WATER SUPPLY PROJECT REPORT

Project location	Project cost	Project time frame	Personnel involved	#
Country Madagascar	Total cost (MGA) 300.000.000	Start date Sept 7th,2023	Project Manager	1
			Logistic Manager	1
			Logistic Manager Assistant	1
Region Atsinanana	Local labor cost40.890.000	Water flow date October 21st,2023	Warehouse man	1
			Plumbing Supervisor	1
District Marolambo			Plumber	2
	Transport cost 32.700.000	End date October 30th,2023	Civil engineer	1
Commune Marolambo			Cementer	9
			Foreman	4

I. BACK GROUND

The Marolambo project is a result of collaboration between MWP and Water charity in the frame of a Project called "WATER FOR EVERYONE" introduced and implemented in Madagascar since October 2022.

Once the project introduced to him, the Regional Director of WASH Atsinanana proposed MWP to start "WATER FOR EVERYONE" in Marolambo and data received from scouting trip in Marolambo on December 2022 showed the real need of the Water supply Project in the area.

A request was received by MWP from the Mayor of Marolambo on behalf of his population asking MWP intervention in their city and MWP decided to carry out feasibility study on May 2023.

After a feasibility study, MWP prepared a realization plan, met with the General Secretary of the Ministry of WASH and decided to carry out the project.

The Ministry proposed MWP to use Kiosk model instead of water stand as Marolambo is a big city.

Two times raw water sample analysis brought to Institut Pasteur for analysis and the result of portability was negative as it showed the presence of Escherichia Coli.

II. ACHIEVEMENT

A. At the source taking point

a. Improvement of water taking point at the source in installing a new small Dam to keep mud and debris flowing away from the retention tank.

b. Installing a 75mm PEHD hose with two inlets to pick up water from the source and drain it into the retention tank.

c. Keep the 75mm PEHD pipe at the water taking point safe from the mud, debris, leaves, by placing and covering it with medium size gravel.

B. At the Dam (retention tank)

a. Raise the main face to increase the amount of water retained and create an automatic overflow to evacuate floods

b. Create a wall on the rear and side facades to prevent rainwater, debris or other waste from the surroundings to contaminate the plant.
c. New installation of a 60 mm PEHD valve to enable water to be drained off during maintenance work and cleaning of the collection basin.

C. At the Loading chamber

a. Install a screen at the water inlet between the collection tank and the loading chamber installed in front of the first filter to prevent excess sludge and debris from reaching the filter.
b. Interior/exterior coating and creation of a new concrete lid
c. Readjustment and plumbing work on the water inlet from the dam to the chamber

D. At the filter 1 and filter 2

a. Removal of sludge and waste filter elements
b. Inside, a few modifications to the plumbing design, such as creating an overflow mechanism, installing a perforated slab and adjusting the piping layout.
c. External installation of an automatic overflow system to drain off water in the event of overloading.
d. Installation of an outlet valve to interrupt the movement of water to Filter 2 if needed.
e. Installation of three emptying valves to remove used water from the filter during maintenance and cleaning operations.
f. Manufacture of new valve chambers with covers other than external and internal coating work for every filter
g. loading new filter elements into each filter

E. Supply and distribution lines

a. Digging trenches, lay out brand new PEHD hoses with different size, connect hoses to the system units using new connectors, and backfilling of trenches and restoration.
b. installation with chamber for purge valves, sectioning valve and drain valve

F. Holding tank and water quality

a. Rehabilitation works on the interior and exterior of the two storage tanks of 58m3 and 24m3.
b. Replacement of old piping and installation of new branches with a new link mechanism.
c. Installation of a float valve in each of the two tanks to automatically stop the water inflow when the level to be reached in the tank is satisfied.
d. Installation of new treatment facilities to ensure water quality which is already operational
e. Installation of a flow meter between the storage reservoir and the water distribution points to monitor the amount of water delivered by the reservoirs.

G. Availability of an electro chlorinator on site for the production of local chlorine to treat water.

H. Water delivery point

a. Twenty (20) kiosks, each with two taps, two shut-off valves, a manhole and a painted fence, are installed and are spread over the entire city area for public use
b. Ten (10) standpipes have been installed and made available to public institutions such as schools, hospitals, etc...

I. Management and sustainability

a. Two (02) technicians, including one from Antananarivo, have been recruited by MWP and reside on site to ensure the follow up of water quality, monitor, maintain and repair the system.

b. Twenty (20) suitably qualified volunteers have been recruited locally to monitor the use of the infrastructure by users, and will be remunerated by membership fees.
c. A sum of 5,000 MGA will be paid by each member household of the kiosk as their contribution to the maintenance of the infrastructure (payment of repair costs, purchase of spare parts, purchase of products needed for chlorine production, etc.). This sum was voted by the beneficiary population itself at a meeting held for this purpose.
d. It was agreed with the beneficiary population at a meeting prior to the use of the infrastructure that:
e. - Opening and closing times
f. - The membership fees to be payable by each member household, and the terms of payment.
g. A free day has been set aside on Saturday of each week for everyone, members and non-members alike, to fetch water from each kiosk.
h. - Rules to be respected by everyone using the kiosks (no washing in or around the kiosks, etc.).

J. Challenge and difficulties encountered

a. The poor access to the commune has had a huge impact on the project budget, as there are fewer transport operators and they take unfair advantage of the situation to charge extremely high freight rates for materials.
b. The repeated delays in obtaining supplies of materials due to the poor conditions of the road and also the bad condition of the local haulage trucks.
c. Sometimes, for lack of trucks, cement is transported on the backs of men over a 40 km distance.
d. The shortage of skilled workers also had an impact on the budget, as extra expenses were incurred to bring in and repatriate masons from Antananarivo and Mahanoro to help complete the work in the shortest possible time, while ensuring good quality of service.
e. The indirect employment of local laborers for longer than expected due to different parameters is part of the unforeseen expenditure.

III. CONCLUSION

The Marolambo Project is MWP's first major gravitational water supply project.

The system is equipped with (1) small Dam at water source taking point, (1) Dam to retain collected water, (1) small water holding chamber prior to filters, (1) filter with three compartments, (1) second filter with six compartments, (2) holding tanks, (1) chlorination box on each holding tank, (20) public kiosks, and (10) stand points for institutions.

The project was large and complex, certainly was a challenge, but it would qualify MWP as one of Madagascar's leading NGOs.

All the work was carried out to the highest professional standards, and despite the fact that the two results of water analysis carried out by the “Institut Pasteur” laboratory that showed the presence of Escherichia coli, MWP succeeded in eliminating this major concern for the population and Ministry of Health by treating the water (As per a latest checking of chloric residual from the taps water).