

Osiligi Charity Projects

**Repair of broken hand pumps
in Kenya, Jan - June 2022**

(FF 607)



2022 Interim Report

For the Eagle Foundation

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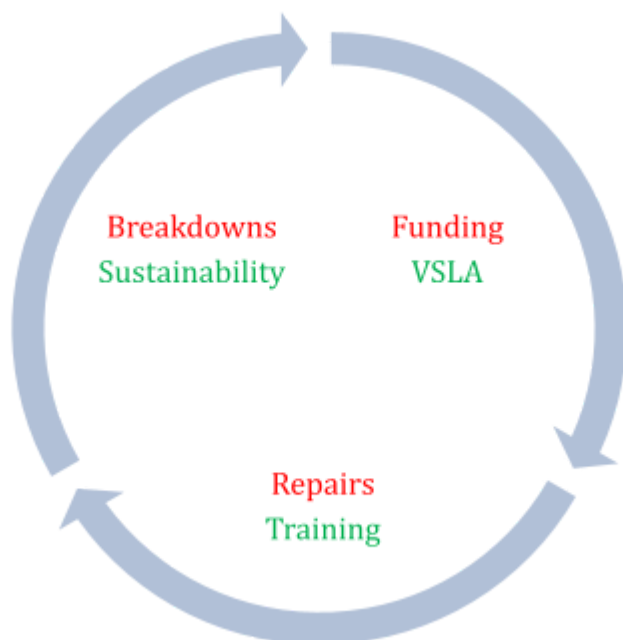
Summary

This report outlines the progress made from Jan – June 2022 by the Osiligi charity Kenyan team, in the restoration of hand-pumps in the rural districts of Kenya.

Covid has restricted travel to and around Kenya and so the verification of the data received by the team is important to provide confidence in the information provided in this report.

Despite the restriction of Covid and the impact of external influences which have caused a rise in the cost of fuel and materials, the team has been able to restore 103 pumps, providing access to water to 33,597 people including schools and dispensaries. It has been achieved at an average cost per user of 120 Ksh or 86p and is funded by the Eagle Foundation (Appendix A).

The sustainability life of a hand pump can be achieved by recycling parts and by saving for spares by generating a water economy. This is made possible through schemes such as a Village Savings Local Association (VSLA) and is important in the sustainability of a pump and in breaking the cycle of dependence of a poor community having to wait for the next charity to provide funding to repair their pump.



This can be achieved by community ownership, in training to carry out basic repairs and in the management of their pump. The regional, local contact personnel (RCP) will continue to support the local communities by providing spares to enable them to carry out their own repairs, and by providing the expertise when necessary in carrying out a more complex or expensive repair.

Introduction

The aim of the project is to continue to repair and restore existing and viable non-functional hand-pumps in Kenya, therefore providing access to ground water to the rural communities. The RWSN study from 2009 concluded that there are over 12,000 hand pumps in Kenya, 3600 hand-pumps or 30% are non-functional). The Osiligi charity has restored over 1600 hand-pumps in Kenya since 2015, so there is still a lot more work to do, and consequently funding is still required (Appendix B).

When a hand-pump fails the rural community has to find an alternative, or purchase water. Neighbouring communities often make a charge for providing access to their pump. The cost of bottled water ranges from 5 – 20Ksh for 20L, and that weighs 20 Kg. Often a woman or (girl) child has to collect the water travelling (6km) over long distances. Time that could be used for alternative employment or in a child's education. No education, no job, leading to an early marriage, pregnancy, and no choice. So the cycle simply repeats itself.

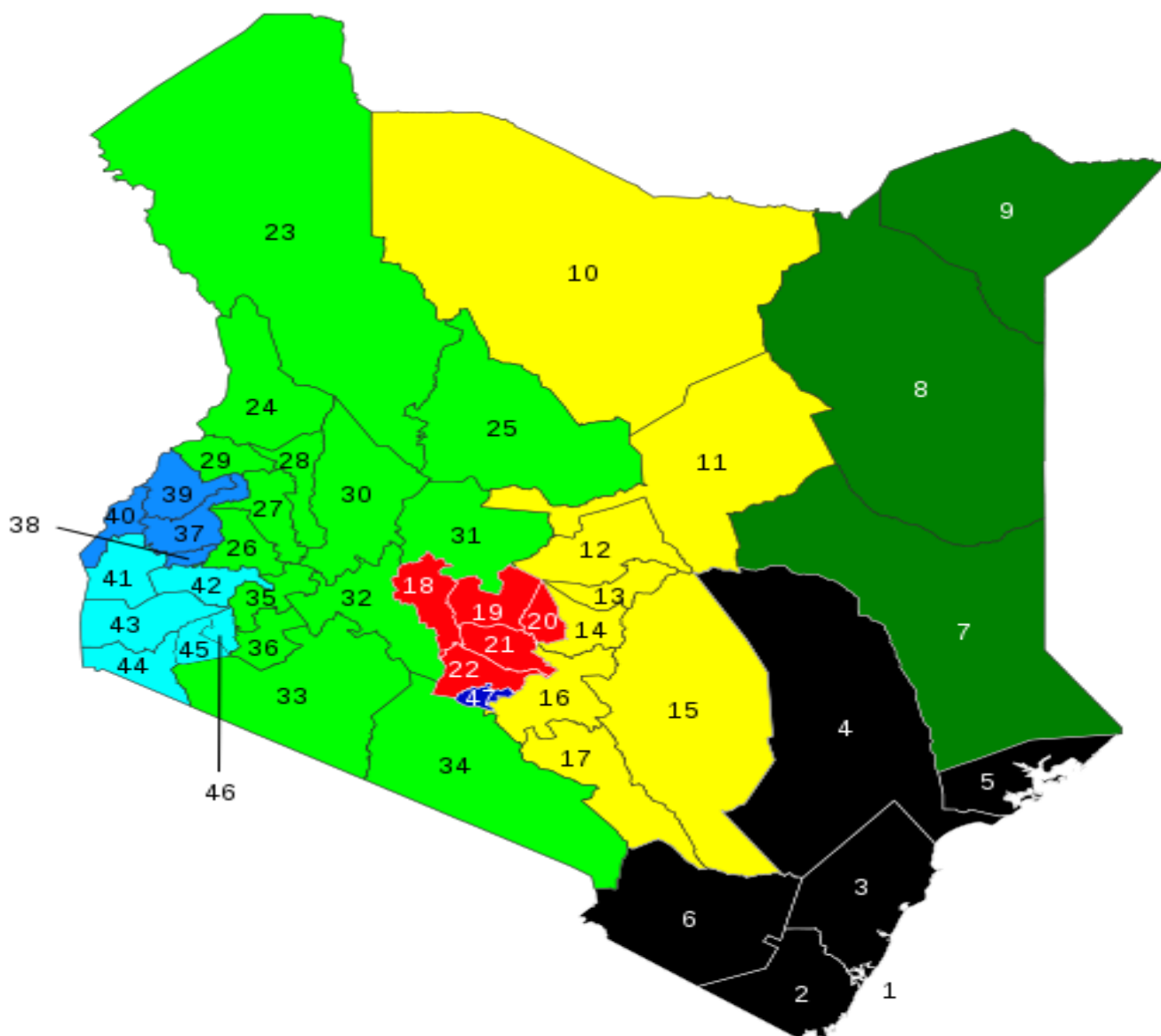
Alternative open water sources are rivers, ponds or puddles but these carry risks. Drowning or being attacked by a wild animal or human. Waterborne disease such as typhoid and cholera, with the consequences of dysentery and diarrhoea, which may lead to death, poor health and a debilitating illness. Medication is expensive or may not be available, adding to the financial burden on a household..

Hand pumps do need basic periodic maintenance and operational management due to the environmental conditions and its usage. Training is offered to a community to carry out basic maintenance, such as changing a seal, O-ring, bobbin or a bearing that will cause a pump to fail but only cost a few shillings to replace. If the community can help themselves then this can only help in the sustainability of their hand-pump.

Photos of the type of repairs are shown the verification section of this document. A water economy can be generated by a VSLA savings scheme and this will provide the independence in funding for the necessary spares. If a more major repair is required then the local contact (caretaker) can contact the RCP for further support.

Locating pumps.

Figure 1 indicates the areas in Kenya where the Osiligi charity is now working in Kenya; Nyamira 46, Nakuru 32, Siaya 41, Kisumu 42, and Homa Bay 43, in West Kenya, Kitui 15, Makueni 17, Kajiado 34, counties in Central Kenya and Kwale 2, in East Kenya.



1	Mombasa	13	Tharaka-Nithi	25	Samburu	37	Kakamega
2	Kwale	14	Embu	26	Trans Nzoia	38	Vihiga
3	Kilifi	15	Kitui	27	Uasin Gishu	39	Bungoma
4	Tana River	16	Machakos	28	Elgeyo-Marakwet	40	Busia
5	Lamu	17	Makueni	29	Nandi	41	Siaya
6	Taita-Taveta	18	Nyandarua	30	Baringo	42	Kisumu
7	Garissa	19	Nyeri	31	Laikipia	43	Homa Bay
8	Wajir	20	Kirinyaga	32	Nakuru	44	Migori
9	Mandera	21	Murang'a	33	Narok	45	Kisii
10	Marsabit	22	Kiambu	34	Kajiado	46	Nyamira
11	Isiolo	23	Turkana	35	Kericho	47	Nairobi
12	Meru	24	West Pokot	36	Bomet		

The restoration of pumps?

Over 1600 hand pumps have now been repaired since the project started in 2015. Appendix B indicates that there are still more than 2000 hand pumps still not functioning. To identify the location of a hand-pump the communities, local contacts and authorities need to support the project. To help achieve this and understand expectations a Memorandum of Understanding (MOU) is used to gain support in a region from the local authority and their communities. This is very important for security reasons and in gaining access to resources and information (Appendices C & D).

How many people now have access to water?

Most villages will not know how many people live in the surrounding community, especially if children are included. A borehole may serve a community of between 5 to 100 households, a primary & secondary school of 250 – 1000+ pupils, and possibly a dispensary. Each family household may have grandparents, parents and children, up to 5 - 10 people may be living in a household. A conservative estimate therefore of people served by a pump is between 50 to 2000 people. On average the number of people that have access to water from a borehole will be around 250 - 300 people. During January to May this year the Osiligi charity has repaired 103 pumps, serving approximately 33,597 people which is 326 users per pump.

The Challenges of 2022

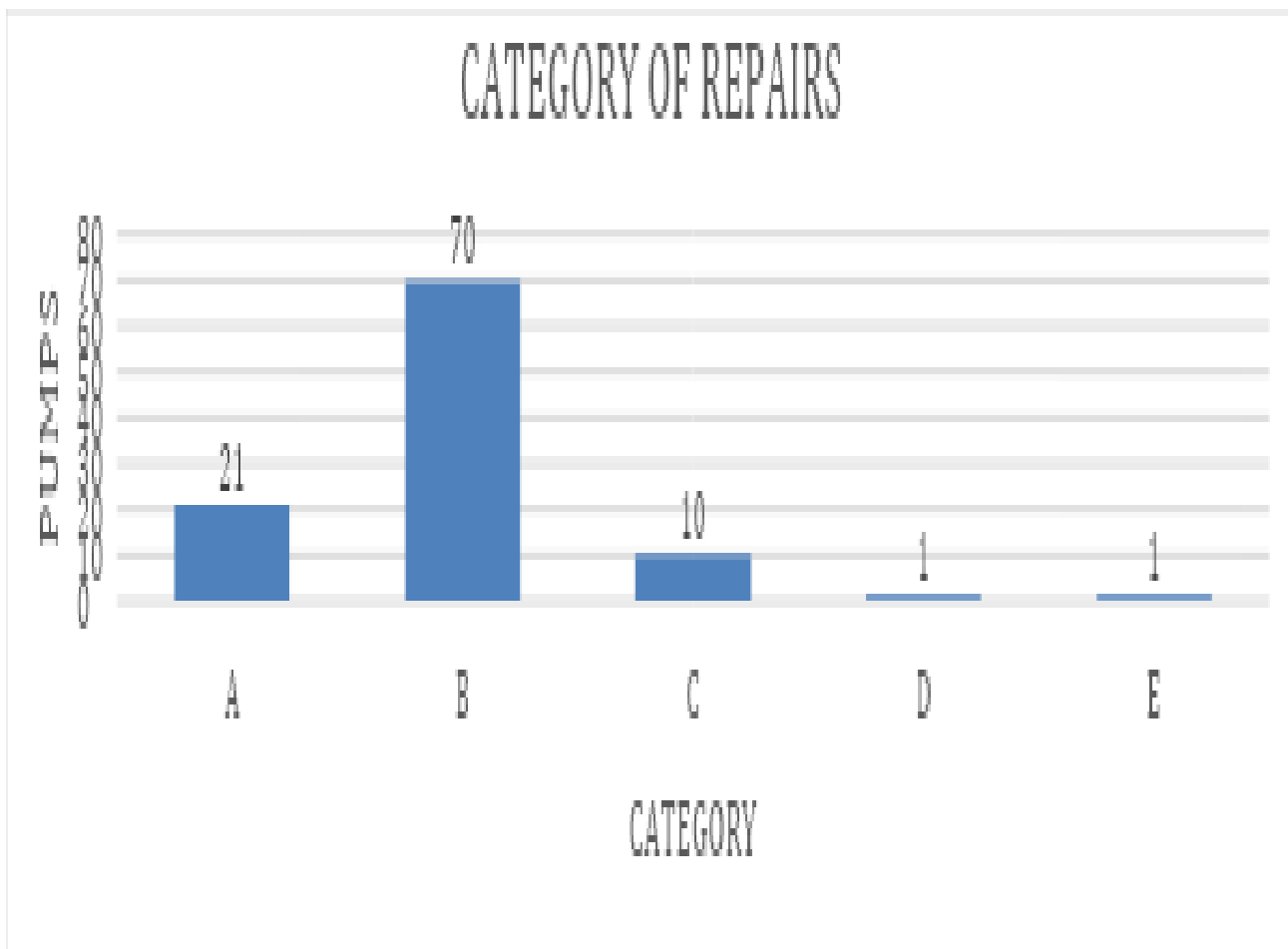
Covid, and the increased cost in travel and material.

It has still not been possible to travel to Kenya this year and as it is also an election year which can have a volatile result when certain regional areas do not accept the result.

The increase in the cost of materials and fuel have made it difficult to maintain costs. Despite these pressures the team have continued to improve their productivity and maintain their ability to restore non-functioning pumps.

The cost of repair

A breakdown of the repairs for the 103 pumps is shown below. These costs do not include the transport of materials and people to site, accommodation or meals, if a more complex repair is necessary. There are 5 categories, A to E. A (21 pumps) is a simple repair where the parts cost less than 5,000Ksh (£35). B (70 pumps) is a more extensive repair where more parts are needed at a cost of between 5000Ksh and 25,000Ksh (£178). Category C (10 pumps) is a more extensive repair where pipes and rods may have to be replaced. These repairs cost between 25,000 - 50,000Ksh (£356). D (1 pumps) is the installation of a new pump if the old one is beyond economic repair 700,000Ksh (£500). Finally, E (1 pump) needed additional resources, such as having to employ a contractor to fish out broken pipes, flush a borehole, or any additional civil works 150,000Ksh (£1000). When a new pump is required any old parts, if possible, are recycled.



Data collection

The following information is collected on the pumps and includes the following data:

RCP:	UK Date (Day/Month/Year):	County:	District?	Village name:	Pump Name:
Victor	15/5/2022	Kisumu	Nyando	Kochogo	Kochogo school high school water pump
Pump Type:	Community Certificate/group	Registration:	Number of Homes:	Population (children & adults):	
Afridev	No			640	
Borehole Registration Details:	Depth of Well/Borehole (m):	Water Column Depth (m):	Alternative source		
Yes		20	9 Alternative Pump		
Distance of water (kms)?	Cost of water (Ksh)?	Latitude	Longitude:		
1		5	-0.20679 34.91113		
Caretaker Name:	Caretaker Contact	Caretaker - work completed	Training Provided	Type of Repair (parts needed):	
Albert	0726525988	Yes, repaired and working	Yes	Bushes seal replaced	

Verification

The pumps repaired during 2022 will be audited in January - March 2023 when a UK team will visit a sample of the repaired pumps.

As it has not been possible to visit Kenya this year the collection of data will help in the verification of the work carried out by the team. The team member responsible for the Osiligi database reviews the data to ensure that any missing data can be followed up on prior to the monthly meetings. Verbal reports are provided at these meetings noting the progress and identifying any issues that have arisen that month. Actions are noted and followed up immediately, so as to assist in the work for the following month. If it is not possible to resolve a problem, then any budget is held back until the problem is resolved.

The data collected is used to identify the RCP responsible for the pump repair and the date it was restored in working condition. The name of the county, district, village and pump provide the location of the pump and type being restored. If a pump is obsolete or not viable for repair, then this is noted and put into another program for later repair. A borehole should be registered with the local authority (LA), but this is not always the case. The community should be registered and may have already applied for assistance to repair their pump, again this is often not the case, or the LA simply do not have the funds to carry out the repairs. If the pump is viable for repair, then the team will undertake its restoration. The number of homes and population are recorded as well as the depth of the borehole and water column. The Lat/Long or GPS coordinates are recorded, and the photographs (Pre/Post repair) have these coordinates included, see below:



The caretaker or person responsible for the pump is recorded. The community and caretaker are often involved in the repair for training purposes.

Categories (A - E): Local Authority MOU

A < 5000Ksh <https://drive.google.com/open?id=1U8Uzk5Tf7a0iz0FysIc1361FQ04zsdBF>

Community MOU

https://drive.google.com/open?id=1fL_USr-kg3F5fN_REiHidbe-ZZ3RVGLy

Pre installation photo including location data

<https://drive.google.com/open?id=1x6In1dCDC0sL3gDTW-uA6kGsvfeynF9w>

Post installation photo including location data

<https://drive.google.com/open?id=1ushGtKlkcY-oSE4b3i2yKbqwX1Cxppd>

The MOUs are signed off by the local authority, community and Osiligi charity RCP (Regional Contact Person) (Appendix C & D).

The aim of the LA MOU is to aid in the communication, identify expectations and achieve the following objectives:

- Informing sub county officials.
- Establishing security.
- Sharing data (borehole registration, pump location, committee certification and priorities in repair.
- Sharing resources e.g., transport, equipment, training in the restoration of the hand pumps.
- Proof of verification.

The aim of the Community MOU is similar but with a focus on how to achieve the following objectives:

- Maintenance and Repair
 - Training and management
- Borehole Protection
 - Animals, Vandalism
- Clean and safe water
 - Disinfection, storage
- Sustainability – VSLA
 - Water economy

Appendix A. Pump repairs

Date	Donations	Money Used	By Donation			By Year		
			Pumps	Number of users	cost per user	Pumps	Users helped	Avr cost per user
			2022					
January								
Eagle Foundation	KES 739,500	KES 700,000	19	5220	KES 134	19	5220	KES 134
Carried Forward	KES 39,500							
February								
Eagle Foundation	KES 753,206	KES 600,000	17	6130	KES 98	36	11350	KES 116
Education Budget		KES 60,000						
Sub total	KES 792,706	KES 660,000						
C/F	KES 132,706							
March								
Eagle Foundation	KES 738,684	KES 730,000	21	7000	KES 104	57	18350	KES 112
Education Budget		KES 73,000						
Sub total	KES 871,390	KES 803,000						
C/F	KES 68,390							
Total 1Q2022	KES 2,231,390	KES 2,163,000						
April								
Eagle Foundation	KES 739,700	KES 600,000	14	4110	KES 146	71	22460	KES 121
Education Budget		KES 60,000						
Sub total	KES 808,090	KES 660,000						
Carried Forward	KES 148,090							
May								
Eagle Foundation	KES 709,891	KES 700,000	15	5180	KES 135	86	27640	KES 123
Education Budget		KES 70,000						
Sub total	KES 857,981	KES 770,000						
Carried Forward	KES 87,981							
June								
Eagle Foundation	KES 704,486	KES 700,000	17	5957	KES 118	103	33597	KES 120

Education Budget		KES 70,000		
Sub total	KES 792,467	KES 770,000		
Carried Forward	KES 22,467			
Total 2Q2022	KES 2,222,467	KES 2,200,000		



Appendix B. RSWN Hand pump Data

Handpump Data, Selected Countries in Sub-Saharan Africa April 21, 2009

Country	Informant	Estimated Rural Pop. (millions) ¹	Estimated Rural Coverage ¹	Estimated Rural Unserved ¹	Estimated % Served by Handpumps	Estimated Number using Handpumps	Total # Handpumps	# Functioning Handpumps	# Non-Functioning Handpumps	% Non-Functioning	Notes
Angola	Dauda	8.6	40%	5.2	90%	3.10	4,500	3,150	1,350	30%	UNICEF estimate
Benin	S Adokpo	3.7	60%	1.5	45%	1.00	6,700	5,200	1,500	22%	
Burkina Faso		10.5	44%	5.9	62%	2.86	22,400	16,800	5,600	25%	UNICEF Country Profiles
Cameroon	J. Rihouey	7.7	41%	4.5	50%	1.58	9,000	6,750	2,250	25%	Estimate J. Rihouey
DRC	G. Kazad	35.3	29%	25.1	4%	0.41	1,500	500	1,000	67%	approx. 60% use springs
Ethiopia	B. Muluneh	58.7	11%	52.2	30%	1.94	30,046	19,667	10,379	35%	DHS 2000/HP # calculated
Cote d'Ivoire		9.2	74%	2.4	80%	5.45	19,500	6,825	12,675	65%	UNICEF Country Profiles
Guinea		5.5	38%	3.4	85%	1.78	12,500	10,000	2,500	20%	UNICEF Country Profiles
Kenya	P. Nduati	19.6	46%	10.6	15%	1.35	12,000	8,400	3,600	30%	DHS 2003/Estimates
Niger	I. Sanoussi	9.0	36%	5.8	56%	1.81	7,175	5,025	2,150	35%	Min. Hydraulics 2005 for # HP
Nigeria	B. Aleobua	65.3	49%	33.3	35%	11.20	80,000	40,000	40,000	50%	JMP and UNICEF sources/Est.
Sierra Leone		3.0	46%	1.6	55%	0.76	2,500	875	1,625	65%	Unicef summaries/Est./MICS2005
Uganda	S. Mutono	22.0	52%	10.6	60%	6.86	30,000	24,000	6,000	20%	
Totals		319	38%	197	45%	55.5	345,071	220,362	124,709	36%	

¹ = JMP 2004 (Joint Monitoring Program). Est. = Estimates made where number of handpumps not clearly stated, but assumed to include both boreholes and protected wells.

HP # Calculated = Actual number of handpumps not inventoried, but number estimated by dividing total population served with handpumps by 250 persons per handpump.

DHS = Demographic and Health Survey (year of survey in parenthesis).

Appendix C. MOU Local Authority template.

Memorandum of Understanding MOU - 2022

Hand Pump Project – Kenya

Osiligi Charity (OC)

&

Local Authority (LA)

This Memorandum of Understanding (MOU) sets out the terms and understanding between the OC and LA in the repair, restoration and maintenance of hand pumps providing access to water to rural communities.

Background

When a hand pump has been repaired there is a need for it to be maintained. The aim of the Osiligi hand pump project is to restore non-functional hand pumps and for the communities to maintain them.

Purpose

This MOU outlines how a partnership between the OC & LA will enable the shared use of resources to benefit the rural communities, by the effective, efficient and efficacy of their resources e.g. the shared use of data for the pumps, their prioritisation and maintenance by the community committees.

The aim of the hand pump project will be achieved from the following objectives:

1. Informing sub county officials.
2. Establishing security.

3. Sharing data (borehole registration, pump location, committee certification and priorities in repair.
4. Sharing resources e.g. transport, equipment, training in the restoration of the hand pumps.
5. Proof of verification

The outcome will be a more effective use of knowledge and resources for the benefit of the rural communities, as it will enable hand pumps to be restored in a qualitative and cost-effective manner.

Reporting

Monthly reports on the number of pumps repaired, including expenditure to monitor the progress of the outcomes and benefit of the partnership to the rural communities

Funding

There is no commitment to funding by either partner.

Duration.

This MOU is '*at will*' and may be modified by mutual consent of authorised officials from the Osiligi charity and Kwale County. This MOU shall become effective upon signature by the authorised officials and will remain in effect until renewed on a yearly basis, modified or terminated by any one of the partners by mutual consent. In the absence of mutual agreement by the authorised officials, this MOU shall end on 31st December 2020.

Contact Information

1. Regional Contact Person

Name:

Mobile:

E-mail:

2. Local Authority

Name:

Mobile:

Email:

1.....

Date:

(Partner signature)

(....., Osiligi Charity.)

.....

Date.....

2.....

Date:

.....

(Partner signature)

(.....)

.....

Date.....

Appendix D. MOU Community template.

Osiligi Charity Projects is a UK registered charity, number 1135331.

Date xx/yy/zz

Memorandum of Understanding (MoU)

Between:

Osiligi Charity (OC)

and

**xxxxx of..... in
yyyyy County**

**For the supply, installation and
maintenance of a pump at xxx in yyyy
ward, zzzz county**

Drawn by:

Osiligi Charity Foundation

MEMORANDUM OF UNDERSTANDING

THIS MEMORANDUM OF UNDERSTANDING (hereinafter "MoU") is made on the day of xx/yy/zz

BETWEEN

OSILIGI CHARITY a charity, registration number 1135331(hereinafter referred to as **OC**)

AND

The xy (hereinafter referred to as "**XY**") whose expression shall where the context admits include and extend to their successors and is assigned to the person deriving title under them.

WHEREAS IT IS AGREED as follows:-

- A. OC** is to supply and install an electric pump in the village (hereinafter referred to as "The Project") to provide the school and the villagers with access to ground water.
- B. XY** has agreed to the sustainable opportunity of the installation and maintenance of a pump.

NOW THEREFORE, THIS MEMORANDUM WITNESSETH AS FOLLOWS:

Obligation

- 1.1 The **OC** in coordination with the **XY** shall undertake to install or restore an electric pump.

- 1.2 Prior to the commencement of the electric pump installation, the **XY** shall ensure that all Land Issues are settled.
- 1.3 That in facilitating the project, **OC** will undertake all the supervision of the project.
- 1.4 The **XY** guarantees to provide access for the project by ensuring that all villages are aligned to the project and no compensation shall be claimed.
- 1.5 The **XY** shall call a meeting that must be attended by not less than the minimum required number of members to provide a quorum for signing off the Agreement between the village members and the **XY** as stipulated in this MoU.
- 1.6 The **XY** shall provide **OC** with a copy of the said Agreement which shall form part of this MoU.
- 1.7 The **XY** shall ensure that community members provide security for the electric pump and Osiligi staff during and after the installation.
- 1.8 The **XY** will ensure there is day to day security of the electric pump and its location.
- 1.9 The **XY** will establish measures to protect the water source from contamination.
- 1.10 The **XY** will undertake to educate and raise awareness amongst water users about best practices to be adopted to protect clean water and maintain a high standard of hygiene and sanitation around the water source.

Duration of the project

- 1.11 The duration of the project will be from xx/yy/zz to xx/yy/zz.

Notices and language

- 1.12 All notices, requests, consents, demands, waivers or other communications under or in connections with this MoU shall be in writing, signed by the parties concerned.
- 1.13 That communications by telephone may be used for emergency cases only or for any query that needs immediate response.
- 1.14 The official language of this MoU shall be in English.

Dispute resolution

1.15 This MoU shall be governed in accordance with the Law of Kenya.

Any dispute arising out of or in connection with this MoU shall be settled amicably by the Parties concerned. Should this fail, the aggrieved party may take legal action at the Court having authority to entertain the dispute.

Implementation of the agreement

1.16 Each of the Parties undertake all steps necessary for its implementation that is considered necessary to fulfil the objective of this MoU.

1.17 Information and guidance in the implementation of the MOU, for sustainability and water economy through a VSLA is given at the end of the MoU.

- A. Maintenance and Repair
- B. Borehole Protection
- C. Clean and safe water
- D. Certificate of Registration
- E. Sustainability - VSLA

IN WITNESS WHEREOF the parties hereto have caused this MoU to be executed by their authorised representative on the date and year as follows:

Dated this xx day of xx/yy/zz

FOR AND ON BEHALF OF THE OSILIGI CHARITY ORGANIZATION

Signature:

Name:

Title:

FOR AND ON BEHALF OF XXXX AND YYYY COMMUNITY

Signature:

Name:

Title:

IN WITNESS WHEREOF the parties hereto have caused this MoU to be executed by their authorised representatives on the date and year as follows:

Dated this 21st day of December 2020

FOR AND ON BEHALF OF THE OSILIGI CHARITY ORGANIZATION

Signature:

Name:

Title:

FOR AND ON BEHALF OF XXXX

Signature:

Name:

Title:

Maintenance and Repair

OC will provide one visit per year by a qualified and trained technician through Engineering who will check on the general condition of the electric pump.

A technician can be contacted on **XXX**. This is restricted to two calls within three years to prevent any nuisance calling.

Borehole Protection

An animal-proof fence should be constructed around every completed borehole which is intended for community or public use. Hedges or timber can be used in constructing the fence.

Boreholes are constructed as a point for collecting water. Water collected should be utilized at home.

Washing the clothes and household utensils and bathing are prohibited near a well/bore hole.

Mixing of chemicals, washing of petroleum products and containers, and handling of potential pollutants near the bore hole are also prohibited.

A 30-meter protection zone must be built and maintained (Appendix B).

Livestock (cattle) should not be allowed near wells/bore holes.

The community has direct ownership and responsibility for the borehole or public well. The community should protect the borehole and pump from theft, vandalism, and misuse.

Best Practices for clean and safe water.

1. **Post -delivery contamination:** water that is safe at the point of delivery can prevent significant health risk of recontamination during collection, storage, and drawing. Steps that can be taken to minimize such risks include improved collection and storage practices.

2. Water collection and storage:

- a. People need vessels to collect water, to store it and use it for washing cooking and bathing. These vessels should be clean, hygienic, and easy to carry.
- b. The amount of storage required depends on the size of the household, e.g. approx. 5 litres per person is appropriate where there is an appropriate daily supply.
- c. Promotion and monitoring of safe collection, storage and drawing provide an opportunity to discuss water contamination issues with vulnerable groups, especially women and children.

3. Water Disinfection:

- a. Water should be treated with a residual disinfectant such as chlorine if there is a significant risk of water source or post-delivery contamination.
- b. This risk will be determined by conditions in the community, such as population density, excreta disposal arrangements, hygiene practices and the prevalence of diarrheal disease.

Sustainability

Water Economy

Village Savings Local Association (VSLA)

The **XY** is encouraged to form a water management committee to generate a water economy from their pump. The objective is to provide sustainability for the pump and provide an economy to the community by having access to groundwater.

An example of a savings scheme but not restricted to is a Village Savings and Loan Association (VSLA) group, who regularly save a small amount then members can take small loans from these savings.

Share purchases and loans must be recorded in a Passbook. Water Fund, Loan Fund, Social Fund balances and shares are noted by the record-keeper/s. Passbooks remain locked between meetings, to prevent tampering or alteration of loan records.

The Group has a five-person Management Committee elected for one cycle. Groups develop a constitution that contains the Social Fund, Share-purchase and Loan policies of the Group.

Each member has one vote in electing the Management Committee and developing the constitution. At the end of every annual cycle, all outstanding loans are recovered, and the Loan Fund is shared out. The Loan Fund (which includes profits) is divided by the total number of shares purchased by members during the cycle, to calculate the share value. Each member then receives his or her pay-out according to the number of shares purchased. Further information can be obtained from

http://www.fsnnetwork.org/sites/default/files/vsl_programme_guide_for_village_agents_-_version_1.04_english.pdf

The objective of the VSLA is to break the cycle of the community's dependence on a 3rd party to repair or restore their pump.