

添付資料- 5 協議議事録

1. Minutes of Discussions on the Basic Design Study on the Project for Rural Water Supply, Phase 2 in the Kingdom of Swaziland dated November 23, 2001
2. Technical Notes on the Basic Design Study on the Project for Rural Water Supply, Phase 2 in the Kingdom of Swaziland dated December 21, 2001
3. Minutes of Discussions on the Basic Design Study on the Project for Rural Water Supply, Phase 2 in the Kingdom of Swaziland dated March 21, 2002
4. Minutes of Discussions on the Basic Design Study on the Project for Rural Water Supply, Phase 2 in the Kingdom of Swaziland (Explanation of the Draft Basic Design) dated May 17, 2002

MINUTES OF DISCUSSIONS
ON THE BASIC DESIGN STUDY
ON THE PROJECT FOR
RURAL WATER SUPPLY, PHASE 2
IN THE KINGDOM OF SWAZILAND

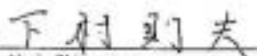
In response to a request from the government of the Kingdom of Swaziland (hereinafter referred to as "the Swaziland"), the Government of Japan decided to conduct a Basic Design Study on the Project for Rural Water Supply, Phase 2 in the Kingdom of Swaziland (hereinafter referred to as "the Project") and entrusted the study to Japan International Cooperation Agency (hereinafter referred to as "JICA").

JICA sent to the Swaziland the Basic Design Study Team (hereinafter referred to as "the Team") headed by Mr. Norio Shimomura, Deputy Managing Director, Grant Aid Management Department, JICA, and scheduled to stay in Swaziland from November 18th to December 19th, 2001.

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

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

Mbabane, November 23rd, 2001


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Basic Design Study Team
Japan International Cooperation Agency
Japan


Mr. Ephraim M. Hlopho
Principal Secretary
Ministry of Economic Planning &
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Kingdom of Swaziland


Mr. Sabelo F. Dlamini
Acting Principal Secretary
Ministry of National Resources and Energy
Kingdom of Swaziland

ATTACHMENT

1. Objective

The objective of the Project is to improve water supply conditions in the rural areas of Swaziland by construction of water supply facilities and provision of equipment and materials as a means to contribute to achieving the national rural water development strategy.

2. Project Sites

The project sites are within the four (4) Regions of Hhobho, Manzini, Lubombo and Shiselweni where sites for drilling of new boreholes have been identified.

3. Responsible and Implementing Agencies

- (1) Coordinating organization: Ministry of Economic Planning & Development
- (2) Responsible organization: Ministry of National Resources and Energy
- (3) Implementing organization: Rural Water Supply Branch

4. Items Requested by the Kingdom of Swaziland

After a series of discussions with the Team, the Swazi side requested the items shown in Annex-1. JICA will assess the appropriateness of the request and will recommend to the Government of Japan for approval.

5. Japan's Grant Aid System

- (1) The Swazi side has understood Japan's Grant Aid system explained by the Team as described in Annex-2.
- (2) The Government of Swaziland will take necessary measures, as described in Annex-3, for smooth implementation of the Project, on condition that the Grant Aid Assistance by the Government of Japan is extended.

6. Schedule of the Study

- (1) The consultants of the Team will proceed to carry out further studies in Swaziland until December 19th, 2001 and subsequent test boring works at the selected sites are to be carried out from January to March, 2002.
- (2) Based on the Minutes of Discussions and technical examination of the study results, JICA will prepare a draft report in English and dispatch a mission to Swaziland in order to explain its contents at around the middle of February, 2002.



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(3) In case the contents of the draft report are accepted in principle by the Swazi side, JICA will complete the final report and submit it to the Swazi side by the end of April, 2002.

7. Other Relevant Issues

The following issues were discussed and confirmed by both sides.

(1) Planning of the Project

The Swazi side stressed the need to formulate the most effective implementation plan of the Project within the available Japanese budget to be allocated to the Project.

(2) Implementation of the Project

The Swazi side very strongly requested technical transfer provided to Swazi counterpart persons through out the implementation stage of the Project. For this purpose, Rural Water Supply Branch will complete a number of wells under necessary assistance to be provided by the Japanese side.

The Swazi side assured that the equipment and machinery (including drilling rig, truck with compressor etc.) provided in the Phase1 Project will be fully and exclusively utilized for the implementation of the Phase2 Project.

The successful wells completed by the Swazi side are to be counted in the number of successful wells to be completed by the Project.

(3) Screening of communities for borehole construction

Both sides agreed that the proposed sites are to be examined by following criteria and the priority list would be prepared by the Team based on the result of site survey.

- 1) hydrogeological condition
- 2) socio-economical condition
- 3) other site condition

(4) Definition of successful or unsuccessful borehole

Both sides agreed that the definition of successful borehole would be determined by the result of site survey and test boring.

(5) Test boring

The Team will implement test borings at 10 communities in the course of Basic Design Study. Both sides agreed that the successful boreholes would be finished as completed wells in the implementation stage of the Project and counted in the number of successful wells to be constructed by the Project.

(6) Unsuccessful borehole and alternative site

Both sides agreed that in case the first borehole at a site is unsuccessful, a maximum of two more boreholes would be drilled at an appropriate locality in the same site. However, if the third borehole is unsuccessful, the fourth would not be drilled in principle and the site will be excluded from the

Project.

(7) Type of water supply facilities

Both sides agreed that water supply facilities under the Project would be boreholes equipped with hand-pumps.

(8) Operation and maintenance of facilities, equipment and materials

1) Rural Water Supply Branch will properly operate and maintain the water supply facilities to be constructed as well as equipment and materials to be provided by the Project. Rural Water Supply Branch will be responsible for coordinating community people for the proper operation and maintenance.

2) The Swazi side shall prepare adequate stores to keep the equipment and materials before the implementation of the Project.

(9) Safety and security

The Swazi side will take necessary measures for the safety and security of the Japanese nationals involved in the Project.

JAPAN'S GRANT AID

Annex 1

Items Requested by Government of Swaziland

1. Construction of Micro Schemes

Region	Communities	No. of Requested Micro Schemes
Hhohho	(1) Meleni, (2) Nkangweni, (3) Lelimgantini, (4) Mavocile, (5) etc	19
Lalonde	(6) n/a, (7) Banzobeni, (8) Luvini, (9) Sibanakhweni, (10) Ntsefolo, (11) Madadadi, (12) Njokweni, (13) Mphungweni, (14) Tintaka, (15) Sigweni/Wilensibela, (16) Mphungweni/Erboveni, (17) Ntshoni, (18) Mhokweni, (19) Hlolo/Selotso, (20) Mavocile, (21) Mavocile/Matjola, (22) Mavocile	16
Masizi	(23) Mavocile, (24) Mavocile, (25) Mavocile, (26) Ndabeni, (27) Oudini (Mavocile), (28) Ntshoni, (29) Ekhosini II, (30) Mavocile, (31) Kamaqa, (32) Mavocile/Kamaqa, (33) Mavocile, (34) Kamaqa, (35) Ekhosini/Mavocile	32
Shiselweni	(36) Mavocile, (37) Ekhosini, (38) Ntshoni, (39) Oudini, (40) Ekhosini, (41) Mavocile, (42) Ntshoni, (43) Mavocile, (44) Mavocile, (45) Ekhosini, (46) Ekhosini/Mavocile, (47) Ekhosini	19
Total	41 communities	86

In addition to the communities listed above, 22 sites are also included for the Luvuvu area where a macro scheme had originally been requested, thus bringing the total number of the requested micro schemes to be 108.

2. Spare Parts and Consumables Drilling Equipment

The following equipment are considered for the supply of spare parts.

- (1) Truck Mounted Drilling Rig
- (2) Truck Mounted High Pressure Compressor
- (3) Pumping Test Apparatuses
- (4) Cargo Trucks
- (5) Geophysical Survey Equipment
- (6) Water Quality Analysis Equipment
- (7) Other equipment and vehicles provided under the phase 1 project

3. Construction Equipment and Consumable Materials for Micro Scheme Construction

The specifications and dimensions will be examined in the present and forthcoming studies.

1. Japan's Grant Aid System

(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 the Cabinet)
 - Determination of the implementation (The Notes exchanged between the Governments of Japan and the recipient country)
 - Implementation (Implementation of the Project)
- 2) Firstly, the application or request for a Grant Aid project submitted by a recipient country is examined by the Government of Japan (the Ministry of Foreign Affairs) to determine whether or not it is eligible for Grant Aid. If the request is deemed appropriate, the Government of Japan assigns JICA to conduct a study on the request.

Secondly, JICA conducts the study (Basic Design Study), using Japanese consulting firms.

Thirdly, the Government of Japan appraises the project to see whether or not it is suitable for Japan's Grant Aid Programme, 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 Governments of Japan and the recipient country.

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

(2) Basic Design Study

1) Contents of the Study

The aim of the Basic Design Study (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 Government of Japan. The contents of the Study are as follows:

- i) Confirmation of the background, objectives and benefits of the Project and also institutional capacity of agencies concerned of the recipient country necessary for the Project's implementation;
- ii) Evaluation of the appropriateness of the Project to be implemented under the Grant Aid Scheme from a technical, social and economic points of view;
- iii) Confirmation of items agreed on by both parties concerning the basic concept of the Project;
- iv) Preparation of a basic design of the Project; and
- v) 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 the smooth implementation of the Study, JICA uses a registered consulting firm. JICA selects a firm based on proposals submitted by interested firms. The firm selected carries out a Basic Design Study and writes a report, based upon terms of reference set by JICA.

The consultant firm used for the Study is recommended by JICA to the recipient country to also work in 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 protracted.

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"** means the one fiscal year which the Cabinet approves the project for. Within the fiscal year, all procedure such as exchanging of the Notes, concluding contracts with consulting firms and contractors 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, 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 the recipient country or its designated authority will conclude contracts denominated in Japanese yen with Japanese nationals. These contracts shall be verified by the Government of Japan. This "Verification" is deemed necessary to secure accountability of Japanese taxpayers.

- 6) **Undertakings required to 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:

- i) To secure land necessary for the sites of the Project and to clear, level and reclaim the land prior to commencement of the construction;
- ii) To provide facilities for the distribution of electricity, water supply and drainage and other incidental facilities in and around the site;
- iii) To secure buildings prior to the procurement in case the installation of the equipment;

- iv) 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;

- v) To exempt Japanese nationals from customs duties, internal taxes and other fiscal levies which may be imposed in the recipient country with respect to the supply of the products and services under the verified contracts;

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

- vii) **"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 the necessary staff for this operation and maintenance as well as to bear all the expenses other than those covered by the Grant Aid.

- viii) **"Re-export"**
 The products purchased under the Grant Aid shall not be re-exported from the recipient country.

- ix) **Banking Arrangement (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 (A/P) issued by the Government of recipient country or its designated authority.

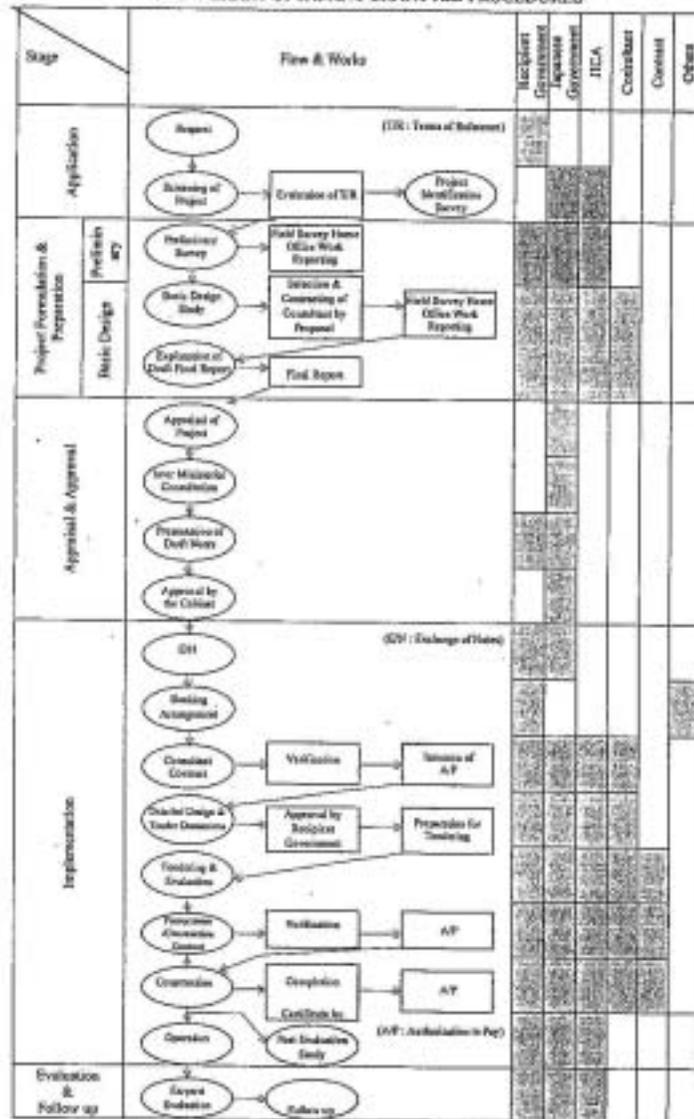
2. Grant Aid Procedure

- (1) **Flowchart of Japan's Grant Aid Procedures**
 Refer to Attachment 1.

- (2) **Major Undertaking to be taken by Each Government**
 Refer to Attachment 2.

Attachment 1

FLOW CHART OF JAPAN'S GRANT AID PROCEDURES



Attachment 2

Major Undertakings to be taken by Each Government

No.	Items	To be covered by Grant Aid	Self-aid
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		●
4	To construct the parking lot	●	
5	To construct roads		
	1) Within the site	●	
	2) Outside the site		●
6	To construct the building	●	
7	To provide facilities for the distribution of electricity, water supply, drainage and other incidental facilities		
	1) Electricity		
	a. The distribution line to the site		●
	b. The drop wiring and internal wiring within the site	●	
	c. The main circuit breaker and transformer	●	
	2) Water Supply		
	a. The city water distribution main to the site		●
	b. The supply system within the site (including and/or elevated tanks.)	●	
	3) Drainage		
	a. The city drainage main (for storm, sewer and others) to the site		●
	b. The drainage system (for toilet sewer, ordinary waste, storm drainage and others) within the site	●	
	4) Gas Supply		
	a. The city gas main to the site		●
	b. The gas supply system within the site	●	
	5) Telephone System		
	a. The telephone trunk line to the main distribution frame/panel (MDF) of the building		●
	b. The MDF and the extension after the frame/panel	●	
	6) Furniture and Equipment		
	a. General furniture		●
	b. Project equipment	●	
8	To bear the following commissions to a bank of Japan for the banking services based upon the B/A		
	1) Advance commission of A/P		●
	2) Payment commission		●
9	To ensure prompt unloading and customs clearance at port of disembarkation in recipient country		
	1) Marine(Air) transportation of the products from Japan to the recipient country	●	
	2) Tax exemption and customs clearance of the products at the port of disembarkation		●
	3) Internal transportation from the port of disembarkation to the project site	●	

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10	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	●
11	To exempt Japanese nationals from customs duties, internal taxes and other fiscal levies which may be imposed in the recipient country with respect to the supply of the products and services under the verified contracts	●
12	To maintain and use properly and effectively the facilities constructed and equipment provided under the Grant Aid	●
13	To bear all the expenses, other than those to be borne by the Grant Aid, necessary for construction of the facilities as well as for the transportation and installation of the equipment	●

Necessary Measures to be Taken by Government of Kingdom of Swaziland
On
Condition that Japan's Grant Aid is Extended

1. To support prompt execution for customs clearance of the equipment imported to country under the Grant Aid.
2. To accord Japanese nationals whose services may be required in connection with the supply of products and services under the verified contracts such facilities as may be necessary for their entry into the country and stay therein for the execution of their work;
3. To exempt Japanese nationals from custom duties, internal taxes and other fiscal levies which may be imposed in the country with respect to the supply of the products and services under the verified contracts.
4. To maintain and use the facilities and equipment constructed/procured under the Grant Aid properly and effectively and to assign the staff necessary for operation and maintenance for the facilities.
5. To bear all the expenses other than those to be borne by the Grant Aid necessary for the execution of the Project.
6. To bear advising commissions for Authorization to Pay and payment commission to a Japanese bank for the banking services based upon the banking arrangement.

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TECHNICAL NOTES
ON
THE BASIC DESIGN STUDY
ON
THE PROJECT FOR RURAL WATER SUPPLY, PHASE 2
IN
THE KINGDOM OF SWAZILAND

Based on the Minutes of Discussions signed on November 23, 2001 between the Basic Design Study Team (hereinafter referred to as "the Team") of Japan International Cooperation Agency (hereinafter referred to as "JICA") and Rural Water Supply Branch (hereinafter referred to as "RWSB"), of the Government of the Kingdom of Swaziland, the consultant members of the Team had a series of discussions and conducted field surveys from November 23 to December 24, 2001.

As a result of the discussions and the surveys, both sides confirmed the technical conditions described as per the attached.

Mbabane, December 21, 2001



Soichiro Yamada
Chief Consultant,
JICA Basic Design Study Team for
the Project for Rural Water Supply, Phase 2
in the Kingdom of Swaziland



Mr. Melvyn Mayetsh
Acting Chief Water Engineer,
Rural Water Supply Branch,
Ministry of Natural Resources and Energy,
Government of the Kingdom of Swaziland

ATTACHMENT

Both parties agreed upon and confirmed the following items.

1. Communities Requested for Micro Scheme Construction

It is confirmed that the 100 sites listed in Table 1 are requested for the construction of micro schemes. The implementation of construction will be determined after examination at the aspects of access condition to sites, groundwater potential and socio-economical situation.

2. Equipment and Materials Requested

It is confirmed that the equipment and materials for construction of micro schemes listed in Table 2 are requested. The details and specifications of this equipment and materials are to be examined in the studies to be made in Japan.

3. Communities for Test Drilling

The following communities are selected for the implementation of the test drilling, which was confirmed in the Minutes of Discussions.

List of Drilling Sites

Location (Ref. No.)	Region	Community	Target Aquifer	Number of Boreholes
HD-3	Hlabathi	Lobhlangeni	Gravel	1
HD-4	Hlabathi	Mawushe	Gravel	1
MD-1	Musina	Miyeni	Gravel	1
MD-18	Musina	Umsal	Gravel	1
L2-3	Lobentse	Mazafika	Sandstone	1
SD-3	Sidwasa	Hlotshwayi	Sandstone	1
L2-5	Lobentse	Umkhaya	Dunef	1
SD-4	Sidwasa	Danganyeni	Dunef	1
L3-8	Lobentse	Maphangwane	Shale	1
L3-22	Lobentse	Nkwenkwe	Shale	1
Start Boreholes				5
Total				13

RWSB agreed to open the access roads to the site, to prepare the land for borehole drilling, and to protect the sites until the construction works commence in January 2002.

4. Replacement of Vehicles Provided under the Phase 1 Project

The following vehicles procured under the Phase 1 Project will be replaced in accordance with the regulations of CTA.

Vehicle	Intended Year of Replacement	Period of Use by CTA Regulation
Toyota Hilux (Double Cabin)	2001	2 years
Toyota Hilux (Single Cabin)	2001	2 years
Toyota Land Cruiser (Station Wagon) 1*	2001	2 years
Toyota Land Cruiser (Station Wagon) 2*	2001	2 years
Pitman Cargo Truck With Crane	2001	8 years
Nissan Tank Lorry Truck	2001	8 years

Note: *: Replacement period extended due to relatively low mileage of vehicles.



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Table - 1 List of Communities Requesting Micro Schema Construction

No.	Region	Community	No. of Household	No. of Requested Tubewells	Access Condition*
H2-1	Hlabisa	Makali	168	3	A (2 sites), B (2 sites)
H2-2	Hlabisa	Nalungoni	158	3	A
H2-3	Hlabisa	Lukhlongeni	138	3	A (1 site), B (1 site)
H2-4	Hlabisa	Mavumbi	138	3	A
Sub-total			508	19	-
L2-1	Labonde	Emahleeni	68	2	A
L2-2	Labonde	Lomisa	68	1	B
L2-3	Labonde	Makholisi	38	1	A
L2-4	Labonde	Makholisi	70	1	A
L2-5	Labonde	Sijakweni	40	1	A
L2-6	Labonde	Mphahleleni	70	2	B (1 site), C (1 site)
L2-7	Labonde	Uthukha	105	2	A
L2-8	Labonde	Mphahleleni/Gokhweni	30	1	B
L2-9	Labonde	Nandeni	30	1	A
L2-10	Labonde	Makholisi	30	1	A
L2-11	Labonde	Makholisi	30	2	B
L2-12	Labonde	Makholisi/Makholisi	40	1	B
L2-13	Labonde	Buchobeni/Emisa	80	1	A
L2-14	Labonde	Uthukha	68	1	A
L2-15	Labonde	Uthukha	48	1	A
L2-16	Labonde	Makholisi	60	1	B
L2-17	Labonde	Gijakweni	42	1	B
L2-18	Labonde	Uthukha	35	1	A
L2-19	Labonde	Makholisi (IV)	31	1	A
L2-20	Labonde	Uthukha	60	1	A
L2-21	Labonde	Uthukha	40	1	B
L2-22	Labonde	Makholisi	40	1	B
L2-23	Labonde	Makholisi	46	1	B
L2-24	Labonde	Makholisi	32	1	B
L2-25	Labonde	Makholisi V	41	1	B
L2-26	Labonde	Makholisi (I, II, III)	40	1	A
Sub-total			1,237	32	-
M2-1	Masizi	Masizi	65	1	B
M2-2	Masizi	Masizi	55	1	B
M2-3	Masizi	Masizi	83	1	B
M2-4	Masizi	Masizi II	106	2	B
M2-5	Masizi	Masizi	108	1	B
M2-6	Masizi	Kuseni	80	2	B
M2-7	Masizi	Masizi/Kuseni	250	2	B
M2-8	Masizi	Masizi	220	2	B
M2-9	Masizi	Kuseni	150	2	B
M2-10	Masizi	Emeni/Masizi/Kuseni	257	8	B
Sub-total			1,494	32	-
S2-1	Shaleni	Makholisi	10	1	B
S2-2	Shaleni	Kuseni	20	1	B
S2-3	Shaleni	Masizi	21	1	B
S2-4	Shaleni	Masizi	30	1	B
S2-5	Shaleni	Masizi	32	2	A
S2-6	Shaleni	Masizi	41	2	A
S2-7	Shaleni	Makholisi	14	1	B
S2-8	Shaleni	Makholisi	22	1	A
S2-9	Shaleni	Makholisi	43	2	B
S2-10	Shaleni	Makholisi	60	2	B
S2-11	Shaleni	Masizi	136	2	B
Sub-total			417	19	-
Total			3,700	80	-

Note: A: All season, B: Seasonal, C: Not possible

The above vehicles shall be available for the construction of micro schemes in the next year together with the drilling rigs and air compressor.

5. Design Conditions for Micro Scheme

The following design conditions shall be applied for the basic design of tubewell facilities.

- Served population: 250 - 500 (varies depending on the topography)
- Walking distance: Max. 1 km
- Minimum yield of tubewell: 0.1 l/sec.
- VLOM type hand pump: AFRUDEV or Bush type hand pump

6. Necessity of Software Assistance

The RWSB places high priority on software aspects and is already employing techniques to better effect these software components. In addition, the Central government, particularly Ministry of Public Service and information, has awarded the RWSB four (4) additional posts to strengthen its Community Development Section. Furthermore, Central Government has issued an Ultimatum that these vacant posts must be filled by March 31, 2002 or they will be frozen. In respect of this, the RWSB requests the technical assistance to facilitate the community development activities in order to achieve the sustainable operation of the tubewells to be constructed under the Project.

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Table - 2 List of Equipment and Materials Requested

Items	Q'ty	Unit
I. Equipment and Materials for Construction of Micro Schemes		
1. Hand pumps for wells to be constructed by RWSB including spare parts and tools (V.L.O.M type: Afridev and Bush types)	45*	Sets
2. Other Materials for wells to be constructed by RWSB		
2-1 Casing/screen pipes and gravel materials	1	Lot
2-2 Gravels for completion	1	Lot
2-3 Materials for drainage	1	Lot
2-4 Fuel, oil and lubricates	1	Lot
2-5 Drilling mud and additives, and foam agents	1	Lot
3. Equipment for construction by RWSB		
3-1 Back hoe	1	Unit
3-2 Concrete mixer (0.3 - 0.5 m ³)	1	Unit
3-3 Fuel tank trailer (2 m ³)	1	Unit
II. Consumables and spare parts for the equipment and vehicles proposed under the Phase I Project		
1. Consumables and spare parts for drilling rig and tools	1	Lot
2. Consumables and spare parts for Air compressor	1	Lot
3. Consumables and spare parts for generators	1	Lot
4. Consumables and spare parts for electrical logging instruments	1	Lot
5. Consumables and spare parts for geographical survey instruments	1	Lot
6. Consumables and spare parts for pumping test equipment	1	Lot
7. Consumables and spare parts for water quality analysis equipment	1	Lot
8. Consumables and spare parts for workshop equipment	1	Lot
9. Consumables and spare parts for vehicles		
9-1 Toyota Land Cruiser (Service Wagon)	1	Lot
9-2 Nissan cargo truck with crane	1	Lot
9-3 Nissan tank lorry truck	1	Lot
9-4 Nissan truck for drilling rig	1	Lot
9-5 Nissan truck for air compressor	1	Lot

Note: *. The number of micro schemes to be constructed by RWSB will be determined in the Study in Japan.

SWAZILAND

Tel: 404-0234404-123 1/2/3
Fax: 404-4330

01/022

Our ref:

Your ref:

President,
Japanese International Cooperation Agency

Dear Sir/Madam,

**RE: REQUEST FOR FURTHER ASSISTANCE FOR RURAL WATER SUPPLY
PHASE 2 PROJECT FOR SWAZILAND**

The Rural Water Supply Branch (RWSB) through the Ministry of Natural Resources and Energy of the Kingdom of Swaziland kindly requests the above mentioned project proposal to include the following:

1. Spare parts for vehicles that have a serious problem because it is too difficult to obtain them locally. These are mentioned in the Technical note of the Basic Design study in more detail.
2. The addition of a Community training enhancement component to assist the RWSB with ensuring sustainability of both phase 1 and phase 2 projects. The methodology of this enhancement is described further in the Technical Note of the Basic Design study.
3. The revision of the original plant and equipment list as per the one now listed in the Technical Note of the Basic Design study as listed below:

Item	Quantity
GPS	6
Stereoscope for aerial photographs	1
Welding Equipment	1
Fuel tank trailer	1
4 Wheel Drive Backhoe	1
Concrete Mixer	1

The above-mentioned request has been necessitated by the fact that the Consultant and the RWSB staff noticed that there is a serious need to ensure sustainability of the phase 1 and phase 2 projects.

Your continued assistance to the rural communities of the Kingdom of Swaziland and their Government is greatly appreciated and we hope it will continue in this and other forms. Your positive response to this request will be greatly appreciated also.

GOVERNMENT

Rural Water Supply Branch
P.O. Box 961
Mbabane

December 21, 2001

Yours truly,

MELVYN E. MAVISELE
ACTING CHIEF WATER ENGINEER

MEM

**MINUTES OF DISCUSSIONS
ON THE BASIC DESIGN STUDY
ON THE PROJECT FOR
RURAL WATER SUPPLY, PHASE 2
IN THE KINGDOM OF SWAZILAND
(The Second Field Survey)**

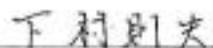
In response to a request from the government of the Kingdom of Swaziland (hereinafter referred to as "Swaziland"), the Government of Japan decided to conduct a Basic Design Study on the Project for Rural Water Supply, Phase 2 in the Kingdom of Swaziland (hereinafter referred to as "the Project") and entrusted the study to Japan International Cooperation Agency (hereinafter referred to as "JICA").

JICA sent to Swaziland the Basic Design Study Team (hereinafter referred to as "the Team") headed by Mr. Norio Shimomura, Deputy Managing Director, Grant Aid Management Department, JICA. The first field survey was conducted from November 18th to December 25th, 2001, and the second field survey started from January 11th, 2002, and is scheduled to continue until March 23rd, 2002.

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

In the course of the discussions and field surveys, both sides confirmed the main items described on the attached sheets. The Team will proceed with further works and prepare the Draft Final Basic Design Study Report.

Mbabane, March 21st, 2002


Mr. Norio Shimomura
Leader,
Basic Design Study Team,
Japan International Cooperation Agency,
Japan


Mr. Ephraim M. Hlophle
Principal Secretary,
Ministry of Economic Planning &
Development,
Kingdom of Swaziland


Ms. Nadine B. Celso
Principal Secretary,
Ministry of National Resources and Energy,
Kingdom of Swaziland

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ATTACHMENT

1. Definition of this Minutes of Discussions

This Minutes of Discussions of the second field survey is to complement the items of the Minutes of Discussions signed on November 23rd, 2001.

2. Communities for Construction of Micro Schemes under the Project

100 sites (51 communities) were surveyed by the First Basic Design Study Team, and examined on necessity, appropriateness and suitability of each community from the viewpoints of accessibility, socio-economy and hydrogeology during the study in Japan. As a result, 78 sites (39 communities) were identified for the construction of micro schemes. Thus it was agreed that the Project is to construct the micro schemes with the target sites of 78 in the 39 communities.

3. Construction by Swazi Side

It was agreed that out of 78 sites, 20 sites are to be constructed by Swazi side, and 58 sites by Japanese side. The equipment and materials necessary for the construction by the Swazi side will be provided under the Project except for those commodities such as fuel, lubricants, bentonite, CMC, etc. The Swazi side will provide the recurrent costs such as salary, field allowances, overtime allowances, etc. of the operators and assistants of the drilling equipment and vehicles.

4. Construction by Japanese Side

- (1) The Japanese side will drill the tubewells with the target of 50 successful tubewells excluding eight (8) tubewells which have been identified as the successful ones as a result of the test drilling conducted in the Basic Design Study (II) by the Japanese consultant. This drilling will be conducted as the test drilling during the detailed design stage.
- (2) The following success rate of drilling were derived from the results of the test drilling conducted in the Basic Design Study (II) and the records of the phase I project depending on the geological categories.

Geology	Phase I Project		Test Drilling		Adopted Rate (%)
	No. of Sites	Success Rate (%)	No. of Sites	Success Rate (%)	
Granite	14	41.0	3	33.3	39.6
Gneiss	35	66.0	3	99.0	63.7
Sandstone	11	45.5	3	33.3	41.4
Basalt	3	66.4	2	100.0	75.3
Rhyolite	10	75.0	4	25.0	60.7
Total/Avg.	75	56.4	13	53.3	53.9

LB 


Both sides agreed that the success rate of 55 % will be adopted for all of the sites. Since the total depth of drilling to drill 50 successful tubewells is calculated to be 8,100 m on condition that the standard depth of the successful and the unsuccessful tubewells are 80 m and 100 m, respectively, the 8,100 m of drilling will be conducted in the detailed design stage by the Japanese consultant with the target of 50 successful tubewells. In the Lamabuka area first prioritized by the Swazi side the maximum depth of drilling is set at 1,700 m considering the success rate of 60 % because the area is categorized into the Rhyolite area.

5. Definition of Successful Drilling

Both sides agreed that the following definition of the successful drilling is adopted for judging the drilled tubewell in the Project.

- Minimum yield: 0.2 Usec.
- Max. dynamic water level after drawdown: 45 m
- Water quality: Satisfy the standard values of guidelines of Swaziland

In case that the above conditions are judged not to be satisfactory but the beneficiaries request is considered strong, the treatment of such tubewell is subject to discussion with RWSB.

6. Schedule of the Study

- (1) Based on the Minutes of Discussions and technical examination of the study results, JICA will prepare a draft report in English and dispatch a mission to Swaziland in order to explain its contents around April 2002.
- (2) In case the contents of the draft report are accepted in principle by the Swazi side, JICA will complete the final report and submit it to the Swazi side around July 2002.

7. Other Relevant Issues

(1) Treatment of Successful Tubewell

Eight (8) tubewells were identified to be successful as a result of the test drilling conducted in the Basic Design Study 2. The Swazi side strongly requested the Japanese side to allow them to construct the spires and install the hand pumps as soon as possible in order to avoid the unnecessary expenditures for re-development of tubewells and to meet the beneficiary's request. The materials such as hand pump units, cement, etc. will be provided together with the other materials after the completion of such finishing works.

(2) Necessity of Software Assistance

Both sides agreed on the necessity of the software assistance for the following three (3)

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components.

- Operation and maintenance of the drilling equipment and management of drilling works
- Hydrogeological investigations for proper siting of the drilling points
- Facilitation of the community members for community development towards the sustainable operation and maintenance of the micro schemes to be constructed under the Project

(3) Equipment and Materials Necessary for Construction of Micro Schemes

It was agreed that the equipment and materials necessary for the construction of micro schemes by the Swazi side will be provided as presented in the attached table.

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List of Equipment and Materials for Construction of Tubewells by Swazi Side

I. Equipment and Materials for Construction of Micro Schemes

1. Hand pumps for wells to be constructed by RWSB including spare parts and tools (VLOM type: Afsidev and flush types)
2. Other Materials for wells to be constructed by RWSB
 - 2-1 Casing/screen pipes and gravel materials including fittings
 - 2-2 Cobble stones for soak pit
 - 2-3 Cement, gravels and sands for apron construction and pump installation
 - 2-4 Other consumables and materials
3. Construction equipment
 - 3-1 Back hoe
 - 3-2 Concrete mixer (0.2 - 0.3 m³)
 - 3-3 Fuel tank trailer (2 m³)

II. Consumables and spare parts for the equipment and vehicles needed under the Phase 1 Project

1. Consumables and spare parts for drilling rig and tools
2. Consumables and spare parts for air compressor
3. Consumables and spare parts for generators
4. Consumables and spare parts for electrical logging instruments
5. Consumables and spare parts for geographical survey instruments
6. Consumables and spare parts for pumping test equipment
7. Consumables and spare parts for water quality analysis equipment
8. Consumables and spare parts for workshop equipment
9. Consumables and spare parts for vehicles
 - 9-1 Toyota Land Cruiser (Station Wagon)
 - 9-2 Nissan cargo truck with crane
 - 9-3 Nissan tank lorry truck
 - 9-4 Nissan truck for drilling rig
 - 9-5 Nissan truck for air compressor

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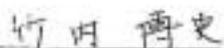
MINUTES OF DISCUSSIONS
ON
THE BASIC DESIGN STUDY ON THE PROJECT
FOR
RURAL WATER SUPPLY, PHASE 2
IN THE KINGDOM OF SWAZILAND
(EXPLANATION OF THE DRAFT BASIC DESIGN)

In November 2001, the Japan International Cooperation Agency (hereinafter referred to as "JICA") dispatched a Basic Design Study Team (The First Field Survey) to the Kingdom of Swaziland (hereinafter referred to as "Swaziland") and in March 2002, JICA dispatched a Basic Design Study Team (The Second Field Survey) to Swaziland. Through discussions, field surveys and technical examination of the results in Japan, JICA prepared a draft report of the study.

In order to explain to and consult with the Swaziland Government on the components of the draft report, JICA sent to Swaziland the Draft Report Explanation Team (hereinafter referred to as "the Team"), which is headed by Hiroshi TAKEUCHI, Staff, First Project Management Division, Grant Aid Management Department, JICA, from 13 May, 2002 to 20 May, 2002.

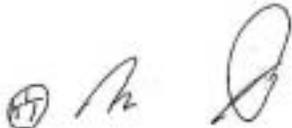
As a result of discussions, both parties confirmed the main items described on the attached sheets.

Minibane, 17 May 2002


Mr. Hiroshi TAKEUCHI
Leader
Draft Report Explanation Team
Japan International Cooperation Agency
(Japan)


Mr. Ephraim M. Hlophe
Principal Secretary
Ministry of Economic Planning &
Development
Kingdom of Swaziland


Mr. Sikelele F. Dlamini
Acting Principal Secretary
Ministry of Natural Resources and Energy
Kingdom of Swaziland



ATTACHMENT

1. Components of the Draft Report

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

2. Minutes of Discussions

Both sides read and confirmed again all the contents of the two previous Minutes of Discussions, one on the first basic design study of 23 November, 2001, and the other on the second basic design study of 21 March, 2002.

3. Japan's Grant Aid scheme

The Swazi side understands the Japan's Grant Aid Scheme and the necessary measures to be taken by the Government of Swaziland as explained by the Team and described in Annex-2 and Annex-3 of the Minutes of Discussions signed by both parties on 23 November, 2001.

Especially, the Japanese side reminded the Swazi side that, in the stage of examination, the Japanese government would examine the contents of the project based on the basic design study report and make the final decision on this grant aid project.

4. Schedule of the Study

JICA will complete the final report in accordance with the confirmed items and send it to the Government of Swaziland around August 2002.



5. Outline of the Project

(1) Target sites for Construction of Micro Schemes under the Project

Both sides confirmed that the Project is to construct 78 micro schemes (39 communities, 4 districts) in the rural areas of Swaziland.

(2) Scope of works to be undertaken by the Swazi side

1) Both sides confirmed that out of 78 sites, 20 sites are to be constructed by the Swazi side. The Swazi side agreed to make necessary budgetary arrangements and to provide sufficient members of staff for their work as shown in Annex- I.

2) Both sides agreed that the construction of the aprons and installation of the hand pumps at eight (8) successful boreholes, which were drilled during the Basic Design Study 2, would be conducted by the Swazi side. The Swazi side also agreed to start the construction work following the procurement by the Japanese side of materials such as cement, hand pump units, pipes, etc. for this work. The Swazi side agreed that these eight (8) boreholes are included in the Japanese side's target number of boreholes.

(3) Scope of works to be undertaken by the Japanese side

1) The Japanese side will conduct drilling works to attain cumulative drilling length of up to 8,100m with which 50 boreholes are expected to be successful given the success rate of 55% and average successful boreholes depth of 80m and unsuccessful boreholes of 100m. Casing and screens will be installed at the successful boreholes as production wells. Installation of hand pumps and construction of concrete aprons will be carried out by the Japanese side during the implementation stage. The number of boreholes to be installed with hand pumps will be at most 50.

2) If the success rate is found to be higher than the estimated rate, i.e. 50 successful

boreholes are attained before cumulated drilling length come to 8,100m, then, both sides will discuss what to do with the remaining meterage. If both sides agree to continue further drilling, the related facilities installation of hand pumps and construction of concrete aprons for the additional successful boreholes will be carried out by the Swazi side, at its own expense.

3) If a success rate is found to be lower than the estimated rate, when the cumulated drilling length comes to 8,100m, the Japanese side will terminate drilling and the corresponding number of boreholes out of the 50 will be constructed by the Japanese side. The remaining number of boreholes will be drilled by the Swazi side.

4) In case the first drilling attempt of a borehole is unsuccessful at a certain site, the second drilling attempt will be conducted. However, if the second borehole is also unsuccessful, then, it will be subject to discussion whether the third drilling should be conducted or not. If the third drilling is unsuccessful or both sides agree the third drilling is not conducted, no alternative site for unsuccessful borehole site will be considered.

6. Future scope by the Swazi side

The team explained that 50 boreholes to be constructed by the Japanese side will be drilled as test drilling sites during the detail design stage in order to collect and accumulate various hydro geological data. Software assistance ("soft component") will also be provided by the Japanese side to improve the capacity of the Swazi side to drill boreholes. The Swazi side understands that these activities will make it possible to implement effective and sustainable tubewell construction by the Swazi side.

The Swazi side promises to make proper budget allocation and staffing arrangements after completion of the project in order to conduct drilling of 10-15 boreholes a year in the future.

7. Components of the Japanese assistance

Both sides agreed that the assistance provided by the Japanese side would be composed of the following components when the Japanese Government finally decides to implement the Project.

- Construction of micro schemes in the sites which are listed in Annex-II
- Procurement of equipment and materials listed in Annex-III
- Assistance for construction of borehole facilities (Software Assistance)
- Assistance for Equipment Maintenance (Software Assistance)
- Support to public education and institutional strengthening for facility operation and maintenance by local communities (Software Assistance)

Annex I

Estimated Expenses for Micro Scheme Construction of Swazi Side

Description	Expenses	(Unit: 10 ⁶ yen)
		Remarks
(1) Procurement of construction materials for the taborekwa to be constructed by Swazi side.	5.64	Among items necessary for the construction by Swazi side, stone materials and consumables such as fuel, lubricants, sand, gravel and cable wires are borne by Swazi side.
(2) Provision of equipment provided under the phase I project necessary for the construction by Swazi side including maintenance and repair of these equipment.	30.38	Drilling rig, crane truck, air compressor, pick-up, etc.
(3) Drilling of boreholes for the taborekwa to be constructed by the Swazi side including construction of related facilities and installation of hand pumps.	2.64	The materials for the works are stated separately in Item (1), and the construction works are to be made by the participatory activities.
(4) Provision of staff and vehicles necessary for the training on drilling technology.	1.07	Staff: 13 number x 14 months Drilling vehicles (14 number)

Staffing of RWSS for Micro Scheme Construction of Swazi Side

No.	Job	Work Assignment	Number
1	Operation control	Construction plan, safety management, general O&M issues	1
2	Equipment and materials management	Management of materials, management of warehouse inventory, subcontract management	1
3	Maintenance management	Inspection of equipment, repair, removal plan	1
4	Drilling support	Drilling direction, quality control, safety assurance	1
5	Drilling assistant	Drilling direction, prevention of accidents	2
6	Drill rig operator	Operation of drilling equipment, daily checkups, operation management of machinery	4
Total			11

(57)

(57)

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Communities for Construction of Micro Schemes

Region	No.	Community	Surveyed		Estimated Community			Target Community		
			Household	Micro Scheme	Access Condition*	Demographic Data/Status**	Hydrogeological Condition***	Household	Micro Scheme	Drilled Well
Mozambique	M1-1	Mafate	180	3	A (1 site), B (2 sites)	F (1)	-	-	-	-
	M1-2	Mangochi	180	3	A	B	-	128	3	3
	M1-3	Lambungweni	170	3	A (1 site), B (1 site)	(1)	-	128	3	3
	M1-4	Micrombo	150	1	A	B	C	158	1	6
		Sub-total	580	10				420	14	12
Lusitani	L2-1	Senhabela	80	2	A	(1)	-	88	2	2
	L2-2	Luvuvu	80	1	B	(1)	-	88	1	1
	L2-3	Muzozai	30	1	A	(1)	C	28	1	-
	L2-4	Makabane	30	1	A	F	-	-	-	-
	L2-5	Ngwenya	40	1	A	(1)	C	48	1	-
	L2-6	Mphahlele	30	2	B (1 site), C (1 site)	F (1)	-	-	-	-
	L2-7	Tyuthu	185	2	A	(1)	-	88	2	3
	L2-8	Mphahlele/Chibambane	30	1	B	(1)	C	32	1	-
	L2-9	Nkandeni	30	1	A	(1)	-	32	1	1
	L2-10	Mphahlele	30	1	A	(1)	-	32	1	1
	L2-11	Mphahlele	30	2	B	(1)	-	32	2	2
	L2-12	Mphahlele/Magalo	40	1	B	(1)	-	48	1	1
	L2-13	Buchobochobos	41	1	A	(1)	-	48	1	1
	L2-14	Ilizakane	40	1	A	(1)	-	48	1	1
	L2-15	Ngwenya	40	1	A	F	-	-	-	-
	L2-16	Mphahlele	51	1	B	(1)	-	48	1	1
	L2-17	Mphahlele	41	1	B	F	-	-	-	-
	L2-18	Mphahlele	35	1	A	(1)	-	38	1	1
L2-19	Mphahlele (IV)	31	1	A	(1)	-	31	1	1	
L2-20	Mphahlele	38	1	A	F	-	-	-	-	
L2-21	Mphahlele	45	1	B	(1)	-	48	1	1	
L2-22	Mphahlele	48	1	B	(1)	-	48	1	1	
L2-23	Mphahlele	44	1	B	(1)	-	44	1	1	
L2-24	Mphahlele	32	1	B	(1)	-	-	-	-	
L2-25	Mphahlele V	41	1	B	F (1)	-	-	-	-	
L2-26	Mphahlele (I, II, III)	49	1	A	(1)	-	48	1	1	
		Sub-total	1,238	30				968	32	12
Mozambique	M3-1	Mphahlele	65	1	B	(1)	C	62	1	-
	M3-2	Mphahlele	80	1	B	(1)	-	88	1	1
	M3-3	Mphahlele	85	1	B	(1)	-	88	1	1
	M3-4	Mphahlele (I)	100	1	B	(1)	-	108	1	1
	M3-5	Mphahlele	100	1	B	(1)	-	108	1	1
	M3-6	Mphahlele	85	1	B	(1)	-	88	1	1
	M3-7	Mphahlele	250	1	B	(1)	C	258	1	4
	M3-8	Mphahlele	220	1	B	(1)	-	228	1	3
	M3-9	Mphahlele	180	1	B	(1)	-	188	1	3
	M3-10	Mphahlele	317	1	B	(1)	C	317	1	7
		Sub-total	1,898	10				1,898	10	29
Mozambique	M4-1	Mphahlele	30	1	C	(1)	-	-	-	-
	M4-2	Kajala	30	1	B	(1)	-	38	1	1
	M4-3	Mphahlele	31	1	B	(1)	-	38	1	1
	M4-4	Mphahlele	36	1	B	(1)	-	38	1	1
	M4-5	Mphahlele	35	1	A	(1)	-	35	1	1
	M4-6	Mphahlele	41	1	A	F	-	-	-	-
	M4-7	Mphahlele	34	1	B	(1)	-	34	1	1
	M4-8	Mphahlele	21	1	A	(1)	C	22	1	-
	M4-9	Mphahlele	41	1	B	F	-	-	-	-
	M4-10	Mphahlele/Chibambane	60	1	B	F (1)	-	-	-	-
		Sub-total	376	10				376	10	8
		Total	5,780	100				3,892	18	28

Note: A: All services, B: Standard, C: Not possible.
 W: No WSC, F: No land proposed, P: Total points are more than 5. 1: Total points of each community.
 ***: Results of the soil drilling conducted during the study.

List of Equipment and Materials for Construction of Tubewells by Swazi Side

I. Equipment and Materials for Construction of Micro Schemes

- Hand pumps for wells to be constructed by RWSB including spare parts and tools (VLOM type: Adifer and Bush types)
- Other Materials for wells to be constructed by RWSB
 - Casing/screen pipes and gravel materials including fittings
 - Cobble stones for soak pit
 - Concrete, gravels and sands for apron construction and pump installation
 - Other consumables and materials
- Construction equipment
 - Back hoe
 - Concrete mixer (0.2 - 0.3 m³)
 - Fuel tank trailer (2 m³)

II. Consumables and spare parts for the equipment and vehicles procured under the Phase I Project

- Consumables and spare parts for drilling rig and tools
- Consumables and spare parts for air compressor
- Consumables and spare parts for generators
- Consumables and spare parts for electrical logging instruments
- Consumables and spare parts for geophysical survey instruments
- Consumables and spare parts for pumping test equipment
- Consumables and spare parts for water quality analysis equipment
- Consumables and spare parts for workshop equipment
- Consumables and spare parts for vehicles
 - Toyota Land Cruiser (Station Wagon)
 - Nissan cargo truck with crane
 - Nissan tank lorry truck
 - Nissan truck for drilling rig
 - Nissan truck for air compressor

添付資料- 6 事業事前評価表

1. 協力対象事業名
スワジランド国 第2次地方給水計画
2. 我が国が援助することの必要性・妥当性
<p>(1) 我が国が当該国に対し援助することの必要性・妥当性</p> <p>スワジランド王国(以下ス国)は南アフリカ共和国東北部高原地域に存在する面積約17,000km²(岩手県と同程度)、人口約100万人の内陸国である。我が国はス国から柑橘類や木材を輸入し、我が国からファスナーや自動車を輸出するなど経済面を主とした交流がある。</p> <p>我が国は従前よりス国の民主化、経済改革への取り組みを支援するため、特に、貧困対策に資する地下水開発、食糧援助等の基礎生活分野を中心に協力してきた(スワジランド国地方給水計画(95~97年)等)が、現在もこの方針に変更はなく、当該分野を中心とする協力の必要性・重要性は高い。</p> <p>(2) 当該プロジェクトを実施することの必要性・妥当性</p> <p>我が国は下記の理由から当該プロジェクトを実施する。</p> <ul style="list-style-type: none"> ・ ス国の国家開発計画において地方部の家庭に衛生的な水供給を行うことが目標の一つに上げられている。 ・ 地方部の飲料水供給普及率は約49%と都市部の約90%に比較し著しく整備が遅れている。また、近年では井戸掘削資機材が不足し、また、基盤岩や火山岩が多い地質のため、掘削作業及び地下水探査が困難なことから、事業が計画通り進まない状況が発生している。このため、緊急性の高い井戸施工にあわせ、機材調達及び井戸探査・掘削指導を行う本案件の妥当性は高い。
3. 協力対象事業の目的(プロジェクト目標)
ス国地方部においてハンドポンプ付き井戸の建設、井戸建設にかかるスペアパーツ等の調達、及び、ス国側の継続的な給水整備事業を支援することにより、質・量ともに安定した飲料水を供給することを目的とする。
4. 協力対象事業の内容
<p>(1) 対象地域</p> <p>スワジランド国地方部全域</p> <p>(2) アウトプット</p> <ul style="list-style-type: none"> ・ 39村落(コミュニティー)に78基のハンドポンプ付き井戸が設置される。 ・ 地方給水局が保有する井戸建設用機材が修理・整備される。 <p>(3) インプット</p> <p>【日本側】</p> <ul style="list-style-type: none"> ・ 50基を目標とした総掘削深度8,100mの井戸建設 ・ 前回の地方給水計画(‘95~’97)にて供与された井戸建設用機材のスペアパーツ・交換部品類の調達 ・ 相手国側分担分の井戸建設に係る資機材の調達 ・ 井戸位置選定についての技術指導

- ・ 井戸掘削についての技術指導(OJT)
- ・ 水管理委員会の強化指導

【相手国側】

- ・ 78基より日本側建設数を差引いた井戸建設
- ・ 井戸掘削技術者の確保

(4) 総事業費

概算事業費 5.65 億円(日本側 5.17 億円、相手国側 0.48 億円)

(5) スケジュール

詳細設計期間を含め約 21 ヶ月

(6) 実施体制

実施機関：天然資源・エネルギー省地方給水局

5. プロジェクトの成果

(1) プロジェクトの裨益対象の範囲および規模

スワジランド国地方部全域

裨益人口：約 31,000 人

(2) 事業の目的(プロジェクト目標)達成を示す成果指標

成果指標	現在 (2002年8月)	事業実施後 (2004年3月)
村落給水普及率	49%	54%
村落給水人口	357,000人	388,000人

6. 外部要因リスク(事業の目的(プロジェクト目標)の達成に関するもの)

- ・ 相手国政府及び裨益住民により継続的に施設が建設・維持管理される。

7. 今後の評価計画

(1) 事後評価に用いる成果指標

- ・ 村落給水普及率
- ・ 村落給水人口

(2) 評価のタイミング

2005年以降