Town	***No. & Facility:***	***Year of Construction***	***Financed by:***
Aileu	05 - Distribution Main		

Existing Condition:

Facility: Water distribution main
Diameter: GSP 1.1/2-inch
Length: 2.0 km
Function: Water distribution to the water consumers at the gov't housing estate.
Accessories:

Photograph:

(Date:)

Evaluation:

The existing distribution main is insufficient.

Rehabilitation Plan:

1) Basic Consideration

It is necessary to upgrade the distribution main that supplies the housing estate.
Water demand: 100houses x 6 persons x 0.2m3/day = 120m3/day = 1.4L/sec
Gradient: 30m/1500m = 20 permil, Velocity = 0.7m/sec
Required diameter: 2inch

2) Civil Work: none

3) Piping work:

Pipe laying of 50mm x 1.5 km with necessary appurtenances

4) Mechanical work: none

5) Electrical work: none

6) Miscellaneous: none

Estimated cost:	***Construction schedule:***	***Priority:***
US$16,500		B-1

Town	***No. & Facility:***	***Year of Construction***	***Financed by:***
Aileu	06 - Sloi Kraik Intake		

Existing Condition:

Facility: Spring intake
Source of Water: Sloi Kraik spring
Supplies to: Sloi Kraik reservoir
Function: raw water intake
Major facilities:
Intake weir
Raw water transmission main GSP 3-inch
Elevation (amsl):

Photograph:

(Date:)

Evaluation:

During dry season the flow substantially drops to almost nil.
During rainy season the turbidity is high.

Rehabilitation Plan:

1) Basic Consideration

This source will serve a community based water supply system and will be disconnected by valve from the town's water supply.
To improve the water quantity and quality, rehabilitation of the intake facilities such as installation of perforated pipes under a graded filter bed should be carried out.

2) Civil Work:

Excavation: 6.0m length x 2.0m width x 2.0m depth upstream of the intake weir.
Installation of perforated pipes: perforated pipe 150mm diameter GSP (20 mm dia x 20 holes)
Backfilling: gravel (80 cm thick), sand (1.2m thick)

3) Piping work:

Installation of water collector with the following specification
Diameter and length: 150mm x 6m
Depth: 1.8m below the riverbed

4) Mechanical work: none

5) Electrical work: none

6) Miscellaneous: none

Estimated cost:	***Construction schedule:***	***Priority:***
US$4,917		B-2

Town	***No. & Facility:***	***Year of Construction***	***Financed by:***
Aileu	07 - Hularema Intake		

Existing Condition:

Facility: Spring intake
Source of Water: Hularema spring
Supplies to: Hularema reservoir
Function: raw water intake
Major facilities:
Intake weir
Raw water transmission main GSP 2-inch
Elevation (amsl):

Photograph:

(Date:)

Evaluation:

During dry season the flow substantially drops to almost nil.
During rainy season the turbidity is high.

Rehabilitation Plan:

1) Basic Consideration

This source will serve a community based water supply system and will be disconnected by valve from the town's water supply.
To improve the water quantity and quality, rehabilitation of the intake facilities such as installation of perforated pipes under a graded filter bed should be carried out.

2) Civil Work:

Excavation: 6.0m length x 2.0m width x 2.0m depth upstream of the intake weir.
Installation of perforated pipes: perforate pipe 150mm (20 mm dia x 20 holes)0
Backfilling: gravel (80 cm thick), sand (1.2m thick)

3) Piping work:

Installation of water collector with the following specification
Diameter and length: GSP 6-inch x 6m
Depth: 1.8m below the riverbed

4) Mechanical work: none

5) Electrical work: none

6) Miscellaneous: none

Estimated cost:	***Construction schedule:***	***Priority:***
US$4,848		B-2

Town	***No. & Facility:***	***Year of Construction***	***Financed by:***
Aileu	08 - Marele Reservoir 2		

Existing Condition:

Facility: Sevice reservoir
Structure: Reinforced concrete
Shape: Rectangular
Dimension:
Capacity: 30m^3
Function: Storage
Source of Water: Sloi Kraik River
Elevation (amsl):
Accessories:

Photograph:

(Date:)

Evaluation:

In use

Rehabilitation Plan:

1) Basic Calculation

2) Civil Work:

Installation of water level gauge

3) Piping work:

Installation of 75mm flow meter and control valve
Interconnections of 75mm diameter with a length 0f 30m between No.1 and No.2 reservoirs

4) Mechanical work: none

5) Electrical work: none

6) Miscellaneous: none

Estimated cost:	***Construction schedule:***	***Priority:***
US$3,991		B-2

Town	***No & Facility:***	***Year of Construction***	***Financed by:***
Aileu	09 - Hularema Reservoir		

Existing Condition:

Facility: Service reservoir
Structure: Reinforced concrete
Shape: Rectangular
Dimension: 5.2m x 8.2m x 3.0m
Capacity: 120m^3
Function: Storage
Source of Water: Hularema River
Elevation (amsl):
Accessories:

Photograph:

(Date:)

Evaluation:

In use but with some leaks at the base

Rehabilitation Plan:

1) Basic Consideration

2) Civil Work:

Installation of water level gauge

3) Piping work:

Leak repair work and installation of 50mm flow meter and control valve.

4) Mechanical work: none

5) Electrical work: none

6) Miscellaneous: none

Estimated cost:	***Construction schedule:***	***Priority:***
US$3,057		B-2

Town	***No. & Facility:***	***Year of Construction***	***Financed by:***
Maubisse	01 - Erulu Spring		Portuguese

Existing Condition:

Facility: Collection chamber, storage reservoir
Dimension:
Storage capacity: 56m^3
Function: Intake and storage
Source of Water: Erulu Spring
Elevation (amsl):
Accessories:

Photograph:

(Date:)

Evaluation:

The reservoir, which is a few hundred meters away from the source is not in use due to damaged section of the transmission main.

Rehabilitation Plan:

1) Basic Calculation:

Storage requirement = 356 m3/day * 33% * 8/24 = 40 m^3 (Assumed 33% of the total)
Capacity of the existing reservoir = 56 m^3
Therefore, no need for reservoir expansion

2) Civil Work:

Construction of the drainage facilities.
Construction of security fence.

3) Piping work:

Installation of flow meter, control valves
Repair/replacement of the damaged section of the transmission main (75mm x 30 m)
Installation of 1public tap

4) Mechanical work: none

5) Electrical work: none

6) Miscellaneous:

Installation of chlorine-dosing device

Estimated cost:	***Construction schedule:***	***Priority:***
US$7,891		C-2

Town	***No. & Facility:***	***Year of Construction***	***Financed by:***
Maubisse	02 - Transmission Main (Bucana - Pousada)		

Existing Condition:

Facility: Transmission main
Diameter & length: GSP 3-inch
Length: 1.7 km
Function: Transmit spring water to the Pousada reservoir

Photograph:

(Date:)

Evaluation:

In operation but numerous leaks were seen along the pipeline.
Service connections were installed along the pipeline.
Water does not reach the reservoir during peak hour.

Rehabilitation Plan:

1) Basic Consideration:

It is technically viable and cost-effective if reinstallation of a new transmission main is carried out to replace the existing.

2) Civil Work: none

3) Piping work:

Installation of transmission main 75mm x 1.7 km including the necessary appurtenances.

4) Mechanical work: none

5) Electrical work: none

6) Miscellaneous: none

Estimated cost:	***Construction schedule:***	***Priority:***
US$30,600		C-1

Town	***No. & Facility:***	***Year of Construction***	***Financed by:***
Maubisse	03 - Pousada Reservoir		Portuguese

Existing Condition:

Structure: Reinforced Concrete
Shape: Rectangular
Dimension:
Capacity: 23m^3
Function: Storage
Source of Water: Bucana Spring
Ground level:
Accessories:

Photograph:

(Date:)

Evaluation:

In operation but limited supply is coming due to service connections made on the transmission main. The capacity of the existing reservoir will be sufficient to store water supplied from the source estimated @ 0.7 L/s.

Rehabilitation Plan:

1) Basic Calculation

Storage requirement = 0.70 L/s * 86,400 * 8/24 = 20 m^3
Capacity of the existing reservoir = 23 m^3
Therefore, reservoir expansion is not required.

2) Civil Work:

Installation of water level gauge.

3) Piping work:

Installation of flow meter and control valve.

4) Mechanical work: none

5) Electrical work: none

6) Miscellaneous:

Installation of chlorine-dosing facilities.

Estimated cost:	***Construction schedule:***	***Priority:***
US$6,451		C-2

Town	***No. & Facility:***	***Year of Construction***	***Financed by:***
Maubisse	04 - Distribution Main (Pousada - town center)		

Existing Condition:

Photograph:

(Date:)

Evaluation:

The existing distribution main will be insufficient for the expected increase in water demand.

Rehabilitation Plan:

1) Basic Consideration:

Additional distribution main will be necessary to augment the existing pipeline.

2) Civil Work: none

3) Piping work:

Installation of 75mm x 0.70 km and 50mm x 0.5 km including the necessary appurtenances.

4) Mechanical work: none

5) Electrical work: none

6) Miscellaneous: none

Estimated cost:	***Construction schedule:***	***Priority:***
US$18,100		C-1

Town	***No. & Facility:***	***Year of Construction***	***Financed by:***
Maubisse	05 - Raikuak Ulun Spring		

Existing Condition:

Facility: Spring Intake

Dimension:

Function: Intake for raw water
Source of Water: Raikuak Ulun Spring
Ground level (amsl):
Accessories:
Weir: made of earth
Transmission main: GSP 1-inch

Photograph:

(Date:)

Evaluation:

The intake facility is not properly designed and constructed
It requires rehabilitation including the construction of the concrete weir, collection chamber

Rehabilitation Plan:

1) Basic Consideration:

Rehabilitation of the existing facilities including the construction of the concrete weir, collection chamber

2) Civil Work:

Weir: 5m width x 2.5 m height, made of concrete
Collection chamber: 2m x 3m x 1.5m height
Construction of the security fence.

3) Piping work:

Installation of 75mm x 15 m inlet pipe including 150mm perforated pipe for water collection.

4) Mechanical work: none

5) Electrical work: none

6) Miscellaneous: none

Estimated cost:	***Construction schedule:***	***Priority:***
US$9,295		C-1

Town	***No. & Facility:***	***Year of Construction***	***Financed by:***
Maubisse	06 - Transmission Main (Raikuak Ulun - Leputo)		

Existing Condition:

Facility: Transmission main

Diameter & Length:

GSP 3-inch = 1.2 km

GSP 2-inch = 100m

Function: Transmit spring water to the Leputo reservoir

Accessories:

Photograph:

(Date:)

Evaluation:

In use

It is not properly designed and constructed changing from 3-inch to 2-inch along the line.

Rehabilitation Plan:

1) Basic Consideration:

The entire pipeline should have uniform diameter at 75mm.

2) Civil Work: none

3) Piping work:

Installation of 75mm x 100m to replace the existing including air valves, gate valves and blow-off.

4) Mechanical work: none

5) Electrical work: none

6) Miscellaneous: none

Estimated cost:	***Construction schedule:***	***Priority:***
US$2,553		C-1

Town	***No. & Facility:***	***Year of Construction***	***Financed by:***
Maubisse	07 - Leputo Reservoir		

Existing Condition:

Facility: Service reservoir
Structure: Reinforced Concrete
Shape: Rectangular
Dimension:
Capacity: 20m^3
Function: Storage
Source of Water: Raikuak Ulun
Ground level (amsl):
Accessories:

Photograph:

(Date:)

Evaluation:

Currently in use but requires rehabilitation and expansion.
The raikuak ulun water source supplies about 1.7 L/s or 146.9 m^3/day to this reservoir.

Rehabilitation Plan:

1) Basic Calculation:

Required storage capacity = 146.9 m3/day * 8/24 = 49 m^3
Capacity of the existing reservoir = 20 m^3
Storage deficit = 49 - 20 = 29 m^3

2) Civil Work:

Construction of a new reservoir with a capacity of 30 m^3 including the necessary appurtenances
Construction of the security fence.

3) Piping work:

Installation of flow meter and control valves for the existing reservoir
Pipe interconnection.

4) Mechanical work: none

5) Electrical work: none

6) Miscellaneous:

Installation of chlorine-dosing device

Estimated cost:	***Construction schedule:***	***Priority:***
US$15,651		C-2

Town	***No. & Facility:***	***Year of Construction***	***Financed by:***
Maubisse	08 - Distribution Main (Erulu Reservoir - town center)		

Existing Condition:

Facility: Distribution main

Diameter & length:

GSP 4-inch = 1.2 km

GSP 3-inch = 500 m

Function: Distribution of water supply to the town center

Accessories:

Photograph:

(Date:)

Evaluation:

In use but most had lapsed their economic life resulting to numerous leaks.

Rehabilitation Plan:

1) Basic Consideration:

Require replacement and installation of new pipeline.

2) Civil Work: none

3) Piping work:

100mm x 1.2km and 75mm x 0.5km with necessary appurtenances (air valves, gate valves, blow-off).

Installation of new pipelines including the necessary appurtenances

100mm x 1.2 km

75mm x 0.5 km

4) Mechanical work: none

5) Electrical work: none

6) Miscellaneous: none

Estimated cost:	***Construction schedule:***	***Priority:***
US$39,000		C-1

Town	***No. & Facility:***	***Year of Construction***	***Financed by:***
Gleno	01 - Mota Boot Intake		

Existing Condition:

Facility: Intake pipe and collection chamber appeared to be seriously damaged. Only traces are left.
Dimension:
Capacity:
Function: Raw water collection
Source of Water: Mota Boot River
Ground level (amsl):
Accessories:

Photograph:

(Date:)

Evaluation:

The intake facilities including transmission main are seriously damaged resulting to the non-operation of this facility and substantial decrease in water supply.

Rehabilitation Plan:

1) Basic Consideration:

Require construction of new intake facilities including transmission main.
The facilities must be constructed in safe place with adequate protection.

2) Civil Work:

Construction of collection chamber: 5.0 m x 3.0 m x 1.5 m
Construction of concrete weir: 7.0 m width x 1.5 m height (approximate)
Construction of security fence

3) Piping work:

Installation of new intake pipe 150mm x 10 m with perforation.
Installation of new transmission main 150mm x 100 m.

4) Mechanical work: none

5) Electrical work: none

6) Miscellaneous: none

Estimated cost:	***Construction schedule:***	***Priority:***
US$23,692		B-1

Town	***No. & Facility:***	***Year of Construction***	***Financed by:***
Gleno	02 - Riheu Water Treatment Plant		

Existing Condition:

Process: Slow sand filtration
Dimension: 10m x 18m - 2 basins
Filtration rate: 4m/day
Capacity: 15 L/s
Function: Water Treatment
Source of Water: Mota Boot and Mota Kiik
Ground level (amsl):
Accessories:

Photograph:

(Date:)

Evaluation:

In constant breakdown due to lack of resources and absence of regular maintenance.
Limited supply for treatment due to breakdown of main source at Mota Boot.
Capacity is enough to supply the water demand.

Rehabilitation Plan:

1) Basic Consideration:

No expansion is needed.
Requires routine maintenance and skilled operators
Requires adequate protection of water production and chlorination prior to distribution.

2) Civil Work:

Construction of concrete apron for washing the filter media (sand)
Apron: 10m width x 15m length x 30cm height
Construction of security fence to include the WTP site and reservoir facilities.
Construction of staff house.

3) Piping work:

Installation of flow meter and control valve (150mm x 2 sets)

4) Mechanical work: none

5) Electrical work: none

6) Miscellaneous: none

Estimated cost:	***Construction schedule:***	***Priority:***
US$24,456		B-2

Town	***No. & Facility:***	***Year of Construction***	***Financed by:***
Gleno	03 - Hatsnigulau Reservoirs 1&2		

Existing Condition:

Facility: Service reservoir
Structure: Reinforced Concrete
Shape: Rectangular
Dimension: 5m x 6m x 3m height, 5m x 7m x 3m height
Hatsnigulau 1: 6.5 m x 5.0 m x 3.0 m
Hatsnigulau 2: 7.0 m x 5.0 m x 3.0 m
Total Capacity: 200m^3
Function: Treated water storage
Source of Water: WTP
Ground level (amsl):
Accessories:
Ventilation

Photograph:

(Date:)

Evaluation:

In use with traces of repair works.
Require expansion to meet the required storage.

Rehabilitation Plan:

1) Basic Calculation

Storage requirement = Water demand x 8 hours storage per day
where: water demand = 1,409 m^3/day
Storage requirement = 1,409 * 8/24 = 470 m^3
Storage deficit = 470 - 200 = 270 m^3

2) Civil Work:

Construction of new reservoir with capacity of 300 m^3 including necessary appurtenances
Installation of control valves.

3) Piping work:

Pipe interconnection with the existing 150mm x 50 m.

4) Mechanical work: none

5) Electrical work: none

6) Miscellaneous: Installation of chlorine dosage facilities

Estimated cost:	***Construction schedule:***	***Priority:***
US$38,304		B-2

Town	***No. & Facility:***	***Year of Construction***	***Financed by:***
Gleno	04 - Distribution Main		

Existing Condition:

Facility: Distribution Main
Diameter: GSP 4-inch
GSP 3-inch
Function: To distribute water to the service area such as town center, district offices, Perumanas Baru and neighboring areas.
Accessories:

Photograph:

(Date:)

Evaluation:

Repair to the existing distribution network is underway.
The existing network will be insufficient for the future service area expansion and increase in water demand.

Rehabilitation Plan:

1) Basic Consideration

Additional installation of distribution pipes will be required.

2) Civil Work: none

3) Piping work:

Pipe laying of 150mm x 1.5 km and 100mm x 1.0 km including necessary appurtenances

4) Mechanical work: none

5) Electrical work: none

6) Miscellaneous: none

Estimated cost:	***Construction schedule:***	***Priority:***
US$83,500		B-1

Town	***No. & Facility:***	***Year of Construction***	***Financed by:***
Ermera	01 - Ersoi and Lubulala Intake		

Existing Condition:

Facility: Intake structures
Function: Collection of spring water
Sources: Ersoi and Lubulala springs
Observed flow of sources:
Elevation (amsl):
Accessories:

Photograph:

(Date:)

Evaluation:

The flow from these water sources normally drops substantially during dry season.
The existing intake structures are vulnerable to damage and require rehabilitation.

Rehabilitation Plan:

1) Basic Consideration:

As immediate remedial measures, rehabilitation of the existing intake structures will be required.

2) Civil Work:

Construction of new intake facilities for Ersoi and Lubulala with the following specifications:
2 sets of Collection chamber: 1.5m x 2m x 2m
Construction of security fence.

3) Piping work:

Repair of 50mm x 50 m transmission main
Installation of 2 sets intake pipes 50mm x 10 m

4) Mechanical work: none

5) Electrical work: none

6) Miscellaneous: none

Estimated cost:	***Construction schedule:***	***Priority:***
US$9,200		C-1

Town	***No. & Facility:***	***Year of Construction***	***Financed by:***
Ermera	02 - Proposed Mota Bura River Intake		

Existing Condition:

Photograph:

Evaluation:

The existing water sources is insufficient to supply the current and future water demand in Ermera.
It is necessary to develop additional alternative water source.
The Mota Bura River has adequate potential to supply the water needs of Ermera.

Rehabilitation Plan:

1) Basic Consideration:

To develop Mota Bura River as a source requires the construction of new intake facilities, WTP and the installation of transmission main.

2) Civil Work:

Construction of new intake facilities for Mota Bura with the following specifications:

Intake weir: 7m width x 10m length equipped with 6-inch perforated pipe and drain
Grit chamber: 1.5m x 2m x 2m

Construction of security fence.

3) Piping work:

Installation of 100mm x 30 m and 150mm x 6m perforated pipe
Installation of 100mm butterfly valves and gate valves

4) Mechanical work: none

5) Electrical work: none

6) Miscellaneous: none

Estimated cost:	***Construction schedule:***	***Priority:***
US$19,826		C-1

Town	***No. & Facility:***	***Year of Construction***	***Financed by:***
Ermera	03 - Proposed Transmission Main		

Existing Condition:	***Photograph:***

Evaluation:

Rehabilitation Plan:

1) Basic Consideration:

This proposed transmission will be used to transmit raw water from the proposed Mota Bura Intake to the proposed water treatment plant.

2) Civil Work: none

3) Piping work:

Installation of 100mm x 6 km transmission main including necessary appurtenances.

4) Mechanical work: none

5) Electrical work: none

6) Miscellaneous: none

Estimated cost:	***Construction schedule:***	***Priority:***
US$150,000		C-1