

## APPENDICES

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## Appendix-1. Member List of The Study Team

### Official Member

Dr. Yuji MARUO, Leader                                Senior Technical Adviser, JICA

Mr. Masanori KURISU, Project Coordinator  
First Project Management Div.,  
Grant Aid Management Dept., JICA

### Consultant Member

Mr. Ryoichi KAWASAKI, Chief Consultant Sanyu Consultants Inc., (SCI)

Mr. Hiroshi KONDO, Water Supply System Planner   SCI

Mr. Seiji KIMURA, Hydrogeologist                SCI

Mr. Eiji TANAKA, Geophysicist                 SCI

Mr. Sigeyoshi IWATA, Facility Designer        SCI

Mr. Iwao HAMADA, Estimation and Procurement Planner    SCI

Appendix-2

(1) At the First Field Survey

ITINERARY OF THE STUDY TEAM

	Date	Movement	Accomo.	Activities	Note
1	Feb. 26 (Sat)	AE: Tokyo-Zurich	Zurich	Member= A: Chief Engineer, B: Facility Planner, C: Hydrogeologist	Official member &
2	27 (Sun)	AE: Zurich-Accra	Accra	D: Geophysicist, E: Purchase/work plan/cost-estimation	Consultants' A, E.
3	28 (Mon)	inside Accra	Accra	Courtesy call to MoWH, Japanese Embassy & JICA, & others.	Courtesy call
4	29 (Tue)		Accra	Courtesy call to CWSA, submittal & discussion of I/R. Visit DANIDA, CIDA, GIZ, etc	First meeting
5	Mar. 1 (Wed)	Accra-Takoradi	Takoradi	Visiting to CWSA Regional Office, field survey in Western Region.	OM and A.
6	2 (Thu)	in Western Region	Asankrangua	Field survey in Western Region. Announcement on Geophysical work.	
7	3 (Fri)	in Western Region	Kumasi	Field survey in Western Region.	
8	4 (Sat)	Kumasi-Accra	Accra	Field survey in Ashanti & Greater Accra Regions. Return to Accra.	
9	5 (Sun)	Off	Accra		
10	6 (Mon)	Team Meeting	Accra	Team Meeting.	National Holiday
11	7 (Tue)	inside Accra	Accra	Discussion meeting with CWSA (2).	
12	8 (Wed)		Accra	Conference for the contents of M/D (1st).	
13	9 (Thu)		Accra	Conference for the M/D (2nd). Signature of the M/D.	
14	10 (Fri)	OM Leaving Accra	Accra	Official Members leave Accra. Start of the field survey.	OM leave Accra.
15	11 (Sat)		Accra	Data collection.	
16	12 (Sun)	(BCD:Tokyo-Zurich)	(Zurich)	Second group leaves Japan	2nd group starts.
17	13 (Mon)	(BCD:Zurich-Accra)	Accra	Data collection. Second group arrives at Accra.	2nd group arrives.
18	14 (Tue)		Accra	Courtesy call to Japanese Embassy, JICA office & CWSA.	Courtesy call
19	15 (Wed)	Accra-Takoradi	Accra	visit CWSA, Western Region to discussion	
20	16 (Thu)		Accra	Data/information collection. Preparation of field survey.	
21	17 (Fri)		Accra	Formulate detail field investigation schedule	A, B, C, D, E go to
22	18 (Sat)		Accra	Data collection, test run of equipment	field.
23	19 (Sun)		Accra	Preparation of field works	
24	20 (Mon)	Field works	Western R.	Field survey for Level-2 facility	
25	21 (Tue)		Western R.	Field survey for Level-2 facility	
26	22 (Wed)		Western R.	Field survey for Level-2 facility	
27	23 (Thu)		Western R.	Field survey for Level-2 facility	
28	24 (Fri)		Western R.	Field survey for Level-2 facility	
29	25 (Sat)		Western R.	Field survey. Arrangement of the survey results	
30	26 (Sun)		Western R.	Field survey. Meeting for survey works	
31	27 (Mon)		Western R.	Field survey.	
32	28 (Tue)		Western R.	Field survey.	
33	29 (Wed)		Western R.	Field survey.	
34	30 (Thu)		Western R.	Field survey.	
35	31 (Fri)		Accra	Field survey.	All return to Acc.
36	Apr. 1 (Sat)		Accra	Data arrangement.	
37	2 (Sun)		Accra	Selection of well points for solar pump system sites.	

	Date	Movement	Accomo.	Activities	Note
38	3 (Mon)		Western R.	Field survey (hydrogeological survey, geophysical works). ABE study in Accra.	C,D go to field.
39	4 (Tue)		Western R.	Field survey (hydrogeological survey, geophysical works). ABE study in Accra.	
40	5 (Wed)		Western R.	Field survey (hydrogeological survey, geophysical works). AE meeting.	
41	6 (Thu)		Western R.	Field survey (hydrogeological survey, geophysical works). ABE study in Accra.	
42	7 (Fri)		Western R.	Field survey (hydrogeological survey, geophysical works). ABE study in Accra.	E returns to Japan.
43	8 (Sat)	E: Leaving Accra	Western R.	Field survey (hydrogeological survey, geophysical works). AB study in Accra.	
44	9 (Sun)	E: Leaving Zurich	Western R.	Field survey (hydrogeological survey, geophysical works).	
45	10 (Mon)	E: Arrival at Narita	Western R.	Field survey (HG, GP survey & toposurvey, existing facility survey).	A,B go to field.
46	11 (Tue)		Western R.	Field survey (HG, GP survey & toposurvey, existing facility survey).	
47	12 (Wed)		Western R.	Field survey (HG, GP survey & toposurvey, existing facility survey).	
48	13 (Thu)		Western R.	Field survey (HG, GP survey & toposurvey, existing facility survey).	
49	14 (Fri)		Western R.	Field survey (HG, GP survey & toposurvey, existing facility survey).	C returns to Acc.
50	15 (Sat)		Western R.	Field survey (geophysical survey, topo & existing facility survey). C study in Accra.	
51	16 (Sun)		Western R.	Field survey (geophysical survey, topo & existing facility survey). C study in Accra.	
52	17 (Mon)		Western R.	Field survey (geophysical survey, topo & existing facility survey). C study in Accra.	
53	18 (Tue)		Western R.	Field survey (geophysical survey, topo & existing facility survey). C study in Accra.	
54	19 (Wed)		Western R.	Field survey (geophysical survey, topo & existing facility survey). C study in Accra.	B returns to Acc.
55	20 (Thu)		Western R.	Field survey (geophysical survey, existing facility survey). BC study in Accra.	AD return to Sek.
56	21 (Fri)		Accra	Field survey (hydrogeological survey). ABD study in Accra.	C to site.
57	22 (Sat)		Accra	Field survey (hydrogeological survey). ABD study in Accra.	
58	23 (Sun)	B: Leaving Accra	Western R.	Field survey (geophysical & hydrogeological survey). A study/data-collect in Accra.	B back to Japan, D to
59	24 (Mon)	B: Leaving Zurich	Western R.	Field survey (geophysical & hydrogeological survey). A study/data-collect in Accra.	field.
60	25 (Tue)	B: Arrival at Narita	Western R.	Field survey (geophysical & hydrogeological survey). A study/data-collect in Accra.	
61	26 (Wed)		Western R.	Field survey (geophysical & hydrogeological survey). A study/data-collect in Accra.	
62	27 (Thu)		Western R.	Field survey (geophysical & hydrogeological survey). A study/data-collect in Accra.	
63	28 (Fri)		Western R.	Field survey (geophysical & hydrogeological survey). A study/data-collect in Accra.	
64	29 (Sat)		Western R.	Field survey (geophysical & hydrogeological survey). A study/data-collect in Accra.	
65	30 (Sun)		Western R.	Field survey (geophysical & hydrogeological survey). A study/data-collect in Accra.	
66	May 1 (Mon)		Western R.	Field survey (geophysical & hydrogeological survey). A study/data-collect in Accra.	
67	2 (Tue)		Western R.	Field survey (geophysical & hydrogeological survey). A study/data-collect in Accra.	
68	3 (Wed)		Accra	Field survey (geophysical survey). A study/data-collect in Accra.	C returns to Acc.
69	4 (Thu)		Accra	AC study/data-collect in Accra. D arrange the field data.	
70	5 (Fri)		Accra	ACD report to CWSA, JICA & Embassy.	
71	6 (Sat)		Accra	ACD data/information arrangement in Accra.	D returns to Acc.
72	7 (Sun)		Accra	Preparation for leaving.	
73	8 (Mon)	Leaving Accra	in flight	Leaving Accra.	A,C,D leave Accra.
74	9 (Tue)	Leaving Zurich	in flight		
75	10 (Wed)	Arrival at Narita			

Appendix-2 (2) At the 2nd Survey  
Itinerary of the Study Team

Date	Day	Movement	Activity	Stay
Jul. 25	Tue.	NRT-LDN	Leave Japan by BA008 (13:05)	London
26	Wed.	LDN-ACR	Arrive at Accra by BA2081 (20:20)	Accra
27	Thu.	in Accra	Courtesy call to JICA	Accra
28	Fri.	→Takoradi	Remove to Takoradi, visit CWSA, Western Region	Takoradi
29	Sat.	→Kikam	Animation at Kikam	Takoradi
30	Sun.	→Nsuaem	Animation at Nsuaem	Takoradi
31	Mon.	→M. Amenfi	Animation at Amanso Amenfi	Asankrangwa
Aug. 01	Tue.	→Dadieso	Animation at Dadieso	Awaso
2	Wed.	→Suburi	Animation at Suburi, return to Accra	Accra
3	Thu.	in Accra	Meeting with Team Leader, courtesy call to EOJ, JICA	Accra
4	Fri.	in Accra	Discussion Meeting with CWSA	Accra
5	Sat.	in Accra	Market research	Accra
6	Sun.	in Accra	Market research, draft on M/D	Accra
7	Mon.	in Accra	Discussion Meeting with CWSA (2)	Accra
8	Tue.	in Accra	Discussion Meeting with CWSA (3)	Accra
9	Wed.	in Accra	Discussion Meeting with CWSA (4), signing on M/D	Accra
10	Thu.	Accra→	Reporting to JICA, Japan Embassy, etc. Leave Accra	in flight
11	Fri.	-LDN-	Stop over at London	in flight
12	Sat.	→NRT	Return to Narita, Japan	

Appendix-2 (3) At the 3rd Survey  
Itinerary of the Study Team

Date	Day	Movement	Activity	Stay
Oct. 21	Sat.	NRT-ZRC	Leave Japan by SR 169	Zurich
22	Sun.	ZRC-ACR	Arrive at Accra by SR 264	Accra
23	Mon.	in Accra	Courtesy call to JICA, EOJ, and CWSA	Accra
24	Tue	in Accra	Explanation of Drfat Final Report	Accra
25	Wed	in Accra	Discussion Meeting with CWSA	Accra
26	Thu	in Accra	Discussion Meeting with CWSA	Accra
27	Fri	in Accra	Signing on M/D, reporting to EOJ	Accra
28	Sat	in Accra	Team meeting	Accra
29	Sun	in Accra	Arrangement of the data	Accra
30	Mon	in Accra	Discussion Meeting with CWSA	Accra
31	Tue	in Accra	Discussion Meeting with CWSA	Accra
Nov. 1	Wed	in Accra	Discussion Meeting with CWSA	Accra
2	Thu	in Accra	Market research	Accra
3	Fri	ACR-	Final Meeting with CWSA, Leave Accra by SR 265	in flight
4	Sat	-ZRC-	Stop over at Zurich	in flight
5	Sun	-NRT	Return to Narita, JAPAN	

Party	Person	Position	Date
Embassy of Japan			
	Mr. Takanobu KURODA	First Secretary	2/28
JICA			
	Mr. Siroh NABEYA	Resident Representative	2/28
	Mr. Fumio MIYAGAWA	Dep. Resident Representative	3/9
	Mr. SANJOU	Co-ordinator	
	Mr. Kazutomo HIHARA	Asst. Resident Representative	
Ministry of Finance			
	Mr. Agues M. BOTSA	Chief Economic Officer	2/28
	Mr. Edmond Kwabena NKANSAF	Japan Desk Officer	
Ministry of Works and Housing			
	Mr. Alex B. AKUFFO	Deputy Minister	2/28
	Mr. Stanley Q. BARNOR	Director	
	Mr. S. A. DAKKINA	Chief Hydrologist	
	Dr. Thomas F. AGYAPONG	Deputy Director, Water Sector	
CWSA			
	Mr. Peter O. SACKY	Ag. Chief Executive	2/28
	Mr. R. K. D. VAN ESS	Director, Technical Services	
	Mr. S. OPOKU-TUFFOUR	Regional Director, Wstern Region	
	Mr. Yau Asante SARHODIE	Zonal Planner	
	Mr. Fay EPHRIM	Zonal Planner	
	Mr. Ernest Kwame DOE	W&S System Co-ordinator	
DANIDA			
	Mr. Kurt KLITTEN	Coordinator, Water sector development	2/29
CWSA, Regional Office			
	Mr. D. Amankwa BOATENG	Zonal Hydrogeologist	3/1
	Mr. Kwesi BROWN	Water and Sanitation Engineer	
	Mr. Joseph JONAH	Water and Sanitation Engineer	
	Ms Beba Adam MUSAH	Regional Accountant	
	Mr. Ethelbert KOMULADZEI	Extention Service, Higiene	
	Miss Esinu Ama ABBEY	Management Information System Specialist	
igip			
	Mr. Wilfried MAYER	Project Manager, RWSP	3/8
	Mr. Mawuene DOTSE	Project Co-ordinator	
	Mr. Claus RIEXINGER	Technical Adviser	
CIDA			
	Mr. Baljit S. NAGPAL	Premier Secetaire (Development)	3/8
Wassa Amenfi D/A			
	Nana TANDOH	District Chief Executive	3/2
	Mr. GAISIE	District Coordinating Director	
	Mr. Peter ANDIH-BAIDO	DWST	
	Mr. Redemer TAY	DWST	
	Mr. Robert OBRI-TEBOAFF	PO's manager	
PHASE III Project Site			
	Mr. E. F. BOATENG	Regional Director, Eastern Region	3/4
	Mr. Kweku TOMPSON	Extention services Specialist	
Water Research Institute			
	Dr. Dapaan SIAKWAN	Cfief Hydeologist, Groundwater Div.	4/7
	Mr. Solomon K. MENSAH	Droundwater Div.	
Survey Dept.			
	Mr. K. M. ARKU-LAWSON	Chief Cartographer	3/17

Party	Person	Position	Date
Meteorological Service Dept.			
	Mr. Godson K. ANAGLATE	Dep. Director, Climo Div.	3/17
	Mr. Abraham Ari AYITEY	Climo Div.	
Wassa West D/A			
	Mr. Clement DANDORI	District Co-ordinating Director	3/21
	Mr. Felix OFOSU-TEYE	PWD Engineer	
	Mr. Summuel NDUR	Works Chairman	
Aowin Suaman D/A			
		District Chief Executive	3/22
	Mr. Isaac ADDEI	District Dev't Planning Officer	
Bibiani A. Bekwai D/A			
	Mr. F. ASANTE-MENSAH	District Chief Executive	3/23
Sefwi Wiawso D/A			
	Mr. Alhaji Ishaq ASUREE	District Coordinating Director	4/25
	Mr. Dominic Kofi DANSO	DWST	
Juabeso Bia D/A			
	Mr. Frank E. ODRÖ	Dep. Distric Coordinating Director	4/26
	Mr. Johon Kingsford SAGÖE	DWST	
	Mr. Sanfo B. ADAMUKWAH	DWST	
CWSA, Brong Ahafo Region			
	Mr. Ofori MACCARTHY	Regional Director	4/27
	Mr. Johnson O. APPIAH	Extension Service Specialist	
	Mr. Drameni SEIDLE	Mechnics	
Berekum D/A			
	mr. Komla AGBEDRA	District Coordinating Director	4/27

MINUTES OF DISCUSSIONS  
THE BASIC DESIGN STUDY  
ON  
THE PROJECT FOR RURAL WATER SUPPLY PHASE IV  
IN  
THE REPUBLIC OF GHANA

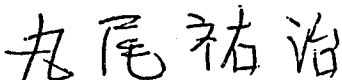
In response to a request from the Government of the Republic of Ghana (hereinafter referred to as "Ghana"), the Government of Japan decided to conduct a Basic Design Study on the Project for Rural Water Supply Phase IV (hereinafter referred to as "the Project") and entrusted the study to the Japan International Cooperation Agency (hereinafter referred to as "JICA").

JICA sent to Ghana the Basic Design Study Team (hereinafter referred to as "the Team"), which is headed by Dr. Yuji Maruo, Senior Technical Adviser, JICA, and is scheduled to stay in the country from 27<sup>th</sup> February to 8<sup>th</sup> May, 2000.

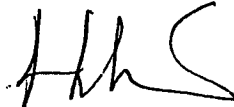
The Team held discussions with the officials concerned of the Government of Ghana and conducted a field survey of the study area.

In the course of discussions and field survey, both parties confirmed the main items described on the attached sheets. The Team will proceed to carry out further works and prepare the Basic Design Study Report.

Accra, 9<sup>th</sup> March, 2000



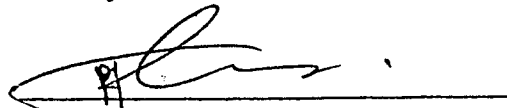
Dr. Yuji Maruo  
Leader  
Basic Design Study Team  
Japan International Cooperation Agency  
(JICA)



Dr. William Adote  
Director  
International Economic Relations Division  
Ministry of Finance



for Mr. I-K. Adjei-Mensah  
Hon. Minister  
Ministry of Works and Housing



Mr. P. O. Sackey  
Ag. Chief Executive  
CWSA



## ATTACHMENT

### 1. Objective of the Project

The objective of the Project is to improve the health and living standard of the people who live in rural areas by providing potable water through construction of water supply facilities.

### 2. Project sites

The Project sites will be confined to 5 districts out of 11 districts in Western Region because the number of target communities for the basic study was reduced from initial requests of 1200 to 350 communities. These are Nzima East, Wassa West, Aowin-Suaman, Wassa-Amenfi, and Bibiani-Anhwiaso Bekwai Districts, as shown in Annex-1.

Out of 350 communities 340 were the candidate sites for Level 1 system, while 10 communities will be selected as an initial candidate sites for Level 2 system and during the course of the study the further selection will be done, eventually reducing the number into 5 communities, on which land survey and geophysical exploration will be carried out. The Ghana side recognized the necessity of assistance for the remaining 6 districts.

### 3. Responsible and Implementing Agency

The Responsible and implementing organization is Community Water and Sanitation Agency (hereinafter referred to as "CWSA"), under the Ministry of Works and Housing.

### 4. Items requested by the Government of Ghana

After discussions with the Team, the items described in Annex-2 were finally requested by the Ghana side. JICA will assess the appropriateness of the request and will recommend to the Government of Japan for approval.

### 5. Japan's Grant Aid Scheme

5.1. The Ghana side understands the Japan's Grant Aid Scheme explained by the Team, as described in Annex-3.

5.2. The Ghana side will take the necessary measures, as described in Annex-3, for smooth implementation of the Project, as a condition for the Japanese Grant Aid to be implemented.

### 6. Schedule of the Study

6.1. The consultants will proceed to further studies in Ghana until 8<sup>th</sup> May, 2000.

6.2. JICA will prepare the draft report in English and dispatch a mission in order to explain its contents in July, 2000.

6.3. Based on the results of discussions of the draft report, JICA will proceed to carry out further examination of the study results in Japan until October, 2000.

6.4. JICA will prepare the draft final report in English and dispatch a mission in order to explain its contents in October, 2000.

## 7. Other relevant issues

### 7.1. The Staged Study Schedule

The Team explained that the Study consisted of two stages, namely; Stage I and II. In Stage I, JICA will prepare the draft report which includes a basic concept of the Project and its basic design. In Stage II, JICA will prepare the draft final report which includes the engineering design on the basis of the study results of Stage I. The final report will be completed by JICA through integration of the study results of both Stage I and II.

### 7.2. Required yield and water quality for successful borehole

The yield must exceed 13 l/min, while the maximum pumping water level must be in the range recommended for installation of the standardized pumps. WHO standard will be basically applied for water quality.

### 7.3. Standard hand pumps

The following four hand-pumps have been standardized in Ghana. Nira pump will be installed to the boreholes in which the dynamic water level is less than 15m, while Afridev pump will be taken as a standard pump for the boreholes where dynamic water level is between 15 to 35 m. If the dynamic water level exceed 35m either modified India Mark II or Vergnet will be installed according to the circumstances.

### 7.4. Animation activities

Both Japanese and Ghanaian sides recognize the importance of animation activity in order to facilitate the sustainability of the project. Japanese side explained that according to principle of Japan's Grant Aid, operation and maintenance of the donated facilities is totally the responsibility of the recipient's side. Ghanaian side understood the principle and confirmed to make every effort to incorporate animation activities, such as Training of Trainer, and initial part of mobilization stage.

### 7.5. Utilization of the 5% fund contributed by the communities

It is the general rule that amount of equal to 5% of drilling cost will be collected from the communities in order to facilitate the sense of ownership among the users before actual drilling work is initiated.

The Ghana side proposed to use the fund to cover part of animation activities and requested Japanese side to take remaining part of the animation activities. /

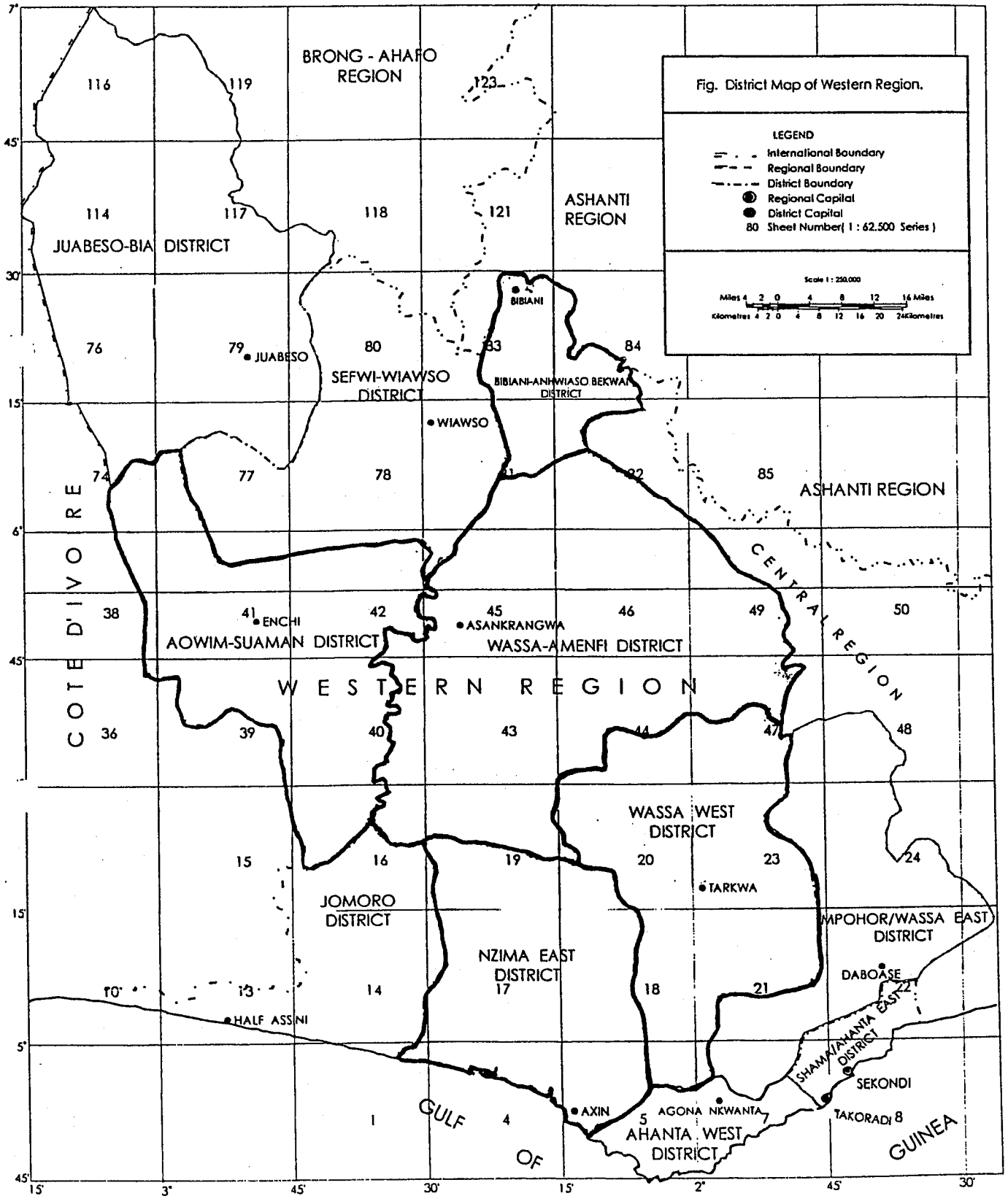
### 7.6. Responsibility of CWSA

CWSA shall be responsible for the execution of the Project on the basis of all documents and drawings prepared as a result of the Study.

### 7.7. Major undertakings of both sides

Major undertakings to be made by each Government and those agreed to by each side are shown in Annex-5.

Location Map of the Project Site



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Annex-2

Items requested by the Government of Ghana

1. Construction of proper number of boreholes with hand pump in five Districts in the Western Region, depending upon the results of the Study. The target communities for the Study shall be 340 communities
2. Construction of proper number of Level-2 water supply facility(s) with mechanized pump system in the Western Region.
3. A part of animation activity in the target communities.

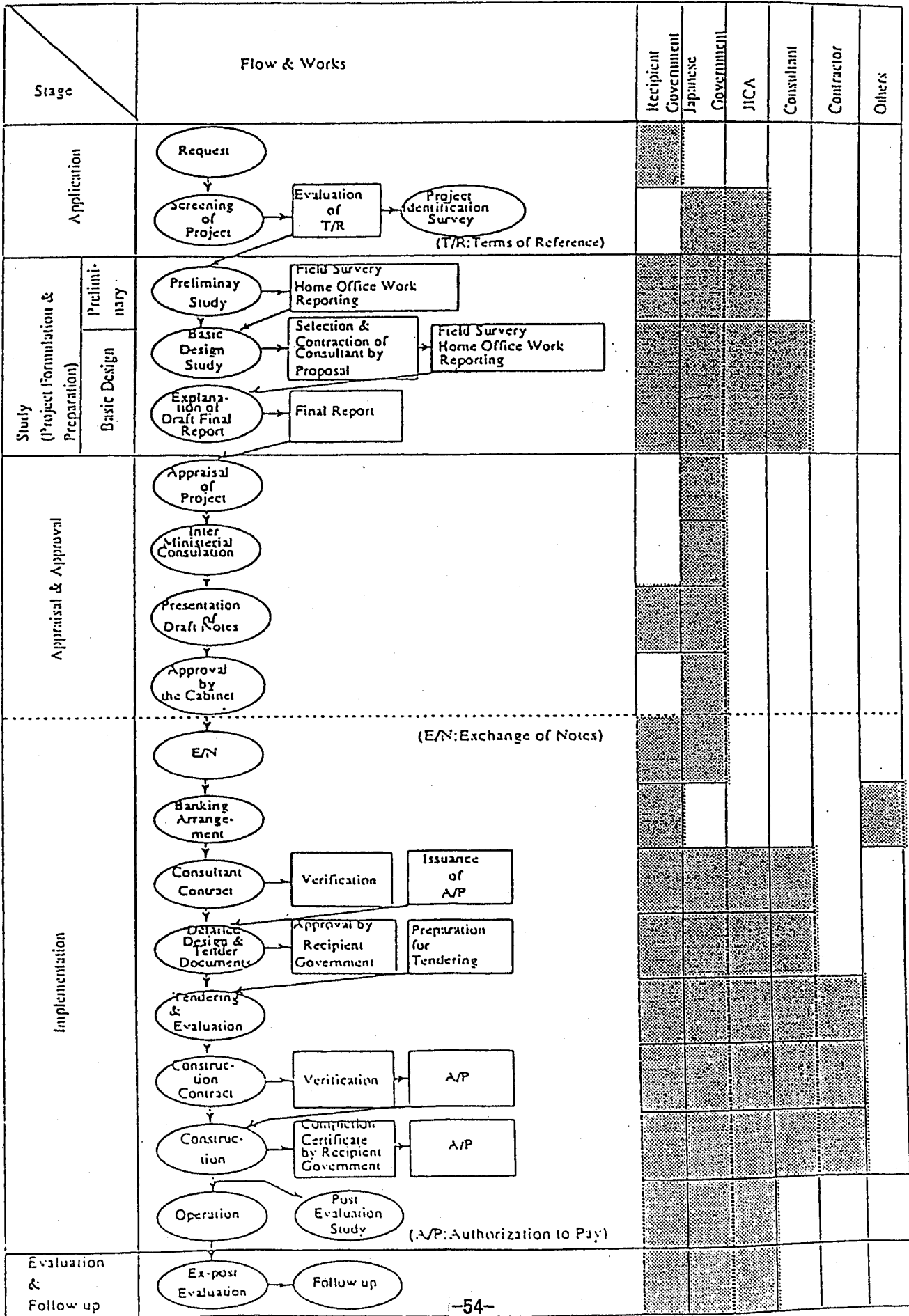
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Flow Chart of Japan's Grant Aid Procedures



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## Annex-5

## 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 in and around the site.		
	1) For hand pump wells		●
	2) For mechanized pump system	●	
4.	To bear the following commissions to a bank of Japan for the Banking services based upon the B/A.		
	1) Advising commission of A/P		●
	2) Payment commission		●
5.	To ensure prompt unloading and customs clearance at the port of disembarkation in recipient country		
	1) Marine (Air) transportation of the products from Japan to the recipient country.	●	
	2) Tax exemption and customs clearance of the products at the port of disembarkation.		●
	3) Internal transportation from the port of disembarkation to the project site.	●	
6.	To accord Japanese nationals whose services 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.		●
7.	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 contract.		●
8.	To maintain and use properly and effectively the facilities constructed and equipment provided under the Grant Aid.		●
9.	To bear all the expenses, other than those to be borne by the Grant Aid, necessary for construction of the facilities.		●

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Appendix-4 Minutes of Discussion and Technical Notes  
(2) Minutes of Discussion at the Draft Report Explanation

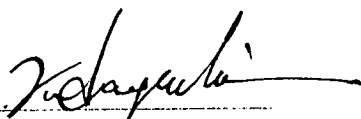
MINUTES OF DISCUSSIONS  
THE BASIC DESIGN STUDY  
ON  
THE PROJECT FOR RURAL WATER SUPPLY PHASE IV  
IN  
THE REPUBLIC OF GHANA  
(EXPLANATION ON DRAFT REPORT)

In February 2000, the Japan International Cooperation Agency (hereinafter referred to as "JICA") dispatched a Basic Design Study Team on the Project for Rural Water Supply Phase IV (hereinafter referred to as "the Project") to the Republic of Ghana (hereinafter referred to as "Ghana"), and through discussion, field survey, and technical examination of the study results in Japan, JICA prepared a 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 the Draft Report Explanation Team (hereinafter referred to as "the Team"), which was headed by Mr. Kazuaki HAYASHI, Deputy Director of General Affairs Division, Tsukuba International Center, JICA, from July 26 to August 10.

As a result of the discussions, both parties confirm the main items described in the attached sheets.

ACCRA, August 9, 2000

  
Mr. Kazuaki HAYASHI

Leader  
Draft Report Explanation Team  
Japan International Cooperation Agency  
(JICA)

  
Mr. Kofi A. ASAMOAH

Ag. Chief Executive  
Community Water and  
Sanitation Agency (CWSA)  
The Republic of Ghana

## ATTACHMENT

### 1. Components of the Draft Report

The Ghanaian side agreed and accepted in principle the components of the draft report explained by the Team.

### 2. Japan's Grant Aid Scheme

The Ghanaian side understands the Japan's Grant Aid Scheme and the necessary measures to be taken by the Government of Ghana as explained by the Team and described in Annex-3 and Annex-5 of the Minutes of Discussions signed by both parties on March 9, 2000.

### 3. Schedule of the Study

- 3.1. The Consultants will proceed to further examine the study results in Japan until October in 2000.
- 3.2. JICA will prepare the draft final report in English and dispatch a mission in order to explain its contents in October 2000.
- 3.3. Based on the results of discussions of the draft report, JICA will complete the final report and send it to the Government of Ghana by December 2000.

### 4. Other relevant issues

#### 4.1 Engineering Design

The Team handed over five copies of the draft engineering design of the facilities to Mr. R. K. D. VAN ESS, Director, Technical Services of CWSA. Both sides agreed that this draft design is confidential and should not be duplicated or released to any outside parties.

#### 4.2 Animation Activities

##### 1) Animation by Ghanaian Side

The Ghanaian side agreed to conduct the animation activities for the mobilization phase at every target community to establish a WATSAN Committee and obtain a letter of acceptance, by the time the Draft Final Report Explanation Team arrives.

##### 2) Animation by the Team

The Ghanaian side agreed to the results of the planning phase animation carried out in the target five small towns by the Team and RWST, Western Region, and this shall be fed into the Detailed Design of the systems.



### 3) Remaining Schedule

The study team will monitor the achievements of the animation activities to be carried out by the Ghanaian side. Both sides will confirm the contents of the Japanese technical assistance for animation during the final explanation mission.

#### 4.3 Criteria of Prioritization for the Project

The Team explained the criteria for the prioritization of ranking the 1st and 2nd villages and the Ghanaian side agreed to it.

#### 4.4 A half standpipe at Kikam

The Ghanaian side strongly requested to the Team to install a standpipe with only one tap at the northern side of the high way because of social situation of the town. The Team agreed to re-consider the allocation of standpipe in Kikam.

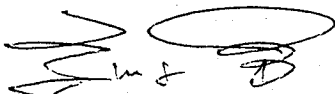
MINUTES OF DISCUSSIONS  
ON BASIC DESIGN ON THE PROJECT FOR RURAL WATER SUPPLY PHASE IV  
IN THE REPUBLIC OF GHANA  
(EXPLANATION ON DRAFT FINAL REPORT)

In October 2000, the Japan International Cooperation Agency (hereinafter referred to as "JICA") dispatched a Draft Report Explanation Team on the Project for Rural Water Supply Phase IV (hereinafter referred to as "the Project") to the Republic of Ghana (hereinafter referred to as "Ghana"), and through discussion, field survey, and technical examination of the study results in Japan, JICA prepared a draft final report of the study.

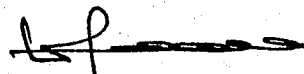
In order to explain and to consult the Ghana on the components of the draft final report, JICA sent to Ghana the Draft Final Report Explanation Team (hereinafter referred as to "the Team"), which is headed by Mr. Fumio Miyagawa, deputy resident representative, JICA Ghana Office, from 23<sup>rd</sup> October to 3<sup>rd</sup> November 2000.

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

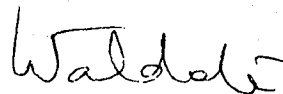
Accra, October 27<sup>th</sup>, 2000



Fumio Miyagawa  
Leader  
Draft Report Explanation Team  
Japan International Cooperation Agency  
(JICA)



Mr. Kofi A. Asamoah  
Ag. Chief Executive  
Community Water and Sanitation  
Agency (CWSA)



Dr. William Adote  
Director  
International Economic Relation Div.  
Ministry of Finance

## ATTACHMENT

### 1. Components of the Draft Final Report

The Government of Ghana agreed and accepted in principle of the components of the draft final report explained by the Team.

### 2. Japan's Grant Aid scheme

Ghanaian side understands the Japan's Grant Aid Scheme and the necessary measures to be taken by the Government of Ghana as explained by the Team and described in Annex-3 and Annex-5 of the Minutes of Discussions signed by both parties on March 9, 2000.

### 3. Schedule of the Study

JICA will complete the final report in accordance with the confirmed items and send it to the Government of Ghana by the end of March 2001.

### 4. Other relevant issues

#### 1) Soft-component

The Ghanaian side requested the consultant services for the animation activities to the communities as one of the components of the Grant Aid. Attached are the request letter and the description of the Soft-component.

#### 2) Engineering Design

The Team handed one copy of the draft final engineering design of the facilities to CWSA. Both sides agreed that this draft design is confidential and should not be duplicated or released to any outside parties.

#### 3) Exemption of VAT

The Ghanaian side confirmed that the VAT concerning the activities on the Project implementation shall be exempt under the E/N between the both governments. Listed items for tax exemption shall be provided before submittal of the final report.

#### 4) Letter of Acceptance

Both sides understand that Basic Design will be finalized by checking the letter of acceptance submitted by the target communities. The communities which have not submitted the letter by November 8, 2000 shall be canceled.

5) 5% Contribution Fund

Both sides understand that amount of equal to 5% of standard drilling cost will be collected from communities in order to facilitate the sense of ownership among the users before actual drilling work is initiated. The Ghanaian side promised to use the fund to cover follow up animation activities and submit financial report to JICA, Ghana.

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# COMMUNITY WATER AND SANITATION AGENCY

Head Office: Private Mail Bag, K.I.A., Accra - Ghana

Tel: 021-77 91 02, 77 94 79 Fax: 021-77 94 75 Email: cwsd@ncs.com.gh

Our Ref: CWSA/AR.117/10.3/22

Your Ref: .....

Date: 27-10-00

**MR. MICHIO KANDA  
MANAGING DIRECTOR  
GRANT AID MANAGEMENT DEPARTMENT  
JAPAN INTERNATIONAL CO-OPERATION AGENCY.**

Dear Sir,

## REQUEST FOR SOFT-COMPONENT OF PROJECT

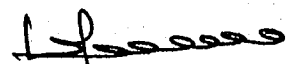
Our national strategy for the delivery of water and sanitation facilities to the rural communities and small towns, requires that the beneficiary communities and small towns are taken through a process of community animation before, during and after the construction of the facilities.

This process is to prepare the communities and small towns for the ownership operation and management of the facilities as means of ensuring sustainability of the investment.

In the line with strategy therefore, we would like to request the Government of Japan to include a soft-component in the project for Rural Water Supply in Ghana Phase IV.

Attached<sup>\*</sup> is the detail description of the Soft-component to be introduced into the Project.

Yours faithfully,

  
**KOFI ASAMOAH  
CHIEF EXECUTIVE (AG.)**


CC:

**MINISTER OF WORKS AND HOUSING, ACCRA  
MINISTER OF FINANCE, ACCRA  
AG. DIRECTOR OF PLANNING & INVESTMENT  
REGIONAL DIRECTOR, WESTERN REGION  
DIRECTOR OF FINANCE  
DIRECTOR OF TECHNICAL SERVICES.**


MINUTES OF MEETING  
ON  
RURAL WATER SUPPLY PROJECT PHASE IV  
(Technical Note No.1)

With regards to the captioned Project, the Community Water and Sanitation Agency, Regional Office in Western Region (hereinafter referred as "the CWSA, Western Region") represented by Mr. Stephen OPOKU-TUFFUOR, Regional Director, Western Region, and the Basic Design Study Team at the Project (hereinafter referred as "the Study Team"), dispatched by Japan International Cooperation Agency (hereinafter referred as "JICA") represented by Mr. Ryoichi KAWASAKI, Chief Consultants, held a meeting on the technical matters on the Project. Following the discussions, at the meeting, the items described in the Attachment have been mutually agreed upon.

Takoradi, March 20, 2000

  
\_\_\_\_\_  
Mr. Stephen OPOKU-TUFFUOR  
Regional Director, CWSA Western Region

.....  
**REG. DIRECTOR**  
**C. W. S. A.—W/R:**  
20/3/2000

  
\_\_\_\_\_  
Mr. Ryoichi KAWASAKI  
Chief Consultants,  
The Study Team, JICA

Attachment

1. Date and Place: on march 20, 2000 at CWSA Regional Office, Western Region

2. Attendants:	<u>CWSA</u>	<u>The Study Team</u>
	Stephen OPOKU-TUFFOUR	R. KAWASAKI
	Kwesi BROWN	H. KONDO
	D. Amankwah BOATENG	S. KIMURA
	Esinu Ama ABBEY	E. TANAKA
	Ethelbert KOMULADZEI	

3. Major Items discussed:

3.1. Survey schedule of the Study Team

- The Study Team explained the first survey schedule to select 5 target communities for Level-2 facility, and the CWSA, Western Region understood and agreed to the schedule.
- The CWSA, Western Region agreed to assign Mr. Stephen OPOKU-TUFFOUR, Mr. D. Amankwah BOATENG, and Mr. Kwesi BROWN, to the Study Team as counterpart personnel.

3.2. Candidate communities for the preliminary survey on Level-2 facility

- Based on the M/D agreed on March 9, 2000 in Accra, the Study Team requested to the CWSA, Western Region to propose 10 candidate communities for preliminary survey for the selection of 5 target communities for further survey.
- The CWSA, Western Region provided the following 10 communities as the proposed sites:

Aowin Suaman District	DADIESO
	OMANPE
Bibiani Anhwiaso Bekwai District	ASAWINSO 'A'
	SUBURI
Nzima East District	EWIEBO/BASAKE
	KIKAM
Wassa Amenfi District	ADJAKA MANSO
	MANSO AMENFI
Wassa West District	NSUAEM
	WASSA SIMPA

- The Study Team agreed to the list of proposed communities and explained the criteria for the selection of the 5 target communities for further survey and study, using a matrix sheet as shown in the Annex.
- The CWSA, Western Region agreed to the explanation on the criteria, and expressed the hope that the Study Team would select one community each out of two candidates in each District through the process.

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## SELECTION OF TARGET COMMUNITY FOR LEVEL-2 SYSTEM

(District: )

	Item	Rank	Weight			
I	Size of the Community Population	(number)	3			
II	Accessibility Road condition	A - E	3			
III	Community Mobilization WATSAN Committee	A - E	5			
IV	Water Quality Results of water quality check	A - E	5			
V	Current Water Supply Condition Availability of potable water	A - E	10			
VI	Groundwater Availability Availability and quality	A - E	5			
VII	Security of the Site Security condition	A - C	1			
VIII	Guinea Worm Endemic Occurrence of disease	A - C	5			
IX	Existing Water Supply Facility Existing Water Supply Facility	A - E	10			
X	Number of Water Point		5			
	Dugwell	(number)				
	H.P Well	(number)				
	Communal Tap	(number)				
XI	Urgency of Need Population/water point	(value)	10			
XII	Construction Condition (power supply)		5			
XIII	Others		1			

## Reference of the ranking

	II	III	IV
A	Easily accessible through year	Committee and Fund established	no problem
B	Hard but accessible through year	Fund is not enough	
C	Easily accessible in dry season	Committee established but fund	inc. Fe, Mn
D	Hardly accessible in dry season	on the course of animation	
E	Foot-pass only	No committee	inc. Poison
	V	VI	VII
A	No proper water source	Enough yield and quality	Safe
B	Surface water source in wet season	Enough yield but quality	Fair
C	Groundwater source in wet season	Fair yield, normal quality	Not safe
D	Surface water source through year	Small yield or worse quality	
E	Groundwater source through year	Not available	
	VIII	IX	
A	High incidence	no proper facility	
B	Fair incidence	dugwell only	
C	Low incidence	Hand pump well only	
D		Level-2 system	
E		Level-3 system	

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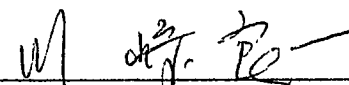


MINUTES OF MEETING  
ON  
RURAL WATER SUPPLY PROJECT PHASE IV  
(Technical Note No.2)

With regards to the captioned Project, the Community Water and Sanitation Agency, Regional Office in Western Region (hereinafter referred as "the CWSA, Western Region") represented by Mr. Stephen OPOKU-TUFFUOR, Regional Director, Western Region, and the Basic Design Study Team at the Project (hereinafter referred as "the Study Team"), dispatched by Japan International Cooperation Agency (hereinafter referred as "JICA") represented by Mr. Ryoichi KAWASAKI, Chief Consultants, held a meeting on the technical matters on the Project. Following the discussions, at the meeting, the items described in the Attachment have been mutually agreed upon.

Takoradi, March 24, 2000

  
\_\_\_\_\_  
Mr. Stephen OPOKU-TUFFUOR  
Regional Director, CWSA Western Region  
REG. DIRECTOR  
C. W. S. A. - W/R.  
30/3/2000

  
\_\_\_\_\_  
Mr. Ryoichi KAWASAKI  
Chief Consultants,  
The Study Team, JICA

Attachment

1. Date and Place: on March 24, 2000 at CWSA Regional Office, Western Region

2. Attendants:	<u>CWSA</u>	<u>The Study Team</u>
	Stephen OPOKU-TUFFOUR	R. KAWASAKI
	Kwesi BROWN	H. KONDO
	Esinu Ama ABBEY	S. KIMURA

3. Major Items discussed:

3.1. Results of the preliminary survey

- The Study Team explained the procedures and results of the preliminary survey to select 5 target communities for further study for Level-2 facility. From the results, the following 5 communities were selected as the targets for further survey and study for Level-2 facility (refer to Annex):

Aowin Suaman District	DADIESO
Bibiani Anhwiaso Bekwai District	SUBURI
Nzima East District	KIKAM
Wassa Amenfi District	MANSO AMENFI
Wassa West District	NSUAEM

- The Study Team raised the concern that the population of the above listed communities given at the communities seem to be inaccurate, especially at DADIESO, and requested the CWSA, Western Region to check and notify the Study Team about reliable population figures.
- The CWSA, Western Region understood and agreed to the results, and promised to check and notify the Study Team about reliable populations of these communities later on.

3.2. Following survey schedule

- The Study Team explained that the Geophysical Party of the Study Team has already commenced geophysical prospecting at KIKAM, and the topo-survey works on those communities shall be commenced on 27<sup>th</sup> this month.
- The Study Team explained the second run of the field survey by the Study Team shall be conducted from coming Monday (27<sup>th</sup>), mainly for construction and work plan studies.
- The CWSA, Western Region understood the current and following study schedule, and agreed to Mr. Stephen OPOKU-TUFFOUR, Mr. Daniel Amankwah BOATENG, and Mr. Kwesi BROWN accompanying the Study Team as counterpart personnel.

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## SELECTION OF TARGET COMMUNITY FOR LEVEL-2 SYSTEM

(District: NZIMA EAST )

	Item	Rank	Weight	EWIBO		KIKAM
I	Size of the Community Population	(number)	3	6,000	>	4,000
II	Accessibility Road condition	A - E	3	B	<	A
III	Community Mobilization WATSAN Committee	A - E	5	C	<<	B
IV	Water Quality Results of water quality check	A - E	5	C	<<	B
V	Current Water Supply Condition Availability of potable water	A - E	10	E	=	E
VI	Groundwater Availability Availability and quality	A - E	5	C	=	C
VII	Security of the Site Security condition	A - C	1	A	=	A
VIII	Guinea Worm Endemic Occurrence of disease	A - C	5	C	=	C
IX	Exiting Water Supply Facility Exiting Water Supply Facility	A - E	10	C	<	B/C
X	Number of Water Point		5			
	Dugwell	(number)		0		4
	H.P Well	(number)		6		1
	H.P Well (broken)			2		2
	Communal Tap	(number)		0		0
XI	Urgency of Need Population/water point	(value)	10	1,000	<<<	4,000
XII	Construction Condition (power supply)		5	need Fe- removal	<	
XIII	Others		1			
	RESULT				<	Selected

## Reference of the ranking

	II	III	IV
A	Easily accessible through year	Committee and Fund established	no problem
B	Hard but accessible through year	Fund is not enough	
C	Easily accessible in dry season	Committee established but fund on the course of animation	inc. Fe, Mn
D	Hardly accessible in dry season		
E	Foot-pass only	No committee	inc. Poison
	V	VI	VII
A	No proper water source	Enough yield and quality	Safe
B	Surface water source in wet season	Enough yield but quality	Fair
C	Groundwater source in wet season	Fair yield, normal quality	Not safe
D	Surface water source through year	Small yield or worse quality	
E	Groundwater source through year	Not available	
	VIII	IX	
A	High incidence	no proper facility	
B	Fair incidence	dugwell only	
C	Low incidence	Hand pump well only	
D		Level-2 system	
E		Level-3 system	

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R.V.

Annex-2

SELECTION OF TARGET COMMUNITY FOR LEVEL-2 SYSTEM

(District: WASSA WEST )

	Item	Rank	Weight	NSUAEM		SIMPA
I	Size of the Community Population	(number)	3	>7,000	>	7,000
II	Accessibility Road condition	A - E	3	A	=	A
III	Community Mobilization WATSAN Committee	A - E	5	B	=	B
IV	Water Quality Results of water quality check	A - E	5	B	>>	C
V	Current Water Supply Condition Availability of potable water	A - E	10	E	=	E
VI	Groundwater Availability Availability and quality	A - E	5	B	=	B
VII	Security of the Site Security condition	A - C	1	A	=	A
VIII	Guinea Worm Endemic Occurrence of disease	A - C	5	C	=	C
IX	Existing Water Supply Facility Existing Water Supply Facility	A - E	10	C	<	B/C
X	Number of Water Point		5			
	Dugwell	(number)		0		1
	H.P Well	(number)		2		3
	H.P Well (broken)			4		1
	Communal Tap	(number)		0		0
XI	Urgency of Need Population/water point	(value)	10	3,500	>>>	2,330
XII	Construction Condition (power supply)		5		>>	need Fe removal
XIII	Others		1			
RESULT				Selected	>	

Reference of the ranking

	II	III	IV
A	Easily accessible through year	Committee and Fund established	no problem
B	Hard but accessible through year	Fund is not enough	
C	Easily accessible in dry season	Committee established but fund	inc. Fe, Mn
D	Hardly accessible in dry season	on the course of animation	
E	Foot-pass only	No committee	inc. Poison
	V	VI	VII
A	No proper water source	Enough yield and quality	Safe
B	Surface water source in wet season	Enough yield but quality	Fair
C	Groundwater source in wet season	Fair yield, normal quality	Not safe
D	Surface water source through year	Small yield or worse quality	
E	Groundwater source through year	Not available	
	VIII	IX	
A	High incidence	no proper facility	
B	Fair incidence	dugwell only	
C	Low incidence	Hand pump well only	
D		Level-2 system	
E		Level-3 system	

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## SELECTION OF TARGET COMMUNITY FOR LEVEL-2 SYSTEM

(District: AOWIN SUAMAN )

	Item	Rank	Weight	DADIESO		OMANPE
I	Size of the Community Population	(number)	3	>8,000	>	2,000
II	Accessibility Road condition	A - E	3	B	=	B
III	Community Mobilization WATSAN Committee	A - E	5	A	>>	C
IV	Water Quality Results of water quality check	A - E	5	A	>>	C
V	Current Water Supply Condition Availability of potable water	A - E	10	E	=	E
VI	Groundwater Availability Availability and quality	A - E	5	A	=	A
VII	Security of the Site Security condition	A - C	1	A	=	A
VIII	Guinea Worm Endemic Occurrence of disease	A - C	5	C	=	C
IX	Existing Water Supply Facility Existing Water Supply Facility	A - E	10	B/C	=	B/C
X	Number of Water Point		5			
	Dugwell	(number)		(123) <sub>private</sub>		3
	H.P Well	(number)		1		2
	H.P Well (broken)			1		3
	Communal Tap	(number)		0		0
XI	Urgency of Need Population/water point	(value)	10	>8,000	>>>	1,000
XII	Construction Condition (power supply)		5		<<	no power ye
XIII	Others		1			
RESULT				Selected	>	

## Reference of the ranking

	II	III	IV
A	Easily accessible through year	Committee and Fund established	no problem
B	Hard but accessible through year	Fund is not enough	
C	Easily accessible in dry season	Committee established but fund	inc. Fe, Mn
D	Hardly accessible in dry season	on the course of animation	
E	Foot-pass only	No committee	inc. Poison
	V	VI	VII
A	No proper water source	Enough yield and quality	Safe
B	Surface water source in wet season	Enough yield but quality	Fair
C	Groundwater source in wet season	Fair yield, normal quality	Not safe
D	Surface water source through year	Small yield or worse quality	
E	Groundwater source through year	Not available	
	VIII	IX	
A	High incidence	no proper facility	
B	Fair incidence	dugwell only	
C	Low incidence	Hand pump well only	
D		Level-2 system	
E		Level-3 system	

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T.K.T.

## SELECTION OF TARGET COMMUNITY FOR LEVEL-2 SYSTEM

(District: WASSA AMENFI )

	Item	Rank	Weight	A. MANSO		M. AMENFI
I	Size of the Community Population	(number)	3	2,000	<	5,000
II	Accessibility Road condition	A - E	3	B	=	B
III	Community Mobilization WATSAN Committee	A - E	5	B	=	B
IV	Water Quality Results of water quality check	A - E	5	B	>>	C
V	Current Water Supply Condition Availability of potable water	A - E	10	E	=	E
VI	Groundwater Availability Availability and quality	A - E	5	A	=	A
VII	Security of the Site Security condition	A - C	1	A	=	A
VIII	Guinea Worm Endemic Occurrence of disease	A - C	5	C	=	C
IX	Existing Water Supply Facility Existing Water Supply Facility	A - E	10	B/C	-	C
X	Number of Water Point		5			
	Dugwell	(number)		2		0
	H.P Well	(number)		2		4
	H.P Well (broken)			3		1
	Communal Tap	(number)		0		0
XI	Urgency of Need Population/water point	(value)	10	1,000	<<<	1,250
XII	Construction Condition (power supply)		5	no power yet	<<	power supply
XIII	Others		1		<	Hospital
	RESULT				<	Selected

## Reference of the ranking

	II	III	IV
A	Easily accessible through year	Committee and Fund established	no problem
B	Hard but accessible through year	Fund is not enough	
C	Easily accessible in dry season	Committee established but fund	inc. Fe, Mn
D	Hardly accessible in dry season	on the course of animation	
E	Foot-pass only	No committee	inc. Poison
	V	VI	VII
A	No proper water source	Enough yield and quality	Safe
B	Surface water source in wet season	Enough yield but quality	Fair
C	Groundwater source in wet season	Fair yield, normal quality	Not safe
D	Surface water source through year	Small yield or worse quality	
E	Groundwater source through year	Not available	
	VIII	IX	
A	High incidence	no proper facility	
B	Fair incidence	dugwell only	
C	Low incidence	Hand pump well only	
D		Level-2 system	
E		Level-3 system	

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A.K.

## Annex-5

## SELECTION OF TARGET COMMUNITY FOR LEVEL-2 SYSTEM

(District: BIBIANI ANHWIASO BEKWAI )

	Item	Rank	Weight	ASAWINSO		SUBURI
I	Size of the Community Population	(number)	3	1,000	<	1,200
II	Accessibility Road condition	A - E	3	C	=	C
III	Community Mobilization WATSAN Committee	A - E	5	B	>	C
IV	Water Quality Results of water quality check	A - E	5	B	=	B
V	Current Water Supply Condition Availability of potable water	A - E	10	E	=	E
VI	Groundwater Availability Availability and quality	A - E	5	A	=	A
VII	Security of the Site Security condition	A - C	1	A	=	A
VIII	Guinea Worm Endemic Occurrence of disease	A - C	5	C	=	C
IX	Existing Water Supply Facility Existing Water Supply Facility	A - E	10	C	=	C
X	Number of Water Point		5			
	Dugwell	(number)		0		0
	H.P Well	(number)		3		3
	H.P Well (broken)			2		1
	Communal Tap	(number)		0		0
XI	Urgency of Need Population/water point	(value)	10	330	<<<	400
XII	Construction Condition (power supply)		5			
XIII	Others		1			priority
	RESULT				<	Selected

## Reference of the ranking

	II	III	IV
A	Easily accessible through year	Committee and Fund established	no problem
B	Hard but accessible through year	Fund is not enough	
C	Easily accessible in dry season	Committee established but fund	inc. Fe, Mn
D	Hardly accessible in dry season	on the course of animation	
E	Foot-pass only	No committee	inc. Poison
	V	VI	VII
A	No proper water source	Enough yield and quality	Safe
B	Surface water source in wet season	Enough yield but quality	Fair
C	Groundwater source in wet season	Fair yield, normal quality	Not safe
D	Surface water source through year	Small yield or worse quality	
E	Groundwater source through year	Not available	
	VIII	IX	
A	High incidence	no proper facility	
B	Fair incidence	dugwell only	
C	Low incidence	Hand pump well only	
D		Level-2 system	
E		Level-3 system	


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D.P.K.

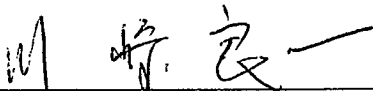
MINUTES OF MEETING  
ON  
RURAL WATER SUPPLY PROJECT PHASE IV  
(Technical Note No.3)

With regards to the captioned Project, the Community Water and Sanitation Agency, Regional Office in Western Region (hereinafter referred as "the CWSA, Western Region") represented by Mr. Stephen OPOKU-TUFFUOR, Regional Director, Western Region, and the Basic Design Study Team at the Project (hereinafter referred as "the Study Team"), dispatched by Japan International Cooperation Agency (hereinafter referred as "JICA") represented by Mr. Ryoichi KAWASAKI, Chief Consultants, held a meeting on the technical matters on the Project. Following the discussions, at the meeting, the items described in the Attachment have been mutually agreed upon.

Takoradi, March 30, 2000

  
\_\_\_\_\_  
Mr. Stephen OPOKU-TUFFUOR  
Regional Director, CWSA Western Region

.....  
**REG. DIRECTOR**  
**C. W. S. A.-W/R**

  
\_\_\_\_\_  
Mr. Ryoichi KAWASAKI  
Chief Consultants,  
The Study Team, JICA



Attachment

1. Date and Place: on March 30, 2000 at CWSA Regional Office, Western Region

2. Attendants: CWSA The Study Team  
Stephen OPOKU-TUFFOUR R. KAWASAKI  
Kwesi BROWN I. HAMADA

3. Major Items discussed:

3.1. Replacement of some selected communities for study target

- Since the commencement of actual field survey, the Study Team pointed out some confusion on the target community list for Level-1 facility such as repetition of same name or duplication with the list for Level-2 facility.
- Responding to the points, the CWSA, Western Region checked the list and found out that the list for Wassa West District was quoted from old database and attached to the requested community list by accident when Wassa West and Nzima East Districts were added to the project district after Sefwi Wiauso and Juabeso-Bia Districts were dropped out, as well as some simple mistakes in the lists of other districts.
- Thus, the CWSA, Western Region explained the situation and process of the confusion, and presented the revised target community list on Wassa West District, together with the community lists on the other districts modified.
- The Study Team understood the situation and agreed to modify the target community list with the conditions that the replaced communities should have low priority than the original ones because they were treated as additionally requested.
- The CWSA, Western Region agreed the conditions. Finally, the Study Team requested the CWSA, Western Region to send a formal note indicating those communities that had to be substituted. The old and the new lists for Wassa West is here attached.

SDT

MINUTES OF MEETING  
ON  
RURAL WATER SUPPLY PROJECT PHASE IV

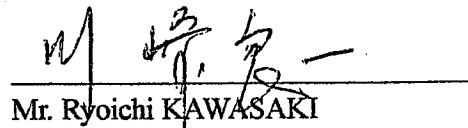
(Technical Note No.4)

With regards to the captioned Project, the Community Water and Sanitation Agency, (hereinafter referred as "the CWSA") represented by Mr. Peter O. Sackey, Ag. Chief Executive, and the Basic Design Study Team of the Project (hereinafter referred as "the Study Team"), dispatched by the Japan International Cooperation Agency (hereinafter referred as "JICA") represented by Mr. Ryoichi KAWASAKI, Chief Consultant, held a meeting on the technical matters on the Project. Following the discussions at the meeting, the items described in the Attachment have been mutually agreed upon.

Accra, April 20, 2000



Mr. Peter O. Sackey  
Ag. Chief Executive, CWSA



Mr. Ryoichi KAWASAKI  
Chief Consultant,  
The Study Team, JICA

Attachment

1. Date and Place: On April 20 at CWSA, Headquarter

2. Attendants: CWSA The Study Team  
R. K. D. Van Ess R. KAWASAKI  
H. KONDO

3. Major Items discussed:

3.1. Design Criteria

3.1.1. For Borehole with Hand-pump

- CWSA standard designs on borehole and platform shall be applied.
- Hand-pump shall be selected from the CWSA standard, depending on the characteristics of the borehole.

3.1.2. For Pipe-system

- As a rule, Design Criteria prescribed in Appendix 1 attached herewith (which is an Appendix of the "Small Town Water and Sanitation Policy" prepared by CWSA in April 2000) shall be applied.
- However, projection shall not be considered because 45 lcd of the design water demand is based on the demand of 10 years later.
- Each stand pipe shall have two taps and serve around 600 people.
- Further details and/or the matters not described in the above Criteria shall be determined through discussions between the designers of both sides.

3.2. Environmental Assessment



- In the case of small town water supply development project, an environmental impact assessment is obliged.
- However, in the case of JICA Project, the JICA standard assessment (IEE: Initial Environmental Estimation) can be applied.

## APPENDIX 1

### DESIGN CRITERIA

#### DESIGN CRITERIA

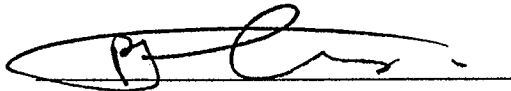
- Per capita water consumption to be applied to current population 45 l/c/d<sup>1</sup>
- Storage reservoir volume 50% of the average daily demand
- Peak hourly factor 2.5
- Residual pressures
  - min. 10m head in the distribution system
  - 3 m head at outlets at peak hour flow
  - max. 60m head
  
- Design period 10 years
- Pumping time 16 hours
- Population growth rate as per regional average
- Physical losses 10%
- Pipe sizes
  - min. 50mm mains
  - min. 19mm for house connection
  - uPVC pipes to be used in the distribution system, and galvanized steel for exposed piping

   
<sup>1</sup> This is based on (i) 20 l/c/d for 80% of population, (ii) 60 l/c/d for 20% population (house connection), (iii) 10% physical losses, (iv) 3% population growth rate for 10 years, and (v) 10% of domestic consumption allowed for institutions and commercial consumers.

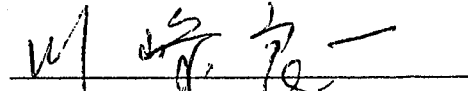
MINUTES OF MEETING  
ON  
RURAL WATER SUPPLY PROJECT PHASE IV  
**(Technical Note No.5)**

With regards to the captioned Project, the Community Water and Sanitation Agency, (hereinafter referred as "the CWSA") represented by Mr. Peter O. Sackey, Ag. Chief Executive, and the Basic Design Study Team of the Project (hereinafter referred as "the Study Team"), dispatched by the Japan International Cooperation Agency (hereinafter referred as "JICA") represented by Mr. Ryoichi KAWASAKI, Chief Consultant, held a meeting on the technical matters on the Project. Following the discussions at the meeting, the items described in the Attachment have been mutually agreed upon.

Accra, May 8, 2000



Mr. Peter O. Sackey  
Ag. Chief Executive, CWSA



Mr. Ryoichi KAWASAKI  
Chief Consultants,  
The Study Team, JICA

Attachment

1. Date and Place: On May 3 at CWSA, Headquarter

2. Attendants: CWSA The Study Team  
R. K. D. Van Ess R. KAWASAKI

3. Major Items discussed:

3.1. Priority Index for Target Communities

3.1.1. For Level-1 Communities

- A rural community has high priority over a small town.
- A community without any good water supply system has higher priority over a community with at least one borehole with hand-pump, working or not working.
- A community with only one borehole with hand-pump has higher priority over a community with two or more hand-pump wells.
- Borehole with broken down hand-pump shall be counted as 0.5 facility.
- In the same condition, a community with large population has higher priority over a community with less population.
- However, a community with poor accessibility for heavy equipment shall be neglected.

3.1.2. For Level-2 Communities

- Priority on construction of Level-2 facility shall be determined by the estimation matrix attached herewith.
- On the population, the figures shown by CWSA, Western Region on April 18 shall be applied formally.

3.2. Index to set Iron-removal Facility

- Considering the maximum benefit of rural inhabitants, a borehole yielding groundwater with high Fe contents shall be installed with an iron-removal facility.
- The level of Fe contents for installation of an iron-removal facility shall be more than 1.0 mg/l.
- The borehole yielding groundwater of more than 13.0 lit/min with Fe content of the water less than 1.0 mg/lit shall be completed as a successful well.

### SELECTION OF TARGET COMMUNITY FOR LEVEL-2 SYSTEM

(District: )

	Item	Rank	Weight			
I	Size of the Community Population	(number)	3			
II	Accessibility Road condition	A - E	3			
III	Community Mobilization WATSAN Committee	A - E	5			
IV	Water Quality Results of Water Quality Check	A - E	5			
V	Current Water Supply Condition Availability of potable water	A - E	10			
VI	Groundwater Availability Availability and quality	A - E	5			
VII	Security of the Site Security condition	A - C	1			
VIII	Guinea Worm Endemic Occurrence of disease	A - C	5			
IX	Existing Water Supply Facility Existing Water Supply Facility	A - E	10			
X	Number of Water Point		5			
	Dugwell	(number)				
	H.P Well	(number)				
	Communal Tap	(number)				
XI	Urgency of Need Population/water point	(value)	10			

#### Reference of the ranking

	II	III	IV
A	Easily accessible through year	Committee and Fund established	No problem for quality
B	Hard but accessible through year	Fund is not enough	Less than WHO index
C	Easily accessible in dry season	Committee established but fund	High Fe, Mn contents
D	Hardly accessible in dry season	On the course of animation	Contaminated
E	Foot-pass only	No committee	Include poison
	V	VI	VII
A	No proper water source	Enough yield and quality	Safe
B	Surface water source in wet season	Enough yield but quality	Fair
C	Groundwater source in wet season	Fair yield, normal quality	Not safe
D	Surface water source through year	Small yield or worse quality	
E	Groundwater source through year	Not available	
	VIII	IX	
A	High incidence	no proper facility	
B	Fair incidence	dugwell only	
C	Low incidence	Hand pump well only	
D		Level-2 system	
E		Level-3 system	

*Handwritten signature/initials*