

4. 討 議 議 事 録

現地調査

MINUTES OF DISCUSSIONS

BASIC DESIGN STUDY
ON
THE PROJECT FOR SMALL STREAM BRIDGES REHABILITATION
IN
THE REPUBLIC OF GHANA


In response to the request from the Government of the Republic of Ghana (hereinafter referred to as "the GOG"), the Government of Japan decided to conduct a Basic Design Study on the Project for Small Stream Bridges Rehabilitation (hereinafter referred to as "the Project"), and the Japan International Cooperation Agency (hereinafter referred to as "JICA") sent to Ghana a study team headed by Mr. Juro Chikaraishi, Director of the Third Regional Division, Planning Department, JICA, from December 4 to 23, 1994.

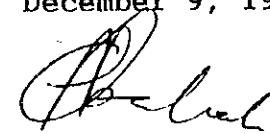
The Team held series of discussions with the officials concerned of the GOG and conducted field surveys at the study area.

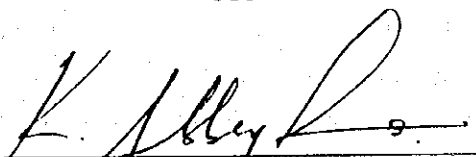
In the course of the discussions, Ghanaian side proposed to delete 5 bridges from the original request and to substitute them by 6 new bridges and revised component of equipments (including vehicles). The Japanese side accepted the revision of the original request as Ghanaian side proposed.


Both parties have confirmed the main items described on the attached sheets. The Team will proceed to continue the works and prepare the Basic Design Study Report.

Accra, December 9, 1994


MR. JURO CHIKARAISHI
Leader,
Basic Design Study Team
JICA


Mr. CHARLES ABAKAH
Director,
International Economic Division,
Ministry of Finance and Economic
Planning


Mr. K. ABBEY SAM
Chief director,
Ministry of Roads and Highways


Mr. Q. ANTWI
Director,
Department of Feeder Roads
Ministry of Roads and Highways

ATTACHMENT

1. Objective of the Project

The objective of the Project is to provide construction materials and equipments necessary for bridges which are technically viable for Ghanaian side to construct by themselves among those requested to the Government of Japan as revised as listed in Annex I.

However, the final candidate bridges and equipments for the Project will be decided after further studies.

2. Project Sites

The proposed sites of the Project are located in Regions Volta, Eastern, Central, Western, Ashanti and Brong-Ahafo which are shown in ANNEX II.

3. Executing Agency

The Department of Feeder Roads of the Ministry of Roads and Highways of the GOG is responsible for the administration and execution of the Project.

4. Items Agreed by Both sides

The justification of the Project is judged from the point of view of river conditions, traffic conditions, accessibility and regional development.

As a result, both sides have confirmed the justification for the revised 28 candidate bridges. However, since some bridges seemed difficult to be constructed by Ghanaian side, the Japanese side advised the Ghanaian side to request to the Government of Japan for another grant aid in the form of "facilities construction" rather than "provision of materials" for those bridges. In this case, however, the final decision for "facilities construction" candidate bridges shall be made by Ghanaian side referring the result of the study.

5. Grant Aid System

- (1) The GOG has understood the system of Japan's Grant Aid in Annex III as explained by the team.
- (2) The GOG will take necessary measures described in ANNEX-IV for smooth implementation of the Project, on condition that the Grant Aid Assistance by the Government of Japan is extended to the Project.

6. Schedule of the Study

- (1) The consultants will proceed to further studies in Ghana until December 23, 1994.
- (2) JICA prepares the Draft Final Report in English and will dispatch a mission in order to explain its contents around February, 1995.

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Annex I

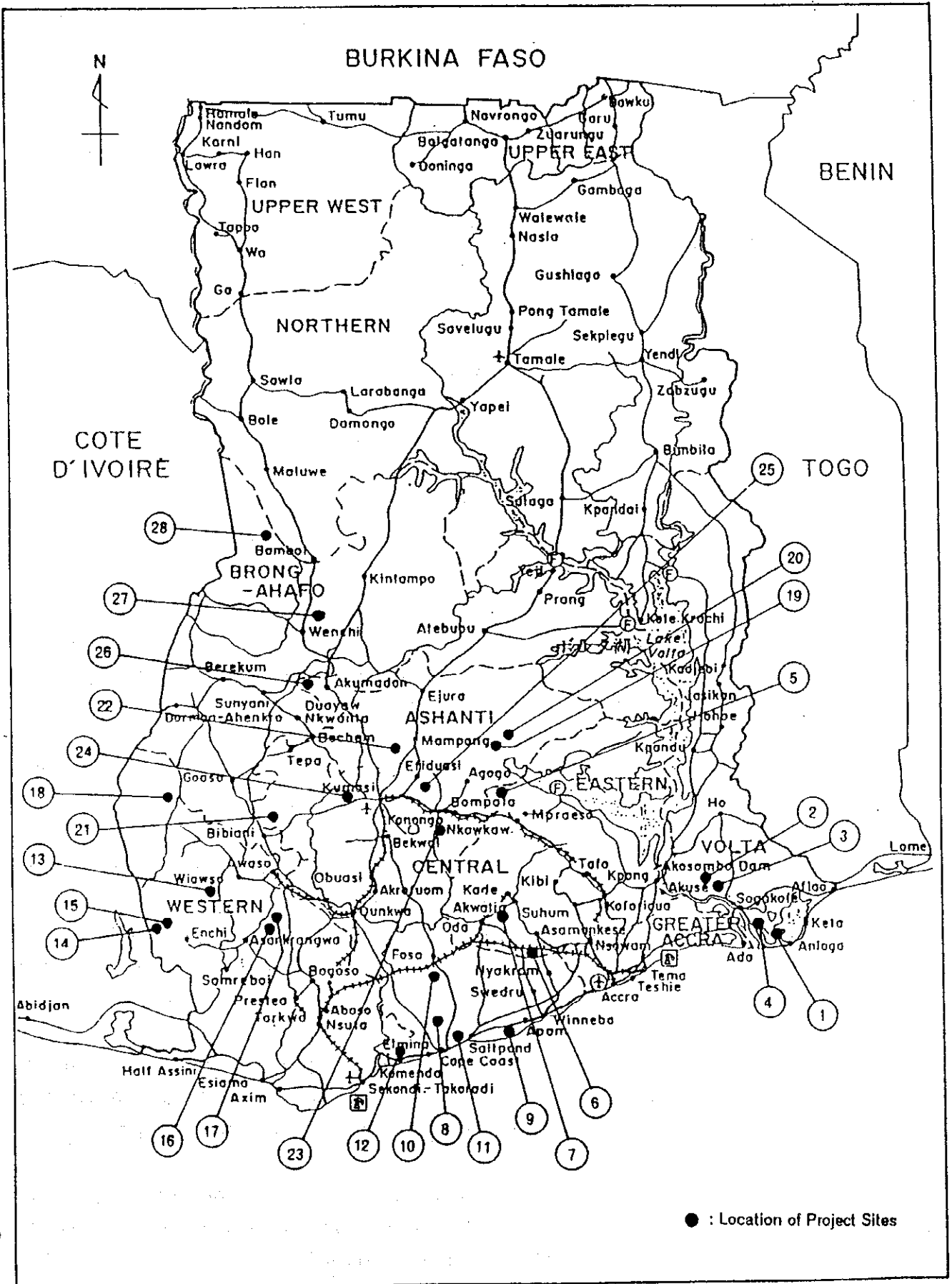
1. List of Bridges

No.	Region	Road Name	River Name
1	Volta	Blemeazado-Agortoe	Kolo
2	ditto	Adidome-Juapong	Aklakpa
3	ditto	Adidome-Juapong	Kolo
4	ditto	Galasota-Bomingo	Anor
5	Eastern	Etwereso Jn.-Etwereso-Pawudu	Pra
6	ditto	Takorase-Krudua	Ayensu
7	ditto	Akwatia-Kusi	Birim
8	Central	Nyameadon-Asomdwee	Kakum
9	ditto	Winneba-Ojobi	Ayensu
10	ditto	Akrofuom-Nsuakyir	Ochi
11	ditto	Ekon Jn.-Ekon	Amutu
12	Western	Shama Jn.-Mampong-Adansi	Hwini
13	ditto	Agyeman Camp-Kramokrom	Pru
14	ditto	Adonikrom Jn.-Adonikrom	Susan
15	ditto	Adonikrom Jn.-Adonikrom	Adoni
16	ditto	Wasa Akropong-Anyinabrim	Bura
17	ditto	Wasa Akropong-Anyinabrim	Yorunsu
18	ditto	Nkatieso-Agyemandiem-Abuom	Sayere
19	Ashanti	Kwamepong Nkwanta-Dukusen	Afram
20	ditto	Kwamepong Nkwanta-Dukusen	Ben
21	ditto	Mpsaaso-Sreso	Disri
22	ditto	Agona-Afamanaso	Ofin
23	ditto	Praso-Konongo	Anum
24	ditto	Hiawu-Besease-Ntensere	Owabi
25	ditto	Woraso-Abotanso	Anum
26	Brong-Ahafo	Chiraa-Asuokwa	Tano
27	ditto	Wenchi-Ofuman	Subin
28	ditto	Banda-Kankan	Johol

2. List of Equipments

- Wheel crane (16 t x 3.5 m)	: 2 units
- Cargo truck (8 t)	: 4 units
- Cargo truck (4 t)	: 4 units
- Pick-up (double cabin, 4x4, diesel)	: 6 units
- Cross country vehicle (4x4, diesel)	: 2 units
- Semi-trailer with truck tractor	: 1 unit
- Erection tools	: 2 sets

Annex II Project Site Map



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Japan's Grant Aid Scheme

1. Grant Aid Procedures

- 1) Japan's Grant Aid Program is executed through the following procedures.

Application : Request made by a recipient country
Study : Basic Design Study conducted by JICA
Appraisal & Approval : Appraisal by the Government of Japan and Approval by Cabinet
Determination of Implementation : The Notes exchanged between the Governments of Japan and the recipient country

- 2) First, 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 Program, 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 signed by the Government 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 (hereinafter referred to as "the Study"), conducted by JICA on a requested project (hereinafter referred to as "the Project") is to provide a basic document necessary for the appraisal of the project by the Japanese Government. The contents of the Study are as follows:

- a) Confirmation of the background, objectives, and benefits of the requested project and also institutional capacity of agencies concerned of the recipient country necessary for the Project's implementation.
- b) Evaluation of the appropriateness of the Project to be implemented under the Grant Aid Scheme from a technical, social and economic point of view.
- c) Confirmation of items agreed on by both parties concerning the basic concept of the Project.
- d) Preparation of a basic design of the Project
- e) 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 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 consultant 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 consulting 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 and also to avoid any undue delay in implementation should the selection process be repeated.

3. Japan's Grant Aid Scheme

1) What is Grant Aid ?

The Grant Aid Program 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. Grant Aid is not supplied through the donation of materials as such.

2) 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.

3) "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 weather, 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.

- 4) 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, contracting 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.)

- 5) 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.

- 6) 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:

- (1) To secure land necessary for the sites of the Project and to clear, level and reclaim the land prior to commencement of the construction.
- (2) To provide facilities for the distribution of electricity, water supply and drainage and other incidental facilities in and around the sites.

- (3) To secure buildings prior to the procurement in case the installation of the equipment.
- (4) To ensure all the expenses and prompt execution for unloading, customs clearance at the port of disembarkation and internal transportation of the products purchased under the Grant Aid.
- (5) 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.
- (6) 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.

7) "Proper Use"

The recipient country is required to maintain and use the facilities constructed and 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.

8) "Re-export"




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

9) 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 an authorized foreign exchange 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 issued by the Government of the recipient country or its designated authority.

Annex IV

Necessary measures to be taken by the GOG:

1. To provide data and information necessary for the Project.
2. To bear the following commissions to the Japanese foreign exchange bank for the banking services based upon the Banking Arrangements.
 - Advising commission of Authorization to Pay
 - Payment commission
3. To ensure prompt unloading and customs clearance at ports of disembarkation in Ghana and internal transportation of the products purchased under the Grant, from the delivery site(s) to project sites.
4. To exempt Japanese nationals from customs duties, internal taxes, and other fiscal levies which may be imposed in Ghana with respect to the supply of the products and services under the verified contracts.
5. To accord Japanese nationals whose services may be required in connection with the supply of the products and services under the verified contract of such facilities as may be necessary for their entry into Ghana and stay therein for the performance of their work.
6. To bear all the expenses other than those to be borne by the Grant, necessary for the bridge construction.

ドラフト報告書説明


MINUTES OF DISCUSSIONS ON
THE BASIC DESIGN STUDY ON THE PROJECT
FOR SMALL STREAM BRIDGES REHABILITATION
IN THE REPUBLIC OF GHANA
(CONSULTATION ON DRAFT REPORT)

In December 1994, the Japan International Cooperation Agency (JICA) dispatched a Basic Design Study Team on the Project for Small Stream Bridges Rehabilitation (hereinafter referred to as "the Project") to the Republic of Ghana and through discussions, field survey and examination of the results in Japan, has prepared the draft report of the study.

In order to explain and to consult the Ghanaian side on the components of the draft report, JICA sent to Ghana a study team, which is headed by Mr. Kenji Kiyomizu, Development Specialist on Civil Engineering, JICA, and is scheduled to stay in the country from February 14 to 21, 1995.

As a result of the discussions and field survey, both parties confirmed the main items described on the attached sheets.

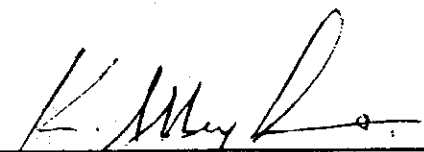
Accra, February 20, 1995



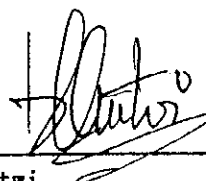
Mr. Kenji Kiyomizu
Leader,
Basic Design Study Team,
JICA



Mr. Charles Abakah
Director,
International Economic Division,
Ministry of Finance and Economic
Planning



Mr. K. Abbey Sam
Chief Director,
Ministry of Roads and Highways



Mr. C. D. Antwi
Director,
Department of Feeder Roads,
Ministry of Roads and Highways

ATTACHMENT

1. Components of the draft report

The Government of the Republic of Ghana has agreed and accepted in principle the components of the draft report proposed by the team.

2. Japan's Grant Aid system

- (1) The Government of the Republic of Ghana has understood the system of Japan's Grant Aid explained by the team.
- (2) The Government of the Republic of Ghana will take necessary measures, described in Annex for smooth implementation of the Project on condition that the Grant Aid assistance by the Government of Japan is extended to the Project.

3. Further Schedule

The team will make the final report in accordance with the confirmed items, and send it to the Government of the Republic of Ghana by April 1995.

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ANNEX

Necessary measures to be taken by the Government of Ghana;

1. To provide data and information necessary for the Project.
2. To bear the following commissions to the Japanese foreign exchange bank for banking services based upon the Banking Arrangements.
 - Advising commission of Authorization to Pay
 - Payment commission
3. To ensure prompt unloading and customs clearance at ports of disembarkation in Ghana and internal transportation of the products purchased under the Grant, from the delivery site(s) to Project sites.
4. To exempt Japanese nationals from customs duties, internal taxes and other fiscal levies which may be imposed in Ghana with respect to the supply of the products and services under the verified contracts.
5. To accord Japanese nationals whose services may be required in connection with the supply of the products and services under the verified contract such facilities as may be necessary for their entry into Ghana and stay therein for the performance of their work.
6. To bear all the expenses other than those to be borne by the Grant, necessary for construction of the bridges.
7. To construct all bridges within the period of two years after delivery of materials provided under the Grant.
8. To submit progress reports on the construction of bridges by Ghanaian side to JICA Ghana office at least every six (6) months.

KAP

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5. ガーナ共和国の主要経済指標

資料編 5. ガーナ共和国の主要経済指標

1994.10 1/2

国名	ガーナ共和国
	GHANA

一般指標				
政体	立憲民主制	*1	面積	238.0 千Km ² *1
元首	President Jerry John RAWLINGS	*1	人口	12,699 千人 (1993年) *1
独立年月日	1957年03月06日	*1	首都	アクラ *1
人種(部族)構成	アカン44%、モシ16%、アソント16%	*1	主要都市名	クマシ、タマレ、ケーブ・コースト *1
		*1	経済活動可人口	3,700 千人 (1983年) *1
言語・公用語	英語、アシャンテ語	*1	義務教育年数	3 年間 (1992年) *2
宗教	地域信仰38%、回教30%、キリカ24%	*1	初等教育就学率	- % (0000年) *2
国連加盟	1957年03月		識字率	60.0 % (1990年) *1
世銀・IMF加盟	1957年09月	*1	人口密度	67.0 人/Km ² (1992年) *2
		*1	人口増加率	3.12 % (1993年) *2
			平均寿命	平均 55.19 男 53.3 女 57.2 *1
			5歳児未満死亡率	84.5/1000 (1993年) *1
			カリ供給量	2,140.0 cal/日/人 (1990年) *2

経済指標				
通貨単位	セディ	*1	貿易量	(1989年) *3
為替レート(1US\$)	1US\$= 943.4 (06月)	*3	輸出	1,018.0 百万ドル *2
会計年度	1月～12月	*1	輸入	1,273.0 百万ドル *2
国家予算	(1988年)	*2	輸入が率	2.5 % (1992年) *4
歳入	701.8 百万ドル	*2	主要輸出品目	ココア、金、木材、ボーキサイト *1
歳出	711.2 百万ドル	*2	主要輸入品目	石油製品、消費財、資本財、食品 *1
国際収支	-56.6 百万ドル (1992年)	*2	日本への輸出	64.0 百万ドル (1992年) *5
ODA受取額	626.00 百万ドル (1992年)	*2	日本からの輸入	86.0 百万ドル (1992年) *5
国内総生産(GDP)	6,778.00 百万ドル (1992年)	*2		
一人当たりGDP	420.0 ドル (1991年)	*2	外貨準備総額	413.3 百万ドル (1994年) *1
GDP産業別構成	農業 53.0 % (1991年)	*2	対外債務残高	4,275.0 百万ドル (1992年) *4
	鉱工業 17.0 % (1991年)		対外債務返済率	26.7 % (1992年) *4
	サービス業 30.0 % (1991年)		インフレ率	12.6 % (1992年) *2
産業別雇用	農業 59.0 % (1992年)	*2		
	鉱工業 11.0 % (1992年)			
	サービス業 30.0 % (1992年)		国家開発計画	*5
経済成長率	3.6 % (1992年)	*2		

気象(1966年～1983年平均) 場所: Accra (標高 27 m)													
月	1	2	3	4	5	6	7	8	9	10	11	12	平均/計
最高気温	31.0	31.0	31.0	31.0	31.0	29.0	27.0	27.0	27.0	29.0	31.0	31.0	29.6 °C
最低気温	23.0	24.0	24.0	24.0	24.0	23.0	23.0	22.0	23.0	23.0	24.0	24.0	23.4 °C
平均気温	27.0	27.5	27.5	27.5	27.5	26.0	25.0	24.5	25.0	26.0	27.5	27.5	26.5 °C
降水量	15.0	33.0	56.0	81.0	142.0	178.0	46.0	15.0	36.0	64.0	36.0	23.0	725.0 mm
雨期/乾期	雨 雨												

*1 The World Factbook(C.I.A)
 *2 Human Development Report(UNDP)
 *3 International Financial Statistics(IMF)
 *4 World Debt Tables(WORLD)
 *5 最新世界各国要覧(東京書籍)

国名	ガーナ共和国
	GHANA

1994.10 2/2

*6

項目	年度	1989	1990	1991	1992
無償資金協力		2,043.46	2,382.47	2,515.30	2,699.97
技術協力		2,146.74	1,989.63	2,050.70	2,194.95
有償資金協力		5,161.42	5,676.39	7,364.47	5,852.05
総 額		9,351.62	10,048.49	11,930.47	10,746.97

*6

項目	歴年	1989	1990	1991	1992
無償資金協力		6.63	8.21	7.91	9.37
技術協力		21.49	21.58	28.93	12.97
有償資金協力		69.81	42.10	79.22	48.95
総 額		97.93	71.89	116.06	71.29

*7

	贈 与 (1)		有償資金協力 (2)	政府開発援助 (ODA) (1) + (2) = (3)	その他政府資 金及び民間資 金 (4)	経済協力総額 (3) + (4)
		技術協力				
二国間援助 (主要供与国)	234.60	81.70	97.70	414.00	23.50	437.50
1. イギリス	60.50	19.70	-5.00	75.20	15.30	90.50
2. カナダ	38.70	6.50	0.00	45.20	-1.60	43.60
3. アメリカ	27.00	6.00	0.00	33.00	0.00	33.00
4. ドイツ	23.50	18.50	0.50	42.50	10.80	53.30
多国間援助 (主要援助機関)	84.80	20.70	199.50	305.00	104.00	409.00
	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.00	0.00
そ の 他	199.70	60.40	50.40	310.50	29.00	339.50
合 計	519.10	162.80	347.60	1,029.50	156.50	1,186.00

*8

技術	関係各省庁→大蔵経済企画省
無償	関係各省庁→大蔵経済企画省
協力隊	関係各省庁→大蔵経済企画省

- *6 我が国の政府開発援助(外務省)
- *7 海外経済協力便覧(海外経済協力基金)
- *8 国別協力情報(JICA)

6. 要請橋梁の本計画対象としての 妥当性の検討

資料編 6. 要請橋梁の本計画の対象としての妥当性の検討

番号	橋梁番号	橋梁名	州名	道路名	河川名	橋梁建設の必要性			橋梁建設による社会経済効果				橋梁建設の実現性				本計画対象 妥当性判定	備 考		
						橋梁形式	状 況	必要性判定	影響人口	徒歩交通	車交通量	オート交通	効果判定	支間長	道路等級	7/25道路			下部工種	実現性判定
1	1-2	Aklakpa	ネリ	Adidome-Juapong	Aklakpa	橋梁なし	車通行不能	大	20,000	0	0	100	大	25 x 3	地方道	建設必要	-	問題あり	妥当でない	サイトへのアクセス道路が建設されていない。
2	1-3	Nyivu	"	Adidome-Juapong	Nyivu	木 橋	車通行不能	大	20,000	1,200	0	0	大	25	地方道	補修容易	容易	問題無	妥当	
3	2-1	Pra	イスタ	Etwereso Jn.-Etwereso Pawudu	Pra	橋梁なし	車通行不能	大	10,000	100	0	200	大	20 x 3	地方道	建設必要	-	問題あり	妥当でない	サイトへのアクセス道路が建設されていない。
4	2-2	Ayensu	"	Talorase-Krudua	Ayensu	橋梁なし	車通行不能	大	2,000	500	0	0	大	30	地方道	良好	困難	問題あり	妥当でない	支間長30mの橋梁が必要であるため施設建設案件対象が適切である。
5	2-4	Emou	"	Osenasf-Apinamang	Emou	木 橋	耐荷力不足	大	200,000	2,000	200	0	大	20	幹線道路	良好	容易	問題あり	妥当でない	2車線橋梁が必要であるため施設建設案件対象が適切である。
6	3-1	Kakum	セントラ	Nyanedon-asondwee	Kakum	鉄波板	耐荷力不足	大	10,000	500	100	0	大	20	地方道	良好	容易	問題無	妥当	
7	3-2	Ayensu II	"	Winneba-Ojobi	Ayensu	R C	小破損	小さい	2,000	300	155	0	大	25	幹線道路	良好	容易	問題あり	妥当でない	破損箇所は補修により供用可能である。
8	3-3	Ochi	"	Akrofuom-Nsuakyir	Ochi	木 橋	耐荷力不足	大	5,000	500	25	0	大	25	地方道	良好	容易	問題無	妥当	
9	3-4	Amutu	"	Ekon Jn.-Ekon	Amutu	橋梁なし	河床通行可能	小さい	8,000	1,500	0	0	大	50	地方道	良好	容易	問題無	妥当でない	洪水時以外は河床通行可能であり、建設の必要性が不明確である。
10	3-5	Fum	"	Akonfudi-Asibirim	Fum	橋梁なし	車通行不能	大	5,000	500	0	0	大	40	地方道	良好	困難	問題あり	妥当でない	支間長40mの橋梁が必要であるため施設建設案件対象が適切である。
11	4-1	Hiwini	ウスタ	Shama Jn.-Mampong-Adansi	Hiwini	木 橋	車通行不能	大	6,000	500	0	0	大	25	地方道	補修容易	容易	問題無	妥当	
12	4-2	Pru	"	Agyeman Camp-Kramokrom	Pru	木 橋	耐荷力不足	大	8,000	1,500	100	0	大	25	地方道	良好	容易	問題無	妥当	
13	4-3	Susan	"	Adonikrom Jn.-Adonikrom	Susan	木 橋	耐荷力不足	大	10,000	2,000	55	0	大	20	地方道	補修容易	容易	問題無	妥当	
14	4-4	Adoni	"	Adonikrom Jn.-adonikrom	Adoni	木 橋	耐荷力不足	大	10,000	2,000	55	0	大	25	地方道	補修容易	容易	問題無	妥当	
15	4-5	Bura	"	Wasa-Akropong-Anyinabrim	Bura	木 橋	耐荷力不足	大	7,000	1,000	60	0	大	25	地方道	良好	容易	問題無	妥当	
16	4-6	Yurunusu	"	Wasa-Akropong-Anyinabrim	Yurunusu	木 橋	耐荷力不足	大	7,000	1,000	60	0	大	20	地方道	良好	容易	問題無	妥当	
17	4-7	Sayere	"	Nkateso-Agyemandiem-Abuom	Sayere	木 橋	耐荷力不足	大	10,000	300	170	0	大	20	幹線道路	補修容易	容易	問題あり	妥当でない	2車線橋梁が必要であるため施設建設案件対象が適切である。
18	4-8	Peburu	"	Bopa-Fordj	Peburu	木 橋	耐荷力不足	大	15,000	2,000	35	0	大	25	地方道	良好	容易	問題無	妥当	
19	4-9	Samere	"	Pensanum-Amuni	Samere	木 橋	耐荷力不足	大	7,000	1,000	50	0	大	20	地方道	良好	容易	問題無	妥当	
20	4-10	Botente	"	Pensanum-Amuni	Botente	木 橋	耐荷力不足	大	7,000	1,000	50	0	大	20	地方道	良好	容易	問題無	妥当	
21	4-11	Nwhine	"	Asaasefre-Banso-Kwesikrom	Nwhine	レール橋	耐荷力不足	大	10,000	300	125	0	大	17 x 3	地方道	良好	困難	問題あり	妥当でない	下部工施工に特殊機械や技術を必要とするため施設建設案件対象が適切である。
22	4-12	Draw	"	Asaasefre-Banso-Kwesikrom	Draw	木 橋	耐荷力不足	大	10,000	700	100	0	大	40	地方道	良好	容易	問題あり	妥当でない	支間長40mの橋梁が必要であるため施設建設案件対象が適切である。
23	4-13	Djaba	"	Adubrim Jn.-Adubrim	Djaba	木 橋	耐荷力不足	大	3,000	1,000	55	0	大	20	地方道	良好	容易	問題無	妥当	
24	4-14	Ayawora	"	Adubrim Jn.-Adubrim	Ayawora	木 橋	耐荷力不足	大	3,000	1,000	55	0	大	25	地方道	良好	容易	問題無	妥当	
25	5-4	Ofin	アソナ	Agona-Afamasaso	Ofin	R C クラス	耐荷力不足	大	3,000	300	140	0	大	20	地方道	良好	容易	問題無	妥当	
26	5-5	Anum	"	Praso-Konongo	Anum	橋梁なし	車通行不能	大	10,000	300	0	0	大	15	地方道	補修容易	容易	問題無	妥当でない	短支間橋梁であるため現地側で容易に建設できるRC橋が適切である。
27	5-6	Owabi	"	Hiawu-Besease-Ntensere	Owabi	橋梁なし	車通行不能	大	10,000	300	0	0	大	25	地方道	補修容易	容易	問題無	妥当	
28	5-8	Anunu	"	Effiduase-Mkwankwanna-Konongo	Anunuso	R C	大破損	大	5,000	150	140	0	大	25	地方道	補修容易	容易	問題無	妥当	
29	5-9	Tanodumase	"	Bibiana-Asiberem	Tano	橋梁なし	車通行不能	大	5,000	0	0	500	大	45	幹線道路	補修容易	容易	問題あり	妥当でない	2車線橋梁が必要であるため施設建設案件対象が適切である。
30	5-10	Anuru	"	Kwakwama-Nobekan	Anuru	木 橋	耐荷力不足	大	2,000	200	140	0	大	20	地方道	補修容易	容易	問題無	妥当	
31	6-1	Tano	フ'ロ'ア'カ'味	Chiraa-Asuokwa	Tano	R C	大破損	大	3,000	200	85	0	大	25	地方道	補修容易	容易	問題無	妥当	
32	6-2	Subin	"	Wenchi-Ofuman	Subin	R C	大破損	大	5,000	300	230	0	大	20	地方道	補修容易	容易	問題無	妥当	
33	6-3	Johol	"	Banda-Kanken	Johol	橋梁なし	車通行不能	大	3,000	200	0	0	大	45	幹線道路	補修容易	容易	問題あり	妥当でない	2車線橋梁が必要であるため施設建設案件対象が適切である。
34	6-5	Tano	"	Sienchem-Goaso	Tano	木 橋	耐荷力不足	大	150,000	500	130	0	大	20	地方道	良好	容易	問題無	妥当	
35	6-6	fawohoyeden	"	Fawohoyeden-Ayondo	fawohoyeden	木 橋	耐荷力不足	大	20,000	150	150	0	大	20	幹線道路	良好	容易	問題あり	妥当でない	2車線橋梁が必要であるため施設建設案件対象が適切である。

7. 地方道路局が所有する機材の稼働状況

資料編7. 地方道路局が所有する機材稼働状況

機 種	型 式	稼働中	待機中	修理中	修理不能	備 考
ブルドーザ	D6D	5	1	1	4	
材料小運搬車	150E	0	0	0	0	
カーゴトラック	10t	0	0	0	0	
フォークリフト	FD4	0	0	0	0	
モータグレーダ	SHM5, D720	46	8	8	17	
小型ケン引式グレーダ	AG400	2	2	0	0	
セミトレーラ	112E	0	0	1	0	
給油車	—	1	0	0	0	
オートバイ	CG125, TF125	31	13	1	4	
ピックアップ	L-200, HILUX	52	0	9	12	
振動ローラ	BW65S	19	5	1	10	
振動ローラ	T8TGL	0	3	0	1	
振動ローラ	202AD	0	0	0	0	
振動ローラ	TV-90	0	0	0	0	
小型ケン引式トレーラ	VRT-3, 1	0	1	0	1	
乗用車	LANCER	2	0	0	1	
ステーションワゴン	PAJERO	17	0	2	8	
ダンプトラック	TK20G	26	6	5	1	
ドーザショベル	D41S-3	0	2	0	0	
農耕トラクタ	685	32	15	4	3	
農耕トレーラ	AG5T	52	8	4	6	
散水車	STB	21	9	2	1	
ホイールローダ	430	0	0	0	0	
給水ポンプ	3.7km	2	15	3	4	

8. 架設工法概念図

9. ガーナ共和国負担経費内訳

資料編 9. ガーナ共和国負担経費

1. 橋梁建設費

(単位：セディ)

工 種	単 位	数 量	単 価	金 額
下 部 工	基	42	33,300,000	1,398,600,000
護 岸 工	m ²	5,200	161,000	837,200,000
取 付 道 路 工	m	1,260	444,000	559,440,000
橋 梁 架 設	t	520,186	1,763,000	917,087,918
計				3,712,327,918

2. 通関手数料

(単位：セディ)

品 目	単 位	数 量	金 額
鋼製簡易橋梁資材	t	520,186	
架設工具	t	28,104	1,370,725
貨物トラック (8 t) (含スペアパーツ)	台	4	
貨物トラック (4 t) (含スペアパーツ)	台	4	80,000
ピックアップ (含スペアパーツ)	台	6	
ワゴン (含スペアパーツ)	台	2	33,650
セミトレーラー (トラクタ付、含スペアパーツ)	台	1	39,000
ホイールクレーン (含スペアパーツ)	台	2	121,500
計			1,644,875

3. 機材運転・維持管理費 (2年間分)

(単位：セディ)

費 目	単 位	数 量	単 価	金 額
燃料代	ℓ	237,440	360	85,478,400
油脂費 (5%)				4,273,920
運転労務費	人/月	6,452	3,780	24,388,560
タイヤ、消耗品代	式	1	128,080,000	128,080,000
修理代	式	1	71,120,000	71,120,000
計				313,340,880

10. 資機材調達先別の事業費の比較

資料編10.

資機材調達先別の事業費の比較

鋼製簡易橋梁資材調達

項 目	日本国調達	タイ国調達	英国調達	備 考
実施形態 (調達契約方式)	日本鋼橋製作会社	元請：日本鋼橋製作会社 下請：タイ国鋼橋製作会社	英国鋼橋製作会社	契約当事者：日本商社
調達区分	鋼 材	日本国調達 (注1)	英国調達	(注1) 日本国調達は国内価格を適用。
	鉄鋼二次製品	日本国調達 (注2)	日本国調達 (注2)	(注2) 輸送は日本国より直接輸送とする。
	製 作	タイ国調達 (注3)	タイ国調達 (注3)	(注3) 現地人工場作業員と日本人工場作業員との共同作業。
	架 設 工 具	日本国調達 (注4)	日本国調達 (注4)	(注4) 輸送は日本国より直接輸送とする。
鋼材規格	JIS	JIS	BS	
製作工期 (FOB)	7.33ヶ月	8.33ヶ月	8.83ヶ月	表 2.2-1~5 参照
事業費積算額	4.11億円	2.75億円	2.49億円	鋼桁材：526.189t 架設工具：28.104t

機 材 調 達

項 目	日本国調達	現地調達	備 考	
調達区分	トラック (8t)	4台	日本国調達	
	トラック (4t)	4台	日本国調達	
	ホイールクレーン	2台	日本国調達 (注1)	(注1) 現地調達困難
	ワゴン車	2台	日本国調達	
	セミトレーラ (トラクタ付)	1台	日本国調達	
	ピックアップ	6台	日本国調達	
製作工期	6.00ヶ月 (FOB)	7.50ヶ月 (CIF)		
事業費積算額	1.66億円	1.97億円		

11. ガーナ共和国側負担経費の
予算措置確認レター

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Tel. No.



REPUBLIC OF GHANA

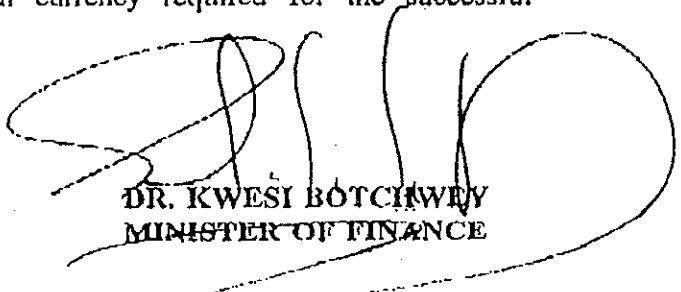
MINISTRY OF FINANCE AND
ECONOMIC PLANNING
P.O. BOX M 40
ACCRA

.....21st. March,.....19⁹⁵

SMALL STREAMS BRIDGE REHABILITATION PROJECT
LOCAL CURRENCY COMPONENT

I have the honour to refer to the recent discussions held between the representatives of the Government of Ghana (officials of Ministry of Finance, Ministry of Roads and Highways, Ghana Highway Authority and the Department of Feeder Roads) and the Government of Japan (Basic Design Study Team led by Mr. Kenji Kiyomizu) in Accra on the 20th of February, 1995.

The Government of Ghana hereby gives an undertaking that there will be adequate and timely provision of local currency required for the successful implementation of this project.


DR. KWESI BOTCHWAY
MINISTER OF FINANCE

THE DIRECTOR
GENERAL GRANT AID DIVISION
J I C A
TOKYO, JAPAN.

(ATTN.: MR. KENJI KIYOMIZU)

cc: The Embassy of Japan
Accra.

(Attn.: Mr. Yamazaki)

The Resident Representative
J I C A
Accra.

The Hon. Minister
Min. of Roads & Highways
Accra.

The Chief Executive
Ghana Highway Authority, Accra.

The Director
Dept. of Feeder Roads, Accra.

JICA