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## 1. 調査団員・氏名

## 資料 1 調査団員・氏名

### 1-1 現地調査（平成 16 年 12 月 16 日～平成 17 年 1 月 10 日）

- (1) 総括:加藤高史（JICA マラウイ事務所）
- (2) 計画管理:杉田樹彦（JICA 無償資金協力部業務第2グループ）
- (3) 業務主任/橋梁・道路計画:市川敏夫（日本工営）
- (4) 橋梁設計:多田一正:(日本工営)
- (5) 自然条件調査 I(測量・地質/環境社会配慮):比嘉靖（長大）
- (6) 自然条件調査 II(河道特性/水文)戸塚奈津子（日本工営）
- (7) 施工・調達計画/積算:森下潤（長大）

### 1-2 概要説明（平成 17 年 5 月 16 日～平成 17 年 5 月 23 日）

- (1) 総括:村瀬達哉（JICA マラウイ事務所）
- (2) 業務主任/橋梁・道路計画:市川敏夫（日本工営）
- (3) 橋梁設計:多田一正:(日本工営)

## 2. 調査工程

## 2-1 基本設計現地調査

日時		曜日	JICA総括	計画管理	業務主任/ 橋梁・道路計画	橋梁設計	自然調査Ⅰ(測量/ 地質/環境社会配慮)	自然条件調査Ⅱ (河道特性/水文)	施工・調達計画 /積算
月	日		加藤 予定	杉田 予定	市川敏夫 予定	多田一正 予定	比嘉靖 予定	戸塚奈津子 予定	森下潤 予定
12	16	木	運輸・公共事業省、国家道路公団 表敬、質問書提出 IR(調査方針)説明及び協議	JICA訪問、運輸・公共事業省 国家道路公団表敬、質問書提出 IR(調査方針)説明及び協議	JICA表敬、運輸・公共事業省 国家道路公団表敬、質問書提出 IR(調査方針)説明及び協議	表敬訪問	作業	作業	作業
	17	金	現地調査 (リロングウェーサリマーバラカ)	現地調査 (リロングウェーサリマーバラカ)	現地調査 (リロングウェーサリマーバラカ)	現地調査	現地調査	現地調査	現地調査
	18	土	現地調査 (リロングウェーサリマーバラカ)	現地調査 (リロングウェーサリマーバラカ)	現地調査 (リロングウェーサリマーバラカ)	現地調査	現地調査	現地調査	現地調査
	19	日	現地調査(バラカ～マンゴチ橋) 団内打ち合せ	現地調査(バラカ～マンゴチ橋) 団内打ち合せ	現地調査(バラカ～マンゴチ橋) 団内打ち合せ	現地調査	作業	作業	作業
	20	月	運輸・公共事業省、 国家道路公団協議	運輸・公共事業省、 国家道路公団協議	運輸・公共事業省、 国家道路公団協議	作業	作業	作業	作業
	21	火	運輸・公共事業省、 国家道路公団協議	運輸・公共事業省、 国家道路公団協議	運輸・公共事業省、 国家道路公団協議	作業	作業	作業	作業
	22	水	ミニッツサイン	ミニッツサイン/JICA事務所報告	ミニッツサイン/JICA事務所報告	作業	作業	現場調査	現場調査
	23	木	/	資料整理・報告書作成	作業	作業	現場調査	現場調査	現場調査
	24	金		ザンビア大使館 報告	現場作業	作業	現場調査	作業	作業
	25	土		移動日	作業	現場作業	現場調査	作業	作業
	26	日			作業	現場作業	現場調査	作業	作業
	27	月			作業	作業	現場調査	作業	調査 プラン
	28	火			現場作業	現場作業	現場調査	現場作業	現場作業
	29	水			現場作業	現場作業	現場調査	現場作業	現場作業
	30	木			現場作業	現場作業	現場調査	現場作業	現場作業
	31	金			作業	作業	作業	作業	作業
1	1	土				ミーティング	ミーティング	ミーティング	ミーティング
	2	日			作業	作業	作業	作業	作業
	3	月			作業	作業	作業	作業	作業
	4	火			現場調査	現場調査	現場調査	作業	作業
	5	水			作業	作業	作業	作業	作業
	6	木			作業	作業	作業	作業	作業
	7	金			作業	作業	作業	作業	作業
	8	土			作業	作業	作業	作業	作業
	9	日			作業	作業	作業	作業	作業
	10	月			作業	作業	作業	作業	作業

2-2 基本設計概要説明

日順	日数	曜日	総括 村瀬 達哉 (JICAマラウイ事務所)	業務主任/橋梁・道路設計画 市川 敏夫 (NK)	橋梁設計 多田 一正 (NK)
1	5/16	月	JICAマラウイ事務所にて打合せ、運輸・公共事業省/国家道路公団 表敬 (リロングエ泊)		
2	5/17	火	運輸・公共事業省/国家道路公団 基本設計概要書 (DBD) 説明/協議・M/D案提示 (リロングエ泊)		
3	5/18	水		現地踏査 (測量図面チェック) (リロングウエ泊)	
6	5/19	木	運輸・公共事業省/国家道路公団 基本設計概要書 (DBD) 説明/協議・M/D署名 (リロングエ泊)		
7	5/20	金	(協議・署名予備日)	(協議・署名予備日) 資料整理 (リロングエ泊)	
8	5/21	土		現地踏査 (測量図面チェック及びナンコクエ橋河川内ボーリング位置の確認) (リロングウエ泊)	
9	5/22	日		リロングエ (08:20) 発 (QM181) → ルサカ (10:10) 着 (ルサカ泊)	
10	5/23	月		在ザンビア日本国大使館報告 (ルサカ泊)	

### 3. 関係者(面会者)リスト

### 資料 3 関係者（面会者）リスト

#### 3-1 現地調査（平成 16 年 12 月 16 日～平成 17 年 1 月 16 日）

- (1) ザンビア 日本大使館  
財津知亭 一等書記官
- (2) JICA マラウイ事務所  
加藤高史 所長  
内山貴之 所員  
Mr. Tom Mtenji Programme Officer
- (3) 運輸・公共事業省リスト  
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) 国家道路局 (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) 国家道路局リロンゲエ・ゾーン事務所  
Mr. Amos Phiri Zone Engineer (CRD)
- (6) Ministry of Water Development, Water Resources Department  
Mr. 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
- (11) Njolo 村 村評議員(ナンコクエ橋近郊)  
 Mr. E.B. Biocinley Village Councilor
- (12) その他 地域住民  
 Mr. A.P. Kadulsa 農民 (ナンヤングカルバート近郊)  
 Mr. F. Masaciko キオスク経営者 (アンゴニカルバート近郊)

3-2 現地調査 (平成 17 年 5 月 15 日～平成 17 年 5 月 25 日)

- (1) ザンビア 日本大使館  
 財津知亭 一等書記官
- (2) JICA マラウイ事務所  
 村瀬達哉 次長  
 内山貴之 所員  
 Mr. Tom Mtenji Programme Officer
- (3) 運輸・公共事業省リスト  
 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) 国家道路局 (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) 天然資源環境省  
 Ms. T.G. Mbale Principal Env. Officer (Environment Dept)

#### 4. 討議議事録(M/D)

## 4-1 現地調査(2004年12月23日)

**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.

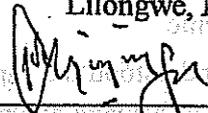
The Team held discussions with the concerned officials of the Government of Malawi and conducted a field survey of the study area.

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

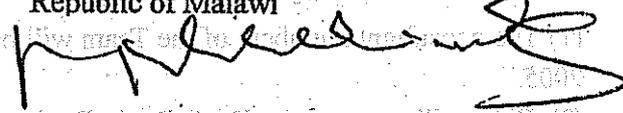
Lilongwe, December 23, 2004

  
Mr. Takashi Kato

Leader  
Basic Design Study Team  
Japan International Cooperation Agency  
Japan

  
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

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.

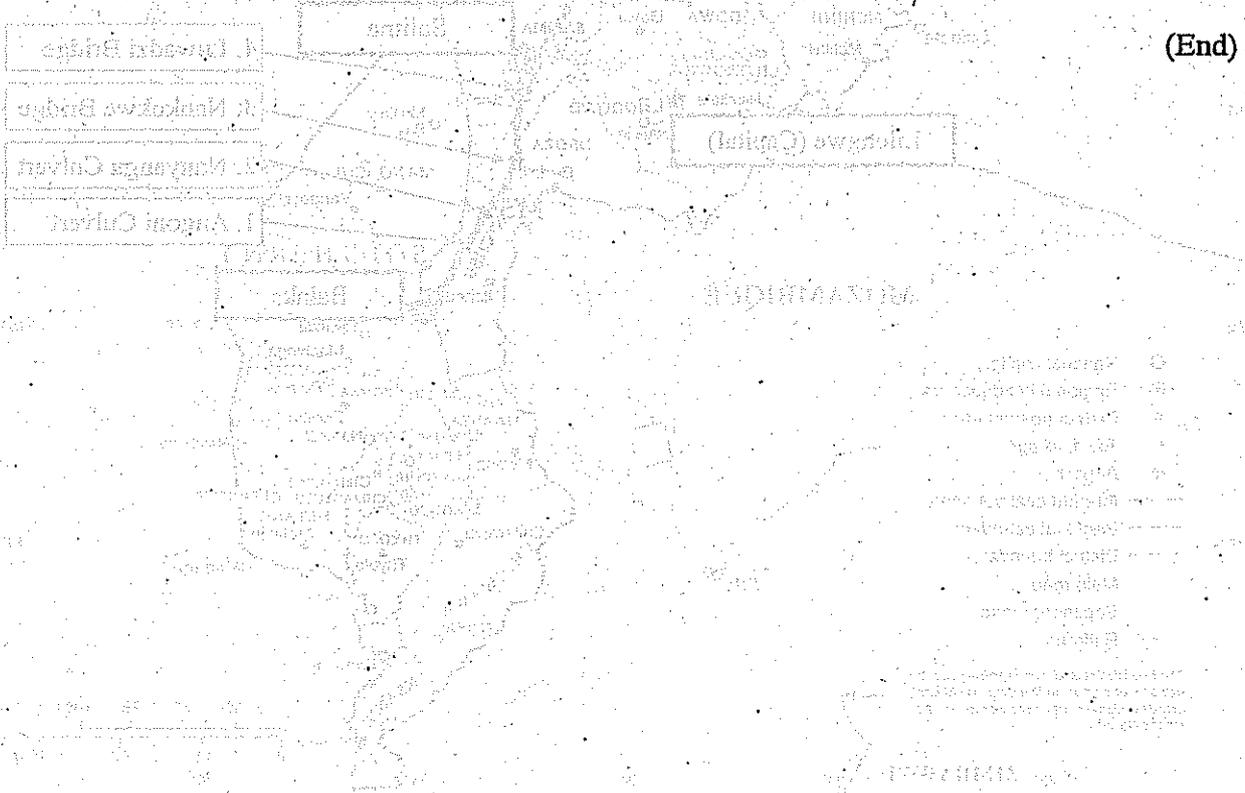
(3) In case the contents of the Draft Basic Design Study Report are accepted in principle by the Government of Malawi, JICA will complete the Final Report and send it to the Malawian side by the end of June 2005.



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.

(End)



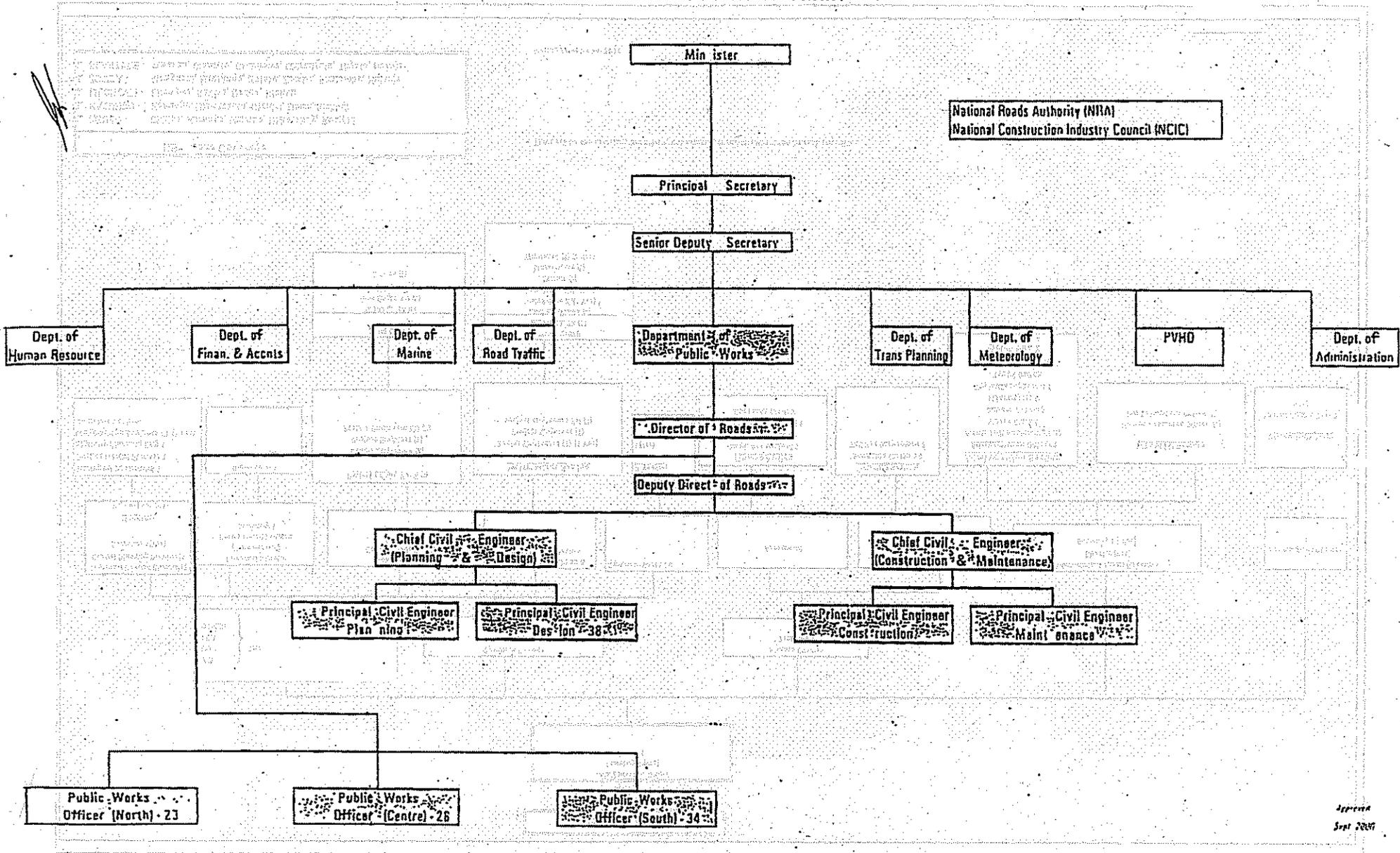
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# The Project for the Reconstruction of M5 Bridges between Balaka and Salima in the Republic of Malawi



*Handwritten signature*

# MINISTRY OF TRANSPORT AND PUBLIC WORKS ORGANISATION CHART



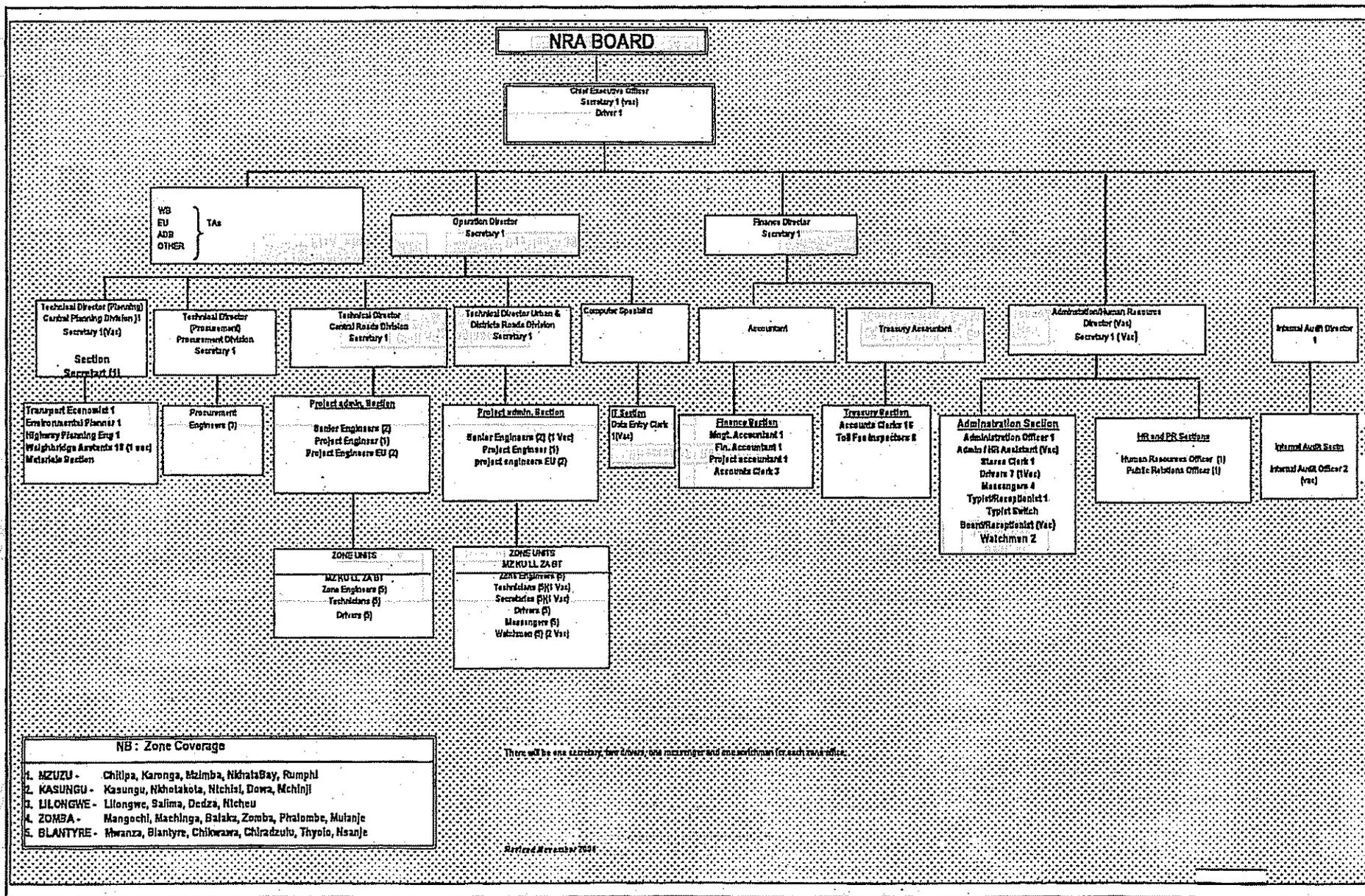
Approved  
Sept 2006

S-24-2-A-101

ANNEX - 2

*Handwritten initials/signature*

NRA ORGANOGRAPH



**NB: Zone Coverage**

1. MZUZU -	Chilipa, Karonga, Mzimba, Nkhais Bay, Rumphl
2. KASUNGU -	Kasungu, Nkhosakota, Ntchisi, Dowa, Mchinji
3. LILONGWE -	Lilongwe, Salima, Dedza, Ntcheu
4. ZOMBA -	Mangochi, Machinga, Balaka, Zomba, Phalombe, Mutanje
5. BLANTYRE -	Mwanza, Blantyre, Chilowawa, Chiradzulu, Thyolo, Hsanje

There will be one secretary, one driver, one messenger and one watchman for each zone office.

Revised November 1991

ADMINISTRATION

## JAPAN'S GRANT AID

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.

### 1. Grant Aid Procedures

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

- Application (Request made by the recipient country)
- Study (Basic Design Study conducted by JICA)
- 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 country)
- Implementation

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).

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.

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.

Finally, for the implementation of the project, JICA assists the recipient country in such matters as preparing tenders, contracts and so on.

### 2. Basic Design Study

#### (1) Contents of the study

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.
- 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**

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.

**3. Japan's Grant Aid Scheme**

**(1) Exchange of Notes (E/N)**

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.

(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.)

#### (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.

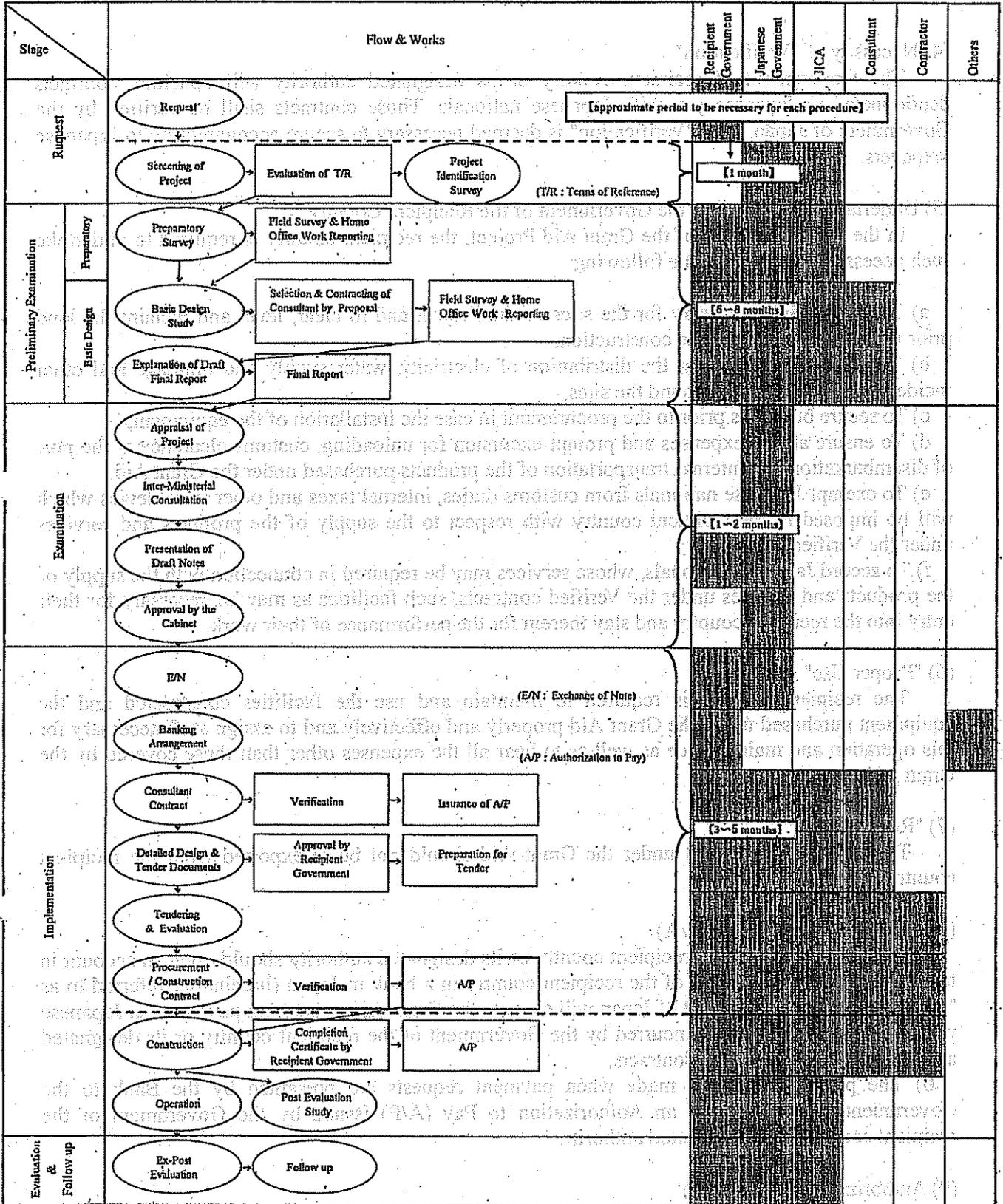
#### (9) Authorization to Pay (A/P)

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

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



The Government of the recipient country should form an advisory commission of an institution to pay and payment contractor in the field.

(10/7)

Attach 1-Flow Chart of the Procedures of Japan's Grant Aid for General Projects

## Major Undertakings to be taken by Each Government

No.	Items	To be covered by Grant Aid	To be covered by 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		●
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		
	a. The city water distribution main to the site		N/A
	b. The supply system within the site (receiving and elevated tanks)		N/A
	3) Drainage		
	a. The city drainage main (for storm, sewer and others to the site) to the site		N/A
	b. The drainage system (for toilet sewer, ordinary waste, storm drainage and others) within the site	●	
	4) Gas Supply		
	a. The city gas main to the site		N/A
	b. The gas supply system within the site		N/A
	5) Telephone System		
	a. The telephone trunk line to the site		●
	b. The MDF and the extension after the frame/panel	●	
	6) Furniture and Equipment		
	a. General furniture		N/A
	b. Project equipment		N/A
8	To bear the following commissions to the Japanese bank for banking services based upon the B/A		
	1) Advising commission of A/P		●
	2) Payment commission		●
9	To ensure unloading and customs clearance at port of disembarkation in 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 contract, such 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		●
13	To bear all the expenses, other than those to be borne by the Grant Aid, necessary for construction of the facilities as well as for the transportation and installation of the equipment		●

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

## 4-2 概要説明(2005年5月20日)

**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  
(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 of the JICA Malawi Office, from May 15 to 22, 2005.

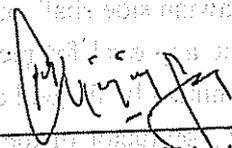
In the course of the discussions, both sides confirmed the main items described in the attached sheets.

Lilongwe, May 20, 2005

村瀬 達哉

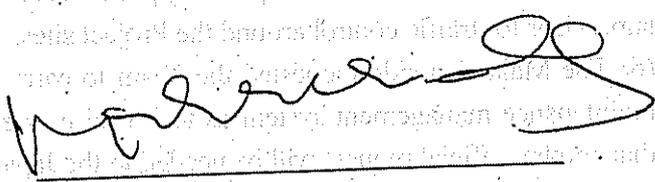
Mr. Tatsuya Murase

Leader  
Basic Design Explanation Team  
Japan International Cooperation Agency  
Japan



Mr. Francis B. Chinsinga

Principal Secretary  
Ministry of Transport and Public Works  
Republic of Malawi



Mr. Maxwell Y. Kachiwala

Acting Chief Executive Officer  
National Road Authority  
Republic of Malawi

## ATTACHMENT

### 1. Contents of the Draft Report

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

### 2. Japan's Grant Aid Scheme

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.

### 3. Schedule of the Study

JICA will complete the Final Report in accordance with the confirmed items and send it to the Malawian side by July 2005.

### 4. 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.

end

村山

DNV

## 5. 事業事前計画表

## 事業事前計画表(基本設計時)

### 1. 案件名

マラウイ共和国 バラカ～サリマ間国道 5 号線橋梁架け替え計画 基本設計調査

### 2. 要請の背景(協力の必要性・位置付け)

内陸国であるマラウイ国では、道路交通が国際物流を含む物資、旅客輸送の重要な役割を担っており、マラウイ国の経済発展の基盤となっている。同国の道路総延長は 15,451km で、その舗装率は約 24.4%(3,774km)であるが、一部の幹線道路を除く道路の現状は、継続的な緊縮財政の結果、十分な維持管理が行えないために、路面の劣化や洪水等による道路および橋梁の損壊を防ぐことができず、度重なる通行止めのため輸送・交通コストの上昇をもたらしている。

このため、マラウイ国政府では 2002 年において、2012 年までに幹線道路網の 80%を良好な状態にすることを目標とした 10 ヵ年(2003 年～2012 年)道路セクター投資プログラムを作成し、全体で 1,671 百万米ドルの投資計画を策定し、南部アフリカ近隣国への輸送回廊およびそれに連結する幹線道路の整備・改修を最重要課題に位置付けている。

国道 5 号線はマラウイ国の南北を縦貫する全長 500km の幹線道路であり、北はタンザニアに向かう北部回廊を、南にはモザンビークのナカラ港への国際輸送回廊としての役割を果たしている。この国道 5 号線に位置する橋梁の多くは、建設後 20～30 年以上を経て損傷・老朽化しており、また洪水時には橋梁が冠水、流失するケースが多発し、現在、南部区間のナンコクウェ橋およびアンゴニ橋では仮橋による通行を余儀なくされ、円滑な交通が阻害されており幹線道路としての機能が損なわれた状況にある。

このような状況を背景として、マラウイ国政府は、国道 5 号線南部区間のバラカ～サリマにおける 4 橋梁を架け替えるための、資金援助(無償資金協力)を我が国政府に対し、要請した。

この国道 5 号線橋においては、北部区間のムズ～コタコタ間において、現在 EU が資金援助を実施しており、2 橋梁の架け替え計画が進行中である。

本プロジェクトによって、国道 5 号線の安定的な交通を確保し、輸送コストの低減や地域経済の活性化ならびに物流の促進によるマラウイ国の社会経済の発展に貢献する。

### 3. プロジェクト全体計画概要

#### (1) プロジェクト全体計画の目標

国道 5 号線、南部地方の中核都市バラカ市と中部地方の中核都市サリマ市を結ぶ延長 158km の区間において円滑で安定的な交通が確保される。

裨益対象の範囲および規模: 国道 5 号線の対象区間が通過するサリマ、デッサ、ンチュウの地域

直接裨益人口: 約 110 万人

#### (2) プロジェクト全体計画の成果

国道 5 号線バラカ～サリマ間(延長 158km)の 4 橋梁が架け替えされる。

#### (3) プロジェクト全体計画の主要活動

ア 洪水により損傷した橋梁・カルバートを新しく架け替える。

イ 橋梁を保護するため河川護岸を補修・補強する。

ウ 橋梁・道路の維持管理体制を強化する。(技術移転)

#### (4) 投入(インプット)

ア 日本側(=本案件): 無償資金協力 6.91 億円

イ マラウイ国側:

- (ア) 必要な人員の確保
- (イ) 工事用地の確保(仮設ヤード、ユーティリティの移設を含む)
- (ウ) 対象道路・橋梁の補修・維持管理費用の確保

(5) 実施体制

主管官庁: 運輸・公共事業省(MOTPW)

実施機関: 国家道路公団(NRA)

#### 4. 無償資金協力案件の内容

(1) サイト

- ・ マラウイ国 国道5号線 バラカ～サリマ間の4橋梁地点

(2) 概要

- ・ 当該無償資金協力により整備される主要な施設は以下の4橋梁である。

番号	橋梁/カルバート名	橋長(m)	建設年	改修方法
1	アンゴニ・カルバート	15.5	1984	架け替え
2	ナンヤング・カルバート	7.5	1984	架け替え
3	ナンコクエ橋	28.6	1984	架け替え
4	ルワジ橋	42.9	1984	架け替え

(3) 相手国負担事項

- ・ 環境承認手続きおよび認証の取得
- ・ 建設用地内に耕作している作物に対する補償金の支払い
- ・ 電話・電線の配電線移設および架設ヤードまでの配線引き込み
- ・ メインキャンプヤードおよび仮設ヤードの確保
- ・ 交通マネジメント対応の整理員およびメインキャンプヤードの警備のための警官配置
- ・ 迂回路のためのベイリー橋の提供

(4) 概算事業費

- ・ 概算事業費 7.06 億円(無償資金協力 6.91 億円、マラウイ国側負担 0.15 億円)

(5) 工期

- ・ 詳細設計・入札期間を含め約 28 ヶ月(予定)

(6) 貧困、ジェンダー、環境および社会面の配慮

- ・ 架け替え橋梁は既存橋梁とほぼ同位置に計画し、自然環境への影響を最小限に抑える。
- ・ 沿道の住民・農作物に対する工事の影響を最小限に抑える。
- ・ 河川内の掘削に際しては沿道住民の水利用に配慮し、河川水の汚濁を最小限に抑える。

#### 5. 外部要因リスク(プロジェクト全体計画の目標達成に関して)

- ・ マラウイ国内情勢・治安が悪化しない
- ・ 大洪水など甚大な天災が発生しない

## 6. 過去の類似案件からの教訓の活用

特になし。

## 7. プロジェクト全体計画の事後評価に係る提案

### (1) プロジェクト全体計画の目標達成を示す成果指標

成果指標	2005 年実測値	2007 年計画
交通量の増加 (ルワジ橋を通過する自転車・バイクを除く交通量)	仮設橋の荷重制限により、重積載車両の通行が制限されている。交通量調査測定値:469 台/12 時間(7 時～19 時)	重積載車両等の交通量が増加する。
交通事故の減少 (サリマ～バラカ間の 14 橋付近で発生した年間事故件数)	過去 4 年間の年間平均事故件数 5.25 件、死亡者数 1.25 人/年、負傷者数 6.75 人/年	事故件数、死亡者数、負傷者数が減少する。
交通遮断の減少 (4 橋付近における年間の交通遮断回数)	過去 3 年間に対象橋の損傷による交通遮断(遮断期間約 1 ヶ月)が 3 回発生した。	対象橋の損傷による交通遮断がなくなる。
維持管理費の削減	4 橋に対する維持管理費は年間予算の約 10%である。	プロジェクト完成後の 4 橋の維持管理費の予算が削減される。

### (2) その他の成果指標

特になし

### (3) 評価のタイミング

2007 年以降(プロジェクト完成後)