Office Works	Office Works	Office Works	Office Works
4	Tus.] / /		Investigation	Office Works	Investigation	Office Works	Office Works
5	Wen.	1 /		Office Works	Office Works	Office Works	Office Works	Office Works
6	Thu.	1 /		Office Works	Office Works	Investigation	Office Works	Office Works
7	Fri.] / /		Office Works	Office Works	Office Works	Office Works	Office Works
8	Sat.	1 /		Office Works	Investigation	Investigation	Office Works	Office Works
9	Sun.	1 /		Office Works	Office Works	Office Works	Office Works	Office Works
10	Mon.	1/			Courtesy Call on JIC	CA, Ministry of Transport a	nd Public Works	•

2-2 Basic Design Draft Explanation Mission Schedule

days	dai	te` :	Leader Chief Consultant/ Bridge Designer JICA Malawl ffice Bridge and Road Planner Mr. Tatsuya MURASE Mr. Toshio ICHIKAWA Mr. Kazumasa TADA
1	5/16	Mon	Meeting at JICA Malawi Office, Courtecy Call on Ministry of Transport and Public Works / National Road Authority (Stay at Lilongwe)
2	5/17	Tue	Explanation of Basic Design Draft Report to Ministry of Transport and Public Works / National Road Authority Discussion on M/D (Stay at Lilongwe)
3	5/18	Wed	Visit to Project Site (Stay at Lilongwe)
6	5/19	Thu	Discussion with Ministry of Transport / National Road Authority (Stay at Lilongwe)
7	5/20	Fri	Signing of M/D Signing of M/D Data and Reference Collection, Report to JICA Malawi Office (Stay at Lilongwe)
8	5/21	Sat	Project Site Investigation (Stay at Salima)
9	5/22	Sun	Lillongwe(08:20)(QM181)→Lusaka(10:10) (Stay at Lusaka)
10	5/23	Mon	Courtesy Call on Embassy of Japan in Zambia (Stay at Lusaka)

3. List of Parties Concerned in the Recipient Country

Appendix 3 List of Parties Concerned in the recipient Country

3-1 Preliminary Study (December 16,2004 – January 16,2005)

(1) Embassy of Japan in Zambia

Mr. Tomoyuki ZAITSU First Secretary

(2) JICA Malawi Office

Mr. Takashi KATO Chief Representative Mr. Takayuki UCHIYAMA Representative Mr. Tom Mtenji Programme Officer

(3) Ministry of Transport and Public Works

Mr. Francis B. Chinsinga Secretary for Transport and Public Works

Mr. L.M. Chirwa Deputy Secretart

Mr. Anthony Livuza Director of Administration and Finance

Mr. Collins K. Kumangirana Director Roads
Mr. Kelvin Mphonda Civil Engineer
Mr. Gomdwe N.B.T Civil Engineer
Mr. Haneda J. Harawa Sr. Technical Officer

Mr. Adams Chavula Chief of Customer Service Unit, Meteorological

Services

Mr. T. I. Masimbi Materials Superintendent
Mr. Stanley D.K. Jere Chief Materials Technician

(4) National Road Authority: NRA

Mr. Dauphin E. Makako Chief Engineer
Mr. Maxwell Y. Kachiwala Operation Director

Mr. Benjamin Kapoteza Technical Director (Urban Road Division)

Mr. C. Zanbezi Technical Director (Procurement)

Mr. A. Mnthini Technical Director (Central Road Division)
Mr. P. Kasakatira Technical Director (Central Road Division)

Mr. L.S. Siwande Transport Engineer
Mr. Peter S. Makwinja Environmental Planner
Mr. Cyril Kamkwamba Project Engineer

Mr. Okendeni Kondowe Project Engineer (Planning)

Mr. C.M. Mtawali Senior Engineer (Development Project)

(5) NRA Lilongwe Office

Mr. Amos Phiri Zone Engineer (CRD)

(6) Ministry of Water Development, Water Resources DepartmentMr. Sydney M. Mainala Director of Water Resources

Mr. W.P.C. Chipeta Chief Water Resources Development Officer, Surface

Water Division

Mr. Kalua Chief Hydrologist, Surface Water Division Mr. Kaunda Hydrologist, Surface Water Division

(7) Ministry of Agriculture, Irrigation Department

Mr. S. C. W Maweru Director of Irrigation Services

(8) Ministry of Natural Resources and Environmental Affairs

Mr. Y. Kaukutu Geologist, Geological Survey Department

(9) Salima Police Station

Mrs. Kachemwe Traffic Officer

(10) Salima District Hospital

Mr. M.N. Chimkhuzi Assistant Health Officer

Mr.N.A. Makina Assistant Human Resource Management Officer

3-2 Draft Report Explanation Mission (15 May, 2005 – 23 May, 2005)

(1) Embassy of Japan in Zambia

Mr. Tomoyuki ZAITSU First Secretary

(2) JICA Malawi Office

Mr. Takashi KATO Chief Representative Mr. Takayuki UCHIYAMA Representative Mr. Tom Mtenji Programme Officer

(3) Ministry of Transport and Public Works

Mr. Francis B. Chinsinga Secretary for Transport and Public Works Mr. Anthony Livuza Director of Administration and Finance

Mr. Collins K. Kumangirana Director of Roads

Mr. Mike Msale Deputy Director of Road

Mr. Kelvin Mphonda Civil Engineer
Mr. Gomdwe N.B.T Civil Engineer
Mr. Jone Ndola Civil Engineer

Mr. T.K. Masimbi Sr. Material Technician Mr. E.G. Machila Material Technician

(4) National Road Authority: NRA

Mr. Maxwell Y. Kachiwala Operation Director

Mr. A. Mnthini Technical Director (Central Road Division)
Mr. P. Kasakatira Technical Director (Central Road Division)

Mr. L.S. Siwande Transport Engineer
Mr. Peter S. Makwinja Environmental Planner
Mr. Okendeni Kondowe Project Engineer (Planning)

Mr. F. Dimu Senior Engineer (Development Project)

(5) Ministry of Environmental Affair

Ms. T.G. Mbale Principal Env. Officer (Environment Dept)

4.	Minutes of Discussions (M/D)	

4-1	Preliminary Study (December 23, 2004)

Minutes of Discussions on the Basic Design Study

on the Project for the Reconstruction of M5 Bridges between Balaka and Salima in the Republic of Malawi

In response to a request from the Government of the Republic of Malawi (hereinafter referred to as "Malawi"), the Government of Japan decided to conduct a Basic Design Study on the Project for the Reconstruction of M5 Bridges between Balaka and Salima (hereinafter referred to as "the Project") and entrusted the study to the Japan International Cooperation Agency (hereinafter referred to as "JICA").

JICA sent to Malawi the Preparatory Study Team headed by Mr. Kyojin MIMA, Director of Project Management Group II, Grant Aid Management Division, JICA, and was scheduled to stay in the country from July 14, 2004 to August 10, 2004.

JICA also sent to Malawi the Basic Design Study Team headed by Mr. Takashi KATO, Resident Representative, JICA Malawi Office, and is scheduled to stay in the country from December 15, 2004 to January 10, 2005.

The Team held discussions with the concerned officials of the Government of Malawi and conducted a field survey of the study area.

In the course of discussions and field survey, both sides confirmed the main items described in the attached sheets.

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Mr. Takashi Kato

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Basic Design Study Team

Japan International Cooperation Agency

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Japan

Lilongwe, December 23, 2004

Mr. Francis B. Chinsinga

Principal Secretary

Ministry of Transport and Public Works

Republic of Malawi

Mr. Maxwell Y. Kachiwala

Operations Director
National Road Authority
Republic of Malawi

ATTACHMENT

1. Objective of the Project

The objective of the Project is to reconstruct four (4) bridges between Balaka and Salima on the M5 road.

2. Project Sites (1865) in the highest contract of the temperature of the support of the su

From Balaka to Salima on the M5 road.

The Project sites are shown in Annex-1.

3. Responsible and Implementing Organizations

The responsible organization is the Ministry of Transport and Public Works.

The implementation organization is the National Road Authority (hereinafter referred to as "NRA").

The organization chart of implementing organization is shown in Annex-2.

4. Items Requested by the Government of Malawi

As the result of discussions, the project components were confirmed as below!

- Redesign and reconstruction of four (4) bridges between Balaka and Salima section of the M5 road
 - (1) Angoni Culvert
 - .(2) Nanyangu Culvert
 - (3) Nankokwe Bridge
 - (4) Luwadzi Bridge

JICA will assess the appropriateness of the request and will report to the Government of Japan.

- 5. Japan's Grant Aid Scheme
- (1) The Malawian side understood the Japan's Grant Aid scheme and the necessary measures to be taken by the Government of Malawi explained by the Team as described in Annex-3.
- (2) The Malawian side promised to take necessary measures, as described in Annex-4, for smooth implementation of the Project as a condition for the Japan's Grant Aid to be implemented.
- 6. Schedule of the Study
- (1) The consultant members of the Team will proceed with further studies in Malawi by January 10, 2005.
- (2) JICA will prepare the Draft Basic Design Study Report in English and dispatch a mission to Malawi in order to explain its contents in May 2005.
- (3) In case the contents of the Draft Basic Design Study Report are accepted in principle by the Government of Malawi, JICA will complete the Final Report and send it to the Malawian side by the end of June 2005.

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7. Other Relevant Issues

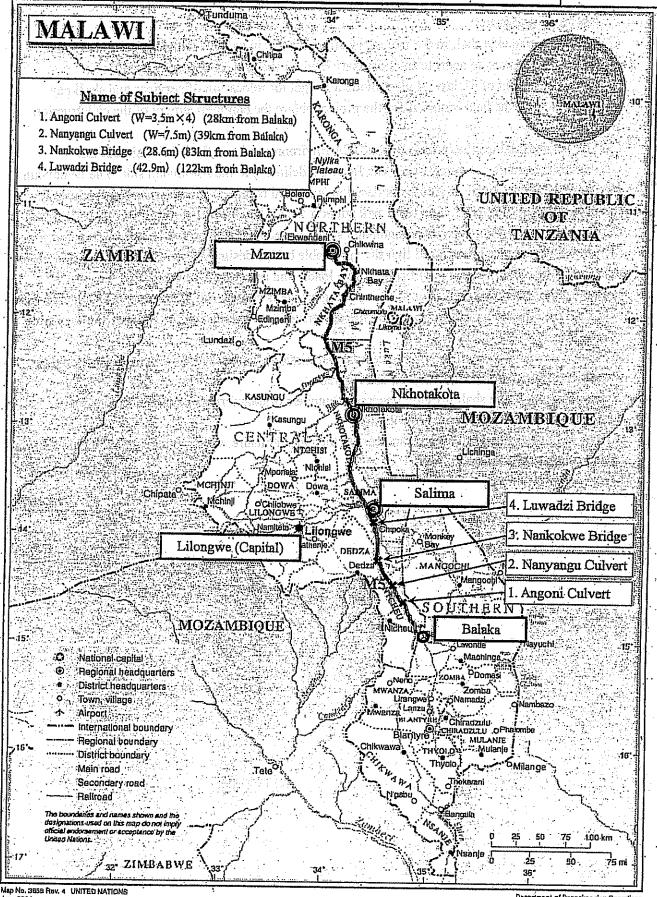
- (1) The Malawian side shall make necessary arrangements in consultations with the affected communities / persons to acquire the necessary land for the project before July 2005.
- (2) The Government of Malawi shall provide a budget for relocation of services and shall pay compensation for the land required for the project before the commencement of the construction works.
- (3) The Team explained the outline of the JICA Environmental and Social Considerations Guidelines (hereinafter referred to as "the JICA Guidelines") to the Malawian side. The Malawian side took the JICA Guideline into consideration, and shall complete the necessary procedures for the Project before July 2005. The team will support the Malawian side for their formulation of the mitigation plans to reduce environmental and social impacts when the project is implemented.
- (4) The Malawian side understood that the applicable bridge design will be determined based on the results of further study of existing bridges, live loads, and river characteristics, etc.
- (5) Both sides basically agreed that if the existing bridge is considered to be removed, the Malawian side shall demolish the existing bridge by the designated time which will be proposed in the Draft Basic Design Study Report.
- (6) The Malawian side shall provide necessary permissions, licenses and other authorizations for smooth implementation of the Project, as required.
- (7) The Malawian side shall provide necessary numbers of counterpart personnel to the Team during the period of their studies in Malawi.
- (8) The Malawian side shall submit answers to the Questionnaire, which the Team handed to the Malawian side, by January 7, 2005.

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The Project for the Reconstruction of M5 Bridges between Balaka and Salima in the Republic of Malawi



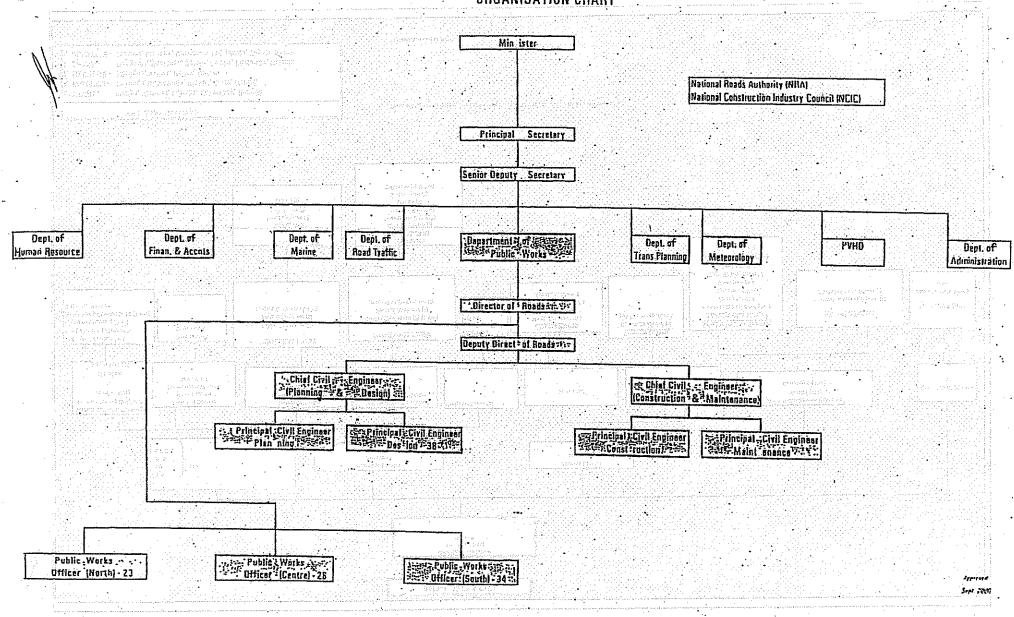
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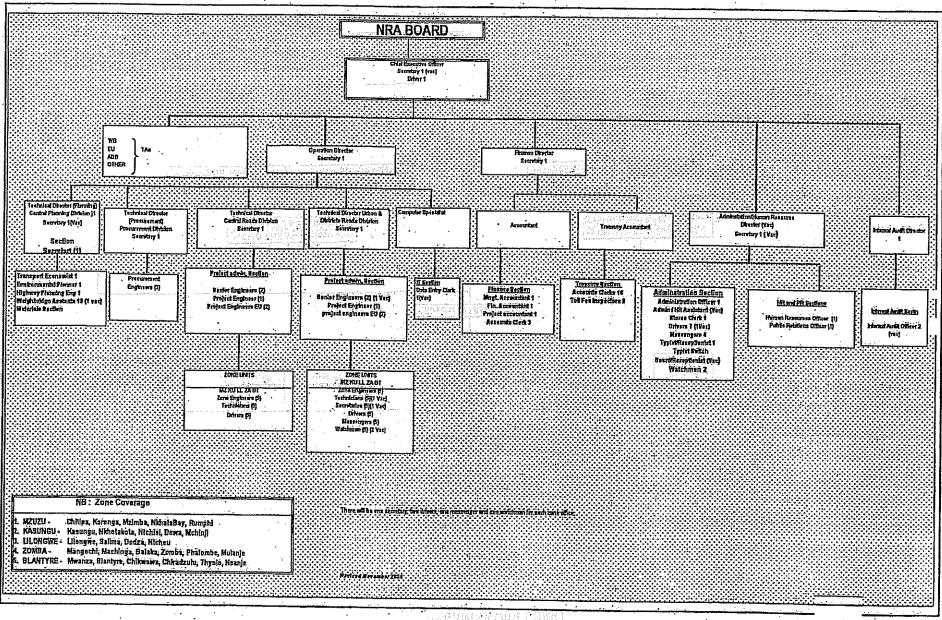
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MINISTRY OF TRANSPORT AND PUBLIC WOS ORGANISATION CHART







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The Grant Aid Scheme provides a recipient country with non-reimbursable funds to procure the facilities, equipment and services (engineering services and transportation of the products, etc.) for economic and social development of the country under principles in accordance with the relevant laws and regulations of Japan. The Grant Aid is not supplied through the donation of materials as such.

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Japan's Grant Aid Scheme is executed through the following procedures.

Application (Request made by the recipient country) and inches lost (fi

calleged to (Basic Design Study conducted by JICA) the design fraction as a fire Appraisal & Approval (Appraisal by the Government of Japan and Approval by the Cabinet) Determination of (The Note exchanged between the Governments of Japan and recipient **Amplementation** from A.**Country)** the architector (ene) is given it to the large (a large transform of the country) the architector is a constant of the country) and the country of the country of the country) and the country) are country) and the country) are considered as a country) and the country) are considered as a country of the country).

Firstly, the application or request for a Grant Aid project submitted by a recipient country is examined by the Government of Japan (the Ministry of Foreign Affairs) to determine whether or not it is eligible for Grant Aid. If the request is deemed appropriate, the Government of Japan assigns JICA (Japan International Cooperation Agency) to conduct a study on the request.

Secondly, JICA conducts the study (Basic Design Study) using (a) Japanese consulting firm(s). Terrigandoras bahayi selt diga acceptionera en bolocorro en historia.

Thirdly, the Government of Japan appraises the project to see whether or not it is suitable for Japan's Grant Aid Scheme, based on the Basic Design Study report prepared by JICA, and the results are then submitted to the Cabinet for approval. (2) "The sizeboa of him Chara Ald" increas the one fiscal vices, which he Cabbat awaying the Pro

Fourthly, the project, once approved by the Cabinet, becomes official with the Exchange of Notes (E/N) signed by the Governments of Japan and the recipient country. ez dose eneros) il esconogram di trab reconstrucción consideránt distribuit e das procesos. Esta escon el technic

Finally, for the implementation of the project, IICA assists the recipient country in such matters as preparing tenders, contracts and so on. which the provided has needing Issuerical in transfer

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organism district for excitation to expension and in previous unlique, level of both life like like and the con-

2. Basic Design Study ambigues of our cult wait of the addrage of the princes beitgious to it

(1) Contents of the study same waying these subsectioned a particle and a plantage at a compact of the

The aim of the Basic Design Study (hereafter referred to as "the Study") conducted by JICA on a requested project (hereafter referred to as "the Project") is to provide a basic document necessary for the appraisal of the Project by the Government of Japan. The contents of the Study are as follows:

- Confirmation of the background, objectives, and benefits of the Project and also institutional capacity of agencies concerned of the recipient country necessary for the Project's implementation.

- Evaluation of the appropriateness of the Project to be implemented under the Grant Aid Scheme from a technical, social and economic point of view.

- Confirmation of items agreed on by both parties concerning the basic concept of the Project.

- Preparation of a basic design of the Project.

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- Estimation of costs of the Project.

The contents of the original request are not necessarily approved in their initial form as the contents of the Grant Aid project. The Basic Design of the Project is confirmed considering the guidelines of the Japan's Grant Aid Scheme.

The Government of Japan requests the Government of the recipient country to take whatever measures are necessary to ensure its self-reliance in the implementation of the Project. Such measures must be guaranteed even though they may fall outside of the jurisdiction of the organization in the recipient country actually implementing the Project. Therefore, the implementation of the Project is confirmed by all relevant organizations of the recipient country through the Minutes of Discussions.

(2) Selection of Consultants (yawanao bahanaan an) ya chana maganifi

For smooth implementation of the Study, JICA uses (a) registered consulting firm(s). JICA selects (a) firm(s) based on proposals submitted by interested firms. The firm(s) selected carry (ies) out a Basic Design Study and write(s) a report, based upon terms of reference set by JICA. The consultant firm(s) used for the Study is (are) recommended by JICA to the recipient country to also work on the Project's implementation after the Exchange of Notes, in order to maintain technical consistency.

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(1) Exchange of Notes (E/N) (a) gama (visus agreed) visus adaptions ADN labor.

Japan's Grant Aid is extended in accordance with the Notes exchanged by the two Governments concerned, in which the objectives of the Project, period of execution, conditions and amount of the Grant Aid, etc., are confirmed.

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- (2) "The period of the Grant Aid" means the one fiscal year, which the Cabinet approves, the Project for. Within the fiscal year, all procedures such as exchanging of the Notes, concluding contracts with (a) consultant firm(s) and (a) contractor(s) and final payment to them must be completed. However, in case of delays in delivery, installation or construction due to unforeseen factors such as national disaster, the period of the Grant Aid can be further extended for a maximum of one fiscal year at most by mutual agreement between the two Governments.
- (3) Under the Grant Aid, in principle, Japanese products and services including transport or those of the recipient country are to be purchased. When the two Governments deem it necessary, the Grant Aid may be used for the purchase of the products or services of a third country. However, the prime contractors, namely, consulting, constructing and procurement firms, are limited to "Japanese nationals". (The term "Japanese nationals" means persons of Japanese nationality or Japanese corporations controlled by persons of Japanese nationality.)

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(4) Necessity of "Verification"

The Government of recipient country or its designated authority will conclude contracts denominated in Japanese yen with Japanese nationals. Those contracts shall be verified by the Government of Japan. This "Verification" is deemed necessary to secure accountability to Japanese taxpayers.

(5) Undertakings required of the Government of the Recipient Country

In the implementation of the Grant Aid Project, the recipient country is required to undertake such necessary measures as the following:

a) To secure land necessary for the sites of the Project and to clear, level and reclaim the land prior to commencement of the construction,

b) To provide facilities for the distribution of electricity, water supply and drainage and other incidental facilities in and around the sites.

c) To secure buildings prior to the procurement in case the installation of the equipment,

d) To ensure all the expenses and prompt excursion for unloading, customs clearance at the port of disembarkation and internal transportation of the products purchased under the Grant Aid,

e) To exempt Japanese nationals from customs duties, internal taxes and other fiscal levies which will be imposed in the recipient country with respect to the supply of the products and services under the Verified Contracts,

f) To accord Japanese nationals, whose services may be required in connection with the supply of the products and services under the Verified contracts, such facilities as may be necessary for their entry into the recipient country and stay therein for the performance of their work.

(6) "Proper Use"

The recipient country is required to maintain and use the facilities constructed and the equipment purchased under the Grant Aid properly and effectively and to assign staff necessary for this operation and maintenance as well as to bear all the expenses other than those covered by the Grant Aid.

(7) "Re-export"

The products purchased under the Grant Aid should not be re-exported from the recipient country.

(8) Banking Arrangements (B/A)

a) The Government of the recipient country or its designated authority should open an account in the name of the Government of the recipient country in a bank in Japan (hereinafter referred to as "the Bank"). The Government of Japan will execute the Grant Aid by making payments in Japanese yen to cover the obligations incurred by the Government of the recipient country or its designated authority under the Verified Contracts.

b) The payments will be made when payment requests are presented by the Bank to the Government of Japan under an Authorization to Pay (A/P) issued by the Government of the recipient country or its designated authority.

(9) Authorization to Pay (A/P)

The Government of the recipient country should bear an advising commission of an Authorization to Pay and payment commissions to the Bank.

(End)

Attached: Flow Chart of the Procedures of Japan's Grant Aid for General Projects

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Flow Chart of the Procedures of Japan's Grant Aid for General Projects

Singo	Flow & Warks	Recipient Government	Japanese Government JICA	Consultant	Confractor	Offers
Kuduesi	Request* [approximate]	period to be perse	sary for each proced			
altoy.	Project Evaluation of T/R Identification Survey (T/R: Terms of Reference) Proparatory Field Survey & Home		waling A A			
Preliminary Examination Braic Design Preparatory	Schöulon & Contracting of Field Survey & Home				e (marge)	•
· Preliminatry Baric Design	Study Study Office Werk Reporting Repiration of Draft Final Report Final Report		-бинэ) 🖫		10 2010 20	
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Major Undertakings to be taken by Each Government

	Major Undertakings to be taken by Each Govern	7	L .
No.	Items	To be covered by Grant Aid	To be covered b Recipient Side
1	To secure land		
2	To clear, level and reclaim the site when needed		•
3 -	To construct gates and fences for the construction yard		
4	To construct the parking lot		
5	To construct temporary roads		
	1) Within the site .	•	
	2) Outside the site	٠,٠	•
6	To construct the buildings	•	
7	To provide facilities for the distribution of electricity, water supply, drainage and other incidental facilities	•	
	1) Electricity		
	a. The distributing line to the site	•	•
	b. The drop wiring and internal wiring within the site	•	
• •	c. The main circuit breaker and transformer	•	
	2) Water Supply		
٠	a. The city water distribution main to the site	N/	Ä
•	b. The supply system within the site (receiving and elevated tanks)	. N/	
•	3) Drainage		
	a. The city drainage main (for storm, sewer and others to the site) to the site	N/	Λ .
	b. The drainage system (for toilet sewer, ordinary waste, storm drainage and		<u>A</u>
	others) within the site	•	•
	.4) Gas Supply		
•]	a. The city gas main to the site	N/.	Δ
	b. The gas supply system within the site	, N/.	
•	5) Telephone System		
٠,	a. The telephone trunk line to the site		<u>.</u>
	b. The MDF and the extension after the frame/panel		·····
	6) Furniture and Equipment		
. '	a. General furniture	. N/.	Λ
	b. Project equipment	N/.	
8	To bear the following commissions to the Japanese bank for banking services		1.
.	based upon the B/A	· .	
	1) Advising commission of A/P		
	2) Payment commission		<u>.</u>
9	To ensure unloading and customs clearance at port of disembarkation in		
- 1	recipient country		
	1) Marine (Air) transportation of the products from Japan to the recipient		
. }	country	• •	
	2) Tax exemption and custom clearance of the products at the port of disembarkation		•
	3) Internal transportation from the port of disembarkation to the project site	•	
10	To accord Japanese nationals whose service may be required in connection with	:	
	the supply of the products and the services under the verified contact such	. 1	
f	facilities as may be necessary for their entry into the recipient country and stay therein for the performance of their work.		
11			,
	To exempt Japanese nationals from customs duties, internal taxes and other fiscal levies which may be imposed in the recipient country with respect to the		
.	supply of the products and services under the verified contracts	-	•
12 :	To maintain and use properly and effectively the facilities constructed under the		
	Grant Aid		•
	To bear all the expenses, other than those to be borne by the Grant Aid,	:	
	- THE THE THE THE TARGET AND A PRODUCT OF THE TRANSPORT AND A		-
	necessary for construction of the facilities as well as for the transportation and		

(B/A: Banking Arrangement, A/P: Authorization to Pay, N/A: Not Applicable)

MZ

4-2	Draft Report Explanation (May 20, 2005)

Minutes of Discussions on the Basic Design Study on the Project for Reconstruction of M5 Bridges between Balaka and Salima in the Republic of Malawi or document just in the (Explanation on the Draft Report)

In December 2004, the Japan International Cooperation Agency (hereinafter referred to as "JICA") dispatched the Basic Design Study Team on the Project for Reconstruction of M5 Bridges between Balaka and Salima (hereinafter referred to as "the Project") to the Republic of Malawi (hereinafter referred to as "Malawi"), and through discussions, field survey and technical examination of the results in Japan, JICA prepared a Draft Report of the study.

In order to explain and to consult with the officials concerned of the Government of Malawi on the components of the Draft Report, JICA sent to Malawi the Basic Design Explanation Team (hereinafter referred to as "the Team"), headed by Mr. Tatsuya Murase, Deputy Resident Representative POOR what old older animal lite of the JICA Malawi Office, from May 15 to 22, 2005.

In the course of the discussions, both sides confirmed the main items described in the attached edinel mysskell milQ 1). The bridge that the shall site date the budget in the fiscal year of 2005 and 100% for sudurating, so be sheets.

(2). East sides confinied that the Project will have no signific an negative impact chalc covircentent and osighiposing society. The Astalousien eithe shock of anolige the Project of reponents requaling to the ETA cope

thed we because The Latitoth receive, at moveds were delided been reliefed. Lilongwe, May 20, 2005 of

sides on December 21, 201

construction of fixe befoles (incombs of maters of Miles

Mr. Tatsuya Murase Free grant and the Mr.

Leader comercia vient forbut to cared newlino Basic Design Explanation Team Japan International Cooperation Agency

· which our country attitudes in thesis or the Friday Januar by MCA, and the Make his see hash with the

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Japan

Mr. Francis B. Chinsinga and administration of Principles to the Malarcian sisterades contented of for Profess.

Principal Secretary May Hade able universal (Vi on L. (1))

Ministry of Transport and Public Works

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And the signification the appropriation of

Republic of Malawi (1362, 15512 minvalintal of C

Mr. Maxwell Y. Kachiwala

Acting Chief Executive Officer National Road Authority Republic of Malawi. #"

ATTACHMENT

latifa Miller Halmort Light.

Type by State of the Building States

1. Contents of the Draft Report

The Malawian side agreed and accepted in principle the contents of the Draft Report explained by the Team.

Recorded And the Japan Respondence Commission Agrees Descinded actioned to us

2. Japan's Grant Aid Scheme அரசு இரு மாழ்கி வர் நடிகளி முழ்கரி மிக்கி எளி காண்குள் முற்றி The Malawian side reconfirmed the Japan's Grant Aid Scheme and the necessary measures to be taken by the Government of Malawi explained by the Team as described in Annex-3 and Annex-4 of the Minutes of Discussions (M/D) signed by both sides on December 23, 2004. assessed of adaptives isocrator to explaint and to countly with the officials contended of the Covernment of Intilians on

3. Schedule of the Study open to see it is resultive or mor ADEL coopen for the second JICA will complete the Final Report in accordance with the confirmed items and send it to the Malawian side by July 2005. the IRCA Washawi Office, didni May 15 edd0, 2005. is the course of the discussions, coin sides confirmed the main inside discribed in the directive

Other Relevant Issues

- (1) The Malawian side shall allocate the budget in the fiscal year of 2005 and 2006 for undertakings to be done on a timely manner by the Malawian side, which were shown in Annex-4 of the M/D signed by both sides on December 23, 2004.
- (2) Both sides confirmed that the Project will have no significant negative impact on the environment and neighboring society. The Malawian side shall examine the Project components according to the EIA code in Malawi and shall obtain the approval for reconstruction of four bridges from the Ministry of Mines, Natural Resources and Environment by the end of July 2005.
- (3) Both sides agreed that the contractor of the Project can utilize the bailey bridges at Nankokwe and Luwadzi for detouring roads during the construction period without lease payment and shall return them to the Malawian side after completion of the Project.
- (4) The Malawian side shall remove the wreckage of old bridges, culvert parts, etc which may hamper the river flow, after completion of the new bridges.
- (5) The Malawian side shall provide police security for the Project camp yard, the personnel and supervisor for traffic control around the Project sites.
- (6) The Malawian side requested the Team to carry out the counterpart training in Japan on the bridge maintenance management system as technical cooperation by JICA, and the Malawian side understood that another official request will be needed to the Japanese side through the JICA Malawi Office.

Standard Roberts W maistern aldanos end

(IEE)

Angoni Culvert Check Sheet (**Down-stream**)

// Kindergarten

Environmental and social check worksheet on each bridge

Name of Bridge1: Angoni Culvert DOWNSTREAM (Temporary existing pipe culvert (width 16.5*length 19.3*height 2.6m)) SURVEY DATE LOCATION NAME ANGONI CULVERT LAT:S14°36'58.3" 29 Dec. 2004, 6 Jan. 2005 LNG:E34°44'20.9" ALT:638m WEATHER :SHOWER/CLOUDY 600*200m=12ha (included river area, 300m each side from center of bailey bridge, SURVEY AREA SURVEYOR :HIGA/MAKWINJA 100m each side from center of existing road) SKETCH :HIGA (no scale) CONDITION OF EACH DOWN STREAM ENVIRONMENTAL ITEM Legend AIR POLLUTION No relation Existing Bridge **Endangered Species** Existing Road See Topographic map River Dimension WATER POLL Facilities, Inhabit. Flow No flow (puddles in river, visual survey, Dec.17,2004) UTION Water usage point Turbidty,PH, COD 20 Inhabitants SOIL POLLUTION No relation Salima WASTE Quarry (Sharape, +10km distance), Borrow and Gravel Pit (Kalungama, +5km distance) TRAFFIC ACCIDENT Maize v Interview with Salima traffic police station (see interview result) AND SECURITY SITUATION Cassava WATER USAGE Washing, Water place for livestock Interview with NRA Environmental Specialist and local inhabitant Animal Diversity Maize, Cassava, Banana, Papaya, Sugar cane Vegetation BIODIVERSITY Endangered Species Nonexistent Downsteram(Dec.17,2004) 10 (200m Balaka side) In the right of the way *** Out of ROW 35 (200m Salima and Balaka side) INHABITATION Main industry of Small-scale farming, Kiosk, Trading inhabitant 20m Farm land, inhabitation, Livestock's grazing area LAND USE NP/Wildlife Reserve & For washing, livestock Nonexistent Grave Forest Bus stop, Meeting place, Kindergarten (250m Balaka side), Trading center, SOCIAL INFRASTRUCTURE Kiosk(mini-bar & cafe) Balaka VULNERABLE SOCIAL GROUPS Nonexistent WATER RIGHTS Nonexistent FISHERIES RIGHTS Nonexistent LOCAL CONFLICT Nonexistent CULTURAL HERITAGE Nonexistent Trading center INFECTIOUS DISEASES HIV/AIDS Interview with administration in Salima District Hospital (see interview result) OTHERS (Disaster) Road pavement, road embankment and river edge were eroded and scoured by flood in 2003. 25 Inhabitants,4kiosks and 2 meeting place under the tree(10 houses in ROW, 15 houses out ROW)

Name of Bridge1: Angoni Culvert <u>UPSTREAM</u> (Temporary existing pipe culvert (width 16.5*length 19.3*height 2.6m))

SURVEY DATE	:29 Dec. 2004	4, 6 Jan. 2005	LOCATION NAME	ANGONI CULV	ERT	LAT:S14°36'58.3"	LNG:E34°44'20.9" ALT:638m		
WEATHER	:SHOWER/C	LOUDY	SURVEY AREA	600*200m=12ha	(included river area, 300m	each side from center of bailey bridge,			
SURVEYOR	:HIGA/MAK	WINJA	SURVEI AREA	100m each side from center of existing road)					
SKETCH	:HIGA (no sc	ale)		CONDITION OF	EACH	TIDOMDI	EAM ADEA		
Legend		Claush	ENVIRONMENTAL ITEM		UPSTREAM AREA				
Existing Culver	t	(💆)	Church	AIR POLLUTION	N	No r	relation		
Existing Road Facilities, Chur	oh Tubobit	339°		WATER DOLL	River Dimension	See Topo	graphic map		
Facilities, Chur	cn, innabit.	Church	The second second	WATER POLL UTION	Flow	No flow (puddles in river	, visual survey, Dec.17,2004)		
		110m√30m		UTION	Turbidty,PH, COD	_			
	т	Brick yard 25m		SOIL POLLUTION	ON	No 1	relation		
V	1	orick yard >		WASTE		Quarry (Sharape, +10km distance), Borro	w and Gravel Pit (Kalungama, +5km distance)		
Maize V V Cassava		90m ↓	SALIMA	TRAFFIC ACCID	ENT	Interview with Coline traffic	police station (see interview result)		
V V			i I	AND SECURITY	SITUATION	interview with Sanma traine p	bolice station (see interview result)		
9			<u> </u>	WATER USAGE		Washing, Water	r place for livestock		
100 A					Animal Diversity	Interview with NRA Environme	ental Specialist and local inhabitant		
	(0)	Sugarcane,	i	BIODIVERSITY	Vegetation	Maize, Cassava, Ban	ana, Papaya, Sugar cane		
7 On America		Papaya, Banana	<u>†</u>	BIODIVERSITY	Endangered Species	None	existent		
				INHABITATION	In the right of the way	2 (200m	Balaka side)		
		Dry river bed			Out of ROW	13 (200m Balaka side)			
100					Main industry of inhabitant	Small-scale farming			
	The state of the s					Farm land, inhabitation, Livestock's grazing area			
Upsteram	(D. 17 2004)			LAND USE	NP/Wildlife Reserve & Forest	Nonexistent			
Upsteram	(Dec.17,2004)	Maize V		SOCIAL INFRASTRUCTURE		Church(110m Salima side), Brick yard(90m Salima side), Bus stop(200m Balaka side)			
		Cassava		VULNERABLE S	SOCIAL GROUPS	Nonexistent			
	mark.			WATER RIGHTS		None	existent		
				FISHERIES RIG		None	existent		
		8		LOCAL CONFLI		None	existent		
	200m Bus sto		n 4	CULTURAL HE			existent		
				INFECTIOUS DI	SEASES HIV/AIDS	Interview with administration in Salima	District Hospital (see interview result)		
15 Inhabitants and 1kiosk (2houses in ROW, 13 houses out ROW)		BALAKA	OTHERS (Disast	er)	Road pavement, road embankment and river edge were eroded and scoured by f in 2003.				
						<u> </u>			

Name of Bridge 2: Nanyangu Culvert DOWNSTREAM (Temporary pipe culvert, width 7.5*length 20.5*height 6.0m) SURVEY DATE :29 Dec. 2004, 6 Jan. 2005 LOCATION NAME NANKOKUWE CULVERT LAT:S14°36'58.3" LNG:E34°44'20.9" ALT:638m WEATHER SHOWER/CLOUDY 600*200m=12ha (included river area, 300m each side from center of bailey bridge, SURVEY AREA SURVEYOR :HIGA/MAKWINJA 100m each side from center of existing road) SKETCH :HIGA(No scale) CONDITION OF EACH DOWNSTREAM AREA ENVIRONMENTAL ITEM 60m← AIR POLLUTION No relation Existing Culvert Salim 3 Inhabitant (out of ROW) 250m Existing Road See Topographic map River Dimension WATER POLL Facilities, Church, Inhabit Flow No flow due to dry UTION Turbidty,PH, COD SOIL POLLUTION No relation WASTE Quarry (Sharape, +30km distance), Borrow and Gravel Pit (Chingamba, +5km distance) TRAFFIC ACCIDENT Interview with Salima traffic police station (see interview result) AND SECURITY SITUATION WATER USAGE Irrigation Interview with NRA Environmental Specialist and local inhabitant Animal Diversity Maize, Cassava, Banana, Tobacco Vegetation BIODIVERSITY Endangered Species DELBERIGEA MELANOXYLON under Nonexistent the Malawi list (+200m Balaka side) Dry riverbed In the right of the way Out of ROW 3(250m Salima side), 1(110m Balaka side) INHABITATIO Main industry of Small-scale farming (maize, cassava, banana) inhabitant Farm land, inhabitation, Livestock's grazing area AND USE NP/Wildlife Reserve & Nonexistent Maize _V Downstream(Dec.17,2004) Forest Cassava SOCIAL INFRASTRUCTURE School(+350m Salima side) VULNERABLE SOCIAL GROUPS Nonexistent 110m WATER RIGHTS Nonexistent FISHERIES RIGHTS Nonexistent LOCAL CONFLICT Nonexistent (out of ROW) CULTURAL HERITAGE Nonexistent INFECTIOUS DISEASES HIV/AIDS Interview with administration in Salima District Hospital (see interview result) 1 № 200m OTHERS(Disaster) River edge was eroded and scored by flood 2001. River protection by gabion is under construction. Endangered species Balaka

Name of Bridge 2: Nanyangu Culvert UPSTREAM (Temporary pipe culvert, width 7.5*length 20.5*height 6.0m)

SURVEY DATE :29 Dec. 2004, 6 Jan. 2005 LOCATION NAME NANKOKUWE CULVERT LAT:S14°36'58.3" LNG:E34°44'20.9" ALT:638m WEATHER :SHOWER/CLOUDY 600*200m=12ha (included river area, 300m each side from center of bailey bridge, SURVEY AREA SURVEYOR :HIGA/MAKWINJA 100m each side from center of existing road) SKETCH :HIGA(No scale) CONDITION OF EACH UPSTREAM AREA ENVIRONMENTAL ITEM AIR POLLUTION No relation Existing Culvert Salima Existing Road See Topographic map River Dimension WATER POLL Facilities, Church, Inhabit. Flow No flow (Dec. 17,2004) UTION Turbidty.PH. COD SOIL POLLUTION No relation Maize _V WASTE Quarry (Sharape, +30km distance), Borrow and Gravel Pit (Chingamba, +5km distance) TRAFFIC ACCIDENT Cassava Interview with Salima traffic police station (see interview result) AND SECURITY SITUATION WATER USAGE Irrigation Interview with NRA Environmental Specialist and local inhabitant Animal Diversity Maize, Cassava, Banana, Tobacco Vegetation BIODIVERSITY Dry river bed Endangered Species Nonexistent 1 (90m Balaka side In the right of the way Upstream (Dec. 17,2004) Out of ROW $8(90\sim250$ m Balaka side) Maize _V INHABITATION Main industry of Small-scale farming (maize, cassava, banana, tobacco) inhabitant Farm land, inhabitation, Livestock's grazing area LAND USE NP/Wildlife Reserve & Nonexistent Forest SOCIAL INFRASTRUCTURE Nonexistent VULNERABLE SOCIAL GROUPS Nonexistent WATER RIGHTS Nonexistent 20m FISHERIES RIGHTS Nonexistent LOCAL CONFLICT Nonexistent CULTURAL HERITAGE Nonexistent INFECTIOUS DISEASES HIV/AIDS Interview with administration in Salima District Hospital (see interview result) 1 Inhabitant in ROW and OTHERS(Disaster) River edge was eroded and scored by flood 2001. River protection by gabion is 3 Inhabitants out of ROW under construction. Balaka 5 Inhabitants (out of ROW)

Environmental and social check worksheet on each bridge

Name of Bridge 3:Nankokwe Bridge DOWNSTREAM (33m Temporary Bailey Bridge, existing bridge was settled by flood)

	inkokwe Bridge <u>DOWNSTREAM</u> (3				
SURVEY DATE	:29 Dec. 2004, 6 Jan. 2005	LOCATION NAME			LAT:S14°17'28.4" LNG:E34°31'21.4" ALT:537m
WEATHER	:SHOWER/CLOUDY	SURVEY AREA			each side from center of bailey bridge, 100m
SURVEYOR	:HIGA/MAKWINJA	SCICVET THEEZY		enter of existing road)	
SKETCH	:HIGA(No scale)		CONDITION OF		DOWNSTREAM AREA
Legend	1		ENVIRONMEN'I	TAL ITEM	DOWNSTREAMAREA
Existing Bridge			AIR POLLUTION	N	No relation
Existing Road	¦ 🌣			River Dimension	See Topographic map
Facilities, Inhab		A CONTRACTOR	WATER POLL		Q= width 15m*depth 1.0m*1.0m/s=15m ³ /s (23rd Dec. visual survey)
Water usage poi	Maize _v v	A STATE OF THE STA	UTION	Flow	Q= width 15m*depth 1.5m*2.0m/s=45m³/s (24th Dec., visual survey)
	Cassay		CHON	m III DII GOD	Q- width 15th depth 1.5th 2.0th/s-45th/s (24th Dec., visual survey)
N Salima	íri v v		COTT DOLLING	Turbidty,PH, COD	
(1	15m Exitig telephone line	The same of the sa	SOIL POLLUTI	UN	No relation
	- E-00/-0-1		WASTE		Quarry (Kapiri, +10km distance), Borrow and Gravel Pit (Njolo, +5km distance)
333°	about 100m interval	AND RECORDS	TRAFFIC ACCII		Interview with Salima traffic police station (see interview result)
	Signboard	A STATE OF THE PARTY OF THE PAR	AND SECURITY		-
	Plantation, Citura		WATER USAGE		Irrigation, Washing, Water place for livestock
	60m			Animal Diversity	No relation
	Rubber tree(1ha)	amenda y services where	BIODIVERSITY	Vegetation	Maize, Cassava, Plantation (2ha)
		A CONTRACTOR OF THE CONTRACTOR	BIODIVERSITY	Endangered Species	Nonexistent
		DESCRIPTION OF THE PROPERTY OF		0 1	
		-		In the right of the way	0
		The state of		Out of ROW	0
	Existing drop		INHABITATION	Main industry of	
				inhabitant	Small-scale farming (maize, cassava, banana), Carving(sell crafts along M5)
	structure	(D 45 2004)		miasiani	Farm land, inhabitation, Livestock's grazing area
	Dowr	nstream(Dec. 17,2004)	LAND USE	NP/Wildlife Reserve &	Tarm tand, mindstandin, 12 vestock o grazing area
	!!!		LAND USE	Forest	Nonexistent
			<u> </u>	Forest	
	Proposed Camp		SOCIAL INFRAS	CALDI ICALI IDE	Telephone line, Drop structure in river, Grave and Bus stop (600m Salima side)
	Yard 1ha		SOCIAL INFINA	SIROCIONE	relephone line, Drop structure in river, Grave and Bus stop (600in Sahma side)
	v ·	alliani de la company de la company	VIII.NERABLE S	SOCIAL GROUPS	Nonexistent
	Maize V	Colon Middle	WATER RIGHTS		Nonexistent
	Cassava	Mark Town	FISHERIES RIG		Nonexistent
	V V		LOCAL CONFLI		Nonexistent
			CULTURAL HE		Nonexistent
	350m				
	Balaka			ISEASES HIV/AIDS	Interview with administration in Salima District Hospital (see interview result)
	Nic	olo village	OTHERS(Disaste	er)	Due to Flood 2001 exiting pier was settled and river edge has been eroded and scoured
	!				
	<u>'</u>				

Nankokw Bridge Check Sheet (Up-stream)

Environmental and social check worksheet on each bridge

Name of Bridge 3:Nankokwe Bridge UPSTREAM (33m Temporary Bailey Bridge , existing bridge was settled by flood) :29 Dec. 2004, 6 Jan. 2005 LOCATION NAME NANKOKUWE BRIDGE SURVEY DATE LAT:S14°17'28.4" LNG:E34°31'21.4" ALT:537m :SHOWER/CLOUDY WEATHER 600*200m=12ha (included river area, 300m each side from center of bailey bridge, 100m each side from center SURVEY AREA :HIGA/MAKWINJA SURVEYOR of existing road) SKETCH :HIGA(No scale) CONDITION OF EACH UPSTREAM AREA ENVIRONMENTAL ITEM Legend Existing Bridge AIR POLLUTION No relation Existing Road Salima. See Topographic map River Dimension - Facilities, Inhabit. Q= width 15m*depth 1.0m*1.0m/s=15m³/s (23rd Dec. visual survey) WATER POLL Flow UTION Q= width 15m*depth 1.5m*2.0m/s=45m³/s (24th Dec., visual survey) 350m√ Turbidty,PH, COD 11 Inhabitants (3houses in Row. 8houses out of SOIL POLLUTION No relation Row) WASTE Quarry (Kapiri, +10km distance), Borrow and Gravel Pit (Njolo, +5km distance) TRAFFIC ACCIDENT Interview with Salima traffic police station (see interview result) AND SECURITY SITUATION Cassava WATER USAGE Irrigation, Washing, Water place for livestock No relation Animal Diversity Maize, Cassava, Banana Vegetation BIODIVERSITY Endangered Species Nonexistent In the right of the way 3 (350m Salima side) Out of ROW 8 (350m Salima side) INHABITATION Main industry of Small-scale farming (maize, cassava, banana), Carving(sell crafts along M5) Upstream(Dec. 17, 2004) inhabitant Farm land, inhabitation, Livestock's grazing area LAND USE NP/Wildlife Reserve & Maize Nonexistent Forest Cassava V 60m_ Banana Electricity line, Kiosk & Bus stop (700m Salima side), Hospital and Mua Mission (Mua SOCIAL INFRASTRUCTURE Signboard Mt Salima side) VULNERABLE SOCIAL GROUPS Nonexistent WATER RIGHTS Nonexistent FISHERIES RIGHTS Nonexistent → 30m LOCAL CONFLICT Nonexistent Exitig electricity CULTURAL HERITAGE Nonexistent line about 100m INFECTIOUS DISEASES HIV/AIDS Interview with administration in Salima District Hospital (see interview result) Balaka OTHERS(Disaster) Due to Flood 2001 exiting pier was settled and river edge has been eroded and scoured

Luwadge Bridge Check Sheet (Down-stream)

Environmental and social check worksheet on each bridge

Name of Bridge 4:Luwadzi Bridge DOWNSTREAM (55m Temporary Bailey, existing bridge was washed away by flood)

SURVEY DATE	:29 Dec. 2004, 6 Jan. 2005	LOCATION NAME	I:LUWADZI BRID	GE .	LAT:S12°57'27.6" LNG:E34°29'25.8" ALT.:500m
WEATHER	SHOWER/CLOUDY				m each side from center of bailey bridge,
SURVEYOR	:HIGA/MAKWINJA	SURVEY AREA		om center of existing roa	• 0 /
SKETCH	:HIGA(No scale)	I.	CONDITION OF EACH		
- N	Salima II Signboar N Legend		ENVIRONMENT		DOWNSTREAM AREA
Salima		Existing Bridge	AIR POLLUTION	V	No relation
		Existing Road		River Dimension	See Topographic map
	341	Facilities, Inhabit.	WATER POLL		Q= width 5m*depth 0.3m*0.5m/s=0.75m ³ /s (23rd Dec. 2004, visual survey)
	1 🛑 '	Water usage point	UTION	Flow	Q= width 15m*depth 1.3m*2.0m/s=39m³/s (30th Dec. 2004, visual survey)
	20m Exitig telephone line			Turbidty,PH, COD	——————————————————————————————————————
ļį	about 100m interval	and the second	SOIL POLLUTION		No relation
!		3000	WASTE	011	Quarry (Kapiri, +30km distance), Borrow and Gravel Pit (Ngwena, +5km distance)
	- 55th		TRAFFIC ACCID	ENT	Pick up car hit bailey bride at night Dec.16,2004 (Deceased 1, Victim 1)
	V	5 A 4 4 5 5	AND SECURITY		Interview with Salima traffic police station (see interview result)
	Maize V	VI. 12	WATER USAGE		Irrigation, Washing, Water place for livestock
į	Marze V Cassava V V			Animal Diversity	No relation
	Cassava	Buck	DIODIT/EDCUMY	Vegetation	Maize, Cassava, Banana
XXXXXXXXXX	, & * *		BIODIVERSITY	Endangered Species	①HYPHAENE CRINITA and ②ALBIZA ANTHELEMINTICA under the Malawi list
	Existing Groin				(150m Balaka side)
				In the right of the way	0
l i			INHABITATION	Out of the right of the w	0
	80m Washed away	Downstrem(Dec.17,2004)		Main industry of inhabitant	Small-scale farming (maize, cassava, banana)
	Bridge Slab	DOWNSTIEM(Dec.17,2004)			Farm land, inhabitation, Livestock's grazing area
	OO Maize V		LAND USE	NP/Wildlife Reserve & Forest	Nonexistent
	Cassava V V	A Company	SOCIAL INFRAS	TRUCTURE	Grave(190m Balaka side), Telephone line
	Dallallay			SOCIAL GROUPS	Nonexistent
l i			WATER RIGHTS	}	Nonexistent
!			FISHERIES RIG		Nonexistent
2 150m Endengered species			LOCAL CONFLI		Nonexistent
			CULTURAL HEF		Nonexistent
		19		SEASES HIV/AIDS	Interview with administration in Salima District Hospital (see interview result)
	1 50m 190m Balaka Grave	As	OTHERS (Disaste	er)	Due to Flood 2000, existing bridge slab was washed way and its pier was settled. River edge has been eroded and scored

Luwadge Bridge Check Sheet (Up-stream)

Environmental and social check worksheet on each bridge

Name of Bridge 4:**Luwadzi Bridge UPSTREAM** (55m Temporary Bailey ,existing bridge was washed away by flood)

		:LUWADZI BRID	GE	LA	AT:S12°57'27.6"	LNG:E34°29'25.8"	ALT.:500m
WEATHER :SHOWER/CLOUDY	DY TEXT A DELA	600*200m=12ha	00*200m=12ha (included river area, 300m each side from center of bailey bridge, 100m each side from				
SURVEYOR :HIGA/MAKWINJA	RVEY AREA	center of existing road)					
SKETCH :HIGA(No scale)		CONDITION OF	EACH	ITPOTPEAM AREA			
Legend	<u> </u>	ENVIRONMENT		UPSTREAM AREA			
Salima	·	AIR POLLUTION	1		No r	elation	
Existing Bridge Existing Road			River Dimension		See Topo	graphic map	
Facilities, Inhabit.		WATER POLL	TII	Q= width 5m*dept	th 0.3m*0.5m/s=0	.75m³/s (23rd Dec. 20	04, visual survey)
Water usage point		UTION	Flow	Q= width 15m*	*depth 1.3m*2.0m	n/s=39m³/s (30th Dec.	visual survey)
L			Turbidty,PH, COD				-
V !		SOIL POLLUTION	ON		No 1	relation	
Maize V V	i	WASTE		Quarry (Kapiri, +30kn	n distance), Borro	w and Gravel Pit (Ng	wena, +5km distance)
Cassava V	j	TRAFFIC ACCID	ENT	Pick up car hit ba	ailey bride at nigh	nt Dec.16,2004 (Decea	sed 1, Victim 1)
V V	į	AND SECURITY	SITUATION	Interview with	h Salaam traffic p	oolice station (see inte	erview result)
Exitig electricity line 60m	. × 8	WATER USAGE		Irrigation, Washing, Water place for livestock			
about 100m interval			Animal Diversity		No r	elation	
		DIODE IEDOIMI	Vegetation	Maize, Cassava, Banana			
******	∏ ∞ ≬ ×	BIODIVERSITY	Endangered Species		No 1	relation	
××	i 🔯						
	i l		In the right of the way			0	
			Out of ROW	10 (300 m Balaka side)			
Existing Gabion	!	INHABITATION	Main industry of	G 11 1	1.6 : / :	1	1 ()
Upstream(Dec.17,2004)			inhabitant	Small-scal	le farming (maize	, cassava, banana, gr	ound nut)
Upstream(Dec.17,2004)				Farm	land, inhabitatio	n, Livestock's grazing	area
∞ * * * *		LAND USE	NP/Wildlife Reserve &		N	:	
	i		Forest		None	existent	
Maize V	i	SOCIAL INFRAS	MDI IOMI IDE	Rest place under tree, Ele	lectricity line, Sch	ool (550m Balaka sid	e),
Cassava	į			Waterwell & Mosque(350m Salima side)			
! V V 70m	į	VULNERABLE S			None	existent	
Signboar	!	WATER RIGHTS			None	existent	
,		FISHERIES RIGI	HTS		None	existent	
		LOCAL CONFLIC	CT		None	existent	
180m/\		CULTURAL HER	RITAGE		None	existent	
15m	i	INFECTIOUS DI	SEASES HIV/AIDS	Interview with administr	ration in Salima I	District Hospital (see	interview result)
	i I.	OTHERS (Disaste	er)	Due to Flood 2000, exist			
Rest Place under the tre	Balaka			River edge has been erod	led and scored		
	!\ <u></u>						

Mitigation Plans

Environmental Impact Items	Potential Environmental Impacts	Mitigation Plans	Institutional Responsibilities	Cost Estimate(MK)	Comments			
Before Construction (In Basic Design • Detailed Design)								
Traffic accidents and Security situation	Increase risk of traffic accidents due to increased traffic volume	Plan and design considering smooth traffic of vehicles, bicycles and pedestrians. Safety and preventive measure of accident - Safety alignment of road (Vertical and horizontal grade, horizontal curve radius etc.) - Installation of traffic safety facilities (traffic board, road marking, railing • guardrail etc.) - Proper drainage plan (horizontal • vertical grade, drain ditch, side ditch, etc.) - Secure the safety side walk (required width, mount-up type)	JICA study team (checked by MOTPW and NRA)	0	All mitigation plans are considered in the Design			
Water quality • Water Usage	- Risk of water pollution in the rivers - Inconvenience to use the existing water supplies	Plan, design and construction plan to protect deterioration of water and maintaining water usage - Secure the access to water usage points such as washing place (installation of stairs) - Selection of foundation type to minimize deterioration of water by waste material due to construction works - Construction in dry season or low water level - River diversion if necessary	JICA study team (checked by MOTPW and NRA)	0				
Biodiversity	Increased risk of negative impacts to biodiversity	Plan and design in consideration with preservation of precious biodiversity Inspection and confirmation of area growing precious plants from topographic survey Selection of road alignment and bridge location avoiding the area growing precious plants Plan of detour road and temporary road for construction avoiding the area growing precious plants	JICA study team (checked by MOTPW and NRA)	0				

Environmental Impact Items	Potential Environmental Impacts	Mitigation Plans	Institutional Responsibilities	Cost Estimate(MK)	Comments
Removal of Inhabitation	Relocation of the existing houses and facilities	Plan and design not to relocate the existing houses and facilities Inspection and confirmation of scale and location of houses Selection of road alignment and bridge location avoiding the removal of inhabitant Plan of detour road and temporary road for construction avoiding the removal of inhabitant Plan of temporary facilities yards avoiding the removal of inhabitant	JICA study team (checked by MOTPW and NRA)	0	All mitigation plans are c0nsidered in the Design
Social Infrastructures	Relocation of the existing religious facilities, meeting places, electric and telephone lines	Plan and design considering the existing social infrastructures - Confirmation of location and scale of the facilities from topographic map data - Selection of road alignment and bridge location not to relocation and removal - Plan of detour road and temporary roads to avoid environmental impact - Plan of temporary facilities such as camp yard, store area of materials to avoid environmental impact	JICA study team (checked by MOTPW and NRA)	0	
Disposal of construction waste	Increased construction waste due to demolition of existing structures	Disposal plan of construction waste(waste soil, concrete, asphalt boulder etc.) - Control of construction waste to minimize - Reuse of construction waste to new bridges - Selection of proper disposal area (utilization of borrow pit, quarry site, soil disposal site etc.)	JICA study team (checked by MOTPW and NRA)	0	

Environmental Impact Items	Potential Environmental Impacts	Mitigation Plans	Institutional Responsibilities	Cost Estimate(MK)	Comments
Natural • Flood Disasters	Risk of damage to structures by natural/flood disaster	Plan and design of counter measures of river bed change, local scouring around piers, bank erosion to prevent from disaster - Secure of flow capacity at bridges (location of bridge, bridge length, span arrangement etc.) - Stability of river bank and river bed (drop structure, spur dike, bank and river bed protection) - Protection of erosion on the slope of road embankment	JICA study team (checked by MOTPW and NRA)	0	All mitigation plans are c0nsidered in the Design
During Construc	tion				
Noise and Vibration	Noise and vibration during the construction period	Construction plan to minimize environmental impact against habitants near site due to noise and vibration Reconfirm the surrounding condition near sites (density of habitant, presences of public facilities Explanation and advertise to local habitants (construction object, period, scale etc.) Selection of low noise and vibration machine. Proper operation and maintenance of heavy equipment. Minimize to use heavy equipment at night. Counter measures to reduce noise and vibration(anti-noise wall, etc, if necessary)	-Contractor (MOTPW and NRA supports if necessary)		Primary impacts that are mitigatable
Air Pollution	Increased dust and air pollution due to construction works.	Preventive measures of air pollution due to construction works - Periodical water sprinkling and dust measure due to construction equipment and dump tracks - Cover to prevent dropping mud, stones from dump tracks - Instruction and training to operators and drivers of heavy equipment and dump trucks (speed limitation, minimum idling, washing facilities, etc.)	-Contractor		

Environmental Impact Items	Potential Environmental Impacts	Mitigation Plans	Institutional Responsibilities	Cost Estimate(MK)	Comments
Water quality • Water Usage	Increased waste water and mud due to construction works	Execution of construction avoiding environmental impact to local inhabitant due to waste water an mud from construction works Inspection and reconfirmation of water usage Constriction plans reducing deterioration of water and mud and proper measures (settling pond, river diversion etc., if necessary) Protect to leaking oil from heavy equipment with proper instruction and training	-Contractor		Primary impacts that are mitigatable
Traffic Congestion due to vehicles for construction and traffic security	Increase risk of traffic accidents due to increased traffic volume for construction works	Secure of smooth traffic operation and safety on the existing roads, detour roads and temporary road for construction - Explanation and advertise to local habitants (construction object, period, scale etc.) - Installation of barricade, traffic control boards - Arrange traffic management polices - Safety instruction to operator of equipment and driver of dump tracks	-Contractor (MOTPW and NRA supports if necessary)		
Disposal of construction waste	Increased construction waste from construction works	Proper disposal of waste (mud and concrete fragments) during construction - Classify and volume (quantity) of waste - Reduce waste produced from construction - Recycle of waste (river bank protection, spur dike, part of embankment etc.) - Proper disposal plan of waste	-Contractor		
Temporary facilities for construction	Risk of negative environmental impacts to surrounding area	Plan of temporary facilities to minimize environmental impact to surrounding area - Explanation and advertise to local habitants (construction object, period, scale etc.) - Installation of a fence for security if necessary	-Contractor (MOTPW and NRA supports if necessary)		

Environmental Impact Items	Potential Environmental Impacts	Mitigation Plans	Institutional Responsibilities	Cost Estimate(MK)	Comments
Instruction and training for social environment	Risk of negative environmental impacts from bad behavior of employee	Instruction and training about environmental impact to relating all staffs - Disposal of garbage and waste from construction sites, camp yard, accommodation - Health control, prevention of an epidemic disease (Malaria, HIV/AIDS)	-Contractor		Primary impacts that are mitigatable
After Construction	n				
Demolish of temporary facilities • Clearing	Risk of negative environmental impacts due to demolish of temporary facilities and clearing sites	Demolish plan of temporary facilities after construction to minimize environmental impact to surrounding area - After demolish of Camp yard, store houses for materials, the land should be cleared at original conditionWaste (wood, concrete, steel, re-bar etc.) from demolish of temporary facilities should be recycled or disposed properly.	-Contractor	Costs are included in Contract Amount of Contractor	
Demolish of detour road • temporary roads for construction	Risk of negative environmental impacts due to demolish of detour road and construction road	Demolish plan of detour and temporary road after construction to minimize environmental impact to surrounding area - After demolish of detour roads, temporary roads for construction, the land should be cleared at original condition. - Waste (disposal soil, boulder etc.) from demolish of detour roads and temporary roads for construction should be recycled or disposed properly.	-Contractor		

Monitoring Plans

Proposed Mitigation Measure	Parameters to be Monitored	Measurements (Incl. method & equipment)	Location	Frequency of Measurement	Institutional Responsibilities	Cost Estimate(MK)
Pre-Construction						
Removal of Inhabitation for permanent and temporary structures (if necessary)	Location, number, and size of house relocated and compensated	Inspection and survey of relocated and demolished property	Nanyang Culverts (if necessary because house exists in ROW)	Prior to commencement of construction works	- MOTPW and NRA -District commissioner -Contractor	50,000
Land taken for permanent and temporary structures	Location and area of land taken and compensated	Inspection and survey of relocated and demolished property	Luwadzi Br., Nankokwe Br.,Nanyang and Angoni Culverts	Prior to commencement of construction works	- MOTPW and NRA -District commissioner -Contractor	
Relocation and reconstruction of social infrastructures	Location, number, and scale of social infrastructures for permanent and temporary structures	Inspection and survey of relocated and rebuild social infrastructures	Luwadzi Br., Nankokwe Br.,Nanyang and Angoni Culverts	Prior to commencement of construction works	- MOTPW and NRA -District commissioner -Contractor	
During Construction	ı					
Noise and Vibration (if required or unacceptable level)	Noise and vibration levels based on environmental standard	Measuring and investigation of noise and vibration levels at center and boundary of the work site based on the environmental standard	Luwadzi Br., Nankokwe Br.,Nanyang and Angoni Culverts	Once or when required	MNREA MOTPW and NRA (supported by contractor if necessary)	

Proposed Mitigation Measure	Parameters to be Monitored	Measurements (Incl. method & equipment)	Location	Frequency of Measurement	Institutional Responsibilities	Cost Estimate(MK)
Air pollution (if required or unacceptable level)	Dust level based on environmental standard	Observation and investigation of dust levels in the areas where there are sensitive receivers and precious floras	Luwadzi Br., Nankokwe Br.,Nanyang and Angoni Culverts	Once or when required	MNREA MOTPW and NRA (supported by contractor if necessary)	250,000
Water quality (if required or unacceptable level)	Taking samples and water quality level based on environmental standard (e.g., pH, electrical conductivity, dissolved oxygen)	Measuring and investigation of water quality level in the river and at water usage places	Luwadzi Br., Nankokwe Br.,Nanyang and Angoni Culverts	Once or when required	MNREA MOTPW and NRA (supported by contractor if necessary)	
Biodiversity	Healthy and damaged to biodiversity (e.g., precious flora, vegetation, tree)	-Monitoring and inspection of state of biodiversity	Luwadzi Br., Nankokwe Br.,Nanyang and Angoni Culverts	Once or when required	MNREA MOTPW and NRA (supported by contractor if necessary)	
Traffic safety	Condition of traffic congestion and safety operation	Monitoring and inspection of traffic management and safety facilities	Luwadzi Br., Nankokwe Br.,Nanyang and Angoni Culverts	Once a month	Contractor MOTPW and NRA	
Construction waste	Condition of disposal and recycle of construction waste	Monitoring and inspection of management for disposal and recycle of construction waste	Luwadzi Br., Nankokwe Br.,Nanyang and Angoni Culverts	Once a month	Contractor	

Proposed Mitigation Measure	Parameters to be Monitored	Measurements (Incl. method & equipment)	Location	Frequency of Measurement	Institutional Responsibilities	Cost Estimate(MK)
Security of temporary facilities	Security situation of temporary facilities (e.g., camp yard, guard fence, stock place)	Monitoring and inspection of management for temporary facilities	Luwadzi Br., Nankokwe Br.,Nanyang and Angoni Culverts	Once a month	Contractor	
Employee education	Contents of lecture and training for social environment (e.g., staff health control, disposal of garbage and waste)	Monitoring and inspection of lecture and training	All staff	Once a month	Contractor	
Civil appeal (if required)	Number and content of complaint made by local resident	Monitoring and inspection of the action taken quickly and the amicable settlement	Luwadzi Br., Nankokwe Br.,Nanyang and Angoni Culverts	When appeal arise	-Contractor -District commissioner - MOTPW and NRA	
After Construction						
Demolish and demobilization of temporary facilities including detour and construction roads	- Circumstances of the used land - Condition of disposal of waste	Monitoring and inspection of the demolish and cleaning plan to minimize environmental impact to surrounding area	Luwadzi Br., Nankokwe Br.,Nanyang and Angoni Culverts	After demolish and transfer	Contractor	50,000