

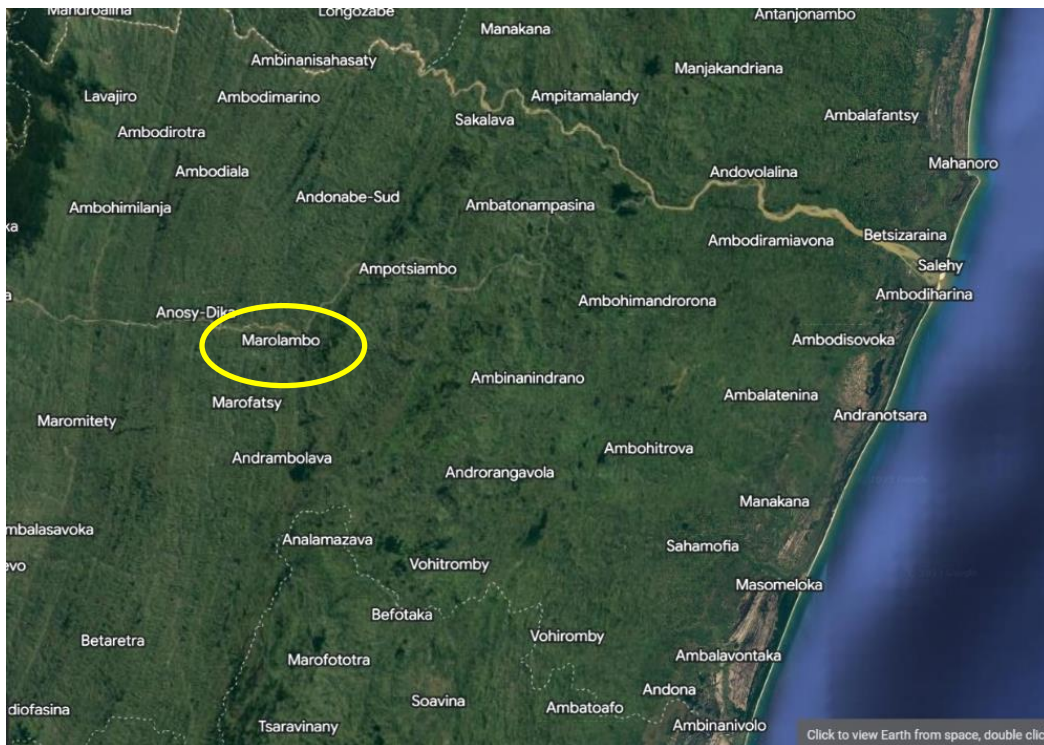
# The Madagascar Water Project

## Water For Everyone -Madagascar

### Engineering Design

---

## Rehabilitation of the Marolambo Municipal Water System

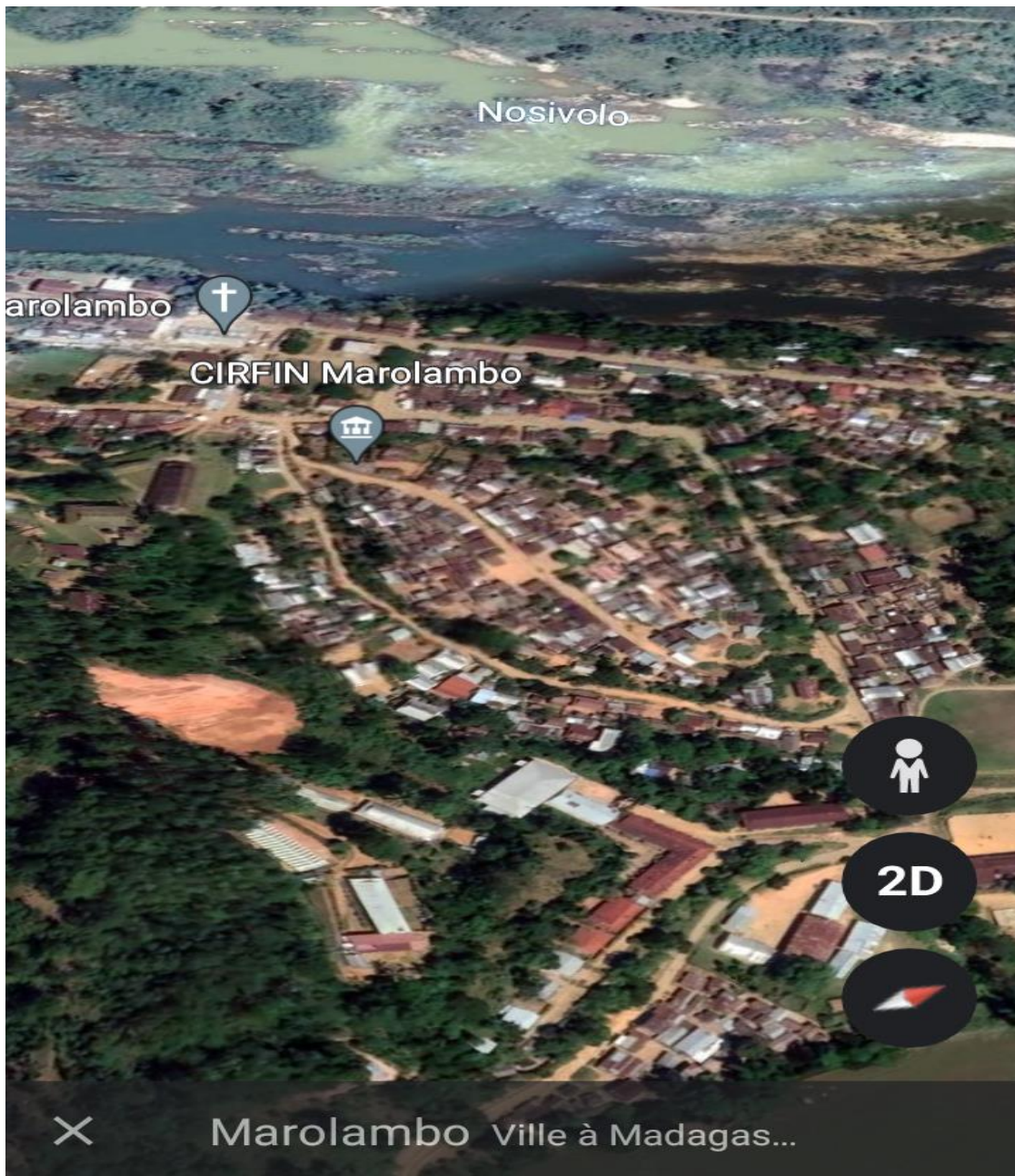


May 2023

## REHABILITATION WORKS OF AEPG IN MAROLAMBO URBAN COMMUNITY EASTERN REGION

Client: MADAGASCAR WATER PROJECT

MAROLAMBO is a city and an urban commune located in the Antsinanana region (EST) of Madagascar (Tamatave province). The Commune is the headquarters of the district.

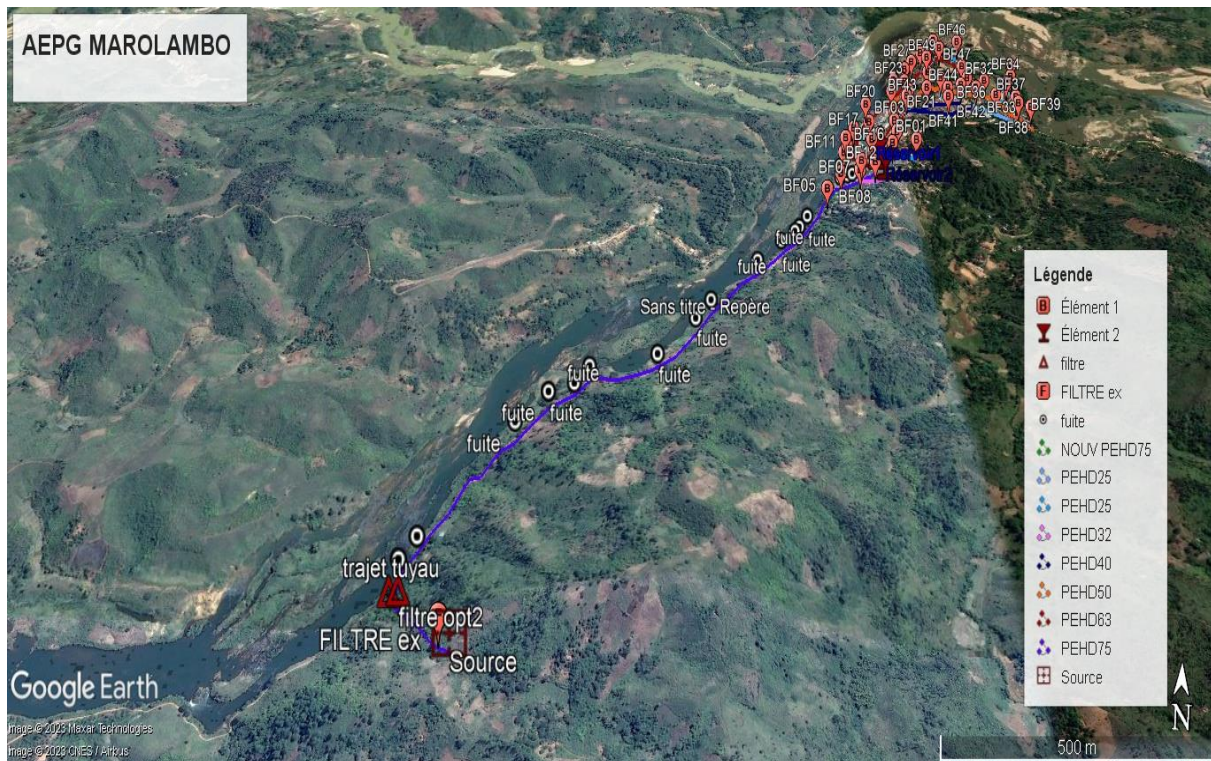


Number of population: 7,763 inhabitants    1,293 households

N



## AEPG Marolambo network plan



**EXISTING WORKS:** 01 catchment, 01 filtration basin, 02 reservoirs, 37 fountains.

**NEW CONSTRUCTION:** 47 Water Stations, 3391 meters of new pipeline, buried to 0.8 meters

### TECHNICAL DESCRIPTION OF WORKS:

WORKS	GPS coordinates	CURRENT STATE	WORK TO DO	OBSERVATION
<b>Capture:</b> 01 source 01 Catchment box	S20° 04' 02.6" E48° 07' 06.8" Height: 489m	Functional	Rehabilitation	Basin slopes not protected
<b>Filtration basin :</b> 03 compartments Length: 3m20 Width: 1m80 Height: 1m20	S20° 04'02.1" E48° 07'05.9" Height: 480m	functional	Rehabilitation	Always too full
<b>Reservoirs:</b> R1: 75m3 Shape: cubic Reinforced concrete R2: 35m3 Shape: cubic Reinforced concrete	S20°03'09.4" E48°07'44.6" Height: 450m	functional	Rehabilitation	Without inlet and outlet valves



## TRANSIT PIPELINE:

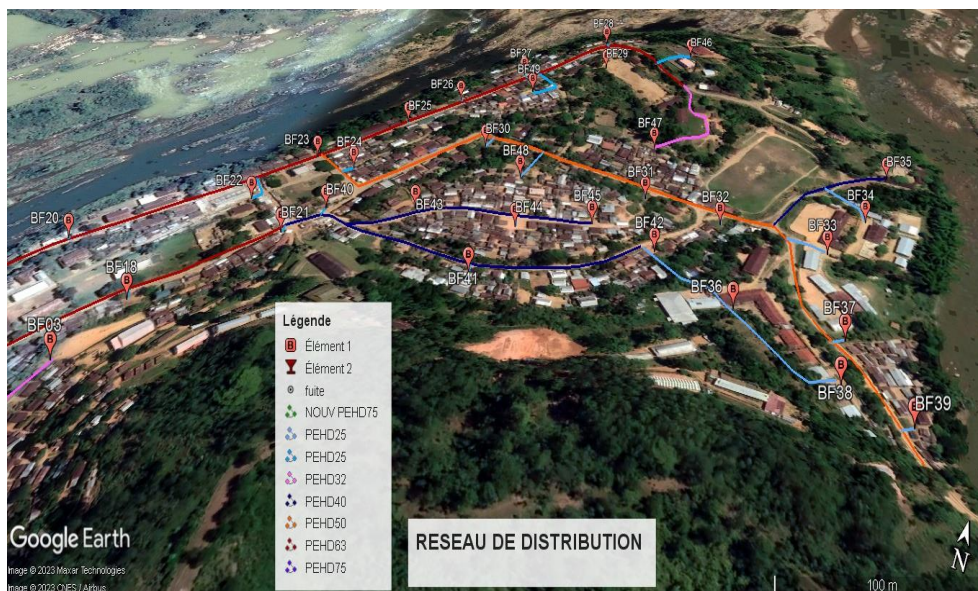


The total length of the supply pipe is 2,360 meters in PEHD D75 (75mm PVC). There were pipeline leaks detected during the field visit.

## WORKS :

- Installation of shut-off valves: outlet capture, inlet and outlet filter, inlet and outlet of the two reservoirs.
- Replacement of pipe PEHD D75mm 300 meters.
- Installation of the fittings for the leaks (SR12 D75mm).
- Bury to 80cm depth and protect the visible pipes.
- Protection of visible pipes by Galva pipes, for difficult passages.

## DISTRIBUTION SYSTEM: pipeline network 1

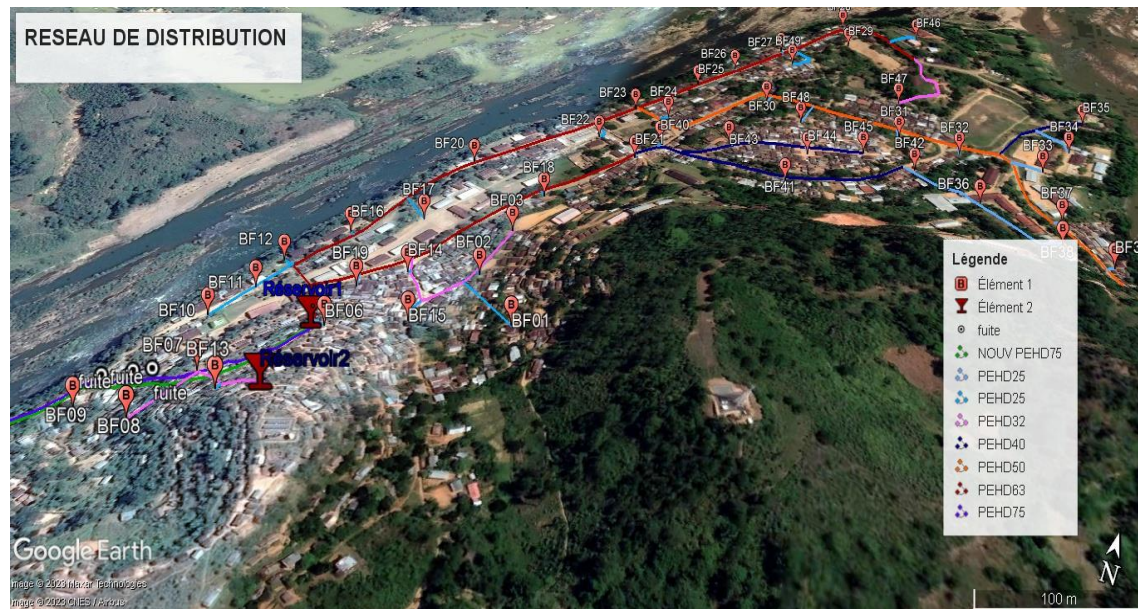




## DISTRIBUTION SYSTEM: pipeline network 2



## DISTRIBUTION SYSTEM: pipeline network 3



The total length of the distribution pipe is 3391 meters including:

- PEHD D63mm: 1275 meters
- HDPE D50mm: 665 meters
- PEHD D40: 597ML
- PEHD D32mm: 497 meters
- PEHD D25mm: 957 meters

### WORKS SUMMARY:

- Replacement of all existing pipes.
- Bury 80cm deep.]
- Laying and connecting the pipes.
- Installation of isolation valves.
- Construction of 47 water fountains.
- Branches of 47 fountains.
- Place in water.

## CONSTRUCTION AND COSTS

The charts below detail the material and labor costs, and the timeline of the project.

### Composite Summary

RE-CONSTRUCTION OF WATER INFRASTRUCTURE IN MAROLAMBO			
SCOPE OF WORK			
1-Rehabilitation of Dam + Filters + Reservoir			
2-Construction of 47 New Water Stations + 22 Concrete Plumbing Boxes + 47 Manholes			
3-Replacement & Installation of Entire Plumbing Infrastructure From Dam to Each Water Station			
System Component	Materials	Cost (MGA)	Cost (USD)
		\$1=4390 MGA	
Dam	Valves & Accessories	209,000	\$ 47.61
	Cement & Materials	513,700	\$ 117.02
Water Filters	Valves & Accessories	418,000	\$ 95.22
	Cement & Materials	1,938,240	\$ 441.51
Upstream Plumbing	Steel & PVC Pipe	10,179,250	\$ 2,318.73
Filter & Holding Tanks	Valves & Accessories	1,216,000	\$ 276.99
	Cement & Materials	3,367,500	\$ 767.08
Pipeline & Distribution Network	PVC Pipe + Valves & Accessories	31,018,450	\$ 7,065.69
Water Stands & Valve Boxes	Valves + Connectors & Accessories	4,408,950	\$ 1,004.31
	Cement & Materials	8,993,200	\$ 2,048.56
	Wood Fence	13,160,000	\$ 2,997.72
Fence	Paint & Wood	3,000,000	\$ 683.37
		<b>Total Material Costs</b>	<b>\$ 17,863.81</b>
Other Costs: Transportation, Labor, Accommodations			
Mobilization & Demobilization	Materials	7,017,000	\$ 1,598.40
	MWP & Moses Personnel	3,120,000	\$ 710.70
		<b>Total Transportation Costs</b>	<b>\$ 2,309.11</b>
Labor & Salaries	Local Labor	14,400,000	\$ 3,280.18
	MWP & Moses Personnel	18,950,000	\$ 4,316.62
		<b>Total labor Costs</b>	<b>\$ 7,596.80</b>
Accomodations: MWP & Moses	Room	10,800,000	\$ 2,460.13
	Meals	8,228,000	\$ 1,874.26
		<b>Total Accommodation Costs</b>	<b>\$ 4,334.39</b>
		<b>Estimated Project Cost</b>	<b>\$ 32,104.11</b>

# Project Timeline

