

**資料 3 環境社会配慮に関する
スクリーニングフォーマット
及び現地調査票**

別紙 3 スクリーニング様式

案件名：マラウイ国「国道 5 号線橋梁修復計画」予備調査

事業実施機関：マラウイ国 運輸・公共事業省 (Ministry of Transport and Public Works)、
道路公団 (National Road Authority)

記入責任者の氏名、所属・役職名、組織名、連絡先

名前：黒木浩則

所属・役職名：日本技術開発株式会社 エンジニアリング・スタッフ

組織名：環境技術センター / 国際事業部 環境部

TEL：03-5341-5162

FAX：03-5341-5128

E-Mail：kurokihi-w@jecc.co.jp

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署名：

項目 1. プロジェクトサイトの所在地

マラウイ国 中部州 M5 道路 (バラカ～ンコタコタ間)

表-1 対象 10 橋の概要

区 間	橋梁名	橋 長	橋梁形式
バラカ～ サリマ区間 (Section 1)	1) Angoni Culvert	W=3.5m×4	パイプカルバート×4
	2) Nanyangu Culvert	W=7.5m	パイプカルバート×1
	3) Nankokwe Bridge	28.6m	2 径間鋼鉄桁橋 (2003 年の洪水により使用不能、現在は仮橋 (L=33m) にて暫定供用)
	4) Luwadzi Bridge	42.9m	3 径間鋼鉄桁橋 (2002 年の洪水により使用不能、現在は仮橋 (L=55m) にて暫定供用)
サリマ～ コタコタ間 (Section 2)	5) Lifyodzi Bridge	31.0m	3 径間連続コンクリート桁橋
	6) Navikoko Bridge	25.0+ α m	3 径間連続コンクリート桁橋
	7) Kanjamwano Bridge	24.0m	2 径間連続コンクリート床版橋×2
	8) Chamakuwa Bridge	12.0m	2 径間連続コンクリート床版橋
	9) Ling'ona Bridge	19.5+ α m	3 径間連続コンクリート桁橋
	10) Mchandilo Culvert	W=3.0m×2	2 箱コンクリートボックスカルバート

項目 2. プロジェクトの内容

2-1 以下に掲げるセクターに該当するプロジェクトですか。

■YES □NO

YES の場合、該当するセクターをマークしてください。

鉱業開発

工業開発

火力発電(地熱含む)

- 水力発電、ダム、貯水池
- 河川・砂防
- 送変電・配電
- 道路、鉄道、橋梁
- 空港
- 港湾
- 上水道、下水・廃水処理
- 廃棄物処理・処分
- 農業(大規模な開墾、灌漑を伴うもの)
- 林業
- 水産業
- 観光

2-2 プロジェクトにおいて以下に示す要素が予定想定されていますか。

YES NO

YES の場合、該当するものをマークしてください。

- 大規模非自発的住民移転 (規模：世帯 人)
- 大規模地下水揚水 (規模：m³/年)
- 大規模埋立、土地造成、開墾 (規模：ha)
- 大規模森林伐採 (規模：ha)

2-3 プロジェクト概要

本プロジェクトは、表-1 に示す 10 橋の改修（補修・掛け替え）事業である。表-1 のうち No.5～10 については、現状の 1 車線を 2 車線化の要請が出ている。No.1～2 については、現状 2 車線であり、補修を行う可能性が大きい。No.3～4 については、現状は 1 車線の仮設橋であるため掛け替えを行う必要性が高いと評価されている。

掛け替えに伴い、取り付け道路の線形変更を含め、橋梁周辺（縦断 200m 程度×横断 50m 程度）の一部で改変が発生する可能性があるが、基本設計段階で改変範囲は最小化される予定である。

2-4 どのようにしてプロジェクトの必要性を確認しましたか。

対象道路の位置づけ（基幹道路）、道路ネットワーク機能、事故の発生状況（人間の安全保障）の観点から現地調査を行い、必要性を確認した。

プロジェクトは上位計画と整合性がありますか。

YES：上位計画名を記載してください。

10 年道路計画（運輸・公共事業省）

NO

2-5 要請前に代替案を検討しましたか。

YES : 検討した代替案の内容を記載してください。

NO

2-6 要請前に必要性確認のためのステークホルダー協議を実施しましたか。

実施済み 実施していない

実施済の場合は該当するステークホルダーをチェックしてください。

関係省庁

地域住民

NGO

その他 ()

項目 3. プロジェクトは、新規に開始するものですか、既に実施しているものですか。既に実施しているものの場合、現地住民より強い苦情等を受けたことがありますか。

新規 既往(苦情あり) 既往(苦情なし)

その他 :

項目 4. 環境影響評価の法律またはガイドラインの名称

環境影響評価に係る法律 : *Environmental Management Act 1996*

ガイドライン名 : *Guidelines for Environmental Impact Assessment 1997*

プロジェクトに関して、環境影響評価(EIA、IEE 等)は貴国の制度上必要ですか。

必要 不要 (現時点で不明)

→基本設計を踏まえてプロジェクト概要書を天然資源・環境省に提出し EIA の必要性が判定される。このため現時点では EIA が必要かどうか不明である。なお、「マ」国においては IEE の手続きはない。

必要な場合、以下の該当する箇所をチェックしてください

IEE のみ必要 (実施済み、 実施中、 実施予定)

IEE と EIA の両方が必要 (実施済み、 実施中、 実施予定)

EIA のみ必要 (実施済み、 実施中、 実施予定)

その他 : 以下に記入してください。

項目 5. 環境影響評価が既に実施されている場合、環境影響評価は環境影響評価制度に基づき審査・承認を受けていますか。既に承認されている場合、承認年月日、承認機関について記載してください。

承認済み(附帯条件なし) 承認済み(附帯条件あり) 審査中

(承認年月日 : 承認機関 :)

手続きを開始していない

(対処橋梁は、M5 号の付帯施設である。M5 は 30 年以上前に建設されており EIA は実施されていない)

その他 ()

項目 6. 環境影響評価以外の環境や社会面に関する許認可が必要な場合、その許認可名を記載してください。

取得済み 取得必要だが未取得

許認可名 : ()

取得不要

その他 ()

項目 7. 事業対象地内または周辺域に以下に示す地域がありますか。

YES NO 分からない

YES の場合、該当するものをマークしてください。

国立公園、国指定の保護対象地域(国指定の海岸地域、湿地、少数民族・先住民族のための地域、文化遺産等)及びそれに準じる地域

原生林、熱帯の自然林

生態学的に重要な生息地(サンゴ礁、マングローブ湿地、干潟等)

国内法、国際条約等において保護が必要とされる貴重種の生息地

大規模な塩類集積あるいは土壌浸食の発生する恐れのある地域

砂漠化傾向の著しい地域

考古学的、歴史的、文化的に固有の価値を有する地域

少数民族あるいは先住民族、伝統的な生活様式を持つ遊牧民の人々の生活区域、もしくは特別な社会的価値のある地域

項目 8. プロジェクトは環境社会影響を及ぼす可能性がありますか。

YES NO 分からない

理由：既存道路上の既存橋梁の修復であるため著しい環境社会影響は及ぼさないと考えられる。

項目 9. 関係する主要な環境社会影響をマークし、その概要を説明してください。

大気汚染

水質汚濁

(橋梁修復に係る工事により濁水が発生する可能性があるが、本予備調査の環境社会配慮に関する提案により濁水抑制対策が実施され影響は最小限となる。)

土壌汚染

廃棄物

騒音・振動

地盤沈下

- 悪臭
- 地形・地質
- 底質

■ 生物・生態系

(5 橋梁周辺において注目すべき種（主にマラウイ・リスト掲載種）が確認された。いずれの種も地域住民の利用により個体数が減少している種である。ただし、これらの種は調査範囲以外にも広く分布しており、調査範囲はこれらの種が生育する特殊な環境ではない。また、設計段階においては、これらの種が生育する場所が可能な限り回避可能であることから、影響は最小限であると予測される。)

■ 水利用

(5 橋梁の下流側において水利用（洗濯・水浴び・灌漑）が確認された。これらは地域住民にとって特に乾季は重要性が高い。橋梁修復・護岸整備にともない影響を与える可能性があるが、設計段階においてアクセス性の確保及び濁水防止対策により影響は最小限であると予測される。)

■ 事故

(現状で1車線の橋梁においては、死亡事故が夜間に多発しているが、2車線化により事故は減少すると予測される。また、歩行者、自転車、二輪車の安全性が確保される。)

- 地球温暖化

■ 非自発的住民移転

(7 橋梁周辺において住居が確認された。設計段階において、これらを可能な限り回避することが可能であることから影響は最小限であると予測する。また、これらの住居の立地する土地は、伝統的土地であり村長が地権者となる。住民移転等が発生する場合は、マラウイ国政府と村長との協議により円滑に進められることから、問題はほとんどないものと考えられる。)

- 雇用や生計手段等の地域経済
- 土地利用や地域資源利用
- 社会関係資本や地域の意思決定機関等の社会組織

■ 既存の社会インフラや社会サービス

(5 橋梁周辺において宗教施設（教会・モスク）、墓地、集会場所が確認された。住民移転同様、設計段階において、これらを可能な限り回避することが可能であることから影響は最小限であると予測する。)

- 貧困層・先住民族・少数民族
- 被害と便益の偏在
- 地域内の利害対立
- ジェンダー
- 子どもの権利
- 文化遺産

HIV/AIDS 等の感染症、■ その他（現地状況については資料 8-2 環境ワークシート、資料 8-3 ヒアリング調査結果にも詳細な情報を記載。）

Name of Bridge 1: Angoni Culvert 20m Temporary pipe culvert × 4

SURVE DATE	24 th July, 2004 10:00-11:30	LOCATION NAME	Nanyangu	LAT: S14° 36' 58.3"	LONG: E34° 44' 20.9"
WEATHER	Fair	NOTE		ALT	638m
SURVEYOR	KUROK I/ MAKWINIA				
SKETCH	KUROKI				
<p>LEGEND</p> <ul style="list-style-type: none"> Target Bridge Road River Inhabitant, Kiosk and Facilities Endangered Species Water usage point <p>20 Inhabitants from center of the road is over than 40m</p> <p>10 Inhabitants Distance from center of the road is over than 50m</p> <p>20 Inhabitants and 1 meeting place under the tree Distance from center of the road is 16-50m (8 inhabitants are in the right of the way)</p> <p>Church 31m</p> <p>Sugar cane, Papaya, Banana</p> <p>Cassava</p> <p>For washing For livestock</p> <p>Grave 100m</p> <p>Railway 180m</p> <p>200m</p> <p>130m</p> <p>200m</p>					
CONDITION OF EACH ENVIRONMENTAL ITEM					
AIR	No relation				
WATER	RIVER DIMENSION: <u>See another inspection sheet (資料 2 参照)</u> FLOW: Underground water flow out from the gap TURBIDITY: - PH: - COD: -				
POLLUTED SOIL	No relation				
TRAFFIC ACCIDENT AND SECURITY SITUATION	Interview with nearest police station (Nkhokotakota PS) <u>See attachment sheet (資料 3-3 参照)</u>				
WATER USAGE	Washing clothes, water place for livestock				
BIODIVERSITY	ANIMAL DIVERSITY: Interview with wildlife officer <u>See attachment sheet (資料 3-3 参照)</u> VEGETATION: <u>See attachment sheet</u> ENDANGERED SPECIES: Nonexistent				
INHABITATION	NUMBER: TOTAL 50 In the right of the way : 8 Out of the right of the way: 42				
LAND USE	Main industry of inhabitant: Cassava, Maize Farm land, inhabitation, Forest, Livestock's breeding area NP / WILDLIFE RESERVE / FOREST RESERVE: Nonexistent				
SOCIAL INFRASTRUCTURE	School, Hospital, Public facility and place, Religious facilities: Church				
VULNERABLE SOCIAL GROUPE	Nonexistent				
WATER RIGHTS	Nonexistent				
FISHERIES RIGHTS	Nonexistent				
LOCAL CONFRICT	Nonexistent				
CULTURAL HERITAGE	Nonexistent				
INFECTIOUS DISEASES HIV / AIDS	Interview with doctor in Nkhokotakota: <u>See attachment sheet (資料 3-3 参照)</u>				

Name of Bridge 2: **Nanyangu Culvert 30m Temporary pipe culvert X1**

SURVE DATE	24 th July, 2004 10:00-11:30	LOCATION NAME	Nanyangu	LAT: S14° 36' 58.3"	LNG: E34° 44' 20.9"
WEATHER	Fair	NOTE		ALT	638m
SURVEYOR	KUROKI I/ MAKWINJA				
SKETCH	KUROKI				
CONDITION OF EACH ENVIRONMENTAL ITEM					
AIR	No relation				
WATER	RIVER DIMENSION: <u>See another inspection sheet (資料 2 参照)</u> FLOW: No flow due to dry TURBIDITY: - PH: - COD: -				
POLLUTED SOIL	No relation				
TRAFFIC ACCIDENT AND SECURITY SITUATION	Interview with nearest police station (Nkhokotakota PS) <u>See attachment sheet (資料 3-3 参照)</u>				
WATER USAGE	Irrigation				
BIODIVERSITY	ANIMAL DIVERSITY: Interview with wildlife officer <u>See attachment sheet (資料 3-3 参照)</u> VEGETATION: <u>See attachment sheet</u> ENDANGERED SPECIES: 1 species 1: DELBERGEEA MELANOXYLON under the IUCN RED LIST				
INHABITATION	NUMBER: TOTAL 2 In the right of the way : 1 Out of the right of the way : 1 Main industry of inhabitant: Cassava, Maize				
LAND USE	Farm land, inhabitation, Forest, Livestock's breeding area NP / WILDLIFE RESERVE / FOREST RESERVE: Nonexistent				
SOCIAL INFRASTRUCTURE	School, Hospital, Public facility and place, Religious facilities: Nonexistent				
VULNERABLE SOCIAL GROUPES	Nonexistent				
WATER RIGHTS	Nonexistent				
FISHERIES RIGHTS	Nonexistent				
LOCAL CONFLICT	Nonexistent				
CULTURAL HERITAGE	Nonexistent				
INFECTIOUS DISEASES HIV / AIDS	Interview with doctor in Nkhokotakota: <u>See attachment sheet (資料 3-3 参照)</u>				

Name of Bridge 3: Nankokwe Bridge 30m Temporary pipe (existing culvert were washed away by flood)

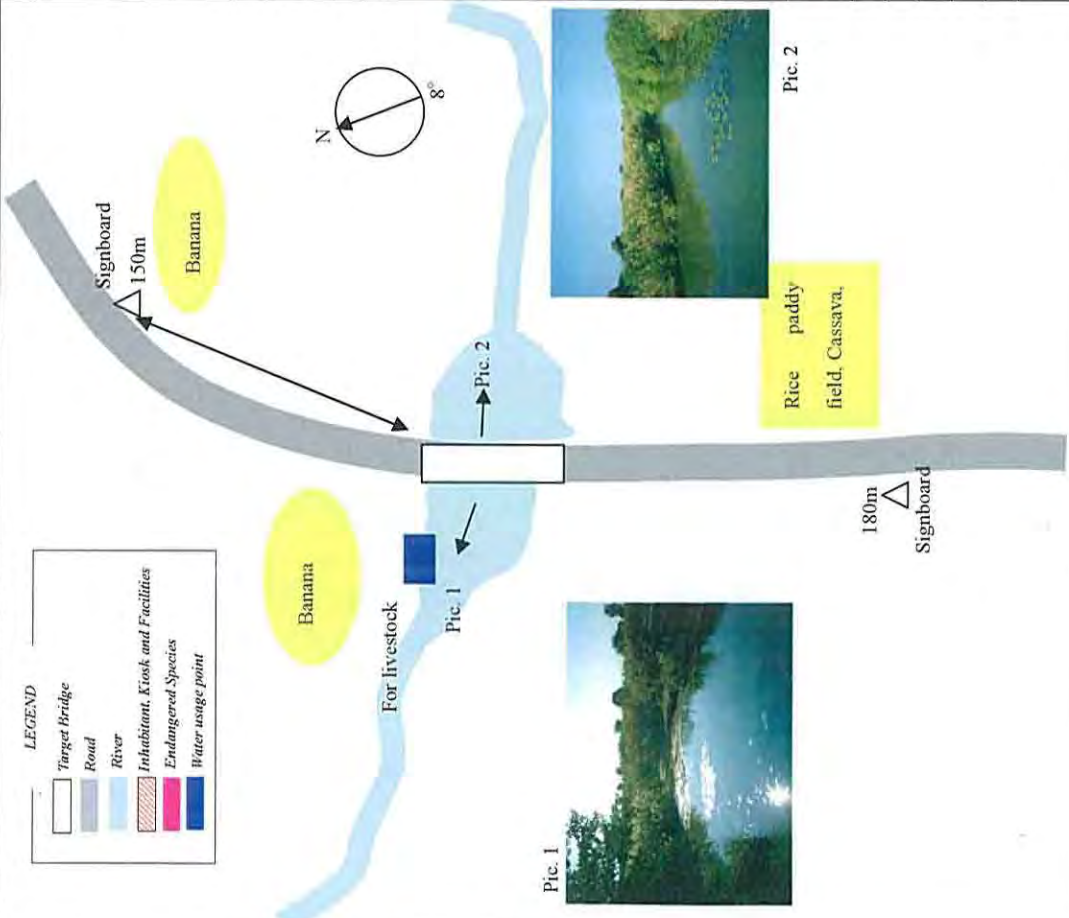
SURVE DATE	24 th July, 2004 12:15-13:30	LOCATION NAME	Nankokuwe	LAT: S14° 17' 28.4"	LNG: E34° 31' 21.4"
WEATHER	Fair	NOTE		ALT	537m
SURVEYOR	KUROKI I/ MAKWINJA				
SKETCH	KUROKI				
CONDITION OF EACH ENVIRONMENTAL ITEM					
AIR	No relation				
WATER	RIVER DIMENSION: <u>See another inspection sheet (資料 2 参照)</u>				
	FLOW: = width 10m*depth 0.1m*0.5m/s=0.5m ³ /s				
	TURBIDITY: -				
	PH: -				
POLLUTED SOIL	COD: -				
	No relation				
TRAFFIC ACCIDENT AND SECURITY SITUATION	Interview with nearest police station (Nkhokotakota PS)				
	<u>See attachment sheet (資料 3-3 参照)</u>				
WATER USAGE	Irrigation				
	ANIMAL DIVERSITY: Interview with wildlife officer				
BIODIVERSITY	<u>See attachment sheet (資料 3-3 参照)</u>				
	VEGETATION: <u>See attachment sheet</u>				
INHABITATION	ENDANGERED SPECIES: Nonexistent				
	NUMBER: TOTAL 1				
	In the right of the way : 0 Out of the right of the way : 1				
LAND USE	Main industry of inhabitant: Cassava, Maize, Banana, Plantation				
	Farm land, inhabitation, Forest (Plantation), Livestock's breeding area				
SOCIAL INFRASTRUCTURE	NP / WILDLIFE RESERVE / FOREST RESERVE: Nonexistent				
	School, Hospital, Public facility and place, Religious facilities: Nonexistent				
VULNERABLE SOCIAL GROUPES	Nonexistent				
WATER RIGHTS	Nonexistent				
FISHERIES RIGHTS	Nonexistent				
LOCAL CONFLICT	Nonexistent				
CULTURAL HERITAGE	Nonexistent				
INFECTIOUS DISEASES HIV / AIDS	Interview with doctor in Nkhokotakota: <u>See attachment sheet (資料 3-3 参照)</u>				

Name of Bridge 4: **Luwadzi Bridge** 60m Temporary Bridges

SURVE DATE	24 th July, 2004 10:00-12:00	LOCATION NAME	Luwadzi	LAT: S12° 57' 27.6"	LNG: E34° 29' 25.8"
WEATHER	Fair	NOTE		ALT	500m
SURVEYOR	KUROKI I/ MAKWINJA				
SKETCH	KUROKI				
		CONDITION OF EACH ENVIRONMENTAL ITEM			
AIR		No relation			
WATER		RIVER DIMENSION: <u>See another inspection sheet (資料 2 参照)</u> FLOW: AREA * VELOCITY = No flow due to dry TURBIDITY: - PH: - COD: -			
POLLUTED SOIL		No relation			
TRAFFIC ACCIDENT AND SECURITY SITUATION		Interview with nearest police station (Nkhokotakota PS) <u>See attachment sheet (資料 3-3 参照)</u>			
WATER USAGE		Irrigation			
BIODIVERSITY		ANIMAL DIVERSITY: Interview with wildlife officer <u>See attachment sheet (資料 3-3 参照)</u> VEGETATION: <u>See attachment sheet</u> ENDANGERED SPECIES: 2 species [1] HYPHAEAE CRINITA under the Malawi list, [2] ALBIZIA ANTHELMINTICA under the Malawi list			
INHABITATION		NUMBER: TOTAL 55 In the right of the way : 0 Out of the right of the way : 0			
LAND USE		Main industry of inhabitant: Cassava, Maize [Farm land, inhabitation, Forest, [Livestock's breeding area]			
SOCIAL INFRASTRUCTURE		NP / WILDLIFE RESERVE / FOREST RESERVE: Nonexistent School, Hospital, Public facility and place, Religious facilities: Grave, Rest Place			
VULNERABLE SOCIAL GROUPE		Nonexistent			
WATER RIGHTS		Nonexistent			
FISHERIES RIGHTS		Nonexistent			
LOCAL CONFRICT		Nonexistent			
CULTURAL HERITAGE		Nonexistent			
INFECTIOUS DISEASES HIV / AIDS		Interview with doctor in Nkhokotakota: <u>See attachment sheet (資料 3-3 参照)</u>			

Name of Bridge 5: Lifyodzi Bridge 31m Concrete Beam Bridge

SURVE DATE	21 st July, 2004 15:20-17:20	LOCATION NAME	Lifodzi	LAT: S12° 58' 41.8"	LNG: E34° 17' 53.5"
WEATHER	Fair	NOTE		ALT	475m
SURVEYOR	KUROK I/ MAKWINJA				
SKETCH	KUROKI				
CONDITION OF EACH ENVIRONMENTAL ITEM					
AIR	No relation				
WATER	RIVER DIMENSION: <u>See another inspection sheet (資料 2 参照)</u> FLOW: AREA * VELOCITY= No flow TURBIDITY: - PH: - COD: -				
POLLUTED SOIL	No relation				
TRAFFIC ACCIDENT AND SECURITY SITUATION	Interview with nearest police station (Nkhotkotakota PS) <u>See attachment sheet (資料 3-3 参照)</u>				
WATER USAGE	Water place for livestock ANIMAL DIVERSITY: Interview with wildlife officer <u>See attachment sheet</u>				
BIODIVERSITY	VEGETATION: <u>See attachment sheet</u> ENDANGERED SPECIES: 0 species Nonexistent				
INHABITATION	NUMBER: TOTAL 0 In the right of the way : 0 Out of the right of the way : 0 Main industry of inhabitant: Cassava, Maize				
LAND USE	Farm land, inhabitation, Forest, Livestock's breeding area NP / WILDLIFE RESERVE / FOREST RESERVE: Nonexistent				
SOCIAL INFRASTRUCTURE	School, Hospital, Public facility and place, Religious facilities: Nonexistent				
VULNERABLE SOCIAL GROUPE	Nonexistent				
WATER RIGHTS	Nonexistent				
FISHERIES RIGHTS	Nonexistent				
LOCAL CONFRICT	Nonexistent				
CULTURAL HERITAGE	Nonexistent				
INFECTIOUS DISEASES HIV / AIDS	Interview with doctor in Nkhotakota: <u>See attachment sheet (資料 3-3 参照)</u>				



Name of Bridge 6: Navikoko Bridge 25m Concrete Beam Bridge

SURVE DATE	22 nd July, 2004 9:30-11:00	LOCATION NAME	Navikoko	LAT: S13° 17' 36.0"	LNG: E34° 17' 03.5"
WEATHER	Fair	NOTE		ALT	481m
SURVEYOR	KUROK I / MAKWINJA				
SKETCH	KUROKI				
CONDITION OF EACH ENVIRONMENTAL ITEM					
AIR	No relation				
WATER	RIVER DIMENSION: <u>See another inspection sheet (資料 2 参照)</u> FLOW: AREA * VELOCITY= No flow TURBIDITY: - PH: - COD: -				
POLLUTED SOIL	No relation				
TRAFFIC ACCIDENT AND SECURITY SITUATION	Interview with nearest police station (Nkhokotakota PS) <u>See attachment sheet (資料 3-3 参照)</u>				
WATER USAGE	Water place for livestock, Irrigation (by foot pump) ANIMAL DIVERSITY: Interview with wildlife officer <u>See attachment sheet (資料 3-3 参照)</u>				
BIODIVERSITY	VEGETATION: <u>See attachment sheet</u> ENDANGERED SPECIES: 1 species: RAPHIA FARINIFERA under the IUCN NUMBER: TOTAL 0				
INHABITATION	In the right of the way : 0 Out of the right of the way : 0				
LAND USE	Main industry of inhabitant: Cassava, Maize, Rice Farm land, inhabitation, Forest, Livestock's breeding area NP / WILDLIFE RESERVE / FOREST RESERVE: Nonexistent				
SOCIAL INFRASTRUCTURE	School, Hospital, Public facility and place, Religious facilities: Nonexistent				
VULNERABLE SOCIAL GROUPES	Nonexistent				
WATER RIGHTS	Nonexistent				
FISHERIES RIGHTS	Nonexistent				
LOCAL CONFLICT	Nonexistent				
CULTURAL HERITAGE	Nonexistent				
INFECTIOUS DISEASES HIV / AIDS	Interview with doctor in Nkhokotakota: <u>See attachment sheet (資料 3-3 参照)</u>				

Name of Bridge 7: Kanjamwano Bridge 25m Concrete Beam Bridge

SURVE DATE	22 nd July, 2004 11:30-12:50	LOCATION NAME	Kanjamwano	LAT: 12° 58' 58.5"	LNG: E34° 18' 00.3"
WEATHER	Fair	NOTE		ALT	477m
SURVEYOR	KUROKI I/ MAKWINJA				
SKETCH	KUROKI				
CONDITION OF EACH ENVIRONMENTAL ITEM					
AIR	No relation				
		RIVER DIMENSION:	See another inspection sheet (資料 2 参照)		
		FLOW: AREA * VELOCITY =	No flow		
		TURBIDITY:	-		
		PH:	-		
		COD:	Polluted by excrement of livestock (Organic and E-coli)		
			No relation		
		TRAFFIC ACCIDENT AND SECURITY SITUATION	Interview with nearest police station (Nkhokotakota PS) See attachment sheet (資料 3-3 参照)		
		WATER USAGE	Water place for livestock		
			ANIMAL DIVERSITY: Interview with wildlife officer See attachment sheet (資料 3-3 参照)		
		BIODIVERSITY	VEGETATION: See attachment sheet		
			ENDANGERED SPECIES: 1 species: RAPHIA FARINIFERA under the Malawi list		
			NUMBER: TOTAL 19		
			In the right of the way : 7		
			Out of the right of the way : 12		
			Main industry of inhabitant: Cassava, Maize, Rice		
		LAND USE	Farm land, inhabitation, Forest, Livestock's breeding area NP / WILDLIFE RESERVE / FOREST RESERVE: Nonexistent		
		SOCIAL INFRASTRUCTURE	School, Hospital, Public facility and place, Religious facilities: Nonexistent		
		VULNERABLE SOCIAL GROUPES	Nonexistent		
		WATER RIGHTS	Nonexistent		
		FISHERIES RIGHTS	Nonexistent		
		LOCAL CONFLICT	Nonexistent		
		CULTURAL HERITAGE	Nonexistent		
		INFECTIOUS DISEASES HIV / AIDS	Interview with doctor in Nkhokotakota: See attachment sheet (資料 3-3 参照)		

Name of Bridge 8: Chamakuwa Bridge 12m Concrete Beam Bridge

SURVE DATE	22 nd July, 2004 14:30-15:40	LOCATION NAME	LAT: S12° 58' 41.8"	LNG: E34° 17' 53.5"
WEATHER	Fair	NOTE	ALT	475m
SURVEYOR	KUROKI I/ MAKWINJA			
SKETCH	KUROKI			
<p>LEGEND</p> <ul style="list-style-type: none"> Target Bridge Road River Inhabitant, Kiosk and Facilities Endangered Species Water usage point 				
<p>10 Inhabitants Distance from center of the road is 20-40m (5-6 inhabitants are in the right of the way) 300m</p> <p>Signboard 150m</p> <p>Rice paddy field, Cassava</p> <p>For livestock</p> <p>Graveyards 37.5m</p> <p>200m</p> <p>150m</p> <p>Signboard</p> <p>Mosque 29m</p> <p>5 Inhabitants Distance from center of the road is over than 30m</p>				
<p>CONDITION OF EACH ENVIRONMENTAL ITEM</p> <p>AIR: No relation</p> <p>RIVER DIMENSION: <u>See another inspection sheet (資料 2 参照)</u></p> <p>WATER: FLOW: AREA * VELOCITY= No flow TURBIDITY: - PH: - COD: Polluted by excrement of livestock (Organic and E-coli)</p> <p>POLLUTED SOIL: No relation</p> <p>TRAFFIC ACCIDENT AND SECURITY SITUATION: Interview with nearest police station (Nkhokotakota PS) <u>See attachment sheet (資料 3-3 参照)</u></p> <p>WATER USAGE: Water place for livestock</p> <p>BIODIVERSITY: ANIMAL DIVERSITY: Interview with wildlife officer <u>See attachment sheet (資料 3-3 参照)</u> VEGETATION: <u>See attachment sheet</u> ENDANGERED SPECIES: 4 species ①: RAPHIA FARINIFERA under the Malawi list, ②: BREONADIA SALICINLA under the Malawi list, ③: PHOENIX RECLINATE under the Malawi list, ④: HYPHAENA CRINITA the Malawi list NUMBER: TOTAL 15</p> <p>INHABITATION: In the right of the way : 0 Out of the right of the way : 15 Main industry of inhabitant: Cassava, Maize</p> <p>LAND USE: [Farm land, inhabitation], Forest, [Livestock's breeding area] NP / WILDLIFE RESERVE / FOREST RESERVE: Nonexistent</p> <p>SOCIAL INFRASTRUCTURE: School, Hospital, Public facility and place, Religious facilities: Mosque, Graveyards</p> <p>VULNERABLE SOCIAL GROUPE: Nonexistent</p> <p>WATER RIGHTS: Nonexistent</p> <p>FISHERIES RIGHTS: Nonexistent</p> <p>LOCAL CONFRICT: Nonexistent</p> <p>CULTURAL HERITAGE: Nonexistent</p> <p>INFECTIOUS DISEASES HIV / AIDS: Interview with doctor in Nkhokotakota: <u>See attachment sheet (資料 3-3 参照)</u></p>				

Name of Bridge 9: Ling'ona Bridge 20m Concrete Beam Bridge

SURVE DATE	23 rd July, 2004 10:30-11:55	LOCATION NAME	Ling'ona	LAT: S12° 57' 18.4"	LONG: E34° 17' 44.8"
WEATHER	Fair	NOTE		ALT	476m
SURVEYOR	KUROKI I/ MAKWINJA				
SKETCH	KUROKI				
CONDITION OF EACH ENVIRONMENTAL ITEM					
AIR	No relation				
WATER	RIVER DIMENSION: <u>See another inspection sheet (資料 2 参照)</u> FLOW: AREA * VELOCITY= No flow TURBIDITY: - PH: - COD: -				
POLLUTED SOIL	No relation				
TRAFFIC ACCIDENT AND SECURITY SITUATION	Interview with nearest police station (Nkhokotakota PS) <u>See attachment sheet (資料 3-3 参照)</u>				
WATER USAGE	Water place for livestock, Washing, bathing, drinking				
BIODIVERSITY	ANIMAL DIVERSITY: Interview with wildlife officer <u>See attachment sheet (資料 3-3 参照)</u> VEGETATION: <u>See attachment sheet</u> ENDANGERED SPECIES: 1 species: RAPHIA FARINIFERA under the Malawi list NUMBER: TOTAL 55				
INHABITATION	In the right of the way : 10 Out of the right of the way : 45				
LAND USE	Main industry of inhabitant: Cassava, Maize Farm land, inhabitation, Forest, Livestock's breeding area				
SOCIAL INFRASTRUCTURE	NP / WILDLIFE RESERVE / FOREST RESERVE: Nonexistent School, Hospital, Public facility and place, Religious facilities: Meeting Place with a Mango's tree				
VULNERABLE SOCIAL GROUPE	Nonexistent				
WATER RIGHTS	Nonexistent				
FISHERIES RIGHTS	Nonexistent				
LOCAL CONFRICT	Nonexistent				
CULTURAL HERITAGE	Nonexistent				
INFECTIOUS DISEASES HIV / AIDS	Interview with doctor in Nkhokotakota: <u>See attachment sheet (資料 3-3 参照)</u>				

Name of Bridge 10: Mchandilo Bridge 10m Box Culvert

SURVE DATE	23 rd July, 2004 12:00-13:30	LOCATION NAME	Mchandilo	LAT: S12° 56' 46.3"	LNG: E34° 17' 36.7"
WEATHER	Fair	NOTE		ALT	479m
SURVEYOR	KUROKI I / MAKWINJA				
SKETCH	KUROKI	<p>The sketch map shows a road crossing a river via a box culvert. Key features include: <ul style="list-style-type: none"> Hot spring (for bath, washing): Orange oval on the left. Wetland (30-100ha): Green circle in the center. Banana: Yellow rectangle on the right. Private livestock barn: Distance from center of the road is 60m. 10 Inhabitants, Kiosk: Distance from center of the road is 5-40m (All inhabitants are in the right of the way). 10 Inhabitants: Distance from center of the road is 25-40m (2-3 inhabitants are in the right of the way). 20 Inhabitants, Kiosk: Distance from center of the road is 10-40m (10 inhabitants are in the right of the way). Hot spring: 250m from the bridge. Mosque: 250m from the bridge. Signboard: 150m from the bridge. Cassava, Sugar cane: Yellow rectangles on both sides. </p>			
CONDITION OF EACH ENVIRONMENTAL ITEM					
<input type="checkbox"/> AIR	No relation				
<input type="checkbox"/> WATER	RIVER DIMENSION: <u>See another inspection sheet (資料 2 参照)</u> FLOW: AREA * VELOCITY = No flow TURBIDITY: Polluted by waste water from livestock barn PH: Alkalinity due to hot springs COD: -				
<input type="checkbox"/> POLLUTED SOIL	No relation				
<input checked="" type="checkbox"/> TRAFFIC ACCIDENT AND SECURITY SITUATION	Interview with nearest police station (Nkhokotakota PS) <u>See attachment sheet (資料 3-3 参照)</u>				
WATER USAGE	Water place for livestock				
BIODIVERSITY	ANIMAL DIVERSITY: Interview with wildlife officer <u>See attachment sheet (資料 3-3 参照)</u> VEGETATION: <u>See attachment sheet</u>				
	ENDANGERED SPECIES: Nonexistent				
	NUMBER: TOTAL 40				
<input checked="" type="checkbox"/> INHABITATION	In the right of the way : 23 Out of the right of the way : 20				
LAND USE	Main industry of inhabitant: Cassava, Maize MK80/kg [Farm land, inhabitation], Forest, [Livestock's breeding area] NP / WILDLIFE RESERVE / FOREST RESERVE: Nonexistent				
SOCIAL INFRASTRUCTURE	School, Hospital, Public facility and place, Religious facilities: Mosque is located in 250m from the bridge				
VULNERABLE SOCIAL GROUPE	Nonexistent				
WATER RIGHTS	Nonexistent				
FISHERIES RIGHTS	Nonexistent				
LOCAL CONFLICT	Nonexistent				
CULTURAL HERITAGE	Nonexistent				
INFECTIOUS DISEASES HIV / AIDS	Interview with doctor in Nkhokotakota: <u>See attachment sheet (資料 3-3 参照)</u>				

1. 事故・治安状況に係るヒアリング調査結果

ヒアリング先：ンコタコタ警察署 交通警察

日 時 : 2004年7月27日

Q1: M5道路の1車線橋梁周辺の過去5カ年の事故件数は?

A1: サリマ〜ンコタコタ間では、1999〜2004年7月までに35件。

Q2: 事故のタイプと典型的な事故は?

A2: 事故は次の4つに分類される。

①死亡事故、②重傷事故、③軽傷事故、④物損、⑤ロードキル

また、典型的な事故は次のとおりである。

■ムチャンディロ: 2003.8月(橋の上で衝突: 夜間、事故タイプ③)

■チャマクワ: 2004.2月(橋桁に衝突して横転、事故タイプ④)

■カンジャムワノ: 2003.6月

(大型バスとパッセンジャー多数を荷台に載せた乗り合いピックアップが橋上で衝突、ピックアップの客3人が投げ出されて死亡: 事故タイプ①)

事故は圧倒的に夜間が多い。

Q3: 対象橋梁周辺の治安状況はどうか? タンザニアでは、車のスピードが落ちる1車線橋梁を狙って窃盗団が出ることもある。

A3: マラウイではそのような情報はない。ンコタコタやサリマの町でバイクや車両の盗難事件は報告されている。

■地域住民へのヒアリング結果

窃盗団等はいない。家に忍び込んで物をとっていく人はいたことがある。

2. 対象橋梁周辺に生息する動物種に係るヒアリング調査結果

ヒアリング先：ンコタコタ野生動物保護区事務所所長

日 時 : 2004年7月23日 14:30

Q1: 対象プロジェクトがンコタコタ野生保護区または周辺に生息する動物に影響があるか?

A1: 野生保護区は対象プロジェクト地域から離れているため問題ないと考える。新設道路や橋梁でもない。

Q2: 対象橋梁周辺には、どのような動物が生息しているか?

A2: 次のような動物がいると思われる。いずれも橋梁修復が悪影響をあたえるとは考えにくい。

動物名: ウォーターバック、レイヨウ類、イエローバブーン、ナイルクロコダイル、カバ、サバンナモンキー類

■地域住民へのヒアリング結果

ナンヤングカルバート付近では、乾季になると山岳地からゾウが乾いた河道を通ることがある。また、ウォーターバック、サバンナモンキー類は多い。

3. 病気等に係るヒアリング調査結果

ヒアリング先：保健人口省ンコタコタ県立病院

日時：2004年7月28日

Q1：対象橋梁周辺の主な病名等は？

A1：主な病名は次のとおりである。

ンコタコタ県及びサリマ町における主な病気の罹患率は次のとおりである。

ンコタコタ県

年・月	マラリア	コレラ	下痢	皮膚病
1993	63.0	0.2	44.0	4.1
1994	60.0	0.2	40.0	6.4
1995	61.0	1.0	42.0	5.3
1996	60.0	1.0	41.0	7.6
1997	59.0	0.9	39.0	8.8
1998	59.0	0.9	39.0	24.1
1999	56.0	1.0	39.0	24.0
2000	54.0	0.5	40.0	41.2
2001	48.0	1.0	37.0	61.9
2002	-	1.0	-	19.1

サリマ町

年・月	マラリア	コレラ	下痢	皮膚病
2002	72.0	0.8	13.0	3.0

なお、AID/HIV の罹患率は、「国別貧困情報」(JICA、平成15年3月)によれば患者総数800,000人(1999年)、成人罹患率(15-49歳)は15.96%(1999年)、世銀の推計によれば14.9%(2001年)となっている。

資料 4 質問票

Questionnaire

1. Administration and Policy

Please provide the following administration and policy-related information in written form together with supporting materials.

Category	Item
Central Government	Organization chart
	Current budget and past expenditure
	National development plan
	Poverty reduction strategic paper (PRSP)
	Recipient organization of foreign aid
Ministry of Transport and Public Works	Development history
	Organization chart and number of personnel by category and department
	Present budget and past 5 years expenditures by category
	Aid programs and projects for the last 5 years
	Transport and road development policy and program
National Road Authority	Development history
	Organization chart and number of personnel by category and department
	Current budget and past 5 years expenditure by category
M5 Local Government	Organization chart
	Current budget by category

2. Transport Sector

Please provide the following information on the transport and road sectors in written form and with supporting materials.

Category	Item
Road Network	National road map by category
	National road map by surface condition
	Road project map
Public Transport	Main bus terminals
	Bus route map
	Statistic data of public transport
Water Transport	Main ports
	Route map of passenger vessel and ferry
	Statistic data of water transport
Air Transport	Main airport and air strip map
	Airline route map
	Statistic data of air transport
Rail Road	Development history
	Map of rail road network
	Statistic data of rail road

3. Road Traffic

Please provide the following information on road traffic in written form and with supporting materials.

Category	Item
Vehicle Ownership	Number of vehicles registered by category for the last 10 years
Traffic Data	Traffic volume by category on trunk road for the last 5 years
	Result of origin-destination survey
	Result of opinion survey on traffic
Law	Law and regulation on traffic
Traffic Accident	Traffic accident data

4. Bridge

Please provide the following bridge-related information in written form and with supporting materials.

Category	Item
Existing Bridges (refer to attached "Bridge Inventory")	Detailed road map in scale of 1:50,000
	List of all bridges along M5, between Balaka and Nkhotakota with station number
	List of all rivers and creeks between Balaka and Nkhotakota
	As-built drawings and related design reports of the target bridges
	Topographic data, including air photograph or satellite photograph
	Bench mark network (Control survey data)
	Geotechnical data
	Hydraulic data
	River improvement plans or studies
Maintenance	Records of damages of bridges due to natural disaster such as flood.
	Records of bridge repairs or rehabilitations
Design Criteria	Organization chart, number of staff and budget for the maintenance of roads and bridges
	Design criteria, standard and guidelines of road and bridge of the related projects under EU, KFW and etc.
Construction Ability and Unit Cost	List of available equipments, facilities and materials for construction of roads and bridges
	Unit construction cost analysis of roads and bridges

5. Environmental and Social Considerations

Please provide us with the following information on the environment road sector in written form and with supporting materials, if possible.

Category	Item
Environmental Impact Assessment	Environmental Impact Assessment (EIA) Law (National Environmental Action Plan, Environmental Management Act)
	Environmental guidelines
	Environmental standards
	Effluent Control Law (Water, Gasses, Emission and other)
	Environmental Impact Assessment Report (any section, any projects)
	Environmental Report concerning "Duwambazi Bridge" constructed by the European Union
Land or Forest Law	Land Law (Compulsory Purchase of Land Law)
	Law and Procedure concerning Resettlements
	Forest Law (Is there any reserve forest around the project area?)
	Fisheries Rights (Is there any area of fisheries rights around the project area?)
	Right of Water (Is there any area with Water Rights around the project area?)
Environmental Data	Endangered species list made by the Malawi government
	What lists do you adopt to consider endangered species for EIA? (<input type="checkbox"/> Red data list by IUCN*1, <input type="checkbox"/> CITES – listed species*2)
	*1 IUCN : International Union for Conservation of Nature and Natural Resources
	*2 CITES : Convention on International Trade on Endangered Species of Wild Fauna and Flora Listed Species
	Game reserve area map
	National park, conservation area and forest reserve map
	Vegetation map
	Land use map
	Environmental survey report in the project area (fauna, flora, water quality) (Environmental state report)
	Rain fall data in the project area Measuring points: Nkhotakota, Salima, Livulezi, Balaka Monthly rain fall for the past 5 years and annual rain fall for the past 10 years
	Stream flow data of rivers in the project area
	Cultural heritage
	Latest "Malawi's national atlas"

6. General information

Please provide the following information on general issues in written form and with supporting materials.

Category	Item
Socio Economic Data	Population by district
	Gross domestic product
	Amount of import and export by product and gate
	Main agricultural, mineral and industrial production
	Inflation rate
	Employment data
	Result of household survey
	Data on tourism
Law and Regulation	Tax, duty and custom
	City planning
	Land ownership and land acquisition

Bridge Inventory

General Information	Name of Bridge		
	Name of Road		
	Station No. (Road)		
	Location		
	Degrees of latitude / longitude		
	Administrator		
	Year of Construction		
	Contractor		
	Design Report		Available / Not Available
Bridge	Type of Bridge	Superstructure	
		Substructure	
		Foundation	
	Applied Design Specification		
	Design Live Load		
	Regulated Traffic Load		
	Bridge Length	(m)	
	Span Length	(m)	
	Skew	(°)	
	Road Elevation	(m)	
	Girder Height	(m)	
	Width	Full Width(m)	
		Carriageway (m)	
		Pedestrian way (m)	
	Traffic Volume	Nos./day	
Incorporation Ratio of Tracks	(%)		
Type of Pavement			
Affixed Articles and Buried Article (Items, Administrator)		Available / Not Available	
Repair Works (Items, Year)		Available / Not Available	
River	Name of River		
	Station (River)		
	Administrator		
	River Width	(m)	
	Normal Discharge	(m^3/sec)	
	Flood Discharge	(m^3/sec)	
	Elevation of River Bed	(m)	
	Normal Water Height	(m)	
	Flood Water Height	(m)	
	Information of Flood Damage		Available / Not Available
	River Improvement Works		Available / Not Available
Others	Topographic Survey		Available / Not Available
	Geological Investigation		Available / Not Available
	Navigation		Available / Not Available

資料 5 収集資料リスト

資料5 収集資料リスト

No.	Region	Category	Title	Author	Publisher	Year	Feature
S-1	Malawi	Socio-economy	Malawi Poverty Reduction Strategy Paper (Final Draft)	Ministry of Finance and Economic Planning	-	2002	Report
S-2	Malawi	Socio-economy	Malawi Poverty Reduction Strategy Paper (Final Draft) Annexes	Ministry of Finance and Economic Planning	-	2002	Report
S-3	Malawi	Socio-economy	Malawi Poverty Reduction Strategy 2002/2003 Annual Review Report Volume 1: Main Report	Ministry of Finance and Economic Planning	-	2004	
S-4	Malawi	Socio-economy	Malawi Poverty Reduction Strategy 2002/2003 Annual Review Report Volume 2: Annexes	Ministry of Finance and Economic Planning	-	2004	
S-5	Malawi	Socio-economy	Economic report 2001	National Economic Council	-	-	
S-6	Malawi	Socio-economy	1988 Malawi Population and Housing Census Report of Final Census Results	National Statistic Office	-	2000	
S-7	Malawi	Socio-economy	1989 Malawi Population and Housing Census Analytical Report	National Statistic Office	-	2002	
S-8	Malawi	Socio-economy	2002 Malawi Core Welfare Indicators Questionnaire Survey Report of Survey Results	National Statistic Office	-	-	
S-9	Malawi	Socio-economy	Annual Economic Survey 1999-2001	National Statistic Office	-	2003	
S-10	Malawi	Socio-economy	Financial Statement for Financial Year 2002/03	Malawi Government	-	-	
S-11	Malawi	Socio-economy	Malawi Economic Growth Strategy Final Draft	Ministry of Economic Planning and Development	-	2003	

資料5 収集資料リスト

No.	Region	Category	Title	Author	Publisher	Year	Feature
T-1	Malawi	Transport	Malawi National Transport Policy	Republic of Malawi	-	2004	Report
T-2	Malawi	Transport	Final Evaluation of Road Maintenance Projects	-	-	-	-
T-3	Malawi	Transport	Road Maintenance and Rehabilitation Project (ROMARP) Volume1:MainReport	Ministry of Works and Supplies	-	1998	Report
T-4	Malawi	Transport	Malawi Transport Sector Review, Provision of Short Term Consultancy Services for the Malawi Transport Sector Review (Draft Final Report)	African Development Bank	-	2001	Report
T-5	Malawi	Transport	Draft National Transport Policy Action Plans	-	-	-	-
T-6	Malawi	Transport	Annual Report July 2002 - June 2003	NRA	-	2003	-
T-7	Malawi	Transport	Ten Years(2000-2010) Road Sector Investment Program	NRA	-	2002	Report
T-8	Malawi	Transport	Proposed Bridge Construction on M5 Project Proposal	NRA	-	-	-
T-9	Malawi	Transport	Manual Classified Traffic Counts on the Main Road Network Final Report Phase 2 - Dry Season Counts	-	-	2002	Report
T-10	Malawi	Transport	M5 Traffic Counting Stations	NRA	-	2004	-
T-11	Malawi	Transport	2004/2005Budget	NRA	-	2004	-
T-12	Malawi	Transport	Law of Malawi National Road Council of Malawi	-	-	-	-
T-13	Malawi	Transport	Number of Road Accidents in Malawi 2001-2003	National Road Safety Council	-	-	-
T-14	Malawi	Transport	Approved Estimates of Expenditure on Recurrent and Capital Accounts for the Fiscal Year 2003/2004 (Output Based)	-	-	-	-
T-15	Malawi	Transport	Authorised Establishment Ministry of Transport & Public Works	MOTPW	-	-	-
T-16	Malawi	Transport	Strategic Plan for The Ministry of Transport October 2002 - June 2005	Ministry of Transport	-	2002	Report
T-17	Malawi	Transport	History of the Paved Roads in Malawi	NRA	-	-	-

資料5 収集資料リスト

No.	Region	Category	Title	Author	Publisher	Year	Feature
B-1	Malawi	Bridge	Detailed road map in scale of 1:50,000	Department of Survey, Ministry of Physical Planning and Surveys	Department of Survey, Ministry of Physical Planning and Surveys	-	Original/Copy
B-2	Malawi	Bridge	Airphoto	Department of Survey, Ministry of Physical Planning and Surveys	Department of Survey, Ministry of Physical Planning and Surveys	1982-1995	Photo
B-3	Malawi	Bridge	Precise Benchmarks, Height and Co-ordinates in Meters	Department of Survey, Ministry of Physical Planning and Surveys	Department of Survey, Ministry of Physical Planning and Surveys	1978	Photo
B-4	Malawi	Bridge	Namikokwe River Bridge (M17) Soil Profiles	Ministry of Works and Supplies	Ministry of Works and Supplies	1979	Copy
B-5	Malawi	Bridge	Hydrological Network	Water Resources Department	Water Resources Department	2004	Copy
B-6	Malawi	Bridge	Annual Report of Day Data: Daily Flow	Water Resources Department	Water Resources Department	1997-2003	Copy
B-7	Malawi	Bridge	Annual Report of Day Data: Mean Daily Water Level	Water Resources Department	Water Resources Department	1997-2003	Copy
B-8	Malawi	Bridge	Report on Site Investigation (Drillhole Log), Ngodzi Bridge Salima Balaka Road (M5)	Ministry of Works	Ministry of Works	1993	Copy
B-9	Malawi	Bridge	Bridge Design Manual	Design Department, Ministry of Works and Supplies	Design Department, Ministry of Works and Supplies	1988	Copy
B-10	Malawi	Bridge	British Standard BS5400 (Part 1 to 10)	British Standard Institution	British Standard Institution	1988	Copy
B-11	Southern Africa	Bridge	Code of Practice for the Design of Road Bridges and Culverts, Draft	Southern Africa Transport and Communications Commission (SATCC)	Southern Africa Transport and Communications Commission (SATCC)	1998	Electronic File
B-12	Malawi	Bridge	Bridge Inspection Report: M5 from Balaka to North of Nkhata Bay	National Road Authority	National Road Authority	2003	Copy
B-13	Malawi	Bridge	2003/2004 Road Maintenance Programme, Progress Report for April 2004	National Road Authority	National Road Authority	2004	Copy
B-14	Malawi	Bridge	Bridge Project in Progress on M5	National Road Authority	National Road Authority	2004	Electronic File
B-15	Malawi	Bridge	Record of bridges repairs and rehabilitations on M5	National Road Authority	National Road Authority	2004	Electronic File
B-16	Malawi	Bridge	Tender Document of Dwambazi Bridge	National Road Authority	National Road Authority	2000	Electronic File

資料5 収集資料リスト

No.	Region	Category	Title	Author	Publisher	Year	Feature
E-1	Malawi	Environment	National Environmental Action Plan 2002 Revised Draft	Department of Research and Environmental Affairs	Department of Research and Environmental Affairs	2003	Book
E-2	Malawi	Environment	National Environmental Action Plan Volume 1: The Action Plan 1994	Department of Research and Environmental Affairs	Department of Research and Environmental Affairs	1994	Book
E-3	Malawi	Environment	State of Environment Report 2002 second edition	Environmental Affairs Department	Environmental Affairs Department	2002	Book
E-4	Salima	Environment	Salima Urban State of Environment Report 2002-2007	Salima Town Assembly	Environmental Affairs Department	2002	Book
E-5	Nkhotakota	Environment	Nkhotakota Urban State of Environment Report 2002-2007	Nkhotakota District Assembly	Environmental Affairs Department	2002	Book
E-6	Malawi	Environment	Malawi National Land Policy	Ministry of Lands, Physical Planning and Surveys	Ministry of Lands, Physical Planning and Surveys	2002	Copy
E-7	Malawi	Environment	Forestry Act 1997	Ministry of Forestry, Fisheries and Environmental Affairs	Ministry of Forestry, Fisheries and Environmental Affairs	1997	Copy
E-8	Salima	Environment	Land Resources Evaluation Project Malawi, Land Resources Appraisal of Salima Agricultural Development Division	Aloys Lorkeers	Ministry of Agriculture Land Husbandry Branch	1992	Copy
E-9	Malawi	Environment	Laws of Malawi, Chapter 69:02 Public Roads	-	-	1962	Copy
E-10	Malawi	Environment	Laws of Malawi, Chapter 58:04 Land Acquisition	-	-	1972	Copy
E-11	Malawi	Environment	Laws of Malawi, Chapter 57:01 Land	Ministry of Lands, Physical Planning and Surveys	Ministry of Lands, Physical Planning and Surveys	1992	Copy
E-12	Malawi	Environment	Waterworks Act	Department of Water	Department of Water	1995	Copy
E-13	Malawi	Environment	National Parks and Wildlife Act	Government Printer, Zomba, Malawi	Government Printer, Zomba, Malawi	1992	Copy
E-14	Malawi	Environment	Laws of Malawi, Chapter 72:03 Water Resources	-	-	1971	Copy
E-15	Karonga and Chitipa	Environment	Consultancy Service for the Review of Bill of Quantities and Update of Social and Environmental Impact and Economic Evaluation of the Construction of the Karonga-Chitipa Road Environmental and Social Impact Assessment Final Report	Scott Wilson National Road Authority	-	2003	Copy

資料5 収集資料リスト

No.	Region	Category	Title	Author	Publisher	Year	Feature
E-16	Malawi	Environment	Guidelines for Environmental Impact Assessment	Environmental Affairs Department, Ministry of Forestry, Fisheries and Environmental Affairs	Environmental Affairs Department, Ministry of Forestry, Fisheries and Environmental Affairs	1997	Book
E-17	Malawi	Environment	Environmental Guidelines for the Malawi Road Section	Ministry of Transport and Public Works	Ministry of Transport and Public Works	2004	Copy
E-18	Lunjiak Quarry	Environment	EIA Report Lunjika Quarry Project (Draft)	Shire Construction Company			Copy
E-19	Malawi	Environment	Fisheries Conservation and Management ACT 1997	Ministry of Natural Resources and Environmental Affairs	Ministry of Natural Resources and Environmental Affairs	1997	Book
E-20	Malawi	Environment	National Forest Policy of Malawi	-			Copy
E-21	Malawi	Environment	Community Based Forest Management Forest Policy Supplement of July 2003	Ministry of Natural Resources and Environmental Affairs	Ministry of Natural Resources and Environmental Affairs	2003	Copy
E-22	Malawi	Environment	Malawi Road and Tourist Map 2002	Ministry of Transport and Public Works Survey Department, Ministry of Tourism Parks and Wild life	Ministry of Transport and Public Works Survey Department, Ministry of Tourism Parks and Wild life	2002	Map
E-23	Malawi	Environment	Environmental Management Act 1996	Ministry of Forestry, Fisheries and Environmental Affairs	Ministry of Forestry, Fisheries and Environmental Affairs	1996	Book
E-24	Malawi	Environment	Malawi - An Atlas of Social Statistics	Todd Benson, James Kaphuka, Shelton Kanaynda and Richmond Chinula	National Statistical Office International Food Policy Research Institute	1998	Book / Map