Town :	***No. & Facility:***	***Year of Construction***	***Financed by:***
Suai	06 - Maugusu Spring Intake		

Existing Condition:

Facilities: Water collection tank
Structure: concrete
Dimension:
Observed flow: less than 0.5 L/sec in 10 / 20 / 2000
Function: spring water collection

Elevation (amsl) :
Accessories: none

Photograph:

(Date:)

Evaluation:

1. In operation.
2. Yield decreases in dry season.
3. Quality of water decreases during rainy season.
4. Lacks routine maintenance.
5. Source is not well-secured.

Rehabilitation Plan:

1) Basic Consideration :

Routine maintenance of the facilities to be improved. Water source to be well-secured.

2) Civil Architectural:

a) Construction of grit chamber (2m x 2m x 1.5m)
b) Installation of security fence.

3) Piping work:

Interconnection of the existing pipeline at intake (50mm)

4) Mechanical work: none

5) Electrical work: none

6) Miscellaneous: none

Estimated cost:	***Construction schedule:***	***Priority:***
US$5,510		B-2

Town :	***No. & Facility:***	***Year of Construction***	***Financed by:***
Suai	07 - Bereluik 1		Portuguese gov't

Existing Condition:

Facility: Service reservoir
Structure: Reinforced Concrete
Shape: Rectangular
Dimension: 7.4m x 5.5m x 5.0m
Capacity: $180m^3$
Function: Storage
Source of Water: Kululai & Maugusu, and from Bereluik 2 reservoir

Elevation (amsl) :
Accessories: ventilators, overflow & drains

Photograph:

(Date:)

Evaluation:

1. In operation.
2. No flow control and measuring equipment.
3. Lacks routine maintenance.

Rehabilitation Plan:

1) Basic Consideration :

Routine maintenance to be improved. Installation of flow control and measuring devices .

2) Civil Architectural: none

3) Piping work:

Rearrangement of pipelines to include the installation of flow control and measuring devices and water level gauge.

4) Mechanical work: none

5) Electrical work: none

6) Miscellaneous: none

Estimated cost:	***Construction schedule:***	***Priority:***
US$3,631		B-2

Town :	***No. & Facility:***	***Year of Construction***	***Financed by:***
Suai	08 - Bereluik 2		AusAID

Existing Condition:

Facility: Service reservoir
Structure: Steel with vinyl coating
Shape: Circular
Dimension: ø7m x 2.5m ht.
Volume: 96m^3
Function: Storage
Source of Water: Ameriko and Olivio
Elevation (amsl) :
Accessories:
Water level gauge and flow control valves

Photograph:

(Date:)

Evaluation:

1. In operation.
2. Routine maintenance to be improved.

Rehabilitation Plan:

1) Basic Consideration :
The reservoirs (1 and 2) site should be securely fenced.

2) Civil Architectural: construction of staff house for operation

3) Piping work: none

4) Mechanical work: none

5) Electrical work: none

6) Miscellaneous: repair of level meter

Estimated cost:	***Construction schedule:***	***Priority:***
US$5,433		B-2

Town	**No. & Facility:**	**Year of Construction**	**Financed by:**
Suai	09 - Proposed		

Proposed Condition:

Facility : Slow sand filtration
Design Filtration Rate: 4.5m/day
Source from: Americo, Kuluai, Olilvio, Maugusu
Supply to: Leugore 1&2
Elevation (amsl) :
Note: The proposed slow sand filters will be constructed close to the existing Bereluik reservoirs.

Photograph:

Evaluation:

The water quality from the source requires treatment of the water prior to distribution.

Rehabilitation Plan:

1) Basic Consideration:

Design intake rate at the existing four surface water sources (Americo, Kuluai, Olivio, Mauguso) is 12L/sec in total. Two basins of SSF will be constructed.

Assuming design filtration rate 4.5m3/m2/day, required surface area for filtration is computed as follows:

= 12 * 86,400/1000 / 4.5

= 230 m^2

2) Civil Work:

Construction of SSF, concrete apron for sand washing (below are the specifications), fence and staff house.

SSF:	Apron:
Filtration rate: 4.5m3/m2/day	Structure: concrete
Size: 8m x 15m - two basins	Size: 8m x 12m x 40cm height separated into two

3) Piping work:

150mm & 200mm GS pipe installation.
Installation of gate valves, flow meter and controller and other appurtenances.
200mm GS pipe installation to interconnect to the existing

4) Mechanical work: none

5) Electrical work: none

6) Miscellaneous:

Installation of chlorination facilities.
Land acquisition with approximate area, A = 1,600 m^2

Estimated cost:	**Construction schedule:**	**Priority:**
US$170,381		B-2

Town :	***No. & Facility:***	***Year of Construction***	***Financed by:***
Suai	10 - Leugore 1		Portuguese gov't

Existing Condition:

Facility: Service reservoir
Structure: Reinforced Concrete
Shape: Rectangular
Dimension: 6m x 5m x 3m
Volume: $90m^3$
Function: Storage
Source of Water: Bereluik 1
Elevation (amsl) :
Accessories: none

Photograph:

(Date:)

Evaluation:

1. In operation.
2. Lacks routine maintenance.

Rehabilitation Plan:

1) Basic Consideration :

This reservoir, which is supplied from the surface water sources through Bereluik 1 was constructed to supply the consumers located at the high zone. Due to limited supply, water shortage is experienced at the higher zone.

2) Civil Architectural: none

3) Piping work:

Installation of flow control and measuring devices.

4) Mechanical work: none

5) Electrical work: none

6) Miscellaneous:

Installation of chlorine dosage devices

Estimated cost:	***Construction schedule:***	***Priority:***
US$5,579		B-2

Town :	***No. & Facility:***	***Year of Construction***	***Financed by:***
Suai	11 - Leugore 2		Australia

Existing Condition:

Facility: Service reservoir
Structure: Steel with vinyl coating
Shape: Circular
Dimension: ø7m x 2.5m height
Volume: 96m^3
Function: Storage
Source of Water: Bereluik 2 and Hospital Reservoir
Elevation (amsl) :
Accessories:
Water level gauge

Photograph:

(Date:)

Evaluation:

1. In operation.

Rehabilitation Plan:

1) Basic Consideration :
Supply to this reservoir is augmented for the Hospital Reservoir to supply the consumers at the high zone. Due to limited supply, water shortage is experienced at the high zone.

2) Civil Architectural: none

3) Piping work: installation of flow meter and controller

4) Mechanical work: none

5) Electrical work: none

6) Miscellaneous: none

Estimated cost:	***Construction schedule:***	***Priority:***
US$2,579		B-2

Town :	***No. & Facility:***	***Year of Construction***	***Financed by:***
Suai	12 - Hospital Reservoir	1995	AusAID

Existing Condition:

Facility: Service reservoir
Structure: Steel with vinyl coating
Shape: Circular
Dimension: ø 10m x 2.5m height
Capacity: 196m^3
Function: Storage
Source of Water: Sukabilaran 1 & 2
Elevation (amsl) :
Accessories:
Water level gauge
Pumps:
Capacity: 1.7m3/min x 40m x 7.5kw - 2 sets
Type: centrifugal
Main Power Switch Panel
Generator
Pump Panel

Photograph:

(Date:)

Evaluation:

This reservoir was designed to store water pumped from the deep well sources, however, due to the limited water from the surface water, it is equipped with a booster pump to supply water into Leugore2. The booster pump impellers are worn out.

Rehabilitation Plan:

1) Basic Consideration :

Water stored into the reservoir should be chlorined prior to distribution. The booster pump has to be replaced.
Water demand:1907m3/day
Storage required: 1907 x 20% x 8hrs/24hrs = 127m3 < 135m3 (expansion not required)

2) Civil Architectural:

Installation of security fence.

3) Piping work:

Installation of 100mm flow meter and 100mm control valve.

4) Mechanical work:

Replacement of pumps with following specifications.
Capacity: 1.7m3/min x 40m x 7.5kw - 2 sets
Type: centrifugal

5) Electrical work:

Watt-hour Meter Box x1set
Main Power Switch Panel x1set
Generator Set 37.5kVA x1set
Fuel Tank 180L x1set
Pump Control Board x1set

6) Miscellaneous:

Installation of chlorine dosage devices

Estimated cost:	***Construction schedule:***	***Priority:***
US$88,661		B-2

Town :	***No. & Facility:***	***Year of Construction***	***Financed by:***
Suai	13 - Proposed Leugore 3	-	-

Proposed Condition:

Facility: Service reservoir

Function: Storage

Source of Water: Deep well (proposed Sukabilaran 3)

Elevation (amsl) :

Note:

The proposed site has 2 existing reservoirs (Leugore 1 & 2).

Photograph:

Evaluation:

The insufficient water supply and storage capacity of the existing reservoirs cause the water shortage at the higher zone.

Rehabilitation Plan:

1) Basic Consideration :

Water from the proposed deep well (Sukabilaran 3) will be pumped into this reservoir to supply the consumers located at the high zone.

2) Civil Architectural:

Construction of an elevated tank adjacent to the existing with the following specifications:

- Height from the ground level: 15.5 m
- Volume: 30m^3
- Structure: Steel
- Appurtenances: Overflow, drain, ventilator, flow meter and controller

3) Piping work:

Installation of 75mm GSP x 50m pipes.

4) Mechanical work:

Installation of booster pump with the following specifications.

- Capacity: 0.2m^3/min
- Type: centrifugal

5) Electrical work:

Watt-hour Meter Box x1set
Fuel Tank x1set
Main Power Switch Panel x1set
Pump Control Board x1set
Generator Set x1set

6) Miscellaneous:

Land Acquisition Area = 100m^2

Estimated cost:	***Construction schedule:***	***Priority:***
US$122,475		B-1

Town :	***No. & Facility:***	***Year of Construction***	***Financed by:***
Suai	14 - Proposed Distribution Main		

Existing Condition:

Photograph:

Evaluation:

Chronic water shortage is acute in Tatoli area.

Rehabilitation Plan:

1) Basic Consideration :

The proposed distribution main will be installed from distribution main to supply Tatoli area.

2) Civil Architectural: none

3) Piping work:

Installation of distribution main with the following specifications.:

Diameter & length: 3 inch GSP x 1km

Function: To distribute water to Tatoli

Accessories: gate valves, air valves, blow-offs

4) Mechanical work: none

5) Electrical work: none

6) Miscellaneous: none

Estimated cost:	***Construction schedule:***	***Priority:***
US$25,000		B-1

Town :	***No. & Facility:***	***Year of Construction***	***Financed by:***
Suai	15 - Proposed Sukabilaran 3		

Proposed Condition:

Facility : Deep well
Supply to: Proposed Leugore 3
Elevation (amsl) :
Note:
The proposed deepwell will be constructed close to the existing Sukabilaran deepwell.

Photograph:

Evaluation:

Rehabilitation Plan:

1) Basic Consideration :

Water from this proposed deepwell will be pumped into Leugore 3 to supply water to the consumers located at the high zone.

2) Civil Architectural:

a) Geophysical survey
b) Well drilling of deep well with Capacity of 5 L/s
c) Construction of pumping station and security fence.

3) Piping work:

Installation of 75mm x 3.0km transmission main to the proposed Leugore 3 reservoir.

4) Mechanical work:

Installation of pump with the following specifications.
Pump capacity: 5 L/s
Type: submersible pump

5) Electrical work:

Watt-hour Meter Box x1
Main Power Switch Panel x1
Generator Set x1
Fuel Tank x1
Pump Control Board x1

6) Miscellaneous:

Land Acquisition Area = 200m^2

Estimated cost:	***Construction schedule:***	***Priority:***
US$181,727		B-1

Town	***No. & Facility:***	***Year of Construction***	***Financed by:***
Maliana	01-Aikumu Spring		

Existing Condition:	***Photograph:***
	Site not visited (Date:)

Evaluation: Yield decreases to almost nil during dry season.

Rehabilitation Plan:

1) Basic Consideration:

To be abandoned due to low yield and low water quality.

2) Civil Work: none

3) Piping work: none

4) Mechanical work: none

5) Electrical work: none

6) Miscellaneous: none

Estimated cost:	***Construction schedule:***	***Priority:***
None		-

Town	***No. & Facility:***	***Year of Construction***	***Financed by:***
Maliana	02-Beapelu/Dabuci and Beamos Springs		

Existing Condition:

Facility:
Structure:
Shape:
Dimension:
Intake flow: 5L/sec

Function: intake
Ground level:
Accessories:

Photograph:

Site not visited

(Date:)

Evaluation:

In operation
Need minor rehabilitation including installation of security fence.

Rehabilitation Plan:

1) Basic Consideration:

Entry into spring intakes should be restricted by the construction of security fence.

2) Civil Work:

Construction of security fence around the 3 intake sites.

3) Piping work: none

4) Mechanical work: none

5) Electrical work: none

6) Miscellaneous: none

Estimated cost:	***Construction schedule:***	***Priority:***
US$4,500		B-2

Town	***No. & Facility:***	***Year of Construction***	***Financed by:***
Maliana	03-Beremau Stream		

Existing Condition:

Facilities: intake chamber
Shape: pentagon
Dimension: 2.9m x 3.8m x 3.6m x 3.0m
Intake Rate: 2L/sec
Function: Water collection intake

Elevation(amsl):
Accessories:
6 inch GSP intake pipe

Photograph:

Site not visited

(Date:)

Evaluation:

Sufficient water is available from this source, however the intake facilities was not properly constructed.

Rehabilitation Plan:

1) Basic Consideration:

Construction of weir could improve water impoundment thereby increasing water abstraction from this spring. Intake rate will be incresed from 2L/sec to 10L/sec.

2) Civil Work:

Construction of weir: 1m height x 3m width across the main stream.
Rehabilitation of intake chamber including installation of screen and concrete covers.
Construction of security fence.

3) Piping work: none

4) Mechanical work: none

5) Electrical work: none

6) Miscellaneous: none

Estimated cost:	***Construction schedule:***	***Priority:***
US$4,730		B-1

Town	***No. & Facility:***	***Year of Construction***	***Financed by:***
Maliana	04-Raw Water Transmission Main		

Existing Condition:

Diameter & length: 6 inch GSP x 7km

Elevation (amsl):

Accessories:

Eight break pressure tanks installed on the entire length.

Photograph:

Site not visited

(Date:)

Evaluation: The damaged section was repaired by Oxfams using HDPE 2-inch x 40m and HDPE 3-inch x 35m as temporary measure.

Rehabilitation Plan:

1) Basic Consideration:

To minimize head logs the repair work made by Oxfam should be replaced altogether with 6-inch pipe GSP.

2) Civil Work: none

3) Piping work:

Installation of 150mm x 75m with necessary appurtenances

4) Mechanical work: none

5) Electrical work: none

6) Miscellaneous: none

Estimated cost:	***Construction schedule:***	***Priority:***
US$2,925		B-1

Town	***No. & Facility:***	***Year of Construction***	***Financed by:***
Maliana	05-WTP		

Existing Condition:

Process: flocculation-sedimentation-filtration
Capacity: 7 L/sec
Function: Purification of water supply
Source of Water: irrigation canal
Elevation(amsl):
Accessories:

- Generator Set
- Pump Control Board
- Intake pump: 0.6 m^3/min x 3m x ___kw - one set, submersible
- Chemical dosing equipment: alum, chlorine and soda
- Chemical room, laboratory, Ware house
- Booster pump: capacity 0.6m/min x 80m x 10kw-one set, centrifugal

Photograph:

(Date:)

Evaluation:

Intake pump and booster pumps need to be replaced because of wear-out of impellers
Not equipped with standby pump sets.
Mixing tanks and chemical dosing equipment damaged.
Laboratory, ware house were heavily destroyed during violence..

Rehabilitation Plan:

1) Basic Consideration

a) The laboratory and ware house should be repaired and rehabilitated.
b) New pumps including standby unit should be installed.
c) Repair of settled water pipes because of clogging

2) Civil Work:

Repair and refurbishment of the laboratory, chemical storage and ware house.

3) Piping work: none

4) Mechanical work:

One set of intake and booster pump to be installed as standby.
Capacity: 1.2m^3/day------- 1 set as standby for intake.
1 set as standby for booster.

5) Electrical work: none (included in the construction of proposed WTP)

6) Miscellaneous: none

Estimated cost:	***Construction schedule:***	***Priority:***
US$113,522		B-1

Town	***No. & Facility:***	***Year of Construction***	***Financed by:***
Maliana	06-Proposed WTP		

Existing Condition:

Photograph:

Evaluation:

The existing WTP and other sources have insufficient production rate to supply the water demand-2003.

Rehabilitation Plan:

1) Basic Consideration

Water production deficit = Max day water demand - Total production

Where: Max day water demand = 28L/s or 2,385m^3/day

Total production=23 L/s

Therefore; Production deficit=28-23=5 L/s

2) Civil Work:

Construction/Installation of 5 L/s package treatment unit with the process such as flocculation, sedimentation with sloping plate, and filters (self-backwash type)

3) Piping work:

Installation of pipe ø75mm with necessary appurtenances to connect with the existing pipe network.

4) Mechanical work:

To operate the treatment unit, following pumps with necessary appurtenances are required:

Intake pump: 1.2m3/day x 6m - 1 set (standby pump is available)

Booster pump: 1.2m3/day - 1 set (standby pump is available)

5) Electrical work:

Water hour Meter Box x1	Fuel Tank x1
Main Power Switch Panelx1	Pump Control Board x 1
Generator Set x1	Pump , Mixer Control Board x 1

6) Miscellaneous: none

Estimated cost:	***Construction schedule:***	***Priority:***
US$474,703		B-1

Town	***No. & Facility:***	***Year of Construction***	***Financed by:***
Maliana	07-Santa Cruz Res.		

Existing Condition:

Facilities: Service Reservoir
Structure: Reinforced concrete
Shape: rectangular
Dimension: 3.5m x 8.2m x 2.2m height
Capacity: 45m3
Function: storage
Source of Water: TV Station Res.1, WTP
Elevation (amsl)
Accessories:

Photograph:

(Date:)

Evaluation:

a) In operation
b) Storage capacity is insufficient
c) Need rehabilitation including installation of accessories

Rehabilitation Plan:

1) Basic Calculation

Water storage deficit = Total storage requirement - Total storage existing volume
Where: Total storage requirement = 2,385m^3/day x 8hrs/24hrs = 795m^3
Therefore; Storage deficit = 795-787 = 8 m^3, almost neglible
Expansion of the service reservoir is not required for the time being.

2) Civil Work: none

3) Piping work:

Installation of flow meter and controller.

4) Mechanical work: none

5) Electrical work: none

6) Miscellaneous: none

Estimated cost:	***Construction schedule:***	***Priority:***
US$2,579		B-2

Town	***No. & Facility:***	***Year of Construction***	***Financed by:***
Maliana	08-Muduklaun Reservoir		

Existing Condition:

Facility Service Reservoir
Structure: Reinforced concrete
Shape: rectangular
Dimension: 9m x 8.5m x 3.6m height
Storage capacity: 220m^3
Function: storage and disinfection
Source of Water: Beremau stream
Supply to: TV Station Reservoir 1
Elevation (amsl):
Accessories:
Chlorine dosage devices

Photograph:

(Date:)

Evaluation: Working. Chlorine is not dosed for disinfection.
a) In operation
b) Chlorine dosing facilities not operational

Rehabilitation Plan:

1) Basic Calculation
No rehabilitation is required except minor rehabilitation.

2) Civil Work:
Installation of water level guauge.

3) Piping work: none

4) Mechanical work: none

5) Electrical work: none

6) Miscellaneous: chlorine dosage devices to be taken out

Estimated cost:	***Construction schedule:***	***Priority:***
US$1,300		B-2

Town	***No. & Facility:***	***Year of Construction***	***Financed by:***
Maliana	09-TV Station Reservoir 1		

Existing Condition:

Facility: Service Reservoir
Structure: Reinforced concrete
Shape: Rectangular
Dimension: 8.2m x 6.1m x 1.75m height
Capacity: 63m^3
Function: Storage
Source of Water: Beremau intake
Elevation (amsl):
Accessories:

Photograph:

(Date:)

Evaluation:

a) In operation
b) Needs minor rehabilitation

Rehabilitation Plan:

1) Basic Consideration:

2) Civil Work:

Construction of security fence.

3) Piping work: none

4) Mechanical work: none

5) Electrical work: none

6) Miscellaneous: chlorine dosage devices

Estimated cost:	***Construction schedule:***	***Priority:***
US$4,800		B-2

Town Maliana	***No. & Facility:*** 10-Proposed WTP	***Year of Construction***	***Financed by:***

Existing Condition:

Photograph:

Evaluation:

Rehabilitation Plan:

1) Basic Consideration

Water from Beremau intake are being supplied to the consumers without treatment. As the raw water becomes tubid after heavy rains, water treatment is required.

Slow sand filtration is considered most appropriate.

2) Civil Work:

Construction of slow sand filter basin with production rate, 10 L/s.

Dimension: 9m x 12m - 2 basins

Design filtration rate: 4.5m/day

Appurtenances: filter media, underdrain pipes (GS), ladders, overflow, drains, security fence, outlet chambers

Construction of concrete apron for washing filter media (10m x 10m) with drains

3) Piping work:

Interconnection to the transmission main (150mm x 100m) from Muduklaun Reservoir, with necessary appurtenances including flow meter and controller

Outlet main to be installed (150mm x 100m)

4) Mechanical work: none

5) Electrical work: none

6) Miscellaneous: staff house, land acquisition (60m x 80m)

Estimated cost:	***Construction schedule:***	***Priority:***
US$143,072		B-2