

Interview Survey Results on the Rural Water Supply Condition (JICA MCHINJI DISTRICT GROUNDWATER DEVELOPMENT PROJECT)



- d. Daily working hour : _____
- e. Water supply amount per Capita per day : _____
- f. Year of construction : _____

4 Committee and Tariff System

- (9) Committee
- a. Village health water committee (VHWC)
 - b. Water point committee (WPC)
 - c. Yes No, WPC is functioning well
 - d. Yes No, Water tariff is efficiently collected
 - e. Yes No, Village people have willingness to manage system by themselves
- (10) Coverage
- a. Population served with safe water _____ 0 (before 100%)
 - b. Coverage rate of safe water served _____ 0 (before 100%)
- (11) Tariff system
- a. Collection efficiency (%) : _____ No regular collection
 - b. Water tariff system _____
 - c. by bucket, water tariff by bucket : _____
 - d. by family, monthly water tariff by family : _____
 - e. Others : Haphazard collection in case of breakdown

Only 30% of villagers have willingness to pay. At the beginning of the service started, water tariff was collected regularly, but as the treasurer used money for other purposes, villagers refused to pay water tariff. However villagers are trying to prepare budget for repairing by getting the help from NGOs.

5 Water Quality and Water Borne Disease

- (12) Water quality
- a. Fair, Good, Not good but potable, Not potable
 - b. Problem of water quality _____
- (13) Water borne disease
- a. Number of inhabitants affected by water borne disease last year _____
 - b. Main water borne disease _____
Many patients of diarrhea after breakdown. Villagers use shallow well

6 Others

(12/22) Distance to the farthest family is 500m.

1 Location

- (1) TA _____ MLONYENI
- (2) Village name _____ CHAONONGEKA (No. 1-14)

2 Population and Household

- (3) Total population _____ 300
- (4) Number of household _____ 65
- (5) Main vocation _____ Agriculture
- (6) Average monthly household income _____

3 Water Supply Facilities

- (7) Water point type and number
- a. Deep well with handpump _____ 1 (No. 1-14)
- b. Unprotected shallow well _____ 2
- c. River, pond, lake, others _____
- (8) Functional condition
- a. Functional _____
- b. Under repair (Breakdown) _____
- c. Breakdown or Abandoned, Reasons of abandonment below:

Rods, riser pipe are worn down. Not functional since 2months ago. Three times of breakdown have been experienced since 1993. Villagers hope to be helped by NGOs.

Interview Survey Results on the Rural Water Supply Condition (JICA MCHINJI DISTRICT GROUNDWATER DEVELOPMENT PROJECT)



- d. Daily working hour : _____
- e. Water supply amount per Capita per day : _____
- f. Year of construction : _____

12 (before breakdown)

 1994

4 Committee and Tariff System

(9) Committee

- a. Village health water committee (VHWC)
- b. Water point committee (WPC)
- c. Yes No, VHWC and WPC are functioning well
- d. Yes No, Water tariff is efficiently collected
- e. Yes No, Village people have willingness to manage system by themselves

It was reported very weak

(10) Coverage

- a. Population served with safe water _____
- b. Coverage rate of safe water served _____

0 (before 100%)
 0 (before 100%)

(11) Tariff system

- a. Collection efficiency (%) : _____
- b. Water tariff system _____
- c. by bucket, water tariff by bucket :
- d. by family, monthly water tariff by family :
- e. Others : Haphazard collection in case of breakdown

K40 (before)

current
 The tariff mentioned above was determined by villagers according to CBM principle. In the beginning of the service started, the tariff was collected satisfactory, but the accumulated tariff was disappeared for several years. So, villagers stopped paying tariff. As the enough budget has not been collected so far, villagers decided to prepare money by delivering their maize.

5 Water Quality and Water Borne Disease

(12) Water quality

- a. Fair, Good, Not good but potable, Not potable
- b. Problem of water quality _____

little bit salty

(13) Water borne disease

- a. Number of inhabitants affected by water borne disease last year _____
- b. Main water borne disease _____

Many patients of diarrhea after

breakdown. Villagers use shallow well

6 Others

(13/22)

1 Location

- (1) TA _____
- (2) Village name _____

ZULU
 CHAMVEKA
 (NO. 2-92)

2 Population and Household

- (3) Total population _____
- (4) Number of household _____
- (5) Main vocation _____
- (6) Average monthly household income _____

200
 37
 Agriculture
 -

3 Water Supply Facilities

- (7) Water point type and number _____
- a. Deep well with handpump _____
- b. Unprotected shallow well _____
- c. River, pond, lake, others _____
- (8) Functional condition _____
- a. Unfunctional _____
- b. Under repair (Breakdown) _____
- c. Breakdown or Abandoned, Reasons of abandonment below:

1 (NO. 2-92)
 2

Un functional since February 2004. Five rods and riser pipe are breakdown. Total repairing cost will be estimated around K20,000 to K25,000. Three times of the breakdown have been experienced.

Interview Survey Results on the Rural Water Supply Condition (JICA MCHINJI DISTRICT GROUNDWATER DEVELOPMENT PROJECT)



- d. Daily working hour : 12hrs (before breakdown)
- e. Water supply amount per Capita per day : _____
- f. Year of construction : 1995

4 Committee and Tariff System

- (9) Committee
 - a. Village health water committee (VHWC)
 - b. Water point committee (WPC)
 - c. Yes No, VHWC and WPC are functioning well
 - d. Yes No, Water tariff is efficiently collected
 - e. Yes No, Village people have willingness to manage system by themselves
- (10) Coverage
 - a. Population served with safe water 0 (before 100%)
 - b. Coverage rate of safe water served 0 (before 100%)
- (11) Tariff system
 - a. Collection efficiency (%) : 35%
 - b. Water tariff system _____
 - c. by bucket, water tariff by bucket : _____
 - d. by family, monthly water tariff by family : K20/household/month
 - e. Others : Haphazard collection in case of breakdown

Tariff has been collected, but accumulated tariff has been used for other purposes by treasurer. So, there is no budget to repair even small parts of the pump. WPC intends to collect temporary tariff from the villagers, but it has not been successful until now.

5 Water Quality and Water Borne Disease

- (12) Water quality
 - a. Fair, Good, Not good but potable, Not potable
 - b. Problem of water quality _____
- (13) Water borne disease
 - a. Number of inhabitants affected by water borne disease last year Many diarrhea patients
 - b. Main water borne disease Diarrhea, no cholera

6 Others

(14/22) It seems that the WPC member does not tell truth.

1 Location

(1) TA ZULU
 (2) Village name KATHYUKA
 (No. 3-08) _____

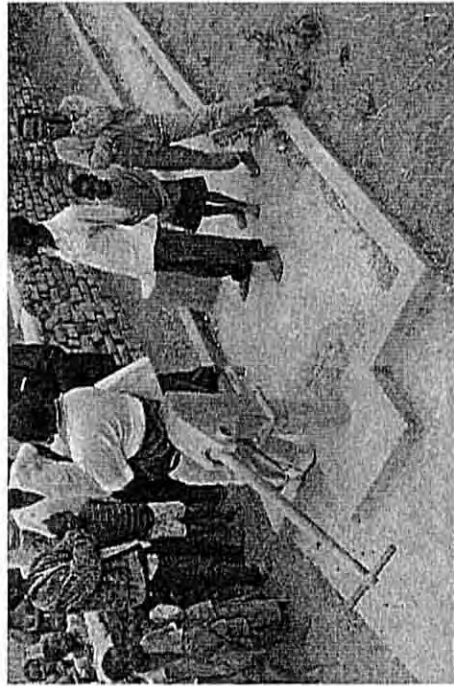
2 Population and Household

(3) Total population 300
 (4) Number of household 56
 (5) Main vocation Agriculture
 (6) Average monthly household income -

3 Water Supply Facilities

- (7) Water point type and number
 - a. Deep well with handpump 1 (No. 3-08)
 - b. Unprotected shallow well 2
 - c. River, pond, lake, others _____
- (8) Functional condition
 - a. Functional _____
 - b. Under repair (Breakdown) _____
 - c. Breakdown or Abandoned, Reasons of abandonment below:
 Rubber is worn out. Not functioning before 3 months ago.
 Breakdown has been experienced ten times since 1995.

Interview Survey Results on the Rural Water Supply Condition (JICA MCHINJI DISTRICT GROUNDWATER DEVELOPMENT PROJECT)



d. Daily working hour : 12hrs (before breakdown)
 e. Water supply amount per Capita per day : -
 f. Year of construction : 1995

4 Committee and Tariff System
 (9) Committee

a. Village health water committee (VHWC)
 b. Water point committee (WPC)
 c. Yes No, WPC is functioning well
 d. Yes No, Water tariff is efficiently collected
 e. Yes No, Village people have willingness to manage system by themselves

(10) Coverage
 a. Population served with safe water 0 (before 100%)
 b. Coverage rate of safe water served 0 (before 100%)

(11) Tariff system

a. Collection efficiency (%) : Unknown
 b. Water tariff system
 c. by bucket, water tariff by bucket :
 d. by family, monthly water tariff by family : K10 to K20/household/month
 e. Others : Haphazard collection in case of breakdown
 Tariff has been collected, but accumulated tariff has been used for other purposes by treasurer. So, there is no budget to repair the pump. WPC intends to collect temporary tariff from the villagers, but it has not been successful until now.

1 Location

(1) District ZULU
 (2) TA CHIKOLOKA
 (No.3-05)

2 Population and Household

(3) Total population 300
 (4) Number of household 58
 (5) Main vocation Agriculture
 (6) Average annual household income K15,000

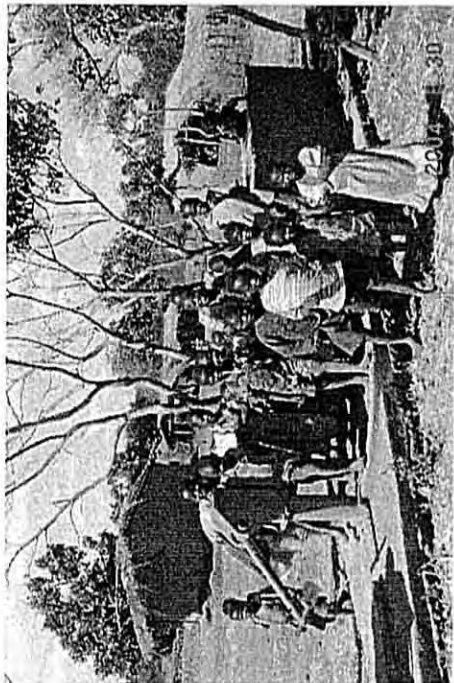
3 Water Supply Facilities

(7) Water point type and number 1 (No.3-05)
 a. Deep well with handpump
 b. Unprotected shallow well 6
 c. River, pond, lake, others
 (8) Functional condition
 a. Functional
 b. Under repair (Breakdown)
 c. Breakdown or Abandoned, Reasons of abandonment below:
 Six rods worn out. It has broken in 2002. Two times of breakdown has been experienced since 1995.

5 Water Quality and Water Borne Disease
 (12) Water quality
 a. Fair, Good, Not good but potable, Not potable
 b. Problem of water quality
 (13) Water borne disease
 a. Number of inhabitants affected by water borne disease last year
 b. Main water borne disease Many diarrhea patients
 Diarrhea, no cholera

6 Others
 (15/22)

Interview Survey Results on the Rural Water Supply Condition



- d. Daily working hour : 12
- e. Water supply amount per Capita per day : -
- f. Year of construction : 1997

4 Committee and Tariff System
(9) Committee

- a. Village health water committee (VHWC) No
- b. Water point committee (WPC) No tariff collection
- c. Yes No, WPC is functioning well
- d. Yes No, Water tariff is efficiently collected
- e. Yes No, Village people have willingness to manage system by themselves

(10) Coverage

- a. Population served with safe water Unknown
- b. Coverage rate of safe water served -

(11) Tariff system

- a. Collection efficiency (%) : No tariff collection
- b. Water tariff system -
- c. by bucket, water tariff by bucket :
- d. by family, monthly water tariff by family :
- e. Others : Haphazard collection in case of breakdown Enough money has not been collected yet

5 Water Quality and Water Borne Disease

- (12) Water quality Unprotected Shallow Well
- a. Fair, Good, Not good but potable, Not potable Chlorinated
 - b. Problem of water quality Not reported (chlorinated)

(13) Water borne disease

- a. Number of inhabitants affected -
- by water borne disease last year
- b. Main water borne disease -

6 Accessibility in Rainy Season

- (14) Road condition
- Easy Access throughout the year
 - Easy Access in dry season and difficult access in rainy season
 - Accessible in dry season but not accessible in rainy season
 - Not accessible even in dry season

- 7 Others Chlorinated lime which is given by health surveillance assistance under Ministry of Health is put into the shallow well.

- 1 Location
- (1) TA KHONGONI
 - (2) Village Name KASANDA

2 Population and Household

- (3) Total population 500
- (4) Number of household 50
- (5) Main vocation Agriculture
- (6) Average annual household income -

3 Water Supply Facilities

- (7) Water point type and number
- a. Deep well with handpump 1 (breakdown)
 - b. "Vonder" Hand drilled well with handpump
 - c. Protected shallow well with handpump
 - d. Gravity fed communal tap
 - e. Motorized communal tap
 - f. Unprotected shallow dug well 4 (Dumbo)
 - g. Spring
 - h. River, pond, lake, others
- (8) Functional condition (if one of a to e is checked in item (5))
- a. Functional
 - b. Under repair
 - c. Abandoned, Reasons of abandonment below: 1
Breakdown at 2001, rehabilitated at 1997, rods & riser main broken now (16/22)

Interview Survey Results on the Rural Water Supply Condition



1 Location
 (1) TA KHONGONI
 (2) Village Name MPHANDA

2 Population and Household
 (3) Total population 150
 (4) Number of household 30
 (5) Main vocation Agriculture
 (6) Average monthly household income -

3 Water Supply Facilities
 (7) Water point type and number
 a. Deep well with mechanic or handpump
 b. "Vonder" Hand drilled well with handpump
 c. Protected shallow well with handpump
 d. Gravity fed communal tap
 e. Motorized communal tap
 f. Unprotected shallow dug well
 g. Spring
 h. River, pond, lake, others
 (8) Functional condition (if one of a to e is checked in item (5))
 a. Functional
 b. Under repair
 c. Abandoned, Reasons of abandonment below:
1, dries up in dry season

d. Daily working hour : -
 e. Water supply amount per Capita per day : -
 f. Year of construction : -

4 Committee and Tariff System
 (9) Committee
 a. Village health committee (VHC)
 b. Water point committee (WPC)
 c. Yes No, VHC and WPC are functioning well
 d. Yes No, Water tariff is efficiently collected
 e. Yes No, Village people have willingness to manage system by themselves
 (10) Coverage
 a. Population served with safe water
 b. Coverage rate of safe water served
 (11) Tariff system
 a. Collection efficiency (%) : Not applicable
 b. Water tariff system
 c. by bucket, water tariff by bucket : _____
 d. by family, monthly water tariff by family : _____
 e. Others : _____

5 Water Quality and Water Borne Disease
 (12) Water quality
 a. Fair, Good, Not good but potable, Not potable
 b. Problem of water quality Chlorinated
 (13) Water borne disease
 a. Number of inhabitants affected by water borne disease last year Not reported
 b. Main water borne disease _____

6 Accessibility in Rainy Season
 (14) Road condition
 Easy Access throughout the year
 Easy Access in dry season and difficult access in rainy season
 Accessible in dry season but not accessible in rainy season
 Not accessible even in dry season

7 Others Chlorinated lime which is given by health surveillance assistance under Ministry of Health is put into the shallow well.
 (17/22)

Interview Survey Results on the Rural Water Supply Condition



- d. Daily working hour : _____
- e. Water supply amount per Capita per day : _____
- f. Year of construction : _____

- 4 Committee and Tariff System
- (9) Committee
- a. Village health water committee (VHWC)
 - b. Water point committee (WPC)
 - c. Yes No, VHWC and WPC are functioning well
 - d. Yes No, Water tariff is efficiently collected
 - e. Yes No, Village people have willingness to manage system by themselves
- (10) Coverage
- a. Population served with safe water _____
 - b. Coverage rate of safe water served _____
- (11) Tariff system
- a. Collection efficiency (%) : _____
 - b. Water tariff system _____
 - c. by bucket, water tariff by bucket :
 - d. by family, monthly water tariff by family :
 - e. Others : _____

- 5 Water Quality and Water Borne Disease
- (12) Water quality
- a. Fair, Good, Not good but potable, Not potable
 - b. Problem of water quality _____
- (13) Water borne disease
- a. Number of inhabitants affected by water borne disease last year _____
 - b. Main water borne disease _____

- 6 Accessibility in Rainy Season
- (14) Road condition
- Easy Access throughout the year
 - Easy Access in dry season and difficult access in rainy season
 - Accessible in dry season but not accessible in rainy season
 - Not accessible even in dry season

- 7 Others
- (18/22) _____
- Additional digging done because of dry up in dry season _____

- 1 Location
- (1) TA _____
- (2) Village Name _____
- 2 Population and Household
- (3) Total population _____
- (4) Number of household _____
- (5) Main vocation _____
- (6) Average annual household income _____

- 3 Water Supply Facilities
- (7) Water point type and number
- a. Deep well with mechanic or handpump _____
 - b. "Vonder" Hand drilled well with handpump _____
 - c. Protected shallow well with handpump _____
 - d. Gravity fed communal tap _____
 - e. Motorized communal tap _____
 - f. Unprotected shallow dug well _____
 - g. Spring _____
 - h. River, pond, lake, others _____
- (8) Functional condition (if one of a to e is checked in item (5))
- a. Functional _____
 - b. Repair needed (working but need repair) _____
 - c. Abandoned, Reasons of abandonment below: _____

Interview Survey Results on the Rural Water Supply Condition

Not Requested Village



- d. Daily working hour : _____
- e. Water supply amount per Capita per day : _____
- f. Year of construction : 1971

4 Committee and Tariff System

(9) Committee

- a. Village health water committee (VHWC)
- b. Water point committee (WPC)
- c. Yes No, WPC is functioning well
- d. Yes No, Water tariff is efficiently collected
- e. Yes No, Village people have willingness to manage system by themselves

(10) Coverage

- a. Population served with safe water 0
- b. Coverage rate of safe water served 0

(11) Tariff system

- a. Collection efficiency (%) : not collected presently
- b. Water tariff system 0
- c. by bucket, water tariff by bucket :
- d. by family, annual water tariff by family : berore (k50/family/year)
- e. Others : Haphazard collection in case of breakdown

5 Water Quality and Water Borne Disease

(12) Water quality

- a. Fair, Good, Not good but potable, Not potable
- b. Problem of water quality Little bit salty

(13) Water borne disease

- a. Number of inhabitants affected by water borne disease last year Two villagers died by chorela
- b. Main water borne disease Many diarrheea patients in rainy season
Chorela

6 Accessibility in Rainy Season

(14) Road condition

- Easy Access throughout the year
- Easy Access in dry season and difficult access in rainy season
- Accessible in dry season but not accessible in rainy season
- Not accessible even in dry season

7 Others The money (k8,000) for repair was stolen, after that, people has had no willingness to pay for repair.

(19/22)

1 Location

(1) TA KALOLO

(2) Village Name MATUNDULUZI

2 Population and Household

(3) Total population 322

(4) Number of household 60

(5) Main vocation Agriculture

(6) Average monthly household income -

3 Water Supply Facilities

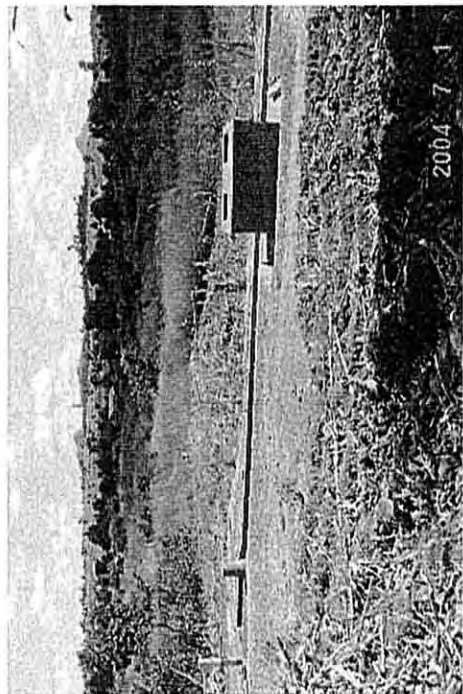
(7) Water point type and number

- a. Deep well with handpump 1 (breakdown)
- b. "Vonder" Hand drilled well with handpump _____
- c. Protected shallow well with handpump _____
- d. Gravity fed communal tap _____
- e. Motorized communal tap _____
- f. Unprotected shallow dug well 8
- g. Spring _____
- h. River, pond, lake, others _____

(8) Functional condition (if one of a to e is checked in item (5))

- a. Functional
- b. Under repair (not working for 3 months) 2
- c. Abandoned, Reasons of abandonment below:
Breakdown at 2000, Rods \$ riser pipes broken

Interview Survey Results on the Rural Water Supply Condition (JICA LILONGWE DEDZA PROJECT SITES)



- d. Daily working hour : 12hrs
- e. Water supply amount per Capita per day : 250 inhabitants/well
- f. Year of construction : 2003

4 Committee and Tariff System

- (9) Committee
 - a. Village health water committee (VHWC)
 - b. Water point committee (WPC)
 - c. Yes No, WPC is functioning well
 - d. Yes No, Water tariff is efficiently collected^{note}
 - e. Yes No, Village people have willingness to manage system by themselves

- (10) Coverage
 - a. Population served with safe water 512 inhabitants/3wells
 - b. Coverage rate of safe water served 100%
- (11) Tariff system No regular collection

- a. Collection efficiency (%) :
- b. Water tariff system
- c. by bucket, water tariff by bucket :
- d. by family, monthly water tariff by family : *) Note K50 at beginning
- e. Others

Note: In the beginning of the water supply implemented, the water tariff of k50/household/month was collected according to the instruction of the expansion workers, but presently the villagers deliver their grains once a year instead of the water tariff payment. The collected grains are sold and gained money is used for O/M. The average household deliver of the grains is estimated by around k4,000 to k5,000 annually. This system was employed by villagers themselves without any instruction of the expansion workers. WPC has opened bank account to save the collected money. The expansion workers visited the village once a week before handing over of the water supply facility, but no visiting after handing over.

5 Water Quality and Water Borne Disease

- (12) Water quality
 - a. Fair, Good, Not good but potable, Not potable
 - b. Problem of water quality
- (13) Water borne disease
 - a. Number of inhabitants affected
 - by water borne disease last year The water borne diseases have decreased
 - b. Main water borne disease in patients after the construction of the well

6 Others

The tariff collection system was changed because the enough money collected.

(20/22)

1 Location

- (1) TA CHAUMA
- (2) Village name MTHAWANTHU 1
two wells drilled in the village

2 Population and Household

- (3) Total population 516
- (4) Number of household 120
- (5) Main vocation Agriculture
- (6) Average monthly household income

3 Water Supply Facilities

- (7) Water point type and number
 - a. Deep well with handpump 1
 - b. Unprotected shallow well
 - c. River, pond, lake, others
- (8) Functional condition
 - a. Functional
 - b. Under repair (Breakdown)
 - c. Breakdown or Abandoned, Reasons of abandonment below:

Interview Survey Results on the Rural Water Supply Condition (JICA LILONGWE DEDZA PROJECT SITES)

d. Daily working hour : 12
 e. Water supply amount per Capita per day : -
 f. Year of construction : 2003

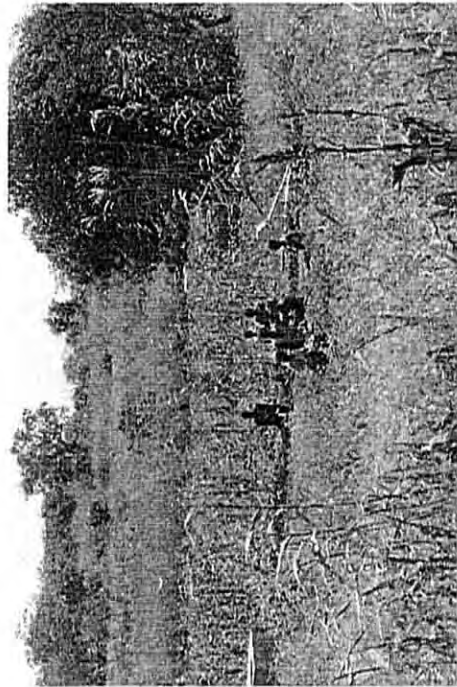
- 4 Committee and Tariff System
 (9) Committee
 a. Village health water committee (VHWC)
 b. Water point committee (WPC)
 c. Yes No, VHWC and WPC are functioning well
 d. Yes No, Water tariff is efficiently collected
 e. Yes No, Village people have willingness to manage system by themselves
- (10) Coverage
 a. Population served with safe water 1,032 inhabitants/3wells
 b. Coverage rate of safe water served 100%

- (11) Tariff system
 a. Collection efficiency (%) :
 b. Water tariff system
 c. by bucket, water tariff by bucket :
 d. by family, monthly water tariff by family : *) Note K20 at beginning
 e. Others current

Note: In the beginning of the water supply implemented, the water tariff of k20/household/month was collected according to the instruction of the expansion workers, but presently the tariff is gained from the common garden which is cultivated by the villagers without rewards. The grains harvested from the common garden are sold and gained money is used for O/M. The average income from the common garden is estimated by around k1,750 annually. This system was employed by villagers themselves without any instruction of the expansion workers. WPC has opened bank account to save the gained money. The expansion workers visited the village three times a month before handing over of the water supply facility, but no visiting after handing over.

- 5 Water Quality and Water Borne Disease
 (12) Water quality
 a. Fair, Good, Not good but potable, Not potable
 b. Problem of water quality
 (13) Water borne disease
 a. Number of inhabitants affected
 by water borne disease last year The water borne diseases have decreased
 b. Main water borne disease in patients a Patients of the water borne disease

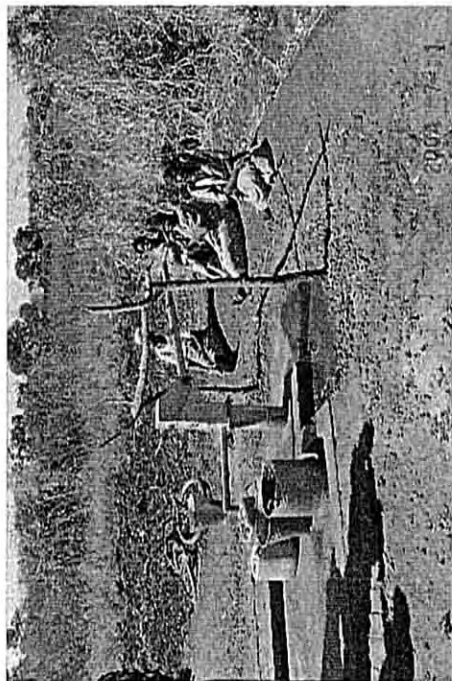
- 6 Others
 (21/22) The tariff collection system was changed because many villagers did not pay water tariff.



- 1 Location
 (1) TA CHAUMA
 (2) Village name CHIKUMBA 1
 3 wells drilled in the village
 (3) Total population 1,032
 (4) Number of household 240
 (5) Main vocation Agriculture
 (6) Average monthly household income -

- 3 Water Supply Facilities
 (7) Water point type and number
 a. Deep well with handpump 1 (NO. 1)
 b. Unprotected shallow well
 c. River, pond, lake, others
 (8) Functional condition
 a. Functional
 b. Under repair (Breakdown)
 c. Breakdown or Abandoned, Reasons of abandonment below:

Interview Survey Results on the Rural Water Supply Condition (JICA LILONGWE DEDZA PROJECT SITES)



- d. Daily working hour : 12hrs
- e. Water supply amount per Capita per day : -
- f. Year of construction : 2003

4 Committee and Tariff System

(9) Committee

- a. Village health water committee (VHWC)
- b. Water point committee (WPC)
- c. Yes No, VHWC and WPC are functioning well
- d. Yes No, Water tariff is efficiently collected
- e. Yes No, Village people have willingness to manage system by themselves

(10) Coverage

- a. Population served with safe water 430 inhabitants/well
- b. Coverage rate of safe water served -

(11) Tariff system

- a. Collection efficiency (%) : -
- b. Water tariff system -
- c. by bucket, water tariff by bucket : -
- d. by family, monthly water tariff by family : * Note
- e. Others at beginning current

Note: In the beginning of the water supply implemented, the water tariff of k50/household/month was collected according to the instruction of the expansion workers, but presently the tariff is gained from the common garden which is cultivated by the villagers without rewards. The grains harvested from the common garden are sold and gained money is used for O/M. The average income from the common garden is estimated by around k5,000 annually. This system was employed by villagers themselves without any instruction of the expansion workers. WPC does not have bank account. The expansion workers visited the village every week before handing over of the water supply facility, but no visiting after handing over.

5 Water Quality and Water Borne Disease

(12) Water quality

- a. Fair, Good, Not good but potable, Not potable
- b. Problem of water quality -

(13) Water borne disease

- a. Number of inhabitants affected -
- b. by water borne disease last year The water b. Patients of the water borne disease
- b. Main water borne disease in patients a after the construction of the well

6 Others

(22/22) The tariff collection system was changed because many villagers did not pay water tariff.

1 Location

- (1) TA CHAUMA
- (2) Village name LINYAMA

One well drilled in the village

- (3) Total population 430
- (4) Number of household 100
- (5) Main vocation Agriculture
- (6) Average monthly household income -

3 Water Supply Facilities

- (7) Water point type and number
 - a. Deep well with handpump 1
 - b. Unprotected shallow well -
 - c. River, pond, lake, others -
- (8) Functional condition
 - a. Functional -
 - b. Under repair (Breakdown) -
 - c. Breakdown or Abandoned, Reasons of abandonment below: -

資料 1 0 質問票に対する回答

RESPONSES TO QUESTIONNAIRE FROM PRELIMINARY STUDY TEAM - JICA

WATER QUALITY

- No fluorine or cadmium in Project areas
- No cases where Boreholes have been closed due to contamination from fluorine or cadmium.
- Where fluorine or cadmium traces have been found the contents have not been higher than World Health Organization (WHO) Standard to warrant any action such as detailed studies or rectifying measures.

DRILLERS' RESPONSE

Number of Boreholes drilled by Rigs.

1-1 BACKGROUND OF THE PROJECT

- (1) Reason for low coverage in the requested Traditional Authorities is that Nationally there is no proper database for water facilities coverage. Hence resources were not evenly distributed/targeted.
- (2) The overall objective of National Water Development Project, PRSP, dispersed Borehole construction, MASAF Project, OPC Project, PHAST and other Projects is to achieve 7,000 Wells Drilling Programme and maximise health benefits through community participation.
- (3) No, there is no on-going or under planning RWS Projects in the requested areas.
- (4) The projections were done at different times without full assessment of available resources, facilities and consultations with stakeholders hence the differences in targets set.
- (5) The problems of Community Based Management to be improved are:
 - Lack of follow-up after implementation
 - Lack of replicability of trained committees
 - Lack of resources
 - Lack of capacity/trained personnel

1-2 Outline of the Project

(1) Project Area

- Population in requested Traditional Authorities is:

TA Kalolo – 100,039 (1998 Census)

TA Khongoni – 73,312 (1998 Census)

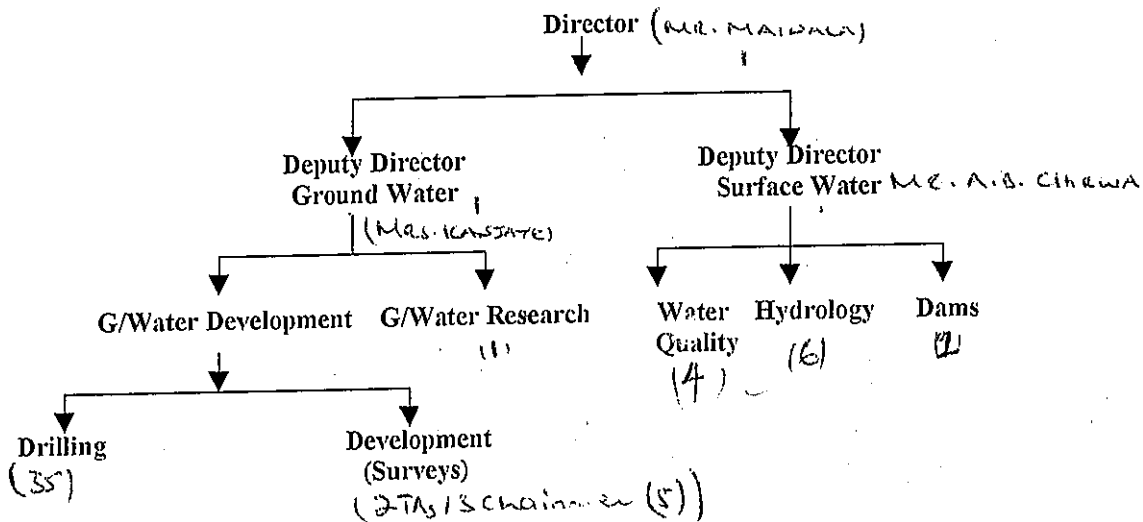
- High population density and inadequate or no water facility(ies).

- There is Data on water supply conditions of the villages in the requested TAs but not socio-economic data.

- Rehabilitation normally requires less resources hence the exercise can be ably handled by Government resources and are fewer facilities needing attention such that other players have been doing rehabilitation in these areas.

1-3 Organization of the Implementing Agency

(1) Structure of WRD



- Budget for WRD for the last 5 years:

1999 _____

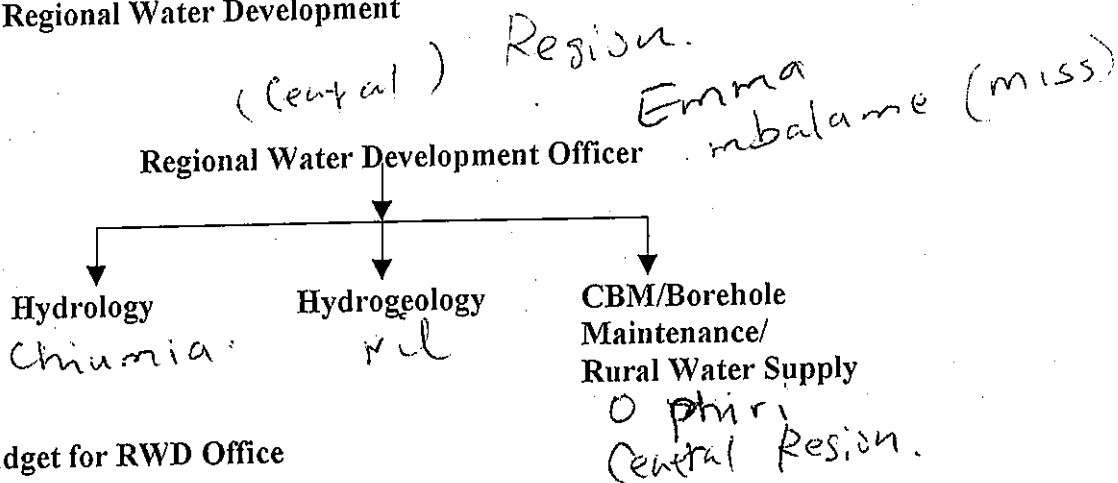
2000 _____

2001 _____

2002 _____

2003 _____

Structure of Regional Water Development



Budget for RWD Office

1999	_____
2000	_____
2001	_____
2002	_____
2003	_____

- (3) There are no plans to privatise the Drilling Section and the Monitoring/Research Section of MoWD in future.
- (4) Yes. Yearly budgets include maintenance costs of equipment including Drilling Rigs.
- (6) The present conditions of the supply chain of the spare parts is through Chipiku Stores distributed throughout the country and close to the communities needing spare parts.
- (7) Currently there are plans to involve Private Sector known as Local Service Providers in the operation and maintenance of Rural Water Supply but not in the Management.

2. Activities of Other Donors, NGOs

- (1) There is only one NGO which was involved in rehabilitation of defunct boreholes . The NGO known as Naitondo Parish was repairing boreholes at a fee which the communities was not affordable.
- (2) Average cost of water supply facilities (Borehole) is MK420,000 and duration was almost 7 days from siting , drilling and construction of ancillary structures and training of communities.

- (3) The Ministry's Extension Workers plus those from Ministry of Health, Community Services undertake the education, mobilization of the village people and monitoring of rural water supply in the Projects of other Donors and NGOs.
- (4) Some are functioning well, others are not. The main problems are some facilities have outlived their lifespan, others lack proper maintenance due to defunct trained committees. In others there was no training at all.

3. Questions on Social and Environmental Issues

- (1) None
- (2) Preference comes second to availability. People drink whatever is available.
- (3) -
- (4) Yes.
- (5) Refresher courses both internal and external
On -Job-Training.
- (6) There are no any private water vendors in the requested TAs.

4. Local Contractors and Markets

- (1) Yes, there are available. But we do not know the unit cost of the socio-economic surveyors but can be tendered out.

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(3) Utilization of Drilling Equipment and related matters procured under Japan's Grant Aid Programs

How is the condition of the 4 sets of drilling equipment and supporting vehicles and/or related survey/testing instruments procured under Japan's grant aid program?

Simply show the condition of the equipment by filling up the attached tables.

Details will be surveyed through interview with the persons in charge of equipment management/maintenance. Kindly tell us the name and position of the persons.

<u>M. CHIRAMBO</u>	<u>HYDROGEOLOGIST</u>
<u>R. CHIWALA</u>	<u>HYDROGEOLOGICAL OFFICER</u>
<u>R.D. BOTOMANI</u>	<u>HEAD MECHANIC</u>

In filling the column of 'Condition' in the table, use following A~D ranking;

- A. Well-maintained, and can be used at any time.
- B. Not used at this moment, waiting for a slight repair. Parts for repair is available in Malawi. (Major parts required: NOT APPLICABLE)
- C. Not used at this moment, waiting for a drastic repair or overhaul. Parts for repair is not available in Malawi, or not affordable. (Major parts required: NOT FOUND)
- D. Abandoned due to 'Worn-out / crashed'

(4) Number of the wells constructed by utilization of the drilling rigs mentioned in (3)

Kindly inform us the number of the wells so far constructed by filling up the column of the 'Number of the wells' in the same tables mentioned in above (3).

If possible, add the total drilling length including failed well, in the column.

drillers

(5) Water Quality

The previous study reports describe that fluorine or cadmium contaminated groundwater has been found in some places.

Kindly show the areas on the map, where fluoride or cadmium compound has ever detected with higher content over WHO standard, or give us the copy of the materials of detailed study on water quality in Malawi, especially of those in the project areas.

What were the countermeasures so far taken upon such items being detected?

Please give information by area, together with such countermeasures of followings;

- Filled back or close the drilled borehole for not using water from the well
- Made recommendation to the users not to use water for drinking purpose
- The villagers have been allowed to use the well based on the understanding that the quality is not so serious problem because of permissible level.
- The study is going on how to cope with this problem.

GM/MW 005 号 7/4

Questionnaire regarding Groundwater Development

(1) Accessibility to the villages concerned from Lilongwe especially for heavy trucks to drill boreholes

Please show accessibility to each village located in the 2 TAs of KHONGONI and KALOLO by the following A-D ranking, by filling the column of 'Accessibility' in the table of Village List.

- A. Roads and bridges are passable throughout the year
- B. Passable in dry season, but a little bit difficult in rainy season
- C. Passable provided that some portion of road or bridge is improved
- D. Difficult access for heavy trucks

(2) Progress of 7000 borehole well construction program planned in 2002

Your Government has established the plan of 7000-well construction in the 3 years of 2002-2004. How is the attainment of the program?

Please show the number of borehole wells along with the title of the project.

Project Title or covered Area	Year:	Number of the Well drilled
3,000 BOREHOLE PROGRAMME	2001-2002	3,000
800 BOREHOLE PROGRAMME	2002	860
400 BOREHOLE PROGRAMME	2003-04	600
500 BOREHOLE PROGRAMME	2001-03	500
1000 MANGOCHI EAST PROJECT	2002	600 (CONTINUING)
177 LILONGWE-DEDZA PROJECT	2002-04	177
AD HOC PROGRAMME	CONTINUOUS	350
Total number of the well constructed		6087 (87%)

Do you have any idea to fulfill this construction plan, by period extension or by requesting foreign assistances?

YES THROUGH REQUESTING FOREIGN ASSISTANCE
 SUCH AS JICA, NORAD, KFW FUNDED
 PROJECTS AND HARNESSING LOCAL RESOURCES

7

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Area of groundwater contamination	Countermeasures taken
LAILES HOPE AREAS (KARONGA, NKHOTAKOTA CHIRADZULU)	NONE

Are there any other places where some hazardous minerals or compound other than fluorine/cadmium been detected? If so, mention here, and show where the places on the map.

Item	Content level	
SALINITY	100 mg/l	MANGOCHI, NSANJE, CHIKWAWA (MOST OF THESE PLACES IT IS JUST A POCKET OF SALINE G/WATER).

(6) Ratio of successful Well Construction

The well drilling occasionally fails by hitting poor quality groundwater, or by not hitting expected amount of groundwater especially in the areas of the basement complex, being obliged to drill another well.

Please show the areas where frequent re-drilling works were common based on the experience in the past well construction. Or, simply list up the project area where frequent re-drilling was obliged, with percentage of successful well.

— NO PROJECT AREA HAS THE PROBLEM OF HITTING DRY HOLES.
EXCEPT IN SOME PARTS OF MZIMBA WEIT PROJECT AND LILONGWE-DEDZA PROJECT ESPECIALLY IN TA TAMBALA.

Lists of Equipment for Groundwater Development
procured under Japan's Grant Aid Programs
and
Operational Conditions of the Equipment/Vehicles, and
Well Construction Works accomplished by Use of them

	Year of Procurement	Related Project Area
(1) ①-1	1989	Kawinga North
(2) ①-2	1989	Kawinga North
(3) ②	1992	Mchinji
(4) ③	1997	Mzimba West
(5) ④	2002	Lilongwe~Dedza

Year	Number of Wells constructed by use of FSW-7T-S22 (1) in 1990-2004		Project Title	Number/Length drilled
	Year	Project Title		
	KAMRANGA			
		MG 178A		157 ft, the project 836 booklets
		MG 177L		160 for the project 70 booklets
		Rig MG 179L		230 booklets
		MG 178L		1093 booklets
Number totals				1323 booklets
Length totals including failed well				33075 m

Item and Type	A-D	Operational Condition (Rank A~D) and Major Parts required for Recovery of function	
		Operational Condition	Major Parts
Drilling Machine [FSW-7T-S22]	A	GOOD OPERATIONAL CONDITION	
Mounting Truck	A	GOOD OPERATIONAL CONDITION	
Cargo Truck with Crane [5-ton Load]	D	ACCIDENT DAMAGED	
Cargo Truck with Crane [3-ton Load]		OFF ROAD DAMAGED	
Pick-up Truck (Double Cabin)	D	ACCIDENT DAMAGED	
Station Wagon []	D	ACCIDENT DAMAGED	
Truck for Compressor []	A	GOOD OPERATIONAL CONDITION	
Vehicle for Pumping Test []	D	ACCIDENT DAMAGED	
Air Compressor [PDSH-750]	A	GOOD OPERATIONAL CONDITION	
Portable Air Compressor [PDS-125]	C~D	NOT WORKING / DAMAGED	
Diesel Engine Generator [DCA-27PI]	C~D	NOT WORKING / DAMAGED	

Item and Type	A-D	Operational Condition (Rank A-D) and Major Parts required for Recovery of function	Year	Project Title	Number/Length drilled
Drilling Machine	C	MAJOR PARTS REQUIRED		KAWANSA	837
		GOOD OPERATIONAL CONDITION			
Mounting Truck	B	GOOD OPERATIONAL CONDITION		KAWANSA	77
		GOOD OPERATIONAL CONDITION			
Cargo Truck with Crane [5-ton Load]	A	GOOD OPERATIONAL CONDITION		KAWANSA	77
		GOOD OPERATIONAL CONDITION			
Cargo Truck with Crane [3-ton Load]	C	ENGINE PROBLEM, DAMAGED		KAWANSA	77
		ENGINE PROBLEM, DAMAGED			
Pick-up Truck [Double Cabin]	D	ACCIDENT / DAMAGED		KAWANSA	77
		ACCIDENT / DAMAGED			
Station Wagon []	D	ACCIDENT (DAMAGED)		KAWANSA	77
		ACCIDENT (DAMAGED)			
Truck for Compressor []	A	GOOD OPERATIONAL CONDITION		KAWANSA	77
		GOOD OPERATIONAL CONDITION			
Vehicle for Pumping Test []	D	DAMAGED		KAWANSA	77
		DAMAGED			
Air Compressor [PDSH-750]	B	MAJOR PARTS REQUIRED		KAWANSA	77
		MAJOR PARTS REQUIRED			
Portable Air Compressor [PDS-125]	D	DAMAGED		KAWANSA	77
		DAMAGED			
Diesel Engine Generator [DCA-27PI]	D	DAMAGED		KAWANSA	77
		DAMAGED			
<p>Number totals _____</p> <p>Length totals _____ m</p> <p>including failed well</p>					

Item and Type		Operational Condition (Rank A~D) and Parts required for Recovery of Function		Year	Project Title	Number / Length drilled
		A~D	Function			
Drilling	Drilling Machine	[FSW-7T-S30]	GOOD OPERATIONAL CONDITION		Rig MG 084	Maximum depth HEM 145 ftg
	Mounting Truck		GOOD OPERATIONAL CONDITION			
Rig and Supporting	Cargo Truck with Crane (1) [5-ton Load]		ACCIDENT DAMAGED		Rig MG 178L	185 ftg
	Cargo Truck with Crane (2) [5-ton Load]		DAMAGED / PARTS REQUIRED			
	Cargo Truck with Crane (3) [3-ton Load]		DAMAGED OPERATIONAL CONDITION			
Vehicles*	Pick-up Truck (1) [Double Cabin]		ACCIDENT / DAMAGED			
	Pick-up Truck (2) [Double Cabin]		DAMAGED			
Equipment	Station Wagon (1) []		ACCIDENT / DAMAGED			
	Station Wagon (2) []		ACCIDENT / DAMAGED			
Procured in 1992	Truck for Compressor []		ACCIDENT / DAMAGED			
	Vehicle for Pumping Test []		GOOD OPERATIONAL CONDITION			
	Air Compressor [PDSH-750]		GOOD OPERATIONAL CONDITION			
	Portable Air Compressor [PDS-125]		GOOD OPERATIONAL CONDITION			
	Diesel Engine Generator [DCA-27PI]		GOOD OPERATIONAL CONDITION			
Number totals <u>21</u> 330 Length totals <u>4850</u> ftg including failed well _____ ftg						

Item and Type	Operational Condition (Rank A-D) and Major Parts required for Recovery of function		Year	Project Title	Number Length drilled
	A-D				
Drilling Machine	[FSW-7T-S38]			Rig Mt 254	160+
	Mounting Truck				Project 166
Cargo Truck with Crane (1) [3-ton Load]		GOOD OPERATIONAL CONDITION		Rig Mt 930	287+
		GOOD OPERATIONAL CONDITION			Project 160
Cargo Truck with Crane (2) [8-ton Load]		GOOD OPERATIONAL CONDITION		Rig Mt 171	40
		GOOD OPERATIONAL CONDITION			
Pick-up Truck (1) [Double Cabin]		MAJOR PARTS REQUIRED			
Pick-up Truck (2) [Double Cabin]		MINOR PARTS REQUIRED			
Pick-up Truck (3) [Double Cabin]		DAMAGED, MAJOR PARTS REQUIRED			
Pick-up Truck (4) [Single Cabin]		MINOR PARTS REQUIRED			
Pick-up Truck (5) [Single Cabin]		MAJOR PARTS DAMAGED		Rig Mt 254	320
Truck for Compressor []		OPERATIONAL CONDITION		Rig Mt 930	447
Vehicle for Pumping Test []		GOOD OPERATIONAL CONDITION			
Air Compressor [PDSH-750]		GOOD OPERATIONAL CONDITION			
Portable Air Compressor [PDS-125]		GOOD OPERATIONAL CONDITION			
Diesel Engine Generator [DCA-27PI]		GOOD OPERATIONAL CONDITION			
Station Wagon (1) []		N/A			
Station Wagon (2) []		N/A			
Number totals					447, 807
Length totals including failed well					3635 m

Item and Type/Specification of the Equipment and Materials for Groundwater Development, procured in 2002 for Execution of Rural Water Supply Projects		Remarks on Operational Condition of each Item, and Problems or necessary Countermeasures, if any
Drilling Machine	[]	GOOD OPERATIONAL CONDITION
Mounting Truck		GOOD OPERATIONAL CONDITION
Truck-mounted Air Compressor	[]	GOOD OPERATIONAL CONDITION
Cargo Truck with Crane	[5-ton Load]	GOOD OPERATIONAL CONDITION
Pick-up Truck	[Single Cabin]	GOOD OPERATIONAL CONDITION
Pick-up Truck	[Double Cabin]	GOOD OPERATIONAL CONDITION
Truck for Workshop	[3-ton truck with Crane]	GOOD OPERATIONAL CONDITION
Workshop Tools	Diesel Engine Generator []	GOOD OPERATIONAL CONDITION
	Motor Compressor []	GOOD OPERATIONAL CONDITION
	Welding Machine []	GOOD OPERATIONAL CONDITION
	Grinder, Drill, Jib-Crane, etc.	GOOD OPERATIONAL CONDITION
Truck for W/Development [3-ton truck w/ crane]		GOOD OPERATIONAL CONDITION
W/Development Tools	Portable Compressor []	GOOD OPERATIONAL CONDITION
	Submersible Motor Pump []	MINOR PARTS REQUIRED
	Tools for Air-Lifting []	GOOD OPERATIONAL CONDITION
	W/Level meter, pH meter, EC meter, Etc.	GOOD OPERATIONAL CONDITION
Electric Resistivity Survey Instrument []		OPERATIONAL CONDITION
Electric Resistivity Logging Apparatus []		OPERATIONAL CONDITION
Motorbike (1)	[Off-road]	OPERATIONAL CONDITION
Motorbike (2)	[Off-road]	OPERATIONAL CONDITION
Motorbike (3)	[Off-road]	OPERATIONAL CONDITION