



DIOCESE OF MONZE
DIOCESAN DEVELOPMENT DEPARTMENT
CARITAS MONZE



**END OF LUKONDE SOLAR POWERED WATER PROJECT REPORT
TO FAIR HANDELN**

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1.0. Introduction

This report gives highlights on activities that were carried out to mark the successful completion of the Lukonde Community water project where a borehole was drilled and installed as a solar powered borehole. Lukonde community of Fumbo Parish in Gwembe District received this water facility that was drilled to a depth of 90 meters through the financial support from Fair handelIn.

As already stated earlier in the proposal, the valley area is well known for situations that occur from one extreme to another, either by way of experiencing droughts or floods. Inadequate safe and clean water within village perimeters has been a source of concern for Lukonde Community and this problem is now a thing of the past as provision of safe and clean water has been made possible through the strong partnership that exists between Monze Diocese Development Department and Fair handelIn. Community members of Lukonde are currently enjoying availability of clean and safe water. Drilling and installation of the solar powered borehole has brought about several benefits to community members.

The pumping test revealed that community members will greatly benefit from this water facility having recorded a yield of 1.53 litres per second during the pumping test.

This report will provide information on works that have been done by end of project phase.

2.0. Update on planned Activities

All planned activities were successfully carried out and set objectives were met to a greater extent. The project goal to be realized, the following activities were implemented.

2.1. Activities done

Key Activity Carried Out	Details of sub activities implemented	status
Supported Lukonde community establish a multipurpose water scheme that is climate resilient to be equipped with a solar driven submersible pump	Facilitated geophysical water sitting.	Completed Two points were sited and 1 site was recommended by the surveyor.
	Facilitated drilling of 1 borehole to a depth of 90 m and in accordance with set specifications.	Successfully Completed. Borehole was successfully drilled, cased to the bottom, was flashed and gravel packed
	Facilitated fabrication and installation of a water tank stand.	Completed A 5 meters height tank stand was fabricated and erected
	Facilitated pumping test	Completed

		Test was done successfully and recommendations were a 1 HP pump be used and be installed at a depth of 70 meters.
	Fabrication and installation of solar panel frame	Completed A metallic frame was fabricated to hold 3 x 340watts solar panels and was erected.
	Procurement of solar pump and powering unit	Completed Solar submersible pump along with the powering unit and accessories were purchased i.e 1HP solar submersible pump, 3 x 340watts solar panels, submersible cable, splicing kits, anchor rope, well cap, weather proof control box and poly adaptors.
	Procurement of plumbing accessories	Completed Plumbing materials were procured; 5000ltrs water tank 32 mm x 500m poly pipe, connectors, 3 garden taps, 3 x $\frac{3}{4}$ galvanized tap stands, cable ties and thread tape
	Installation of the solar submersible pump	Completed 1HP pump was installed at a depth of 70m, the pump was then connected to the 3 solar panels via a control switch, and the pump was turned on, and observed if there were any leaks in the water lines. The water lines were then fully buried and taps were open to the community.
	Water point committee	Training on responsibilities of a water point committee was done and the community

		selected members to for the committee. As at time of installation the estimated number of beneficiaries was 420 people and 280 cows.
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3.0. Final Monitoring visit results:

Members of the Monze Diocese Development Department - Caritas Monze Management Team visited Lukonde Community borehole site for monitoring [purposes and brought out the following:

- 3.1. About 20 targeted community members of Lukonde community were met during the visit and a tour of the facility was undertaken. The water project was completed and community members were already benefiting from the solar powered water facility.
- 3.2. Members present narrated how they used to leave their homes at around 04:00 hours in the morning to search for water while walking long distances to the nearest water point. Community members revealed that they no longer spend long hours searching for water and this has led to them having more time to venture into other activities that could improve their livelihoods. It was further reported that the water facility has allowed community members to spend more time engaging in economic activities such as basket weaving, gardening, selling goats and getting wild tubers for brewing the traditional beer.
- 3.3. The Headperson that was met during the monitoring visit revealed that a total number of 54 households drawn from 2 villages were reported to be benefiting from the solar powered water facility. In addition, it was said livestock diseases were no longer a threat in the community as animals had a water source nearby where water was readily available. .

4.0. Challenges during the drilling process

The first 16 meters turned out that it was loose formation, therefore, 8 inch metal casings were put up to 18 meters and this resulted paying an extra amount of ZMW 25,056. Use of metal casings was necessary as the first 16 meters was loose formation and having such casings will enable community members derive maximum benefits for decades.

PENDING ACTIVITY: COMMISSIONING AND OFFICIAL HANDOVER TO THE COMMUNITY

The water point shall eventually be handed over to the community in the presence of the traditional leadership, civic leadership (the district council) and the parish leadership. A suitable date shall be set after the rainy season for the official handover.

5.0. Conclusion

The water project was successfully completed within the stipulated implementation period. Despite the fact that there were challenges during the drilling process due to loose formation, the cost incurred did not lead to over expenditure. The project was completed within the budget and

this was as a result of the financial gain that was brought about due to exchange rates based on how the local currency was performing against other currencies.

It is gratifying to note that the drillers struck water at a depth of between 55 and 69 meters, which translates to the fact that the drilled borehole will most likely be an all year round source of safe and clean drinking water. The solar powered water facility has a 140 mm PVC casing to a depth of 90 meters while 16 meters has metal casings and was equipped with a 1 HP submersible pump. Based on the advice that was given to Caritas Monze by the technician, installation of a submersible pump was done at a depth of 70 meters.

Lukonde community members now have a reliable source of clean and safe water and they are so grateful to Fair HandelN for the financial support and to the Diocese of Monze for facilitating the process that will lead to meaningful development among the people of Lukonde.

Caritas Monze is grateful for the support that FairhandelN has continued to render to the people of the Diocese of Monze. Lukonde Community members are equally grateful for such support as this will improve people's standard of living. Installation of this facility will enable Lukonde Community members to spend less time drawing water while creating time for them to do other economic activities. Having safe and clean water will reduce the distance they used to cover to the nearest water point and will also make people of Lukonde enjoy good health. Having such a water facility, in addition, will allow children in the area go to school instead of spending most of their time drawing water for household use.

Animals will equally have a source of water where they will drink from as opposed to a situation where more than 7 kilometers are covered for farmers to provide adequate water for their animals. Community members will have an opportunity to grow vegetables for both home consumption and for sell. This will lead to community members have nutritious meals and a source of income that will help them buy other essential commodities.

LUKONDE COMMUNITY BOREHOLE IN PICTURE



Figure 3 Geophysical Water Sitting



Figure 1 Drilling on the selected site



Figure 4 Borehole Drilling



Figure 2 Digging a foundation for the Water Tank Stand



Figure 6 Erecting the water tank stand



Figure 5 Fabrication of the 5 meter water tank stand



Figure 7 Preparing for laying of pipes



Figure 8 Pumping Test

Update pictures of works conducted



Figure 9 Solar panel fabrication



Figure 10 : 3 x 340 watts solar panels



Figure 11 Pump house construction

During Monitoring Visit



Figure 12: Women weaving baskets



Figure 13: Mounted Solar panels



Figure 14: A 5000 ltrs tank mounted on a stand



Figure 15: Part of the community present during the monitoring visit

FINANCIAL STATEMENT FOR LUKONDE SOLAR POWERED BOREHOLE AS FINACIALLY SUPPORTED BY FAIR HANDLEN

FOR THE PERIOD JULY TO DECEMBER 2021

INCOME STATEMENT			
Income Statement			
ACCOUNT	BUDGET ZMW	ACTUAL ZMW	Notes
Donors – Fair handleIn	218,245. 00	206, 032. 24	
Other Income: Local Contribution	-	3,991. 51	6
Total Income	218, 245. 00	210, 023. 75	
Expenses			
Communication	20. 00	-	
Transport Diocesan level	6, 520. 00	2, 631. 00	1
Stationery	40. 00	-	
Staff Costs- Diocesan Level	6, 895. 00	1, 650. 00	2
Sitting & Borehole drilling	120, 000. 00	126, 656. 00	3.
Tank stand fabrication	6, 020. 00	5, 422. 60	
Pump testing	-	3, 000. 00	4
Water Point logo	650. 00	-	
Crush stone/River sand and Building sand	1, 200. 00	1, 200. 00	6
Solar Equipment	77, 500. 00	69, 464. 15	5.
Total Expenses	218, 845. 00	210, 023 75	
Closing Balance 31 December, 2021		-	

Notes to the Financial Statement

No.	Explanation / Notes.
1	There was a financial loss which was as a result of the fluctuation of the local currency against the Euro. The team decided to cut down on transport costs so as to cater for other necessary and important requirements.
2	Savings were made to cater for pumping tests that were required to ascertain the borehole yield so as get the correct type of submersible pump for the solar powered borehole.

3	Based on the soil formation, it was recommended that 18 meters of the borehole be provided with metal casings to avoid collapsing. This attracted an additional cost. This cost was met by savings that were made on solar equipment whose prices had gone down due to adjustments on the foreign exchange between the local currency's perform against other currencies.
4	This was not initially budgeted for, but became necessary to do the pumping test so as to ensure that the correct submersible pump was installed on the borehole.
5	The prices went down as exchange rates fluctuated at the time the equipment was imported from other countries. Savings made were used to top up on the
6	The local community (Lukonde) provided the building materials and the department availed the other income.