# **Classification of the water System**

Please provide a general classification of water point by these categories.

$\bigcirc$	Piped Water Scheme (equipped or piped source)	
$\bigcirc$	Handpump (equipped Well)	
$\bigcirc$	Borehole (non-equipped)	
$\bigcirc$	Shallow Well (bucket and rope)	
$\bigcirc$	Earth Dam (non-equipped)	
$\bigcirc$	Sand/Sub Surface Dam (non-equipped)	
$\bigcirc$	Rock Catchment (non-equipped)	
$\bigcirc$	Spring (non-equipped)	
$\bigcirc$	WSP Water Kiosk/StandPipe	
Name of WSP owning/managing the Water Kiosk		
	Kitui Water and Sewerage Company	
	Kiambere-Mwingi Water and Sewerage Company	
	Other	
	Don't Know	

Enter name of WSP owning/managing the Water Kiosk

# Number of Respondents/Participants present

Count all respondents over 18 years of age present for the interview

<sup>\*</sup> Introduction: Good morning, my name is and I am carrying out a survey of water schemes/systems in Kitui County. *Please smile and make eye contact...* 



\* Topic and Funding: We are researching drinking water supplies in rural areas. The research is a partnership between the Kitui County Government, UNICEF, Oxford University, FundiFix and Rural Focus Ltd., through the REACH programme and supported by the US Government (USAID).

Please smile and make eye contact...

( ) ок

\* Partners: We are working closely with the Kitui County Government, Sub-County Water Offices and the Kitui County Administrators at all levels and have already spoken with them regarding this survey. In addition, if you ever have any questions about the study or are dissatisfied at any time with any aspect of the study, you could contact the Kitui County Government- Water Department.

Please smile and make eye contact...



# Kitui\_County\_Water\_Audit\_2017-2018

<ul> <li>* Participation: The survey will take several hours as we would like to go into detail about the infrastructure and the management of your water scheme. We would like to meet with the members of the current management committee who are available. Participation is voluntary and is much appreciated as your views are very important. Data will be shared with the County Government and used for water policy development, water investments planning and implementation purposes. You can choose to participate anonymously if you prefer.</li> <li>Please smile and make eye contact</li> <li>OK</li> </ul>		
Do you all (respondent/s) give your informed consent to participate in the survey?		
Yes		
No		
<b>Can you confirm that there is no Enumerator present for the interview?</b> Select 'Yes' to confirm AND proceed with the audit. Select 'No' to End this survey.		
Ves Yes		
No		
» Respondent Details		
The Water Audit Tool (Don't know = 8888; No response = 9999)		
» Section 1.0: Water Point Location Details		
<b>1.1 Name of Water System/Point?</b>		
1.2 Select Sub-County		
( ) Mwingi West		

- Mwingi Central
- ( ) Kitui West
- () Kitui Rural
- () Kitui Central
- () Kitui East
- () Kitui South
- 1.3 Select Ward

# 1.4 Select Village

**Specify Other** 

1.5 Water Point Code (Use the format: Source code/Count to Date. e.g. BH/01)

*Options: BH = Borehole; PS = Piped Scheme; SW = Shallow well; SSD = Sand/sub-surface dam; ED = Earth dam/pan; RC = Rock catchment; HP = HandPump; WK = Water Kiosk; SP = Spring* 

# Kitui\_County\_Water\_Audit\_2017-2018

1.6 Group Sketch of the Water Infrastructure Map the extent of the scheme on a sheet of paper with the participants. Include KEY infrastructure; pipe network, key villages other water sources etc. This should be a quick and dirty sketch and not to scale to save time.

OK

1.7 What are the main water infrastructure components/features?

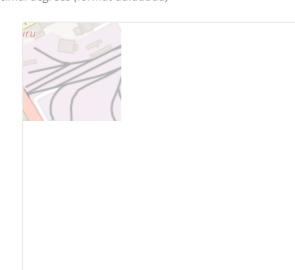
- Tick all that apply Earth Dam/Water Pan Sand/Sub-Surface Dam Borehole Shallow Well **Rock Catchment** River/Stream Spring Rainwater Harvesting Infiltration Gallery Treatment/Dosing plant Generator Solar system Wind Power/Generator system National Grid/KPLC Submersible pump Surface pump Bucket and Rope Break Pressure tank Storage tank Cattle trough **Distribution Pipeline** Water Kiosk Standpipe Meter **Piped Connection** None Other
  - Don't Know
  - No response

**1.8 GPS Location of main site - Borehole site, Generator house etc.** *Ensure Datum is set at WGS 84 and units are in decimal degrees (format dd.ddddd)* 

latitude (x.y °)

longitude (x.y °)

altitude (m)



accuracy (m)

**1.8a Enter longitude (E/W) from Garmin GPS in case tablet GPS is not functioning or inaccurate (>15m)** *Ensure Datum is set at WGS 84 and units are in decimal degrees (format dd.ddddd)* 

**1.8b Enter latitude (N/S) from Garmin GPS in case tablet GPS is not functioning or inaccurate (>15m)** *Ensure Datum is set at WGS 84 and units are in decimal degrees (format dd.dddd)* 

1.9 Take a picture of the main/source point

1.10 Photo of paper sketch

**1.11 Enter GSM Signal strength for Safaricom (enter -dBm units only)** *From your android mobile, go to Settings>General>About device>Status* 

**1.12 Enter GSM Signal strength for Airtel (enter -dBm units only)** From your android mobile, go to Settings>General>About device>Status

# » Section 2.0: Construction

2.1 In which year was constructed?

уууу

2.2 What is the source of this information?

2.3 Who funded/financed the construction of ?

	Actual, from memory
	Actual, from documentation
	Estimated
	Other
	Don't know
	No response

Specify other

Tick all that apply		
	Kitui County Government	
	User Community	
	TANATHI Water Services Board	
	World Vision	
	JICA	
	WSTF	
	Constituency Fund (CDF)	
	CARITAS /Catholic Church	
	National Drought Management Authority	
	Ministry of development of Arid lands and Northern Kenya	
	Action Aid Kenya	
	National Water & Pipeline Conservation	
	Kenya Government (GOK)	
	UNICEF	
	DANIDA	
	Anglican Development Services (ADS)	
	Adventist Development Relief Agency (ADRA)	
	Other NGO	
	Other Government	
	Other Donor	
	Other Church/Well Wishers	
	Don't know	
	No response	

Specify Other
<i>Please type in name of Other Donor/NGO/Government</i>

# **2.4 Who were the Contractors Involved in the Construction of ?** *Please Tick All Contractors that were engaged.*

	Davis & Shirtliff Ltd	
	Living Water International	
	National Water & Pipeline Conservation	
	Center for Alternative Technologies	
	Drilling for Life	
	Biselex Ltd	
	Kisima Ltd	
	Insta Pumps Ltd	
	Wortech Ltd	
	Other Contractor	
	None (drilled by the Local Community/Individual)	
	Don't know	
	No response	
Specify other		

# **2.5 What was the TOTAL Cost of Constructing in Ksh** *Key in all values in Kenya Shillings*

2.6 What is the source of the cost data

- Actual, from memory
  - Actual, from documentation
  - Estimated
  - Other
  - ) Don't know
  - ) No response

Specify other

2.7 Take a picture of any signboards/branding visible on site

# » Section 3.0: Functionality Details

3.1 Which of the following best represents 's operational status?

) Operational

Partly Operational (Sub-optimal)

- ) Not-operational
- )Under Construction

**3.2 Provide reason why the scheme is partly or non-operational** *Please provide as much detail as possible* 

# 3.3 Overall condition of the infrastructure of

Please make observation

- () New/Excellent
- ( ) Well Maintained
- ( ) Poorly Maintained
- Don't Know

# Kitui\_County\_Water\_Audit\_2017-2018

**3.4 Which specific infrastructure components at are NOT operational or are functioning sub-optimally?** *Tick all that apply* 

- Earth Dam/Water Pan
- Sand/Sub-Surface Dam
- Borehole
- Shallow Wel
- Rock Catchment
- River/Stream
- Spring
- Rainwater Harvesting
- Infiltration Gallery
- Treatment/Dosing plant
- Generator
- Solar system
- Wind Power/Generator system
- National Grid/KPLC
- Submersible pump
- Surface pump
- Bucket and Rope
- Break Pressure tank
- Storage tank
- Cattle trough
- Distribution Pipeline
- Water Kiosk
- Standpipe
- Meter
- Piped Connection
- None
- Other
- Don't Know
- No response

3.4 Which specific Handpump parts at are NOT	operational or are functioning sub-optimally?
Tick all that apply	

	U-Seal	
	Rod-Centralisers	
	O-Rings	
	Rising Main Pipes	
	Bush Bearings	
	Plunger Rods	
	Foot Valve	
	Manilla Rope	
	Pump Rods	
	Fulcrum Pin	
	Hanger Pin	
	Pump Head	
	Pump Pedestal	
	Other	
Specify Other		

**3.5 Please explain current problem with the selected or other components** *Explain current issue* 



# 3.7 Please enter any other detail observed on functionality of

Free Text

# » Section 4.0: Source Details

# **4.0.1 What is the water source for** *Tick all that apply*

Earth dam/Water Pan
 Sand/Sub-Surface Dam
 Borehole
 Rock Catchment
 Shallow Well
 River/Stream
 Spring
 WSP Trunk/Main Pipeline
 Other

# » » Section 4.1: Borehole - Machine drilled

4.1.1 Which Drilling Contractor/Company was engaged for this Borehole?

$\bigcirc$	Davis & Shirtliff Ltd
$\bigcirc$	Living Water International
$\bigcirc$	National Water & Pipeline Conservation
$\bigcirc$	Center for Alternative Technologies
$\bigcirc$	Drilling for Life
$\bigcirc$	Biselex Ltd
$\bigcirc$	Kisima Ltd
$\bigcirc$	Insta Pumps Ltd
$\bigcirc$	Wortech Ltd
$\bigcirc$	Other Contractor
$\bigcirc$	None (drilled by the Local Community/Individual)
$\bigcirc$	Don't know
$\bigcirc$	No response
	/ Other

**4.1.2 What was the cost of the Drilling only in Ksh?** *Excluding all equipping and network works.* 

**4.1.3 What is the Borehole depth (in meters)?** 1 Inch = 25.4mm or 2.54cm, 1 Meter = 3.2 Feet

4.1.4 What is the source of your depth data?

**4.1.5 Diameter of Borehole casing (in Inches** 1 Inch = 25.4mm or 2.54cm, 1 Meter = 3.2 Feet

**4.1.6 What is the water capacity/yield of the Borehole (in M3/Hr)** Don't know = 8888; No response = 9999

**4.1.7 Does the borehole have a fixed gantry?** *Observe* 

Yes

4.1.8 Take a Photo of the source

# 4.1.9 Map location of the Borehole source

Ensure Datum is set at WGS 84 and units are in decimal degrees (format dd.ddddd)

latitude (x.y °)

longitude (x.y °)

altitude (m)

accuracy (m)

inu series and s		

**4.1.9a Enter longitude (E/W) from Garmin GPS in case tablet GPS is not functioning/inaccurate (>15m)** *Ensure Datum is set at WGS 84 and units are in decimal degrees (format dd.dddd)* 

**4.1.9b Enter latitude (N/S) from Garmin GPS in case tablet GPS is not functioning/inaccurate (>15m)** *Ensure Datum is set at WGS 84 and units are in decimal degrees (format dd.dddd)* 

# » » Section 4.2: Well

**4.2.1 Which Drilling Contractor/Company was engaged for this Well?** *If manually drilled, select the 'None' option.* 

Davis & Shirtliff Ltd
Living Water International
National Water & Pipeline Conservation
Center for Alternative Technologies
Drilling for Life
Biselex Ltd
Kisima Ltd
Insta Pumps Ltd
Wortech Ltd
Other Contractor
None (drilled by the Local Community/Individual)
Don't know
No response

Specify Other

**4.2.2 What was the cost of Drilling only in Ksh?** *Excluding cost of all equipping and network works.* 

**4.2.3 What is the Well depth (in meters)?** 1 Inch = 25.4mm or 2.54cm, 1 Meter = 3.2 Feet

4.2.4 What is the source of your depth data?

Actual, from memory

) Actual, from documentation

- Estimated
- ) Other
- 🔵 🔵 Don't know
- 📄 No response

**4.2.5 Diameter or Length/Width of the Well (in meters)** 1 Inch = 25.4mm or 2.54cm, 1 Meter = 3.2 Feet

**4.2.6 Capacity/Yield - how many Seconds does it take you to fill a 20l jerry can** *Don't know = 8888; No response = 9999* 

**4.2.7 Does the Well have a fixed gantry?** *Observe* 

) Yes

) No

4.2.8 Take a Photo of the source

# 4.2.9 Map location of the Well source

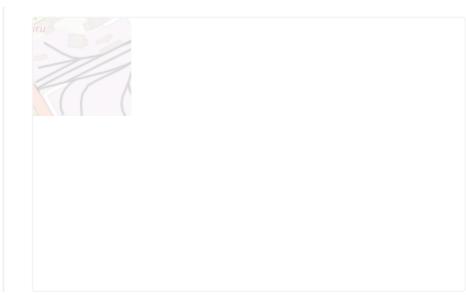
Ensure Datum is set at WGS 84 and units are in decimal degrees (format dd.ddddd)

latitude (x.y °)

longitude (x.y °)

altitude (m)

accuracy (m)



**4.2.9a Enter longitude (E/W) from Garmin GPS in case tablet GPS is not functioning/inaccurate (>15m)** *Ensure Datum is set at WGS 84 and units are in decimal degrees (format dd.dddd)* 

**4.2.9b Enter latitude (N/S) from Garmin GPS in case tablet GPS is not functioning/inaccurate (>15m)** *Ensure Datum is set at WGS 84 and units are in decimal degrees (format dd.ddddd)* 

» » Section 4.3: Sand/Sub-surface dams, Rock catchments, Water pans and Earth dams, Rainwater harvesting

**4.3.1 Storage capacity of in M3** In Cubic Meters

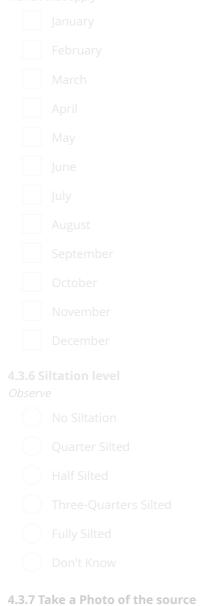
4.3.2 Storage capacity data source

- Actual, from memory
- Actual, from documentation
- 🕖 Estimated
- Other
- ) Don't know
- ) No response

4.3.3 Is enough water available all year round?

- ) Yes
- ) No
- ) Don't Know

4.3.4 Which months is there inadequate water availability? Tick all that apply



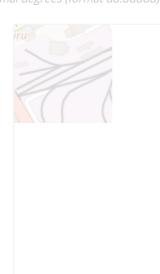
4.3.8 Map location of the Source

Ensure Datum is set at WGS 84 and units are in decimal degrees (format dd.ddddd)

latitude (x.y °)

longitude (x.y °)

altitude (m)



accuracy (m)

**4.3.9a Enter longitude (E/W) from Garmin GPS in case tablet GPS is not functioning/inaccurate (>15m)** *Ensure Datum is set at WGS 84 and units are in decimal degrees (format dd.dddd)* 

**4.3.9b Enter latitude (N/S) from Garmin GPS in case tablet GPS is not functioning/inaccurate (>15m)** *Ensure Datum is set at WGS 84 and units are in decimal degrees (format dd.ddddd)* 

» » Section 4.4: River/Stream and Springs

**4.4.1 Name of the River or Spring** *Enter the Official name given.* 

**4.4.2 Estimate the current total available flow from the water source (M3/Hr)** *In Cubic Meters per Hour* 

4.4.3 Source of flow estimate data

- Actual, from memory
- Actual, from documentation
- Estimated
- Other
- Don't know
- ) No response

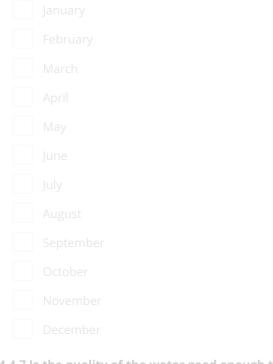
4.4.4 Does the water source contain water year-round?

$\bigcirc$	Yes
$\bigcirc$	No
$\bigcirc$	Don't Know
$\bigcirc$	No Response

4.4.5 Does the flow of water regularly decrease during parts of the year?

Yes
No
Don't Know
No Response

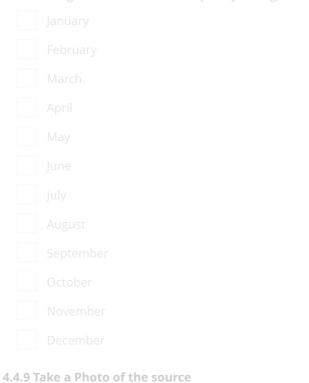
4.4.6 During what months does the flow or water level decrease?



4.4.7 Is the quality of the water good enough to use year round?



4.4.8 During what months is the quality NOT good enough to use?



4.4.10 Map location of the source

Ensure Datum is set at WGS 84 and units are in decimal degrees (format dd.ddddd)

latitude (x.y °)

longitude (x.y °)

altitude (m)



accuracy (m)

**4.4.10a Enter longitude (E/W) from Garmin GPS in case tablet GPS is not functioning/inaccurate (>15m)** *Ensure Datum is set at WGS 84 and units are in decimal degrees (format dd.dddd)* 

**4.4.10b Enter latitude (N/S) from Garmin GPS in case tablet GPS is not functioning/inaccurate (>15m)** *Ensure Datum is set at WGS 84 and units are in decimal degrees (format dd.dddd)* 

» » Section 4.5: Alternative Sources of Water

**4.5.1** How many alternative sources of water are available to your community Don't know = 8888; No response = 9999

» » » 4.5.2 Details of the Alternative source/s

» Section 5.0: Power Details

**5.0.1 Is the power source system a hybrid system?** *Hybrid: Two or more power sources used to provide main and backup power.* 



) No

5.0.2 What is the source of power for

5.0.3 ls	there a changeover system?
$\bigcirc$	Yes
$\bigcirc$	No

Yes

» » Section 5.1: Generator Details

**5.1.1 Generator installation date** Enter the year the current genset was installe

уууу

5.1.2 Is there a control panel? Check cabling for connection to panel



**5.1.3 Generator make** Enter Genset brand name

) Lister Pett

🔵 Airman

Davliff

Parkins

) Yannan

) Honda

Cummins

) Powercraft XD

) Other

**Specify other make** Enter Genset brand name 5.1.4 Generator model Enter model Name/Number

5.1.5 Generator power rating (KVA) Check the Genset name plate for details

**5.1.6 Generator functional hours per day (dry season)** *Enter the average number of hours used per day* 

**5.1.7 Generator functional hours per day (wet season)** *Enter the average number of hours used per day* 

**5.1.8 Generator's date of last service** Enter date in the format mmm/yyyy

yyyy-mm

5.1.9 Generator frequency of service, every?

🔵 🔵 Daily

🔵 Weekly

( ) Monthly

🔵 ) Annualy

) Rarely

) Never

5.1.10 Map location of the Generator

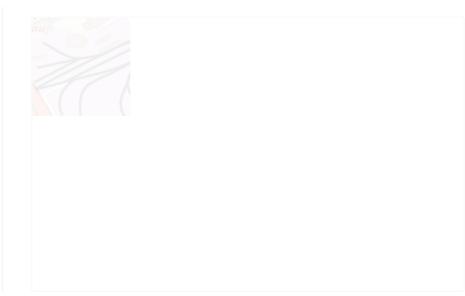
Ensure Datum is set at WGS 84 and units are in decimal degrees (format dd.ddddd)

latitude (x.y °)

longitude (x.y °)

altitude (m)

accuracy (m)



**5.1.10a Enter longitude (E/W) from Garmin GPS in case tablet GPS is not functioning/inaccurate (>15m)** Ensure Datum is set at WGS 84 and units are in decimal degrees (format dd.ddddd)

**5.1.10b Enter latitude (N/S) from Garmin GPS in case tablet GPS is not functioning/inaccurate (>15m)** Ensure Datum is set at WGS 84 and units are in decimal degrees (format dd.ddddd)

5.1.10c Photo of the Generator

**5.1.11 Please include any other details about the Generator** *Free text.* 

» » Section 5.2: Solar System Details

**5.2.1 Solar installation year** *Enter the year the current solar system was installed* 

уууу

**5.2.2 Original number of panels/modules (when they were installed)** Don't know = 8888; No response = 9999

**5.2.3 Current number of panels/modules** *Please count to confirm* 

5.2.4 Reason for the missing panels/modules



**5.2.5 What is the total solar power rating (Watts)** Sum total Watt rating of individual panel/modules

5.2.6 Solar panels make Brand Name



- 🔵 Yingli
- 🔵 Dayliff
- 🔵 Lorentz
- 🔘 Grundfos
- 🔵 Yungi
- ) Other
- 🔵 Don't Know

5.2.7 Specify Other

**5.2.8 Please select connection type** Inspect interconnections between modules, if possible

) Parallel Connectior

🔵 Don't Know

) No response

**5.2.9 Mounting elevation/height above ground (meters above ground)?** *Enter zero (o) for modules at ground level* 

) Ye

) No

5.2.12 Is there an inverter/control box

) No

5.2.13 Make of the inverter/control box

- 🕖 Shell Solar
- ) Yingli
- Dayliff
- ) Lorentz
- Grundfos
- Yungi
- Other
- 📄 Don't Know
- **Specify Othe**

5.2.14 Is there a Solar PV disconnect switch (isolator)?

5.2.15 Functional hours per day (dry season)

Enter the average number of hours that sufficient solar irradiation is available.

5.2.16 Functional hours per day (wet season)

Enter the average number of hours that sufficient solar irradiation is available.

**5.2.17 Have you ever experienced any of the following in relation to the solar system?** *Tick all that apply* 

Specify Other

**5.2.18 Are the solar panels secure? e.g. high up, secured with bolts/locks etc.** *Make observation and answer based on your judgement.* 

**5.2.19** Please include any other observed detail about the solar system *Free text.* 

5.2.20 Take a photo of the solar panels

5.2.21 Take a photo of the mounting structure

5.2.22 Take a photo of the other solar components/accessories

Inverters, Disconnect switch etc.

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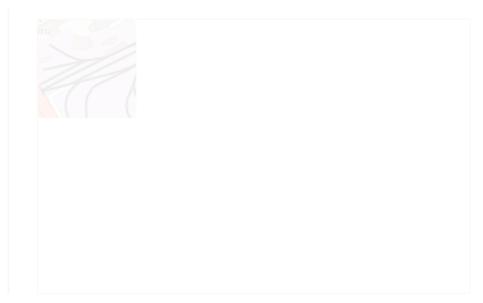
**5.2.23 Please collect GPS coordinates of the solar system location** Ensure Datum is set at WGS 84 and units are in decimal degrees (format dd.ddddd,

latitude (x.y °)

longitude (x.y °)

altitude (m)

accuracy (m)



**5.2.23a Enter longitude (E/W) from Garmin GPS in case tablet GPS is not functioning/inaccurate (>10m)** Ensure Datum is set at WGS 84 and units are in decimal degrees (format dd.ddddd)

**5.2.23b Enter latitude (N/S) from Garmin GPS in case tablet GPS is not functioning/inaccurate (>10m)** *Ensure Datum is set at WGS 84 and units are in decimal degrees (format dd.dddd)* 

» » Section 5.3: National Grid Power

5.3.1 When was connected to the national grid?

уууу

5.3.2 When there is a problem with the power supply/electricity meter, who fixes it?

- Kenya Power Ltd
- Local Fundi/Electrician
- Sub-County Officer

Kitui County Water Officer

- Other
- Don't Know

5.3.3 Has ever been disconnected for not paying the electricity bill on time?

- 🔵 Yes
- ) No

**5.3.4 Roughly how many days in a week do you experience power outage?** *Average days per week* 

**5.3.5 How many hours long are the outages on average per day** *Average hours per day* 

**5.3.6 Please include any other observed detail about the National Grid power source** *Free text.* 

5.3.7 Take a photo of the control box/meter/other relevant infrastructure

» » Section 5.4: Wind Power/Generator

**5.4.1 Wind mill/power installation date** Enter the year the windmill plant was installed

уууу

**5.4.2 Wind mill/power make** Enter Wind power/generator brand name

**5.4.3 Wind mill/power power rating (KVA)** Check the Wind power/generator name plate for details

**5.4.4 Wind mill/power functional hours per day** *Enter the average number of hours used per day* 

**5.4.5 Windmill's date of last service** *Enter date in the format mmm/yyyy* 

yyyy-mm

5.4.6 Wind mill/power frequency of service, every?

# 5.4.7 Map location of the Generator

*Ensure Datum is set at WGS 84 and units are in decimal degrees (format dd.dddd)* 

latitude (x.y °)

longitude (x.y °)

altitude (m)

accuracy (m)



**5.4.7a Enter longitude (E/W) from Garmin GPS in case tablet GPS is not functioning/inaccurate (>15m)** *Ensure Datum is set at WGS 84 and units are in decimal degrees (format dd.ddddd)* 

**5.4.7b Enter latitude (N/S) from Garmin GPS in case tablet GPS is not functioning/inaccurate (>15m)** *Ensure Datum is set at WGS 84 and units are in decimal degrees (format dd.ddddd)* 

5.4.8 Photo of the Generator

**5.4.9 Please include any other details about the Generator** *Free text.* 

» Section 6.0: Pumping Mechanism

**6.0.1 Total number of Surface Water Pumps currently installed at** *Currently installed or Connected to network.* 

1

**6.0.2 Total number of Submersible Water Pumps currently installed at** *Currently installed or Connected to network.* 

>>	>>	Section	6.1: S		-

» » Section 6.2: Surface Pump

» Section 6.3: Handpump

**6.3.1 Type of handpump** *Inspect HP Name plate for details* 

Afridev

🔵 India Mark II

🔿 Blue Pumr

Other

Specify Other type

**6.3.2 Pump installation depth (in metres)** 1 Inch = 25.4mm or 2.54cm, 1 Meter = 3.2 Feet

**6.3.3 Number of rods installed** Don't know = 8888; No response = 9999

6.3.4 Who manages this

()	)	Con	nmu	inity	-bas	ed	orgar	nisatio	on/Se	elf-H	elp	gro	up

- Private Owner
- Contracted Private Operator
- Water Service Provider
- 🔵 School
- Clinic or Hospital
- External supporting partner or NGO
- County Government
- 🔵 National Government
- Other

**6.3.5 Approximately how many Households/people on average use this Handpump?** *Don't know = 8888; No response = 9999* 

6.3.6 Please select User units

) Individuals

) Households

**6.3.7 Does the Handpump supply water year-round (source reliability) ?** *Assuming the pumping mechanism is working.* 

) Yes

) No

6.3.8 If no, in which months is there inadequate/decreased water supply? Tick all that apply



**6.3.9 Please include any other details about the handpump** *Free text.* 

**6.3.10 Take a picture of the full Handpump structure** *Photo of Handpump* 

# 6.3.11 GPS location of the Handpump

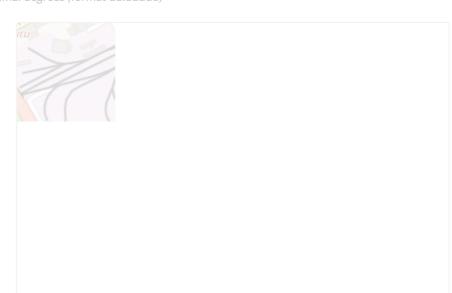
*Ensure Datum is set at WGS 84 and units are in decimal degrees (format dd.ddddd)* 

latitude (x.y °)

longitude (x.y °)

altitude (m)

accuracy (m)



**6.3.11a Enter longitude (E/W) from Garmin GPS in case tablet GPS is not functioning/inaccurate (>15m)** *Ensure Datum is set at WGS 84 and units are in decimal degrees (format dd.dddd)* 

**6.3.11b Enter latitude (N/S) from Garmin GPS in case tablet GPS is not functioning/inaccurate (>15m)** *Ensure Datum is set at WGS 84 and units are in decimal degrees (format dd.ddddd)* 

» Section 7.0: Pipeline and Metering

) Yes

) No

<sup>7.1</sup> Is there a Main/Bulk meter installed?

7.2 Location of main/bulk meter

- 🕖 Inside pumphouse
  - ) Outside pumphouse (Housed)
  - )Outside pumphouse (NOT Housed)
- Other

Specify Other main meter location

**7.3 Size of the meter (in Inches)** 1 Inch = 25.4mm or 2.54cm, 1 Meter = 3.2 Fee

7.4 Current reading of the meter (in cubic meters) Observe to Confirm. Read Black digits only!!

7.5 Take a photo of the Bulk/Main meter

7.6 How often are readings taken and recorded?

- Daily
- Weekly
- ) Monthly
- Annualy
- 📄 Rarely
- Never

7.7 Do you have records of the main meter readings for the past year?

- ) Yes
- ) Yes Partia
  - )Yes, but Not Available
- ) No

7.8 Bulk/Main meter readings for the last one Year *Please enter main/bulk meter reading for the 1st of the month.* 

2017-11-01 00:00:00

2017-10-01 00:00:00

2017-09-01 00:00:00

2017-08-01 00:00:00

2017-07-01 00:00:00

2017-06-01 00:00:00

2017-05-01 00:00:00

2017-04-01 00:00:00

2017-03-01 00:00:00

2017-02-01 00:00:00

2017-01-01 00:00:00

2016-12-01 00:00:00

2016-11-01 00:00:00

2016-10-01 00:00:00

7.9 Total length of the scheme pipeline in Kilometres Estimated total length from start to end node.

**F** 

**7.10 Pipe material used to construct** *Tick all that apply* 

uPVC

Galvanised Iro

PPR pipes

HDPE/PE pipes

- Other Pipe
  - Don't Know

7.11 Water distribution pressurised by

- ) Pumping
- Gravity flow
- Combination of Both

**7.12 How many non-return valves are installed?** *Don't know = 8888; No response = 9999* 

**7.13 Total number of client/user/customer meters installed at** *Both Functional and Non-functional meters installed, excluding the main/bulk meter.* 

**7.14 Number of Kiosks + Standpipes connected** Don't know = 8888; No response = 9999

**7.15 How many of the # Kiosks + Standpipes have WORKING meters?** Don't know = 8888; No response = 9999

**7.16 Number of Schools connected** *Don't know = 8888; No response = 9999* 

**7.17 How many of the # school connections have WORKING meters?** Don't know = 8888; No response = 9999

**7.18 Number of Clinics/Dispensaries/Hospitals connected** Don't know = 8888; No response = 9999

**7.19 How many of the # clinics/dispensaries/hospitals have WORKING meters?** *Don't know = 8888; No response = 9999* 

**7.20 Number of Private/Household connections** Don't know = 8888; No response = 9999

**7.21 How many of the # private/household connections have WORKING meters?** *Don't know = 8888; No response = 9999* 

**7.22 What is the total number of meters not operational at ?** *Don't know = 8888; No response = 9999* 

**7.23** Please include any other details about the meters *Free text.* 

**7.24** Please include any other details about the pipeline/distribution grid *Free text.* 

» Section 8.0: Storage Tanks 8.1 How many storage tanks are in the scheme? Don't know = 8888; No response = 9999 » » 8.2 Storage Tank Details 😑 » Section 9.0: Water Kiosks and Stand Pipes 9.1 Total number of kiosks in Don't know = 8888; No response = 9999 9.2 Number of Kiosks operational Don't know = 8888; No response = 9999 9.3 Total number of standpipes in Don't know = 8888; No response = 9999 9.4 Number of operational Standpipes Don't know = 8888; No response = 9999 » Section 10: Maintenance History

**10.1 What operational tasks do you carry out on a regular basis?** *Do Not Prompt: Select all that apply.* 

Pump Operation
Generator operation
Cleaning of Kiosks and pumphouse
Record keeping
Water distribution/Valves operation
Water treatment
Other
None

Specify the other tasks Free text.

**10.2 What preventive maintenance tasks do you carry out on a regular basis?** *Do Not Prompt: Select all that apply.* 

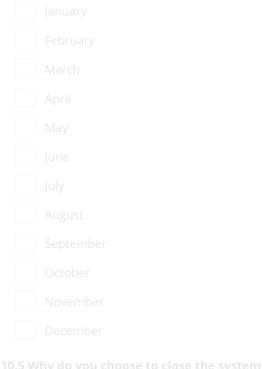
Servicing of Genset
Cleaning of solar panels/
Check for defects in pumphouse and fuel storage
Servicing of pump
Reading and recording current or voltage to pump
Pipeline inspection for leaks
Inspection and reading of water meters
Storage tanks inspection for defects and leaks
Other
None
y the other tasks

Free text.

10.3 Do you choose to close/stop operations at certain times of year?



10.4 In which months do you choose to close the supply system?



**10.5 Why do you choose to close the system at this time?** *DO NOT PROMPT: SELECT ALL THAT APPLY* 

10.6 D	o you have any spare parts available?

Yes

**10.7 What spare parts do you have? (Spare Part 1)** *DO NOT PROMPT* 

**10.8 What spare parts do you have? (Spare Part 2)** DO NOT PROMPT

**10.9 What spare parts do you have? (Spare Part 3)** *DO NOT PROMPT* 

**10.10 What spare parts do you have? (Spare Part 4)** DO NOT PROMPT

**10.11 What spare parts do you have? (Spare Part 5**) DO NOT PROMPT

How many scheme breakdowns have you experienced in the last 2 years?

» » 10.12 Beginning with the most recent, provide details of the last # breakdowns/interruptions



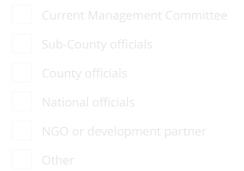
# » Section 11.0: Water Quality

11.1 How is the appearance of the water supplied by ?

- 🔵 Clear
- Very Cloudy
- Slightly Cloudy
- Deep Brownish
- Slightly Brownish
- 🔿 Don't Know
- 🔵 🕦 No sample available
- 11.2 How is the taste of the water supplied by ?



- **11.3 Do you or anybody else monitor the water quality from this scheme?** *i.e. periodically collects samples and tests for chemical/biological characteristics* 
  - Yes
    No
    No
    .4 Who monitors the



**Specify Other quality monitor** 

11.5 Do you consider the water from this source safe for drinking?

) No

11.6 Are you aware of any water quality concerns from this source?

- ) Yes
- ) No

**11.7 Please provide details of these water quality concerns** *Please enter details here.* 

# 11.8 Is the water treated before distribution to users/people?

Yes

11.9 What treatment techniques are used? Select all that apply

**11.10** Take a sample of water and test it for EC (milliSiemen) 1000microS = 1milliS

11.11	Take	а	sample	of	water	and	test	it	for	TDS	(ppt)
1000p	pm =	1р	pt								

**11.12 Take a sample of water and test it for pH** *Ph Units, use the meter provided* 

**11.13 Take a sample of water and test it for Temperature (Degrees centigrade)** Use the meter provided, Enter units of measure

## » Section 12.0: Management

12.1 Who manages/operates the scheme/water project? Select all that apply. Manages/operates means overseeing operations, repair, maintenance etc. Water Service Provider

12.3 Is there a management committee?



» » 12.4 Management Committee Details

12.4.1 How long has this committee been in place? (years)

**12.4.2 How many women are in the management committee?** Don't know = 8888; No response = 9999

**12.4.3 How many men are in the management committee?** Don't know = 8888; No response = 9999

**12.4.4** In the past year, how many meetings did the committee hold to discuss matters relating to this water scheme? Don't know = 8888; No response = 9999

**12.4.5 Date of last meeting** *Please enter 1st of the month if unsure of exact day/date* 

yyyy-mm

12.4.6 Are the Minutes from last meeting available?

Yes

**12.4.7 Ask to see the minutes and take a photo** *Take a photo of the document* 

**12.4.8 Ask to see the minutes and take a photo** *Take a photo of the document* 

**12.4.9 Ask to see the minutes and take a photo** *Take a photo of the document* 

» » 12.5 CBO / Self-Help Group Details

**12.5.1 What is the name of the CBO/Self-Help group?** *Enter official name* 

12.5.2	
12.5.4	
1256	Ask to see the Annual Plan/Budget and take a photo

yyyy-mm

## 1/

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	<b>/ho currently owns the land that the infrastructure is situated on?</b> <i>T PROMPT. Select all that apply</i>
	Community-based organisation/Self-Help group
	Private Owner
	Contracted Private Operator
	Water Service Provider
	School
	Clinic or Hospital
	External supporting partner or NGO
	County Government
	National Government
	Other
	aclude any details or disputes/issues of ownership arrangements 30 is in land disputes with private individuals, or owes them money from pending land purchase.
12.8 H	<b>as the system been expanded since installation?</b> Yes No

# 12.10 Are there plans to expand the system?



12.12 How many people are employed in operating the ? Don't know = 8888; No response = 9999

12.14 Is there an active (in use) bank account for ?

	)	Yes
_		No

_	

12.15 What is the current balance in the bank account/savings? Enter the value in Kenyan shillings

**12.16 Take photo 1 of the constitution** *Take photos of these documents* 

**12.16a Take photo 2 of the constitution** *Take photos of these documents* 

12.16b Take photo 3 of the constitution

*Take photos of these documents* 

**12.17 Please can I see the registration certificate?** *Take photos of these documents* 

**12.18 Please can I see the bank statement?** *Take photos of these documents* 

» Section 13.0: Users (For numeric answers, Don't know = 8888; No response = 9999)

**13.1 What is the water collected from used for by users?** *Select all that apply* 



Other water use

**13.2 How many people use this water supply** *Total/Sum of all users* 

13.3 Please select the unit of measure



) Households

**13.4 How many villages use this water supply** *Total/Sum of all villages* 

**13.5 What is the average/estimated population of each Village** *Estimated population of each Village* 

**13.6 What is the furthest distance (one-way, Km) that people travel from?** *For distance, enter '0' if a piped/yard connection* 

**13.9 How many Camels use this water supply?** *Estimated average heads of livestock* 

**13.10 How many Donkeys use this water supply?** *Estimated average heads of livestock* 

**13.11 How many Cattle use this water supply?** *Estimated average heads of livestock* 

**13.12 How many Sheep/goats use this water supply?** *Estimated average heads of livestock* 

**13.13 Other Animals served and their number** *Estimated average heads of livestock* 

**13.14 How many days per week is water available?** *Answer for an average week with no breakdowns* 

**13.15 How many hours per day is water available?** *Answer for an average day with no breakdowns* 

**13.16 Please provide any other detail on water users.** *Free text.* 

# » Section 14.0: Commercial Operations

**14.1 What tariffs are charged for water to MEMBERS?** *Please enter the amount in Kenyan shillings* 

# 14.2 Please provide the unit of measure for MEMBERS

- ) Per 20l Jerry can
- Per Month
- ) Per Year
- ) Per Visit to water source
- ) Per Cubic meter (m3)
- ) Per other measure

Specify Other unit of measure for MEMBERS

**14.3 What tariffs are charged for water to NON-MEMBERS?** *Please enter the amount in Kenyan shillings* 

14.4 Please provide the unit of measure for NON-MEMBERS

- 🔵 )Per 20l Jerry can
- () Per Month
- 🔵 Per Year
- ) Per Visit to water source
- ) Per Cubic meter (m3)
- ) Per other measure

Specify Other unit of measure for Non-Members

**14.5 Tariff for Cattle (head) in Ksh** *Please enter the amount in Kenyan shillings* 

14.6 Please provide the unit of measure for Cattle

- 🔵 Per Cattle = 20
- Per Cattle per Month
- Per Cattle per Month
- ( ) Per Cattle per Visit
- ( ) Per Cubic meter (m3)
- ( ) Per other measure

Specify Other unit of measure for cattle here

**14.7 Tariff for Sheep/goat (head) in Ksh** *Please enter the amount in Kenyan shillings* 

14.8 Please provide the unit of measure for Sheep/Goat

- ( ) Per Shoat = 20l
- Per Shoat per Month
- ( ) Per Shoat per Year
- ( ) Per Shoat per Visit
- ) Per Cubic meter (m3)
- ) Per other measure

If other, enter the unit of measure for shoats here

**14.9 Tariff for Private connection in Ksh** *Includes Schools and Institutions connected.* 

14.10 Please provide the unit of measure for a Private Connection

- ( ) Per 20l
- ( ) Per Month
- ( ) Per Year

) Per Cubic meter (m3)

) Per other measure

If other, enter the unit of measure for private connections here

**14.11 What is the average monthly income of the water scheme?** *Please enter the amount in Kenyan shillings* 

) Yes

) No

<sup>14.12</sup> Is it possible for users to buy water on credit and pay later?

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14.13 What percentage (%) of total revenues are collected each month?

Ask the respondents to provide an estimate based on their knowledge of water sold vs payments at kiosks, by schools, clinics and private household

- () 81-100 Percent
- () 61-80 Percent
- () 41-60 Percent
- 21-40 Percent
- O 0-20 Percent
- O Don't Know

**14.14** In an average month, how much do you spend on Wages and Salaries (Ksh) Don't know = 8888; No response = 9999

**14.15** In an average month, how much do you spend on Diesel/electricity (Ksh) Don't know = 8888; No response = 9999

**14.16 In an average month, how much do you spend on Maintenance (minor repairs/replacements)** *e.g. pipe bursts, valve repairs, servicing (ksh)* 

**14.17** In an average month, how much do you spend on Administration (ksh) *e.g.*, *books*, *pens*, *transport*, *phone etc*.

**14.18 In an average month, how much do you spend on Committee/Management costs (Ksh)** *e.g., meeting allowances, dividends etc.* 

14.19 In an average month, how much do you spend on Chemicals (Ksh) *e.g.*, chlorine, Soda, Alum

**14.20 Other expense (Ksh)** Don't know = 8888; No response = 9999

Specify Other expense category

14.21 Are all expenditures above supported by receipts or vouchers???

		Vac
_	Σ	res
_		

) No

**14.22 In an average month, how much money do you save (Ksh)?** *Balance after paying for all expenses in a given month* 

14.23 V	Vhere do you keep/store your savings?
	Bank Account
	Mpesa/Mshwari Account
	Cash stored by Committee
	Cash stored by local Administrator
	Cash stored in a Safe
	Community Savings Group/Merry-go-round
	Other

Specify Other savings approach used

If in Bank/Mpesa Account, please provide Bank name and branch and the Account No

If in a Bank/Mpesa, how regularly do you deposit money/revenue collection to your bank account?? Please type in details provided. For Mpesa, enter till/paybill/sim number.



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**14.24** In the last year/12months, how much did you spend on Major repairs/replacements *e.g. of pump, genset, motor etc. (Do not include any external funding e.g.. Unicef, County Government)* 

**14.25** In the last year/12months, how much did you spend on Loan repayments Don't know = 8888; No response = 9999

**14.26** In the last year/12months, how much did you spend on Expansion of the network *i.e. new pipeline/extensions* 

14.27 Do you keep records/accounts of your income and expenditure?

$\bigcirc$	Yes
$\frown$	

No

14.28 Is there a regular audit to establish correctness of the scheme's income and expenditure record, by an independent party?

Independent verification by someone other than the one who collects and/or spends.

(		Voc
		TES
_	_	

) No

14.29 Who conducts such audits

Someone other than the one who collects and/or spends



Scheme Committee Members

🕦 Village/Ward administrato

sub-County Water Office

Independent Auditor

) Other

# **Specify Other Auditor**

) Random/Irregular

**14.31 Please could I see your income and expense records and take a photo of them?** *Photo of financial records* 

**14.32 Photo of financial records** Photo of financial records

**14.33 Photo of financial records** Photo of financial records

**14.34 Photo of financial records** *Photo of financial records* 

14.35 Photo of financial records

Photo of financial records

» Section 15.0: FundiFix Limited





(	)	Yes
(	)	No

Introduction: FundiFix limited is a local company that carries out repairs and maintenance of water systems, including handpumps, generators, pipeline, submersible pumps, solar systems etc. In partnership with the County Government, they are already offering maintenance services for water systems to individuals, institutions and communities in Kitui County. FundiFix also provides training for operators and regular servicing of gensets, electricals and pumps which makes them last much longer. would pay about one third of monthly revenues for the service, and FundiFix would repair regular system breakdowns on time. The County Government and other Donors would top up your contribution to cover the full cost of the repairs. Here is the Contact information of FundiFix Office and feel free to call them any time.

О ок

15.2 Would you be interested in the FundiFix maintenance service?

C	$\Big)$	Yes
_		N.L

15.3 Are you willing to pay approximately a third of your revenues on a monthly basis for maintenance and repairs services?

Provide an example - say, if a scheme collects Ksh 30,000 in revenues monthly, a third will be equivalent to Ksh 10,000

Yes definitely

) No

15.4 How much would you be willing to pay Monthly for this service? (in Kshs) Don't know = 8888; No response = 9999

Thank you for your responses. If you are interested, FundiFix staff will contact you soon to discuss more.

(	
	OK

# End of the Survey

Cross-checks: Make sure your have taken photos of ALL infrastructure components and GPS coordinates where required. If not, please scroll back and forth to update all information on the questionnaire.



Conclusion: Thank the participants for their time and help with this survey. Please let participants know that the information they have provided will be used to inform improved water services delivery by the Kitui County Government. Submit your survey form and move to the next water scheme.



Conclusion: Thank the participants, if present, for their time and help with this survey then Submit this form and travel to the next water scheme/source.

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