



Osiligi Charity Projects

Repair of broken hand pumps in Kenya

FF 647

Final Report, 25th January 2024

| | |
|---------------------------|--|
| Donor: | Fondation Eagle |
| Date of grant acceptance: | 13 th December 2022 |
| Amount granted: | £60,000 |
| Exchange rate: | 147 to 183 KES/GBP (exchanged monthly) |
| Number of beneficiaries: | 104000 people |
| Location: | Southern Kenya |
| Period of project: | 1 st January 2023 to 31 st December 2023 |

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1. Executive Summary

This report outlines the progress made from January – December 2023 by the Osiligi Charity Kenyan team in restoring hand-pumps in the rural district regions of Kenya. During this time, the team has restored 276 hand-pumps across 9 counties of Kenya as a result of Eagle Foundation funding, providing access to water to around 104,000 people. The number of hand-pumps repaired in 2023 using EF funding exceeded the initial goal of 200-250. Despite the rising cost of materials and transport, the average cost of a repair was around 45p per person.

2. Introduction

The aim of the project is to continue to repair and restore non-functional hand-pumps that provide access to ground water to the rural communities of Kenya. The Osiligi charity has restored over 2300 hand-pumps since 2015. However there are still many more to be repaired – probably in excess of 3000 – and each year many pumps break down. The cost of repairing a broken pump is about 20 times lower than that the cost of digging a new well, so it is a very cost-effective activity.

By the end of 2022, the Eagle Foundation (EF) had supported the Osiligi charity for 4 years, resulting in the repair of 799 pumps, benefiting around 236,000 people. The aim for 2023 was to repair a further 200-250 pumps with EF funding. This report outlines the progress achieved from January 1st until December 31st 2023.

The Osiligi UK management team, and the team of 7 Kenyan water engineers who oversee the pump repairs, all work as volunteers. The charity does not pay the engineers a salary; however, the charity does contribute a small amount towards their education or the education of their children.

Repairing hand pumps consists of the following steps:

- Locate broken pumps
- Ask the community to appoint a caretaker
- Repair the pump with the help of the caretaker
- Train the caretaker on basic repairs
- Train the community how to generate a water economy from the pump (to pay for future repairs)
- Record keeping and follow up.

Rather than just repairing the broken pumps, it is paramount in each project that the charity gives the local community the resources (spares, knowledge and engineer contact details) so that they can perform their own basic repairs and maintenance in order to keep their pumps working for many years to come.

3. Identification and locations of broken pumps

To locate the broken pumps, our team of Kenyan engineers work closely with local authorities, MPs, and word of mouth from the communities. Once identified, getting to site can be quite a challenge, often having to resort to getting out of the car and walking to the last stage (see the first photograph in Appendix 4).

During 2023, the EF-funded pump repairs took place in 9 counties of south and south-west Kenya (Figure 1). Each engineer is responsible for covering one or more regions. Figure 2 shows the number of EF-funded pump repairs undertaken in each county during 2023. In total, **276 pumps** were restored during this period as a result of EF funding.

Figure 1: The red arrows denote the 9 (of 47) Kenyan counties where pumps repairs took place during 2023.

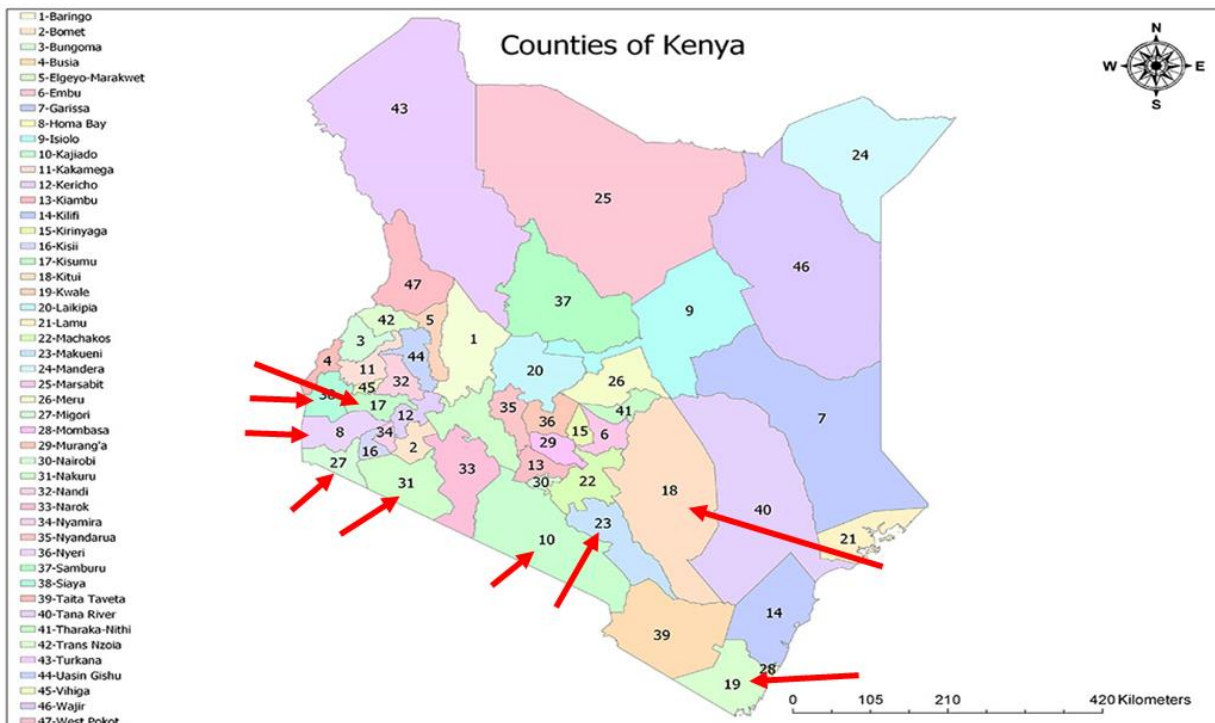
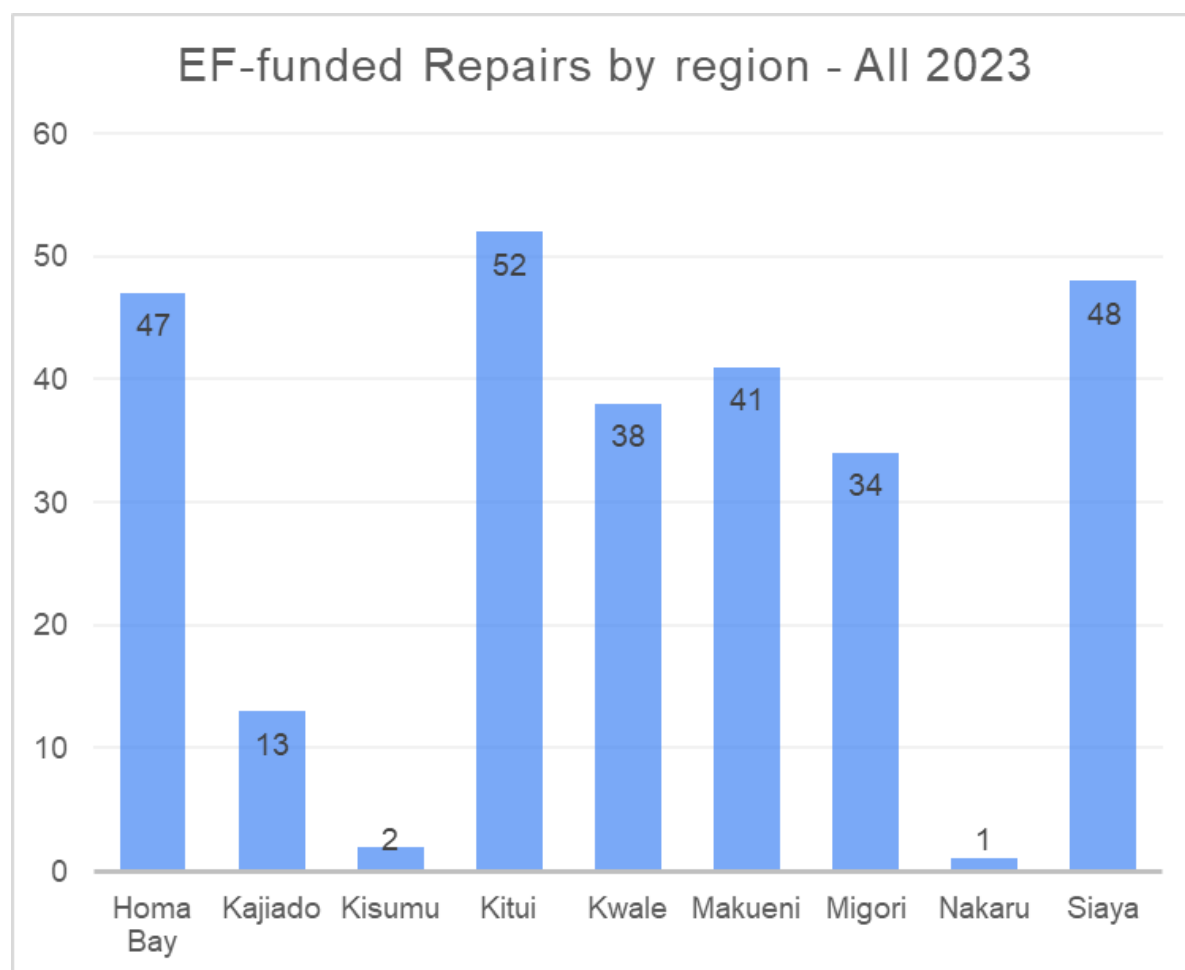


Figure 2: EF-funded repairs during 2023 by location

4. Pump repairs

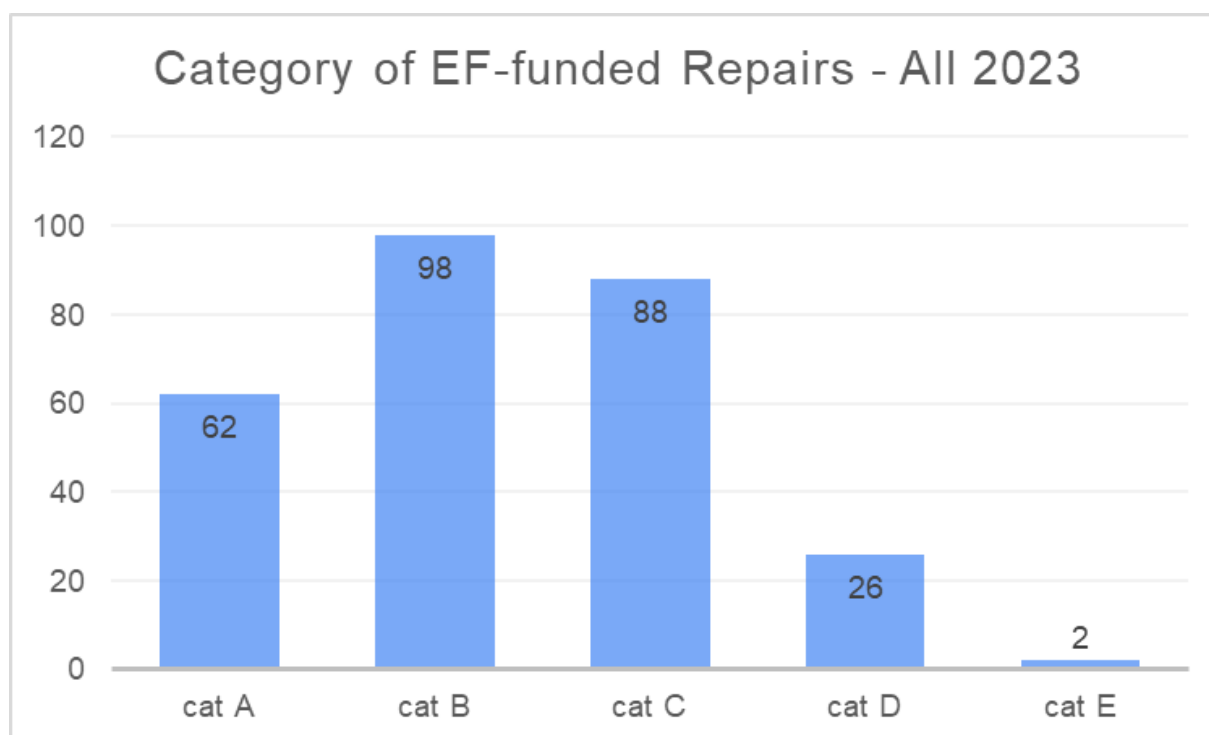
While we can repair any type of hand-pump, we concentrate on Afridev hand pumps as, once repaired, the caretaker can make simple repairs without the need of a winch. He/she is also trained in basic periodic maintenance and operation management due to the conditions imposed by the environment and how a community uses their pump. Appendix 2 shows the EF-funded hand-pump repairs in January 2023, and as can be seen in column M, these were all Afridev pumps.

There are 5 categories of repair; A to E. Category A is a basic repair where the parts cost less than 5,000Ksh (£27). B will require a more extensive repair where more parts are needed up to a cost of 25,000Ksh (£136). A repairs and B repairs can be carried out by the community if they are available to receive training. Category C is a more extensive repair where risers and rods may have to be replaced, and these costs can be up to 50,000Ksh (£272). D is where the installation of a new pump is required should

the old one be beyond economic repair. E are where additional resources are needed for the repair, such as having to employ a contractor to fish out broken pipes, flush a borehole, broken or damaged plinths, or any civil works. These costs do not include the transport of materials and people to site, any accommodation and meals.

Figure 3 shows that the vast majority of EF-funded repairs in 2023 fell into categories A-C.

Figure 3: Shows EF-funded repairs by category of repair.



As noted above, a total of 276 pumps were repaired in 2023 as a result of EF funding. These repairs have resulted in the provision of clean water to 104,000 people. Therefore, the average number of beneficiaries per pump repair was 378 (Appendix 1).

The average cost per beneficiary throughout 2023 was 45p. This is significantly lower than average cost of 70p in the first half of 2023. This was due to more beneficiaries per repair in the second half of 2023 compared to the first half for a similar expenditure (Appendix 1).

By the end of 2023, there remained £134 in GBP and 1,308,096 KES (approximately £6,500), which is carried forward into 2024. The carry forward is mainly due to the greater exchange rate in the second half of the year (more KSH/GBP). Appendix 3

shows how the funding was spent across different categories, as compared to the estimated breakdown in the grant application.

5. Data collection and verification

Data is collected on every pump repaired, and this includes the following information: the date of repair, category of pump repair, the type of repair, type of pump, population served, the number of homes, the county, the village and pump name, exact location (latitude and longitude), whether the borehole is registered and community certificated, photographs, what is the alternative source (cost and distance), the depth and water column, and training. Importantly two caretakers are identified for each pump repair, and their names and phone numbers are also recorded, which allows the pump repair to be verified and followed up (see below).

All this information is submitted by each Osiligi engineer on each of their repairs and is automatically collated onto a spreadsheet. Appendix 2 shows the data collected from a typical month (January 2023).

At the end of every month, one member of our team has the responsibility to call a caretaker for each pump repaired in the preceding month. This is to verify that the pump is still working. In addition, it is the responsibility of each Kenyan engineer to post photos, with GPS coordinates, onto the Osiligi WhatsApp group. These are also verified by the above team member.

It has not been possible for Eric McKinnon (UK-based), who manages the entire Kenyan repair team, to visit Kenya to audit the pump repairs since 2019, due to COVID restrictions. However, in March 2023, Eric was able to spend 2.5 months in Kenya auditing a representative set of pump repairs undertaken by the Osiligi charity in 2022. Forty (40) of the 176 (23%) pumps repaired using Eagle Foundation funding in 2022 were visited and investigated: **All** were all found to be in good working order.

Appendix 1: EF-funded pump repairs 2023

| Date | Donations (KES) | Money Used (KES) | By month | | | Cumulative for 2023 | | |
|-------------------------------|--------------------|---------------------|----------|--------------|---------------------|---------------------|--------------|-----------------------|
| | | | Pumps | No. of Users | Cost per user (KES) | Pumps | Users helped | Average cost per user |
| January 2023 | | | | | | | | |
| Eagle Foundation (£5,000 GBP) | 743,405 | | | | | | | |
| Brought forward (from 2022) | - 28,743 | | | | | | | |
| Pump repairs | | 697,000 | 18 | 6378 | 110 | 18 | 6378 | 110 |
| Education budget | | - | | | | | | |
| Bank charges | | 3,000 | | | | | | |
| Sub-total | 714,662 | 700,000 | | | | | | |
| C/F | | 14,662 | | | | | | |
| February 2023 | | | | | | | | |
| Eagle Foundation (£5,000 GBP) | 736,858 | | | | | | | |
| Brought forward | 14,662 | | | | | | | |
| Pump repairs | | 597,000 | 25 | 9325 | 75 | 43 | 15703 | 89 |
| Education budget | | 100,000 | | | | | | |
| Bank charges | | 3,000 | | | | | | |
| Sub-total | 751,520 | 700,000 | | | | | | |
| C/F | | 51,520 | | | | | | |
| March 2023 | | | | | | | | |
| Eagle Foundation (£5,000 GBP) | 733,647 | | | | | | | |
| Brought forward | 51,520 | | | | | | | |
| Pump repairs | | 611,611 | 19 | 6550 | 105 | 62 | 22253 | 94 |
| Education budget | | 70,000 | | | | | | |
| Bank charges | | 3,000 | | | | | | |
| Sub-total | 785,167 | 684,611 | | | | | | |
| C/F | | 100,556 | | | | | | |
| April 2023 | | | | | | | | |
| Eagle Foundation (£5,000 GBP) | 734,770 | | | | | | | |
| Brought forward | 100,556 | | | | | | | |
| Pump repairs | | 695,155 | 21 | 6446 | 119 | 83 | 28699 | 99 |
| Education budget | | 70,000 | | | | | | |
| Bank charges | | 3,000 | | | | | | |
| Sub-total | 835,326 | 768,155 | | | | | | |
| C/F | | 67,171 | | | | | | |
| May 2023 | | | | | | | | |
| Eagle Foundation (£5,000 GBP) | 735,893 | | | | | | | |
| Brought forward | 67,171 | | | | | | | |
| Pump repairs | | 615,800 | 12 | 3378 | 196 | 95 | 32077 | 110 |
| Education budget | | 45,000 | | | | | | |
| Bank charges | | - | | | | | | |
| Sub-total | 803,064 | 660,800 | | | | | | |
| C/F | | 142,264 | | | | | | |
| June 2023 | | | | | | | | |
| Eagle Foundation (£5,000 GBP) | 816,910 | | | | | | | |
| Brought forward | 142,264 | | | | | | | |
| Pump repairs | | 670,000 | 26 | 9252 | 81 | 121 | 41329 | 103 |
| Education budget | | 80,000 | | | | | | |
| Bank charges | | - | | | | | | |
| Sub-total | 959,174 | 750,000 | | | | | | |
| C/F | | 209,174 | | | | | | |

| Date | Donations (KES) | Money Used (KES) | By month | | | Cumulative for 2023 | | |
|-----------------------------------|------------------|------------------|------------|---------------|---------------------|---------------------|---------------|-----------------------|
| | | | Pumps | No. of Users | Cost per user (KES) | Pumps | Users helped | Average cost per user |
| July 2023 | | | | | | | | |
| Eagle Foundation (£5,000 GBP) | 822,179 | | | | | | | |
| Brought forward (from 2022) | 209,174 | | | | | | | |
| Pump repairs | | 400,000 | 16 | 4850 | 82 | 137 | 46179 | 101 |
| Education budget | | | | | | | | |
| Bank charges | | | | | | | | |
| Sub-total | 1,031,353 | 400,000 | | | | | | |
| C/F | | 631,353 | | | | | | |
| August 2023 | | | | | | | | |
| Eagle Foundation (£5,000 GBP) | 847,060 | | | | | | | |
| Brought forward | 631,353 | | | | | | | |
| Pump repairs | | 507,545 | 32 | 10803 | 55 | 169 | 56982 | 92 |
| Education budget | | 80,000 | | | | | | |
| Bank charges | | 3,000 | | | | | | |
| Sub-total | 1,478,413 | 590,545 | | | | | | |
| C/F | | 887,868 | | | | | | |
| September 2023 | | | | | | | | |
| Eagle Foundation (£5,000 GBP) | 898,862 | | | | | | | |
| Brought forward | 887,868 | | | | | | | |
| Pump repairs | | 831,320 | 33 | 13260 | 69 | 202 | 70242 | 88 |
| Education budget | | 80,000 | | | | | | |
| Bank charges | | | | | | | | |
| Sub-total | 1,786,730 | 911,320 | | | | | | |
| C/F | | 875,410 | | | | | | |
| October 2023 | | | | | | | | |
| Eagle Foundation (£5,000 GBP) | 912,586 | | | | | | | |
| Brought forward | 875,410 | | | | | | | |
| Pump repairs | | 665,000 | 22 | 13261 | 56 | 224 | 83503 | 83 |
| Education budget | | 80,000 | | | | | | |
| Bank charges | | | | | | | | |
| Sub-total | 1,787,996 | 745,000 | | | | | | |
| C/F | | 1,042,996 | | | | | | |
| November 2023 | | | | | | | | |
| Eagle Foundation (£4,950.76 GBP) | 900,000 | | | | | | | |
| Brought forward | 1,042,996 | | | | | | | |
| Pump repairs | | 673,900 | 26 | 11294 | 67 | 250 | 94797 | 81 |
| Education budget | | 80,000 | | | | | | |
| Bank charges | | 3,000 | | | | | | |
| Sub-total | 1,942,996 | 756,900 | | | | | | |
| C/F | | 1,186,096 | | | | | | |
| December 2023 | | | | | | | | |
| Eagle Foundation (£4,915.05 GBP) | 900,000 | | | | | | | |
| Brought forward | 1,186,096 | | | | | | | |
| Pump repairs | | 695,000 | 26 | 9427 | 83 | 276 | 104224 | 81 |
| Education budget | | 80,000 | | | | | | |
| Bank charges | | 3,000 | | | | | | |
| Sub-total | 2,086,096 | 778,000 | | | | | | |
| C/F | | 1,308,096 | | | | | | |
| Grand total (Jan-Dec 2023) | 9,753,427 | 8,445,331 | 276 | 104224 | 81 | 276 | 104224 | 81 |
| C/F | £134.19 GBP | 1,308,096 | | | | | | |

Appendix 2: Pump repair record keeping (January 2023 as a representative month)

| | A | B | C | D | E | F | G | H | I | J | K |
|----|-----------------------|------|--------------------------------------|---------|--------------------|--------------------------------|---|-------------------------------|-----------------|-----------|------------------|
| 1 | Marca de tempo | Name | UK Pump repair Date (Day/Month/Year) | Funding | Categories (A - E) | Population (children & adults) | Number of Homes | Type of Repair (parts needed) | County | District? | Village name |
| 2 | 1/9/2023 10:29:58 VO | | 05/01/2023 EF | A | | 300 | 25 Bushes and u seal replacement | Homabay | Rachuonyo | | Nyanja |
| 3 | 1/9/2023 13:26:08 VO | | 03/01/2023 EF | A | | 250 | 20 U seal replacement (2nd repair) | Homabay | Rangwe | | Gangre |
| 4 | 1/9/2023 13:38:48 VO | | 09/01/2023 EF | B | | 400 | 35 Re-installed | Homabay | Olare | | Kokumbo |
| 5 | 1/12/2023 21:45:30 VO | | 10/01/2023 EF | B | | 450 | 39 Reinstalled | Homabay | Ndhiwa | | Masogo communit |
| 6 | 1/19/2023 13:34:50 VO | | 18/01/2023 EF | B | | 1200 | 100 Leaking risers replaced- re installation | Homabay | Ndhiwa | | Magina |
| 7 | 1/23/2023 15:39:36 PO | | 23/01/2023 EF | B | | 150 | Foot valveU sealPlastic bushes1 rod | Siaya | | | Segere |
| 8 | 1/23/2023 15:50:58 PO | | 19/01/2023 EF | C | | 255 | Replacement of Cylinder 5 rodsSupport rope | Siaya | | | Uhanya |
| 9 | 1/23/2023 16:24:42 PO | | 21/01/2023 EF | A | | 230 | | Siaya | | | Nyagwela |
| 10 | 1/23/2023 16:34:46 PO | | 21/01/2023 EF | A | | 143 | 1 rodU sealO ringPlastic bushes | Siaya | | | Sogo |
| 11 | 1/23/2023 17:15:11 PO | | 16/01/2023 EF | C | | 300 | Cylinder replacement | Siaya | | | Nduru |
| 12 | 1/23/2023 17:32:12 PO | | 12/01/2023 EF | A | | 400 | Plastic bushesU seal | Siaya | | | Aredha |
| 13 | 1/24/2023 8:35:01 SK | | 12/01/2023 EF | B | | 600 | 30 Seal, rod centralizers and bobbins. | Makueni | Makindu | | Kalyakalya |
| 14 | 1/24/2023 8:50:53 SK | | 10/01/2023 EF | C | | 450 | 20 U-seal, Oin, bobbin rod centralizers & plastic bearings set. | Makueni | Kambu | | Kalimani |
| 15 | 1/29/2023 13:22:40 DN | | 21/01/2023 EF | C | | 300 | 60 Two rods and footvalve | Kitui | East | | Ikotha |
| 16 | 1/29/2023 13:43:34 DN | | 21/01/2023 EF | C | | 250 | 55 Change of useal,centralizers and bearings | Kitui | Central | | Mbusyani rd 1 |
| 17 | 1/29/2023 13:52:34 DN | | 21/01/2023 EF | C | | 200 | 50 Two broken rods | Kitui | Kitui east | | Mbusyani rd 2 |
| 18 | 1/29/2023 14:00:28 DN | | 21/01/2023 EF | C | | 300 | 60 Change of useal and broken rod | Kitui | Kitui east | | Kivuti |
| 19 | 1/29/2023 14:06:30 DN | | 21/01/2023 EF | C | | 200 | 50 Change of useal and a broken pipe | Kitui | East | | Mutulatwa kamene |
| 20 | 2/8/2023 13:26:39 VO | | 07/02/2023 EF | C | | 800 | 79 Reinstalled with 7risers replaced | Homabay | Rachuonyo North | | Kobila |

| | K | L | M | N | O | P | Q | R | S | T | U | |
|----|------------------|--------------------------------------|------------|--------------------------------|-----------------------------|-------------------------|--------------------|--------------------------|----------------------|------------|-------------|---|
| 1 | Village name: | Pump Name: | Pump Type: | Borehole Registration Details: | Depth of Well/Borehole (m): | Water Column Depth (m): | Alternative source | Distance of water (kms)? | Cost of water (Ksh)? | Latitude | Longitude: | Location map |
| 2 | Nyanja | Kadan water pump | Afidev | Registered | 80 | 18 | Alternative Pump | 1 | 2.5 | 0.493474 | 34.693094 | https://drive.google.com/open?id=15573_I_S9kd1W8sAbcv1KZYZR3fRbH0 |
| 3 | Gangre | Gangre c water pump(2nd repair) | Afidev | Yes | 25 | 16 | River | 1 | 00 | 0.636782 | 34.616085 | https://drive.google.com/open?id=1fBG4JZ_kfAsZLYUDUuqefAydkzbcjyt |
| 4 | Kokumbo | Kanyolo Nyoguda water point | Afidev | Yes | 67ft | 30 ft | Lake | 3 | 20 | 0.497938 | 34.518792 | https://drive.google.com/open?id=1HUx_XyXynfIQ30kIb66QLWyoHFClctMiibp |
| 5 | Masogo community | Masogo community water pump | Afidev | N/A | 80m | 66m | Alternative Pump | 0.5 | 5 | 0.644749 | 34.536174 | https://drive.google.com/open?id=18jBKwYzwm3Ie059yeod4H4_LuF3R5hT4 |
| 6 | Magina | Magina C water pump (second repair) | Afidev | N/A | 35m | 24m | River | 1 | 00 | 0.644741 | 34.536162 | https://drive.google.com/open?id=1YUe_9YGGQidWeEKHnRvsgz0lcy_xsuf |
| 7 | Segere | Ka Anjeline | Afidev | Yes | 15m | 8m | Spring | | | 0.10738 | 34.236231 | https://drive.google.com/open?id=1HwPYv729634060 |
| 8 | Uhanya | Ahago | Afidev | Yes | 30m | 5m | River | | | 0.107368 | 34.236184 | https://drive.google.com/open?id=1pYK2i10h5Qu |
| 9 | Nyagwela | Nyagwela Primary school | Afidev | Yes | 50m | 30m | Spring | | | 0.15130 | 34.2270 | https://drive.google.com/open?id=1BGr7Wl276KtsMamngPRGJrb6BQ1R3 |
| 10 | Sogo | Sogo | Afidev | Yes | 25m | 5m | Spring | | | 0.12706 | 34.234394 | https://drive.google.com/open?id=1EU9N2 |
| 11 | Nduru | Ka Herenia | Afidev | Yes | 30m | 3m | Spring | | | 0.001214 | 34.36662 | https://drive.google.com/open?id=1tH2pc |
| 12 | Aredha | Aredha | Afidev | Yes | 20m | 3m | River | | | 0.00829 | 34.331039 | https://drive.google.com/open?id=1QzAHh |
| 13 | Kalyakalya | Munathi | Afidev | None | 13 | 10 | Alternative Pump | 3 | 5 | 2.420121 | 37.865107 | https://drive.google.com/open?id=10zAHh |
| 14 | Kalimani | Kwa Mwalimu | Afidev | None | 15 | 10 | Alternative Pump | 5 | 10 | 2.560685 | 38.094684 | https://drive.google.com/open?id=1lIFDu |
| 15 | Ikotha | Kwa kilonzi | Afidev | Well | 15 | 5 | Alternative Pump | 1 | 5 | 1.390851 | 37.958204 | https://drive.google.com/open?id=1mmbtg |
| 16 | Mbusyani rd 1 | Mbusyani community pump | Afidev | Well | 10 | 2 | Alternative Pump | 1 | 5 | 1.388543 | 37.95757 | https://drive.google.com/open?id=12hZz3 |
| 17 | Mbusyani rd 2 | Kwa kilonzi | Afidev | Well | 9 | 2 | Alternative Pump | 1 | 5 | 1.404119 | 37.955398 | https://drive.google.com/open?id=1F2HEyj |
| 18 | Kivuti | Kivuti pump | Afidev | Well | 12 | 3 | Alternative Pump | 1 | 5 | 1.403314 | 37.955601 | https://drive.google.com/open?id=12PzVh |
| 19 | Mutulatwa kamene | Kamene pump | Afidev | Well | 13 | 4 | Alternative Pump | 2 | 5 | 1.40916135 | 37.95701006 | https://drive.google.com/open?id=1vDz_L |
| 20 | Kobila | Kowor secondary school water pump | Afidev | Yes | 60m | 50 | River | 2 | 00 | 0.446359 | 34.594012 | https://drive.google.com/open?id=1MLzW |

| | U | V | W | X | Y |
|----|-------------|---|--------------------|----------------------|--|
| 1 | Longitude: | Location map | Caretaker Name (1) | Caretaker Name (2) | Caretaker (1) Contact details (mobile) |
| 2 | 34.693094 | https://drive.google.com/open?id=15573_I_S9kd1W8sAbcv1KZYZR3fRbH0 | Ogunda | Rose | 0721211851 |
| 3 | 34.616085 | https://drive.google.com/open?id=1fBG4JZ_kfAsZLYUDUuqefAydkzbcjyt | Magret | Jack | 0722452656 |
| 4 | 34.518792 | https://drive.google.com/open?id=1HUx_XyXynfIQ30kIb66QLWyoHFClctMiibp | Collins | Esther | 0722170359 |
| 5 | 34.536174 | https://drive.google.com/open?id=18jBKwYzwm3Ie059yeod4H4_LuF3R5hT4 | George | Ouma | 0723617395 |
| 6 | 34.536162 | https://drive.google.com/open?id=1YUe_9YGGQidWeEKHnRvsgz0lcy_xsuf | Sophy | Susan | 0704508010 |
| 7 | 34.236231 | https://drive.google.com/open?id=1HwPYv729634060 | Anjeline Aooko | Paul Jura | 0729634060 |
| 8 | 34.236184 | https://drive.google.com/open?id=1pYK2i10h5Qu | Francisca Akinyi | Magdaline Ouma | 0711493732 |
| 9 | 34.2270 | https://drive.google.com/open?id=10h5Qu | Alice Wang'a | Phanuel Onyango | 0711617756 |
| 10 | 34.234394 | https://drive.google.com/open?id=1BGr7Wl276KtsMamngPRGJrb6BQ1R3 | Elizabeth Akinyi | Ezaline Owino | 0721842957 |
| 11 | 34.36662 | https://drive.google.com/open?id=1tH2pc | Rachael Otieno | Rose | 0741977475 |
| 12 | 34.331039 | https://drive.google.com/open?id=1QzAHh | Peter Otieno | Cleofas Ayugi | 0724291286 |
| 13 | 37.865107 | https://drive.google.com/open?id=10zAHh | Mr. Maiko | Mrs Maiko | 0710477324 |
| 14 | 38.094684 | https://drive.google.com/open?id=1lIFDu | Beneditt Mwalimu. | Mrs Beneditt Mwalimu | 072382599 |
| 15 | 37.958204 | https://drive.google.com/open?id=1mmbtg | Gabriel | Stephen | 0720447076 |
| 16 | 37.95757 | https://drive.google.com/open?id=12hZz3 | Stephen | Kutendesya | 0715627983 |
| 17 | 37.955398 | https://drive.google.com/open?id=1F2HEyj | Gabriel | Stephen | 0720447076 |
| 18 | 37.955601 | https://drive.google.com/open?id=12PzVh | Stephen | Gabriel | 0715627983 |
| 19 | 37.95701006 | https://drive.google.com/open?id=1vDz_L | Gabriel | Stephen | 0720447076 |
| 20 | 34.594012 | https://drive.google.com/open?id=1MLzW | Tom | Samuel | 0718139211 |

Appendix 3: Variance of expenditure across categories

| | Percentage (predicted) | Percentage (actual) | |
|--------------------------------------|---------------------------|---------------------|---|
| Accommodation | 8% | 5.0% | * |
| Communications | 2% | 1.6% | * |
| Contractors | 9% | 32.6% | * |
| Food - Drink | 8% | 3.4% | * |
| Materials | 39% | 35.0% | * |
| Misc | 2% | 0.3% | * |
| Transport + Fuel | 9% | 12.8% | * |
| People transport | 3% | 0.0% | * |
| Education Budget | 12% | 9.1% | |
| Administration | 8% | 0.2% | |
| | | | |
| Total | 100% | 100.0% | |
| *NB: Representative month (Dec 2023) | | | |

Appendix 4: Photographs of typical pump repairs

Access road to a rural pump repair



Making a joint to fit a riser.



A typical hand-pump repair, restoring access to water.

