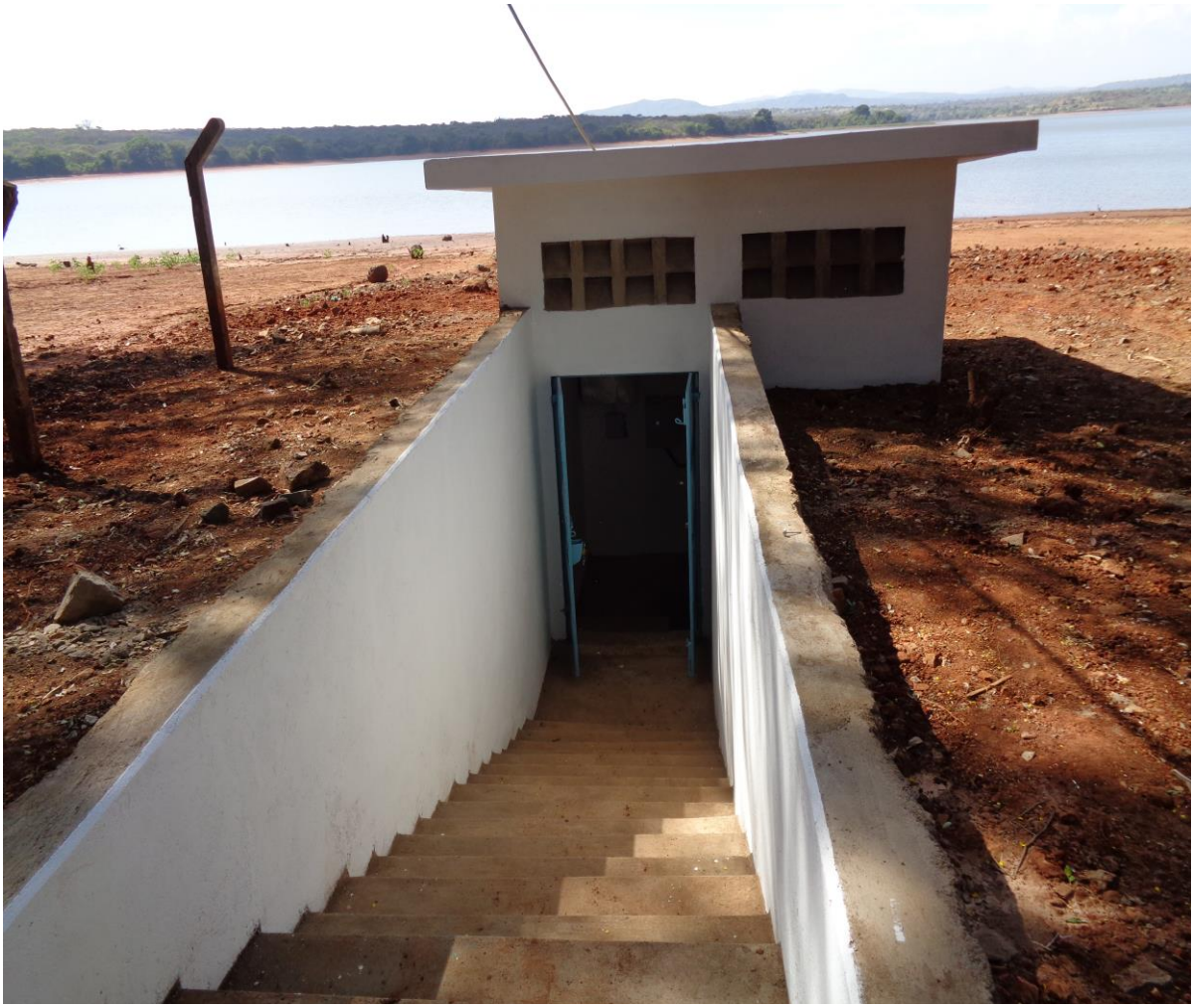
IKOMENIE SCHOOL WATER PROJECT

FINAL NARRATIVE REPORT



Reporting period: April 2018

Project implemented by: Kujenga Maisha East Africa

Final Narrative Report

For the attention of: Martin Petdzolt Thursday, 14 November 2019

Partner	KUMEA	Project Number:	
Project Name	IKOMENIE SCHOOL WATER PROJECT	Project Duration	Two Years
Project Leader	Dr. Simon Maina	Reporting period:	August 2017

1. General Information

1.1. Project Information

The Ikomenie water project was formulated as a result of a successful Sanitation project implemented in two primary schools in Mbeere, Embu County (Mutugu Primary School and Ikomenie Primary school) . The project was funded by NAK- Karitativ and implemented by Kujenga Maisha East Africa in collaboration with the community, Kengen, and the County governemnt. The project was designed to construct an eight kilometere water line from Gitaru dam to Ikomenie Primary school and the installation of a water pump near the dam that would help in pumping the water to the school. The community at Ikomeniea and its enviros has always faced acute water shortage yet they have sevearla hydroelectricity generating dams in their neighbouhood. The project was aimed at alleviating the acute scarcity of water for drinking and sanitation purposes as well as allow full utilization of the sanitation facilities constructed and the existing ones. The project also had a provision for a water Kiosk which would be used to sell surplus water to the coummnity around.

The Ikomenie Primary school has a popuation of of 415 pupils who together with their immediated families and the sorrounding homested form the 2000 beneficiaries targeted.

The approach for this project is to draw water from the Gitaru Dam using a wtaer pump Ground –Force CR5-16 2.2 KW 3HP to a distance of 300m peakpoint and then have the water is transmitted for 8 Km to the school by gravity. The water is conventionally treated through qaugulation, sedimentation, filatrtation and disinfection.

The system has been able to purify 1000 litres output per hour which from the constructed storgae amounts to 24,000 litres per day. This is sufficient for the school and the community around the school.

Source of information

This Progress Report was written by the project coordinator. The information used in writing the report was acquired through reporting by the contractor, monitoring by the Project committee, observation and inspection by the KUMEA team and the consultant in charge of work inspection appointed by KUMEA.

Outcome on the beneficiaries and the situation in the target region

The project has been able to satisfactorily address the water scarcity in the school as well as having an overall improvement the sanitation for the school. The community has also benefited from the project as they able to buy the water for domestic use from the Kiosk. This has income which will finance the maintenance of the water works and hence the sustainability of the project.

List of the indicators of the Specific Objectives and level of achievement.

Specific Objective:

The specific objective of the project was to ensure that NAC Ikomenie Primary School pupils,thier teachers and the adjuscent community have sufficient and reliable source of easily accessible clean water for hyginic domestic use and sanitation needs.

Indicators:

1. Complete water supply line with all its accessories raised from Gitaru Dam to specifics.This is 100% complete
2. The project has also been able to provide clean water to the school and the community for domestic use and sanitation.

Level of Achievement:

So far the project is fully completed. The contarctor finalised the remaining contruction works comprising of the installation of the flashback system and a submersible pump.

Project Implementation

1.2. Results and activities

The following are the works that were planned from commencement to completeion of the project. The work was done in three phases.

Phase one invloved :

1. Mobilizationof labour and equipment to the site as well as sinking the pipeline trench. This was done in collaboration with the parents of the pupils of Ikomenie primary school.It was thier contirbution for the project.
2. Constuction of a pump house. The pump house was located at the furthest point from the shore of the dam.
3. Construction of a 10,000 litres storage tank and 40,000 litres masonary wall tank. The tanks were constructed at the school
4. Construction of a water Kiosk. The kiosk was constructed within the school compound with provion being made at the fence for the community to access the water .
5. Pumping main pipeline to the school from the dam.
6. Installation of a pump.The pump was installed at the pump house after excation to the level of the water sump.
7. Construction and installation of water treatment works.
8. Electrical works installation. The connection was done in collaboration with the Kenya Power and lighting company.A meter for the project was installed.

Phase two invloved

1. Water connection to the kitchen and toilets. The connection was made both to the old latrines and the new ones. Washhand basins were also installed at strategic points to promote hand washing

2. Supply of a portable pump. The budget could not allow for the installation of a portable water pump.The community have been able to acquire one which the use to pump out the water from the pumphouse when it is flooded.
3. Construction of a 15M high tower and insatallation of $10M^3$ washback tank. The tanks and tower were constructed in the third phase after additional bugdte support from NAK-Karitativ.
4. Supply of water meters. The meters were installed to help in monitoring usage at the Kioski and the school for accountability purposes
5. Supply of fro chemical dozer. The dozers were installed at the school and committee tranied on how to administer the chemical in the right proportions
6. Fencing of the pump house.Fencing of the pump house was necessary to secure the installaton from intruders as well as ensure the safety of the pump

Phase three

1. Supply and installation of a submersible pump with all accessories
2. Supply and installation of a control panel
3. Constructions of water tower complete with 10m3 tank.
4. Supply standard control room for panel installations.

Results so far achieved

The complete water supply was installed with all stipulated components including the backwash tank and the submersible water pump. During the last phase, the submersible pump was installed to ensure continuous availability of water during the dry and rainy seasons. During the dray season when the water levels recede, the ground pump will be used to pump the water while the submersible pump will be used when the dam floods.

Observations on the results of outputs and outcomes and their impact.

The results of the project have been quite impressive. The water supply system is functional and the pupils of Ikomenie as well as the neighbouring community have adequate clean water for domestic use which is easily accessible. In addition the project provided opportunities for unskilled labour during implementation.

The outcome of the project realised so far have been the reduction of the cost in terms of time and money used to secure water for domestic use both at the school and in surrounding homesteads. There is also immediate realization of some project income from the sale of water to the community. The sales proceed will help in the repairs and maintenance of the project as well as pay the administration costs including the salaries for staff engaged to run the project. In future, it is envisaged that funds will accumulate and be used to initiate other projects beneficial to the school and the community at large. The school has also witnessed an increase in enrolment due to the project.

Impact to the beneficiaries' takes time to be realized and is dependent on the successful running of the project for a period of three years and above. Some of the obvious long term benefits include increase in income of the beneficiaries as they spend less time and looking for water. There will also be better hygiene and improved overall sanitation in the school as a result of embracing good hygiene practices due to availability water. The availability of water has also contributed to the development of a tree nursery at the school which will in the long run contribute to environmental conservation. The overall impact of the project will be improved livelihoods of the communities due to increased income and reduction of diseases.

Unforeseen negative side effects

As a result of the availability of the water in the school, the student enrolment is now on the rise. This will present a challenge in that the rest of the school infrastructure will be strained. This includes classes, furniture teachers and other facilities. The school board of management is however aware of this challenge and they have promised to work closely with the County government education office to mitigate such negative consequences.

Special Challenges and concerns during project implementation

The management experience challenges in selection of the contractor during the award of the project contract. The initially selected contractors who seemed best for the job proved deficient in term of capacity to handle the project. This led to the re-tendering of the project which finally yielded the current contractor. This contributed to an almost three months delay in the project implantation.

There was also substantial delay in securing the necessary approvals from the relevant government agencies without which the project could not commence. This also led to more than the anticipated delay in the commencement of the project.

In mid June, Kengen closed part of the turbines for repairs contributing to a high rise in water level and the subsequent submerging of the pump house. This is not a very common occurrence and we in collaboration with the contractors are seeking a lasting solution to this kind of occurrence in future. The contractor has proposed installation of submersible pumps which will work during the times when the water levels are low as well as when high.

1.3. Target group

A profile of the beneficiaries.

Ikomenie School Water Project is expected to serve the over four hundred strong pupil and teacher population of the school with sufficient daily domestic water supply and supply the surplus to the surrounding community from which the pupils and teachers come. In this way, the water and sanitation needs of the child will have been met holistically (both at school and at home).

Relationship with the beneficiaries developing

The parents of the pupils of NAC Ikomenie Primary School were involved in implementation of the project. They are also adequately represented in the management committee that have eventually be tasked with the responsibility of running the project. The committee was trained on bookkeeping and they were assisted to open a bank account where all proceeds from water sales are banked.

Acceptance of the project

The whole school community is very receptive of the project. They continue looking forward to the intervention with higher expectations. The project has really changed their lives and will definitely have long term benefits to the school and the community. Because of the income generating capacity of the project, the community will not have a burden of maintaining the entire system. They are happy to provide oversight and be associated with the project which so far is successful.

2. Projected Project Sustainability

Given that each of the 13 sparsely populated villages feeding the NAC Ikomenie Primary School has a standard population of 50 families composed of a middling 6 members per family, the total population surrounding the school is therefore 7,800 people. The expected daily water consumption for this population at an allowance of 20 litres per head per day is 156m^3. At least 20 per cent (some 1,560 people) of this population has a closer proximity to the school than the Gitaru Dam and may opt to obtain its water from the school. Service to this 20 per cent community populace will therefore require a water supply of at least 31.2 m^3 per day.

Since the total consumption of the school population will be at 9.32m^3 by 2028, the community's present need of 31.2 m^3 can still be supported by the project whose daily out put is 40m^3. The School Water User Committee, which will be managing the project, expects to sell each 20 litre jerican of water at Ksh. 5/- only to the community members. If the community purchases 1,560 (20 litre) jericans per day, the total daily income is calculated at Ksh. 7,800/-. This will culminate to Ksh. 234,000/- per month. This is sufficient income to sustain, maintain and expand the project for the benefit of this drought prone community at large.

These funds generated from the water sales are accounted for and reserved under supervision by the School Board of Management and the project oversight committee. Overheads such as water treatment, electricity consumption, water-line maintenance and the water staff salaries shall be drawn from this accumulated monthly collection. The surplus will be applied to school infrastructure improvement and bursaries in future.

2.1. Stakeholders and partners

Partnership with the other stakeholders developing?

The project was implemented by KUMEA under the watchful eye of the government of Kenya's Chief water Officer, Lands and Water in the Embu County, who inspected and monitored progress on a regular basis alongside KUMEA. The national and country governments continue to be key stakeholders with representation in the management committee. The overall responsibility of all water sources is vested in the Water Resource

Management Authority (WARMA). This is the body that the committee will continue working together with to ensure the project is properly managed.

Roles and responsibilities of Partners

The Chief Officer, Lands and Water manages all the Water resources in the county through the Water Resources and Management Authority (WARMA) of Embu County. The Project has been licensed by WARMA as a domestic water supply project. This is the body that will continuously ensure standards and proper management after KUMEA has finally handed over the project to the school community. The parties have been actively involved and briefed on the project progress from commencement to the current status.

3. Challenges and Problems encountered during implementation

The implementation of the project was not without challenges. The major challenges experienced include:

1. Rock excavation was encountered almost at all stages especially on the pipeline trench, coagulation and clear water storage tanks. This was overcome by use of explosives and changing the qaulity of pipes in the rocky sections of the line.
2. There were notable delays in way leave acceptance by Kengen. This was occassioned by the way systems work in the government agencies. The unrelenting follow-up by the project coordinator helped secure all the required approvals.
3. Processing of permit by the Water Resource Management Authority (WRMA) took exeptionally long. The permis were however finally issued.
4. Water levels in the dam drastically decreased due to drought and might increase during this period of the long rains and therefore negatively affecting the continued good performance of the water supply system. A submissible pump has been installed to ensure that pumping continues during the wet and the dry season. This will also take care of the rising water levels of the dam during turbine maintanance by Kengen.

4. Recommendations

It is recommended that the Ikomenia Primary scool,the community and the management committee:

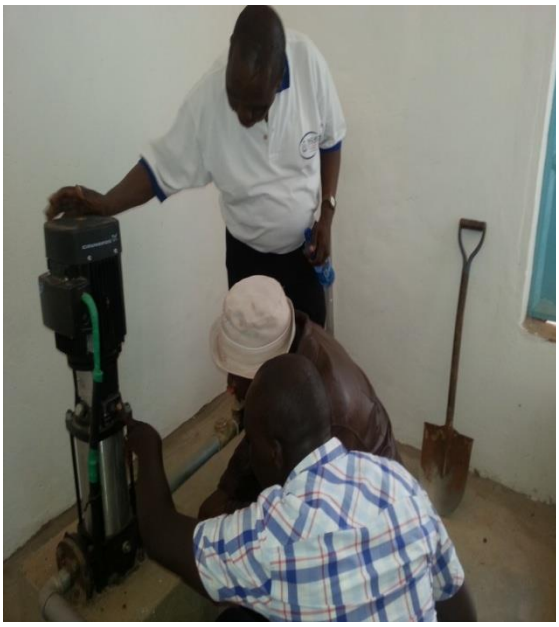
1. Should develop a proper water management routine for the use of water especially when the dam water levels are low and Kengen restricts pumping.
2. Water in the storage tank should be continually chlorine treated by a qaulified staff to ensure that water remains fit for human consumption and doemestic us. This is in addition to the prudent management of the funds realised from the water sales.The committee was trained on this.
3. The surface water run off from school compound during the rainy season should not be allowed to flow inside the underground water tank other wise it will pollute the water.
4. The committee should continue with the monitoring of the project ensuring that routine maintace of the pump and other accessories are regulary done. They should also conitinue endearing the proejct to the community for the safety of the pipeline and for the general monitoring of the project progress.
5. The committee should improve on the record keeping and overall financial mamagement to ensure there are adequate controls as well as better cash management.

All these challenges have been communicated to the management committee and they have also been advised on the mitigation measures and solutions for each one of them is under way as the project progress advances.

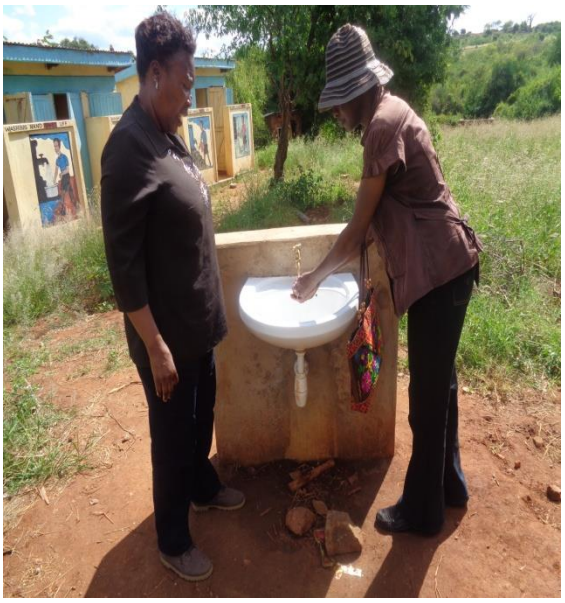
5. Photos

Pipe trench excavation close to the dam

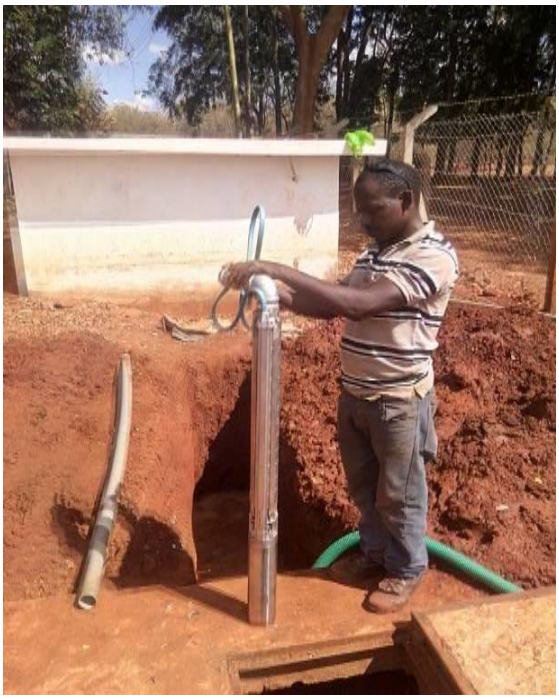
Fencing of the pump house to keep away intruders



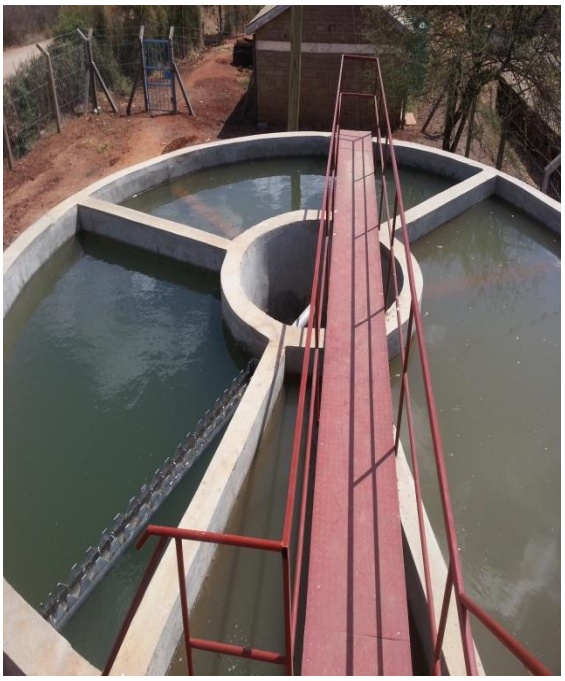
Inside the Pump House at the intake



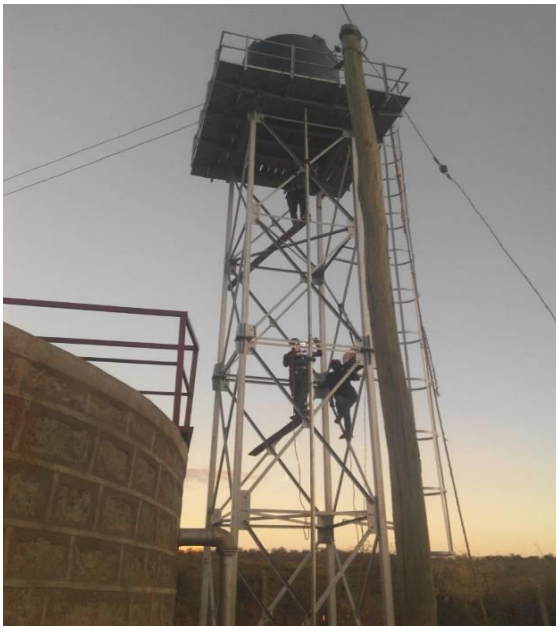
Water installation at the school next to the washrooms



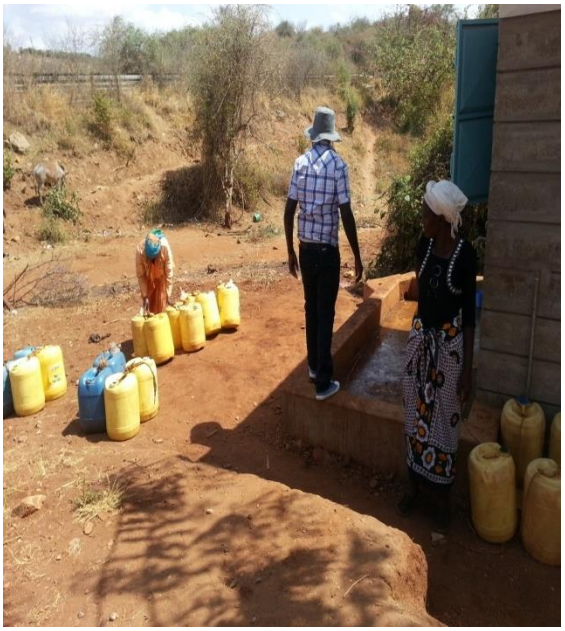
Installation of the submersible pump at the sump



Top of the coagulation tank



Elevated backwash tank installation



Sale of water to the local community

Date: April, *2018* Signature: Dr. Simon Maina