

**Wikililye Sub-Location, Mulango Location, Central Division  
(45 Participants & 79 Non-participants)**

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**Household Demography**

Head of the Household sex (%)

<b>Sex</b>	<b>Participants</b>	<b>Non-participants</b>
Female	66.7	54.4
Male	33.3	45.6
Total	100.0	100.0

Head of the Household age category

<b>Age bracket</b>	<b>Participants</b>	<b>Non-participants</b>
20 ò years	0	0
20 < years ó 35	22.2	27.8
35 < years ó 55	40.0	51.9
55 < years ó 70	28.9	17.7
70 < years	4.4	2.5
not reported	4.4	0
Total	100.00	100.00

Head of Household level of education

<b>Level</b>	<b>Participants</b>	<b>Non-participants</b>
informal	20.0	19.0
primary	42.2	43.0
secondary	35.6	32.9
tertiary	2.2	5.1
Total	100.0	100.0

Head of household main occupation (%)

<b>Occupation</b>	<b>Participants</b>		<b>Non-participants</b>	
	<b>Main occupation</b>	<b>Secondary occupation</b>	<b>Main occupation</b>	<b>Secondary occupation</b>
subsistence farmer	64.4	31.1	70.9	13.9
businessman	11.1	0	6.3	3.8
regular employment	20.0	0	6.3	2.5
wage earner	0	4.4	16.5	2.5
other	2.2	0	0	0
not reported	2.2	64.4	0	77.2
Total	100.0	100.00	100.0	100.0

Household annual income-% (KShs.)

<b>Income</b>	<b>Participants</b>	<b>Non-participants</b>
10,000 ò income	37.8	49.4
10,000 < income ó 30,000	40.0	29.1
30,000 < income ó 50,000	0	6.3
50,000 < income ó 100,000	6.7	10.1
100,000 < income	13.3	5.1
not reported	2.2	0

Total	100.0	100.0
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### Household size(%)

Size	Participants	Non-participants
3 ò members	8.9	19.0
3 < members ó 8	73.3	63.3
8 < members ó 12	15.6	17.7
12 < members	0	0
not reported	2.2	0
Total	100.0	100.0

### Household composition (%)

Composition	Participants	Non-participants
females =males	22.2	26.6
females > males	48.9	38.0
females < males	28.9	34.2
Total	100.0	100.0

### Household income sources (%)

	Participants		Non-participants	
	Main	Secondary	Main	Secondary
crop farming	46.7	51.1	53.2	38.0
livestock	0	4.4	2.5	11.4
business	15.6	2.2	10.1	2.5
regular employment	24.4	0	10.1	2.5
wage earning	11.1	4.4	22.8	12.7
other	2.2	2.2	1.3	0
no response	0	0	0	0
not reported	0	35.6	0	32.9
Total	100.0	100.00	100.0	100.0

### Income sources contribution (%)

(KShs.)	Participants		Non-participants	
	Main (%)	Second (%)	Main (%)	Second (%)
10,000 < income ó 30,000	37.8	15.6	29.1	12.7
30,000 < income ó 50,000	4.4	2.2	5.1	2.5
50,000 < income ó 100,000	13.3	0	12.7	3.8
10,000 < income	15.6	0	7.6	1.3
no response	0	0	0	0
not reported	0	35.6	0	35.4
Total	100.0	100.0	100.0	100.0

### Household Inventory (Assets)

#### Number of houses (%)

Number of houses	Participants	Non-participants
one	0	7.6
two or three	95.6	87.3
four or five	4.4	2.6
not reported	0	2.5

Total	100.0	100.0
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#### Main house thatch

Thatch type	Participants	Non-participants
iron sheets	100.0	92.4
grass	0	7.6
Total	100.0	100.0

#### Main house floor type

	Participants	Non-participants
cemented	51.1	38.0
un-cemented	48.9	62.0
Total	100.0	100.0

#### Main house number of rooms

<i>Number of houses</i>	<i>Participants</i>	<i>Non-participants</i>
one room	4.4	11.4
two or three	57.8	62.0
four or five	28.9	21.5
six and more	8.9	1.3
not reported		3.8
Total	100.0	100.0

#### Wall material- main house

Wall material	Participants	Non-participants
brick/mud	40.0	58.2
brick/cement	55.6	40.5
block/cement	4.4	1.3
Total	100.0	100.0

#### Household with toilets

	Participants	Non-participants
households with toilets	82.2	82.3
households without toilets	17.8	17.7
Total	100.0	100.0

#### ***Other household possessions***

##### Number of chicken and ducks, cows and goats(%)

	Participants			Non-participants		
	Chicken/ducks	Cows	Goats	Chicken/ducks	Cows	Goats
nil	22.2	55.6	33.3	32.9	70.9	63.3
one	24.4	37.8	0	15.2	25.3	29.1
1 < number ó 5	31.1	6.7	55.6	36.7	2.5	5.1
5 < number ó 10	11.1	0	6.7	12.7	1.3	1.3
10 < number	8.9	0	4.4	2.5	0	0
not reported	2.2	0	0	0	0	1.3
Total	100.0	100.0	100.0	100.0	100.0	100.0

#### Number of donkeys

	Participants	Non-participants
nil	71.1	79.7
0 < donkeys ó 3	26.7	19.0
not reported	2.2	1.3
Total	100.0	100.0

Number of jembes, spades, mattocks, etc.

	Participants	Non-participants
nil	8.9	5.1
0 < jembes ó 5	55.6	40.5
5 < jembes ó 10	28.9	50.6
10 < jembes	4.4	3.8
not reported	2.2	0
Total	100.0	100.0

**Number of Ox-ploughs, Bicycles, carts/wheel barrows, plant machines, Transistor radios, television sets( %)**

Participants

	Ox-ploughs	bicycles	carts/wheel barrows	plant machines	radios	TV	motor vehicles
nil	66.7	51.1	37.8	75.6	20.0	82.2	91.1
0 < número 3	31.1	48.9	60.0	22.2	77.8	17.8	6.7
3< number	0	0	0	0	0	0	0
not reported	2.2	0	2.2	2.2	2.2	0	2.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Non-Participants

	Ox-ploughs	bicycles	carts/wheel barrows	plant machines	radios	TV	motor vehicles
nil	79.7	68.4	68.4	88.6	32.9	96.2	96.2
0 < número 3	19.0	30.4	31.6	11.4	67.1	3.8	3.8
3< number	1.3	1.3	0	0	0	0	0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

### **Land**

Land ownership total land rented (acreage)

	Participants		Non-participants	
	owned	rented	owned	rented
5 ò acres	73.3	4.4	86.1	5.1
5 < acres ó 10	15.6	2.2	8.9	2.5
10 < acres	8.9	0	2.5	0
no reported	2.2	93.3	2.5	92.4
Total	100.0	100.00	100.0	100.0

Main land use (%)

Use	Participants		Non-participants	
	main use	second main use	main use	second main use

homestead	4.4	51.1	5.1	79.7
agriculture	91.1	4.4	93.7	3.8
livestock grazing	4.4	44.4	1.3	16.5
rented out	0	0	0	0
not reported	0	0	0	0
Total	100.0	100.0	100.0	100.0

### ***Source of energy***

#### Source of energy

	Participants		Non-participants	
	main	second main	main	second main
firewood	100.0	2.2	97.5	2.5
kerosene	0	75.6	2.5	69.6
charcoal	0	20.0	0	26.6
not reported	0	0	0	0
solar			0	1.3
gas	0	2.2	0	0
Total	100.0	100.0	100.0	100.0

### ***Migration***

#### Year of migration

	Participants	Non-participants
1990-1992	0	0
1993-1997	0	0
1998-2001	0	0
not migrated	100.0	100.0
Total	100.0	100.0

#### Nature of migration

	Participants	Non-participants
permanent	0	0
temporary	0	0
not migrated	100.0	100.0
Total	100.0	100.0

#### Place of settlement

	Participants	Non-participants
village	0	0
town	0	0
abroad	0	0
not applicable	100.0	100.0
Total	100.0	100.0

#### Reasons for migration

	Participants	Non-participants
in search of employment	0	0
land inadequacy	0	0
marriage	0	0

not migrated	100.0	100.0
Total	100.0	100.0

### ***Daily water use***

Daily water use before and after IWSS- litres (Participants)

	<b>Cooking</b>		<b>Washing/cleaning</b>		<b>livestock watering</b>		<b>Other uses</b>	
	Before IWSS	After IWSS	Before IWSS	After IWSS	Before IWSS	After IWSS	Before IWSS	After IWSS
20 ò litres	0	0	0	0	8.9	6.7	2.2	2.2
20 < litres ó 40	44.4	44.4	40.0	22.2	4.4	8.9	0	2.2
40 < litres ó 60	13.3	15.6	15.6	31.1	4.4	4.4	0	0
60 < litres ó 80	35.6	33.3	26.7	26.7	6.7	4.4	0	0
80 < litres ó 100	2.2	2.2	13.3	15.6	2.2	0	0	0
100 < litres	0	0	0	4.4	0	0	0	0
not reported	4.4	4.4	4.4	0	73.2	75.6	97.8	95.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Daily water use - litres (Non-participants)

	<b>Cooking</b>	<b>Washing/cleaning</b>	<b>livestock watering</b>	<b>Other uses</b>
20 ò litres	12.7	15.2	15.2	1.3
20 < litres ó 40	70.9	50.6	10.1	1.3
40 < litres ó 60	15.2	20.3	1.3	0
60 < litres ó 80	0	5.1	1.3	0
80 < litres ó 100	0	2.5	0	0
100 < litres	0	5.1	0	0
not reported	1.3	1.3	72.2	97.5
Total	100.0	100.0	100.0	100.0

### ***Choice of Water Source: Factor influencing choice of water source:***

Participants- dry season

Factor/Percentage	Rank 1	Rank 2	Rank 3	Rank 4	Rank 5	Rank 6
distance	62.2	8.9	22.2	0	0	0
quality	15.6	15.6	6.7	0	0	2.2
quantity	2.2	57.8	11.1	2.2	0	0
Multiple use	4.4	0	0	0	2.2	0
Reliability	2.2	2.2	0	6.7	0	0
No alternative	11.1	13.3	6.7	0	2.2	0
not reported	2.2	2.2	53.3	91.1	95.6	97.8
Total	100.0	100.0	100.0	100.0	100.0	100.0

Participants- wet season

Factor/Percentage	Rank 1	Rank 2	Rank 3	Rank 4	Rank 5	Rank 6
distance	51.1	15.6	24.4	0	2.2	2.2
quality	20.0	53.3	6.7	00	0	0
quantity	11.1	13.3	11.1	4.4	0	0
Multiple use	2.2	0	0	2.2	0	2.2

Reliability	2.2	2.2	4.4	0	0	0
No alternative	8.9	13.3	2.2	0	2.2	0
not reported	4.4	2.2	51.1	93.3	95.6	95.6
Total	100.0	100.0	100.0	100.0	100.0	100.0

Non-participants- dry season

<i>Factor/Percentage</i>	<i>Rank 1</i>	<i>Rank 2</i>	<i>Rank 3</i>	<i>Rank 4</i>	<i>Rank 5</i>	<i>Rank 6</i>
distance	83.5	2.5	12.7	0	0	0
quality	11.4	26.6	11.4	0	0	0
quantity	1.3	58.2	15.2	0	0	0
Multiple use	1.3	0	1.3	0	0	0
Reliability	0	5.1	16.5	0	0	0
No alternative	2.5	6.3	3.8	0	0	0
not reported	0	1.3	39.3	100.0	100.0	100.0
Total	100.0	100.0	100.0	100.0	100.0	100.0

Non-participants- wet season

<i>Factor/Percentage</i>	<i>Rank 1</i>	<i>Rank 2</i>	<i>Rank 3</i>	<i>Rank 4</i>	<i>Rank 5</i>	<i>Rank 6</i>
distance	49.4	11.4	17.7	0	0	0
quality	34.2	49.4	3.8	0	0	0
quantity	12.7	7.6	22.8	0	0	0
Multiple use	1.3	7.6	3.8	0	0	0
Reliability	0	16.5	7.6	0	0	0
No alternative	2.5	5.1	2.5	0	0	0
not reported	0	2.5	41.8	100.0	100.0	100.0
Total	100.0	100.0	100.0	100.0	100.0	100.0

Main Source of Water

<b>Source</b>	<b>Non-Participants</b>		<b>Participants (Before IWSS)</b>		<b>Participants (After IWSS)</b>	
	<b>Dry Season</b>	<b>Wet season</b>	<b>Dry season</b>	<b>Wet season</b>	<b>Dry season</b>	<b>Wet season</b>
river	0	44.3	6.7	31.1	0	13.3
piped	0	0	0	0	0	0
springs	12.7	8.9	2.2	22.2	0	4.4
scoop-hole	49.4	2.5	68.9	4.4	28.9	2.2
bore-hole	1.3	0	0	0	0	0
rock catchment	1.3	0	0	2.2	0	2.2
roof catchment	2.5	11.4	0	13.3	0	6.7
sand dam	0	0	0	2.2	40.0	40.0
wells	31.6	32.9	20.0	24.4	28.9	31.1
earth dam	1.3	0	0	0	0	0
not reported	0	0	2.2	0	2.2	0
Total	100.0	100.0	100.0	100.0	100.0	100.0

**Depth of scoop holes (ft)**

<b>Depth (ft)</b>	<b>Non-participants</b>	<b>Participants (Before IWSS)</b>	<b>Participants (After IWSS)</b>
2 ò depth	11.4	6.7	57.8

2 < depth ó 5	39.2	44.4	11.1
5 < depth ó 10	35.4	22.2	2.2
10 <depth ó15	1.3	4.4	0
15 <depth	11.4	2.2	0
not applicable	1.3	8.9	15.6
not reported	0	8.9	13.3
Total	100.0	100.0	100.0

**Quality of water from main source before and after IWSS**

Quality	Non-participants		Participants (Before IWSS)		Participants (After IWSS)	
	Dry Season	Wet season	Dry season	Wet season	Dry season	Wet season
Clean/clear/good	74.7	67.1	77.8	91.1	88.9	91.1
Dirty/coloured/bad smell	25.3	31.6	15.6	8.9	11.1	8.9
Salty	0	1.3	0	0	0	0
Other	0	0	2.2	0	0	0
not reported	0	0	4.4	0	0	0
Total	100.0	100.0	100.0	100.0	100.0	100.0

**Quantity of water from main source before and after IWSS (litres)**

Litres	Non-participants		Participants (Before IWSS)		Participants (After IWSS)	
	Dry season	Wet season	Dry season	Wet season	Dry season	Wet season
40 ò quantity	3.8	21.5	2.2	13.3	6.7	11.1
40<quantityó60	24.1	11.4	13.3	2.2	8.9	6.7
60<quantityó80	29.1	34.2	35.6	40.0	33.3	37.8
80<quantityó100	21.5	21.5	31.1	26.7	37.8	31.1
100>quantity	12.7	7.6	11.1	15.6	8.9	11.1
not reported	8.9	3.9	6.6	2.2	4.4	2.2
Total	100.0	100.0	100.0	100.0	100.0	100.0

**Distance to the main water source before and after IWSS (Km)**

Kilometres	Non-participants		Participants (Before IWSS)		Participants (After IWSS)	
	Dry season	Wet season	Dry season	Wet season	Dry season	Wet season
0.5 ò Km	62.0	69.6	46.7	68.9	68.9	80.0
0.5 < Km ó 2	29.1	25.3	35.6	22.2	26.7	17.8
2 < Km ó 5	7.6	3.8	13.3	4.4	2.2	0
5 < Km ó 10	1.3	1.3	2.2	2.2	2.2	0
10 < Km ó 15	0	0	2.2	0	0	0
not reported	0	0	0	2.2	0	2.2
Total	100.0	100.0	100.0	100.0	100.0	100.0



Time taken to and from the main water source (hours)

Hours	Non-participants		Participants (Before IWSS)		Participants (After IWSS)	
	Dry season	Wet season	Dry season	Wet season	Dry season	Wet season
0.5 ò hour	69.6	75.9	51.1	73.3	71.1	82.2
0.5 < hours ó 1	19.0	16.5	33.3	15.6	17.8	8.9
1 < hours ó 2	7.6	3.8	8.9	8.9	8.9	4.4
2 < hours ó 5	3.8	3.8	6.7	0	2.2	0
10 > hours	0	0	0	0	0	0
not reported	0	0	0	2.2	0	4.4
Total	100.0	100.0	100.0	100.0	100.0	100.0

Trips to the main water source in a day

Trips	Non-participants		Participants (Before IWSS)		Participants (After IWSS)	
	Dry season	Wet season	Dry season	Wet season	Dry season	Wet season
One	13.9	20.3	4.4	15.6	11.1	13.3
two	24.1	26.6	33.3	24.4	26.7	22.2
three	26.6	22.8	24.4	22.2	26.7	35.6
four and five	29.1	25.3	28.9	28.9	24.4	24.4
more than five	5.1	5.1	6.7	4.4	4.4	4.4
not reported	1.3	0	2.2	4.4	6.7	0
Total	100.0	100.0	100.0	100.0	100.0	100.0

Main water use from the main water source

Main use	Non-participants		Participants (Before IWSS)		Participants (After IWSS)	
	Dry season	Wet season	Dry season	Wet season	Dry season	Wet season
washing/cleaning	3.8	2.5	2.2	2.2	2.2	4.4
drinking	1.3	0	0	2.2	2.2	6.7
general	91.1	97.5	95.6	93.3	91.1	84.4
cooking	1.3	0	0	2.2	2.2	2.2
livestock watering	1.3	0	0	0	2.2	2.2
not reported	1.3	0	2.2	0	0	0
Total	100.0	100.0	100.0	100.0	100.0	100.0

Who used to fetch water before and after IWSS?

Who	Non-participants	Participants (Before IWSS)	Participants (After IWSS)
husband	5.1	4.4	6.7
wife	25.3	24.4	26.7
boys	1.3	2.2	4.4
girls	5.1	11.1	11.1
house-help	7.6	6.7	8.9
husband/wife	0	2.2	2.2

wife/boys	16.5	11.1	6.7
wife/girls	7.6	4.4	4.4
wife/house-help	0	6.7	6.7
boys/girls	5.1	13.3	13.3
boys/house-help	1.3	4.4	2.2
wife/Children	25.3	2.2	2.2
wife/D.I.L	0	6.7	4.4
Total	100.0	100.0	100.0

#### Means of fetching water (main) before and after IWSS

Means	Non- participants	Participants (Before IWSS)	Participants (After IWSS)
human labour	63.3	53.3	53.3
donkey	15.2	20.0	15.6
cart/wheel barrow	12.7	13.3	8.9
motor vehicle	0	2.2	2.2
human labour/donkey	3.8	4.4	8.9
human labour/cart/wheel barrow	3.8	6.7	8.9
donkey/cart/wheelbarrow	1.3	0	0
not reported	0	0	2.2
Total	100.0	100.0	100.0

#### General Impact of IWSS (Participants)

	increased	decreased	no change	no response	not reported	Total
water	91.1	2.2	0	0	6.7	100.0
distance	17.8	73.3	4.4	0	4.4	100.0
disease	15.6	62.2	6.7	0	15.6	100.0
crop farming	33.3	8.9	6.7	0	51.1	100.0
kitchen gardening	40.0	0	0	0	60.0	100.0
vegetable growing	71.1	0	0	0	28.9	100.0
livestock watering	57.8	0	0	0	42.2	100.0
brick making	73.3	0	0	0	26.7	100.0
bee keeping	44.4	0	0	0	55.6	100.0
body washing	53.3	0	0	0	46.7	100.0
clothes washing	51.1	0	0	0	48.9	100.0
utensil washing	48.9	0	0	0	51.1	100.0
tree nurseries	44.4	0	0	0	55.6	100.0
house washing	40.0	0	0	0	60.0	100.0
terracing	31.1	0	0	0	62.2	100.0
other	17.8	0	0	0	82.2	100.0

#### Water rationing (%)

	Non-participants	Participants (Before IWSS)	Participants (After IWSS)
yes	0	4.4	2.2
no	98.7	95.6	95.6
not reported	1.3	0	2.2
Total	100.0	100.0	100.0

#### Mode of water rationing before and after IWSS (%)

	Non-participants	Before IWSS	After IWSS
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Restricted to a fixed amount of water per day	0	4.4	4.4
Queuing	0	2.2	0
other	0	0	0
not reported	100.0	93.4	95.6
Total	100.0	100.0	100.0

#### Accessibility of your nearest dam

	Percent
accessible	80.0
not accessible	13.3
other characteristics	4.4
not reported	2.2
Total	100.0

#### Satisfied with the sand dam project?

	Percent
Satisfied	82.2
Not satisfied	15.6
not reported	2.2
Total	100.0

#### Why satisfied?

	Percent
Plenty of water for domestic use	42.2
Farm productivity has increased	8.9
Increased water for watering animals	20.0
Water helped in construction of houses	2.2
Reduced distances to water source	0
Other reasons	4.4
Not reported	22.2
Total	100.0

#### If not satisfied, why?

	Percent
No opportunity for multiple use	0
The well dries up in the dry season	2.2
The water is not clean	6.7
The well is too shallow	0
Other reasons	8.9
Not reported	82.2
Total	100.0

#### Shift from the traditional water source?

	Percent
Shifted	31.1
Not shifted	64.4
No response	2.2
Not reported	2.2
Total	100.0

#### If not shifted, reason

	Percent
Traditional water source nearer	33.3
No opportunity for multiple use	0
the well dries up in dry season	0
water not clean	2.2
other	4.4
no response	4.4
not reported	55.6
Total	100.0

#### Participants-Sanitation before/after IWSS

Per week	Clothe washing		Body washing		Utensil washing		House washing	
	Before IWSS	After IWSS	Before IWSS	After IWSS	Before IWSS	After IWSS	Before IWSS	After IWSS
daily	8.9	11.1	91.1	93.3	97.8	93.3	22.2	24.4
once	44.4	40.0	2.2	2.2	0	2.2	15.6	11.1
twice	22.2	17.8	6.7	2.2	0	2.2	4.4	4.4
thrice	20.0	24.4	0	0	2.2	0	0	2.2
rarely	0	0	0	0	0	0	0	
when dirty	0	0	0	0	0	0	0	
never used to/doesn't	0	2.2	0	0	0	0	15.6	13.3
not applicable	0	0	0	0	0	0	35.6	35.6
not reported	4.4	4.4	0	2.2	0	2.2	2.2	8.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

#### Non-participants: Sanitation

Per week	Clothe washing	Body washing	Utensil washing
daily	5.1	92.4	81.0
once	44.3	0	1.3
twice	32.9	3.8	15.2
thrice	15.2	1.3	0
rarely	0	0	0
when dirty	0	0	0
doesn't	0	0	0
not applicable	2.5	2.5	2.5
not reported	0	0	0
Total	100.0	100.0	100.0

#### Protection of water points before and after IWSS

	Non-participants	Participants (Before IWSS)	Participants (After IWSS)
fencing	11.4	11.1	13.3
covering well with lid	20.3	15.6	28.9
watchman	1.3	2.2	0
no protection	57.0	62.2	44.4
not applicable	0	6.7	8.9
local arrangements	8.9	2.2	0
not reported	1.3	0	4.4

Total	100.0	100.0	100.0
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### **Soil conservation**

#### Terracing before and after IWSS (%)

	Non-participants	Participants (Before IWSS)	Participants (After IWSS)
nil	17.7	15.6	17.8
0 < number ó 3	26.6	22.2	24.4
3 < number ó 5	30.4	31.1	26.7
5 < number ó 10	20.3	20.0	20.0
10 < number	1.3	11.1	6.7
not reported	3.9	0	4.4
Total	100.0	100.0	100.0

#### Tree planting before and after IWSS (%)

	Non-participants	Participants (Before IWSS)	Participants (After IWSS)
nil	25.3	35.6	24.4
0 < number ó 5	10.1	11.1	8.9
5 < number ó 10	29.1	13.3	26.7
10 < number ó 50	31.6	33.3	31.1
50 < number	2.5	0	2.2
not reported	1.3	6.7	6.7
Total	100.0	100.0	100.0

#### Gabions before and after IWSS (%)

	Non-participants	Participants (Before IWSS)	Participants (After IWSS)
nil	94.9	88.9	88.9
0 < number ó 5	2.5	0	0
5 < number ó 10	0	0	0
10 < number	1.3	0	0
not reported	1.3	11.1	11.1
Total	100.0	100.0	100.0

#### Misonzo before and after IWSS (%)

	Non-participants	Participants (Before IWSS)	Participants (After IWSS)
nil	73.4	77.8	80.0
0 < number ó 5	17.7	13.3	8.9
5 < number ó 10	5.1	0	0
10 < number	2.5	0	0
not reported	1.3	8.9	11.1
Total	100.0	100.0	100.0

#### Grass planting before and after IWSS (%)

	Non-participants	Participants (Before IWSS)	Participants (After IWSS)
Yes	72.2	55.6	55.6

No	26.6	42.2	31.1
Not reported	1.3	2.2	13.3
Total	100.0	100.0	100.0

## **Waterborne diseases mitigation measures**

### Boiling (%)

	Non-participants	Participants (Before IWSS)	Participants (After IWSS)
Boil drinking water	68.4	55.6	15.6
not reported	31.6	44.4	84.4
Total	100.0	100.0	100.0

### Chemicals application before and after IWSS (%)

	Non-participants	Participants (Before IWSS)	Participants (After IWSS)
Treat drinking water with chemicals	10.1	6.7	6.7
not reported	89.9	93.3	93.3
Total	100.0	100.0	100.0

### Clean/clear compound/bushes before and after IWSS (%)

	Non-participants	Participants (Before IWSS)	Participants (After IWSS)
clean/clear compound	1.3	0	2.2
not reported	98.7	100.0	97.8
Total	100.0	100.0	100.0

### Dry stagnant waters before and after IWSS (%)

	Before IWSS	After IWSS
Dry stagnant water	0	0
not reported	100.0	100.0
Total	100.0	100.0

### Inoculation before and after IWSS (%)

	Non-participants	Participants (Before IWSS)	Participants (After IWSS)
Inoculation	0	0	0
not reported	100.0	100.0	100.0
Total	100.0	100.0	100.0

### Eating well cooked food before and after IWSS (%)

	Before IWSS	After IWSS
well cooked food	0	0
not reported	100.0	100.0
Total	100.0	100.0

### Use of mosquito nets food before and after IWSS (%)

	Before IWSS	After IWSS
Using nets	0	0
not reported	100.0	100.0
Total	100.0	100.0

### Observing cleanliness of utensils before and after IWSS (%)

	Non-participants	Participants	
		Before IWSS	After IWSS
Utensil cleanliness	1.3	2.2	2.2
not reported	98.7	97.8	97.8
Total	100.0	100.0	100.0

Other measure before and after IWSS (%)

	Before IWSS	After IWSS
other measure	0	0
not reported	100.0	100.0
Total	100.0	100.0

### **Mode of choosing water source committee members/dam committee members**

Participants:

	Participants (Dam committee)			
	Nomination	Election	Selection	Other mode
Yes	31.1	20.0	44.4	4.4
Other	68.8	75.6	51.1	95.6

Non-Participants:

	Non-participants			
	Nomination	Election	Selection	Other mode
Yes	0	3.8	0	0
Other/N/A	100.0	96.2	100.0	100.0

Participants:

By whom	Participants (Dam committee)			
	Nomination	Election	Selection	Other mode
not reported	66.7	75.6	51.1	95.6
community	17.8	8.9	26.7	0
provincial administration	0	0	0	0
political leaders	0	0	2.2	0
dam members	11.1	11.1	15.6	0
Other	4.4	4.4	4.4	4.4
Total	100.0	100.0	100.0	100.0

Non-participants:

By whom	Participants (Dam committee)			
	Nomination	Election	Selection	Other mode
not reported	100.0	94.8	100.0	100.0
community	0	2.6	0	0
provincial administration	0	0	0	0
political leaders	0	0	0	0
dam members	0	0	0	0
Other	0	2.6	0	0
Total	100.0	100.0	100.0	100.0



Participants: Duration in office- dam committee

	Percent
not reported	4.4
one month	20.0
half-year	26.7
one year	26.7
two years	4.4
not stated	2.2
indefinitely	4.4
no response	6.7
Total	100.0

Non-participants: Duration in office- committee

	Percent
not reported	96.2
one month	0
half-year	0
one year	1.3
two years	2.5
not stated	0
indefinitely	0
no response	0
Total	100.0

Participants: Factored considered when choosing dam committee member

<i>Factor</i>	<i>Considered</i>
honesty	4.4
transparency	6.7
trustworthy	11.1
respectable	11.1
religious	2.2
social	6.7
ability to lead	22.2
hard working	4.4
faithful	4.4
active	8.9
commitment	11.1
age/experience	6.7
good in communication	31.1
maturity	22.2
participation	11.1
availability	13.3
wealth	6.7
other aspect	8.9

Impact of dam committee in regard to:

<i>Factor</i>	<i>Positive</i>	<i>Negative</i>	<i>no impact</i>
age	86.7	0	8.9
religion	86.7	0	8.9

political party affiliation	88.9	0	11.1
wealth	86.7	4.4	4.4
gender	88.9	2.2	4.4

Community give people who have not had opportunity to lead a chance to lead

	Non-participants	Participants
yes	0	55.6
no	3.8	40.0
no response	0	0
not reported	96.2	4.4
Total	100.0	100.0

Linkage between dam and other committees?

	Non-participants	Participants
yes	2.5	35.6
no	1.3	55.6
not reported	96.2	8.9
Total	100.0	100.0

If yes to linkage, how?

	Non-participants	Participants
considering community committee members in dam committee	0	8.9
dam committee members considered in other community committee	2.5	31.1
no response	0	0
not reported	97.5	60.0
Total	100.0	100.0

Participants: Other general benefits derived from IWSS

	Percent
yes	51.1
no	26.7
not reported	22.2
Total	100.0

Non-participants: Member of any community group?

	Percent
no response	5.0
yes	38.0
no	57.0
Total	100.0

**Participants: If yes benefits yes**

Non-participants: If a member of community group- benefits

	participants	non-participants
advice from older people to young members of the society	2.2	1.3
community members interact freely while working together	17.8	11.4
women contribute to a fund to uplift their	11.1	7.6

welfare		
community formed groups for planting vegetables and seedlings for sale	13.3	7.6
formation of groups to help in harvesting/terracing and other undertakings	42.2	13.9
making new friends	6.7	0
other	4.4	6.3

Influence of development agenda by community

	Non-participants	Participants
yes	53.2	75.6
no	45.6	22.2
not reported	1.3	2.2
Total	100.0	100.0

If influence yes, how:

<i>How</i>	<i>Non-participants</i>	<i>Participants</i>
the community is free to express its interests during development meeting	10.1	20.0
before any law/bylaw/rule is passed people community is consulted	1.3	11.1
done through <i>barazas</i> whereby members air their views freely	16.5	17.8
through consultation with those concerned	3.8	11.1
involved when discussing development ideas	5.1	4.4
headman (administrators) consults with the people and forwards their views	16.5	22.2
chairpersons of groups, headmen and other leaders consulted through formation of groups	12.7	22.2
any other way	0	8.9

Participants: Impact of increased water after IWSS:

	improved	declined	the same
health	68.9	4.4	13.3
cleanliness	71.1	4.4	13.3
leisure	68.9	0	17.8
girl-child school absenteeism	8.9	4.4	31.1
boy-child school absenteeism	8.9	4.4	33.3
girl-child school punctuality	15.6	4.4	46.7
boy-child school punctuality	13.3	2.2	46.7
cooking at the right time	55.6	2.2	31.1

Non-participants: impact of water availability on the following:

	positive	negative	no effect
health	55.7	20.3	1.3
cleanliness	68.4	5.1	3.8
leisure	70.9	2.5	3.8

girl-child school absenteeism	2.5	3.8	41.8
boy-child school absenteeism	1.3	2.5	43.0
girl-child school punctuality	12.7	3.8	50.6
boy-child school punctuality	13.9	3.8	50.6
cooking at the right time	39.2	2.5	2.5

Non-participants: Impact of water scarcity on the following:

	positive	negative	no impact
health	2.5	10.1	1.3
cleanliness	1.3	8.9	2.5
leisure	2.5	7.6	2.5
girl-child school absenteeism	10.1	2.5	10.1
boy-child school absenteeism	8.9	3.8	10.1
girl-child school punctuality	2.5	7.6	2.5
boy-child school punctuality	2.5	8.9	1.3
cooking at the right time	3.8	1.3	8.9

Participants: Increase in water impact

	improved	declined	the same
security	80.0	0	6.7
pregnancy rates	13.3	8.9	6.7
community cohesiveness	75.6	77.	11.1
marriage rates	13.3	2.2	17.8

Non-participants: water availability impact on the following

	positive	negative	no impact
security	69.6	3.8	2.5
pregnancy rates	13.9	57.0	5.1
community cohesiveness	58.2	7.6	5.1
marriage rates	12.7	49.4	13.9

Non-participants: water scarcity impact on the following

	positive	negative	no impact
security	5.1	10.1	8.9
pregnancy rates	5.1	10.1	3.8
community cohesiveness	6.3	2.5	1.3
marriage rates	1.3	8.9	2.5

Is trekking long distances by girls regarded as good?

	Non-participants	Participants
good	6.3	8.9
bad	92.4	88.9
no response	0	0
not reported	1.3	2.2
Total	100.0	100.0

bad

	Non-participants	Participants
tiring	36.7	40.0
compromise other household duties	11.4	22.2
develop irresponsible behaviour-	19.0	22.2

early pregnancies/marriages		
leads to school absenteeism/lateness	10.1	15.6
not generally safe	29.1	40.0
other reason	3.8	0

### good

	Non-participants	Participants
body exercise and good health	2.5	2.2
test of adulthood- could take care of themselves	2.5	0
other reason	0	2.2

### Impact of the project in relation to trek (Participants)

	percent
time	17.8
absenteeism/lateness in school improved	6.7
school drop out rates lowered	6.7
improved security of girls	33.3
increased time for leisure	13.3
distance to water source reduced	4.4
other impact	11.1
no impact	24.4

### Hours of sleep

	Non-participants		Participants (Before IWSS)		Participants (After IWSS)	
	dry season	wet season	dry season	wet season	dry season	wet season
2 ò hours	0	0	0	0	0	0
2 < hours ó 4	0	0	0	2.2	0	0
4 < hours ó 6	12.7	8.9	8.9	6.7	8.9	8.9
6 < hours ó 8	57.0	41.8	62.2	35.6	62.2	55.6
8 < hours	30.4	49.4	24.4	51.1	24.4	31.1
not reported	0	0	4.4	4.4	4.4	4.4
Total	100.0	100.0	100.0	100.0	100.0	100.0

### Whom do you consult before participating in community projects (sand dam project)

	Non-participants	Participants
husband (in the household)	29.1	4.4
husband (elsewhere)	3.8	0
wife (in the household)	7.6	6.7
wife (elsewhere)	0	2.2
friends	36.7	28.9
local administration (headman/Ass. Chief/Chief)	16.5	44.4
none	3.8	0
religious leaders	1.3	4.4
other	0	6.7
not reported	1.3	2.2
Total	100.0	100.0

Economic activities (%):

Mentioned	Non-participants	Participant (Before IWSS)	Participant (After IWSS)
agriculture	100.0	97.8	97.8
goat/sheep	24.1	33.3	33.3
cattle	15.2	22.2	24.4
vegetable growing	7.6	20.0	22.4
kitchen gardening	12.7	2.2	4.4
brick making	32.9	15.6	20.0
tree nurseries	15.2	8.9	20.0
bee keeping	2.5	8.9	2.2

New crops/activities introduced after IWSS:

New crop/activity	Percent
spinach growing	2.2
vegetable growing	57.8
fish	0
<i>sukuma wiki</i>	24.4
onions	22.2
tomatoes	22.2
<i>ndania</i>	11.1
sugar cane	4.4
arrow roots	2.2
fruits	4.4
other crop	11.1

Contribution of the following activities after IWSS (KShs)

Activity	5000 value	500<value≤1000	1000<value≤5000	5000<value≤10000	10,000<value
agriculture	4.4	8.9	2.2	0	0
goats/sheep	0	0	0	0	0
cattle	4.4	0	0	0	0
vegetable growing	0	2.2	8.9	2.2	0
kitchen gardening	2.2	0	0	4.4	0
brick making	0	0	4.4	2.2	0
tree nurseries	2.2	2.2	4.4	2.2	0
bee keeping	0	0	0	0	0
sugar cane	0	0	0	0	0
business	2.2	0	0	0	0

Indirect benefits:

	mentioned (%)
increased land value	31.1
increased livestock reproduction rates	2.2
able to pay school fees- increased income	2.2
able to cloth the family- increased income	0
increased land productivity- increased water and terracing	8.9

soil fertility- tree planting and terracing	11.1
reduced cost of buying salt lick for animals	4.4
vegetables- plenty and cheap	11.1
increased sand for construction	2.2
other benefit	4.4

Whether IWSS has served as incentive to people to buy/lease land

	Percent
attracted- total	4.4
leased land to cultivate	2.2
paid sand dam fees before leasing the land	0

**Use of time saved from walking long distances:**

	Percent
<i>Shamba</i> work	51.1
taking care of livestock	0
making bricks	4.4
kitchen gardening	0
tending tree nursery	6.7
business	0
leisure	0
other activities	0

**Contribution of the activity undertaken owing to increased time availability (KShs):**

	Shamba work	tending livestock	making bricks	kitchen gardening	tending tree nursery	business	other activities
500 ò value	2.2	0	0	0	2.2	0	0
500 < value ó 1,000	2.2	0	0	0	0	0	0
1000 < value ó 5,000	13.3	0	4.4	0	2.2	0	0
5,000 < value ó 10,000	15.6	0	2.2	0	0	0	0
10,000 < value	4.4	0	0	0	0	0	0

Cost of water per 20 litre jerrican (KShs)

	Dry season				Wet season		
	Non-participants	Participants		Non-participants	Participants		
		Before IWSS	After IWSS		Before IWSS	After IWSS	
5 ò shillings	54.4	73.3	73.3	62.0	82.2	80.0	
5 < shillings ó 10	43.0	20.0	22.2	35.4	13.3	15.6	
10< shillings ó 15	0	0	0	0	0	0	
15 < shillings ó 20	0	0	0	0	0	0	
20 < shillings	0	4.4	4.4	0	4.4	4.4	

Controlled measure

Measure	Non-participants	Participants
covering the well with a lid	5.1	22.2
washing of clothes not allowed in the IWSS	0	2.2
only participants are allowed	1.3	4.4

planting of grass to check erosion	2.5	4.4
children not allowed to play near the IWSS	2.5	4.4
other control/plan (eg. prayers)	2.5	2.2

If not controlled, why?

Why	Non-participants	Participants
it is a public/natural resource	29.1	4.4
participants are responsible people- respect their efforts	7.6	11.1
other reason	15.2	13.3

### Pollution penalties/action(%)

Participants:

Type of pollution	pays fine	report to dam committee	report to provincial administration	report to Sasol	warning/cautioned	excommunicated
washing inside the dam/well	35.6	0	31.1	2.2	4.4	0
washing clothes inside the dam/well	35.6	0	35.6	2.2	4.4	0
watering animals in the dam/well	35.6	0	35.6	2.2	4.4	0
spraying vegetables/crops chemicals around the dam/well	33.3	0	42.2	2.2	2.2	0
defecating/urinating near the dam/well	33.3	0	44.4	2.2	2.2	0
dropping objects in the source	33.3	0	44.4	2.2	2.2	0

Non-participants:

Type of pollution	pays fine	report to source committee	report to provincial administration	warning/cautioned	excommunicated
washing inside the dam/well	11.4	0	13.9	15.2	10.1
washing clothes inside the dam/well	11.4	0	13.9	15.2	10.1
watering animals in the dam/well	11.4	1.3	13.9	15.2	10.1
spraying vegetables/crops chemicals around the dam/well	15.2	0	17.7	5.1	7.6
defecating/urinating near the dam/well	15.2	13.9	17.7	5.1	7.6
dropping objects in the source	15.2	13.9	17.7	5.1	7.6

Who is responsible for operation and maintenance of your water resource (Sand dam/well)

	Non-participants	Participants
dam/source committee members	6.3	4.4
chairperson of the dam committee	0	4.4
provincial administration	0	0
community	57.0	68.9



watchman	0	0
no body/party	0	00
no maintenance required	8.9	2.2
owner	22.8	0
Sasol/other NGO	2.5	8.9
other	2.5	0
not reported	0	4.4
Total	100.0	100.0

Source of funds for operation and maintenance of the IWSS if applicable

	Non-participants	Participants
dam committee members	0	68.9
chairperson of the dam committee	0	26.7
provincial administration	0	0
community	2.5	2.2
politicians	0	0
no funds needed	83.5	0
sasol	0	0
other	7.6	
not reported	6.3	2.2
Total	100.0	100.0

Operation and maintenance contribution by households if applicable (KShs)

	Non-participants	Participants
25 ò KShs.	2.5	6.7
25 < KShs ó 50	0	0
50 < KShs ó 75	0	2.2
75< KShs ó 100	1.3	2.2
100 < KShs	0	4.4
in kind (labour)	0	0
no funds needed	0	6.6
not reported	96.2	77.8
Total	100.0	100.0

Frequency of dam/source committee meetings

	Non-participants	Participants
monthly	1.3	26.7
never meet	38.0	53.3
when there is need	2.5	11.1
other	0	4.4
no committee reported	0	0
not reported	58.2	4.4
Total	100.0	100.0

Control over family resources:

	Income			Labour			Expenditure		
	NP	P		NP	P		NP	P	
		Before IWSS	After IWSS		Before IWSS	After IWSS		Before IWSS	After IWSS
husband	34.2	33.3	33.3	34.2	33.3	33.3	30.4	31.1	31.1
wife	39.2	17.8	20.0	39.2	20.0	20.0	39.2	20.0	20.0

husband/wife	19.0	35.6	37.8	19.0	37.8	37.8	22.8	40.0	40.0
children	1.3	2.2	2.2	1.3	2.2	2.2	1.3	2.2	2.2
father/mother-in-law	1.3	0	0	1.3	0	0	1.3	0	0
boys	1.3	2.2	2.2	1.3	2.2	2.2	1.3	2.2	2.2
girls	3.8	4.4	4.4	3.8	4.4	4.4	3.8	4.4	4.4
other	0	0	0	0	0	0	0	0	0

#### Impact of increased family income to family unit

	Percent
positive	31.1
negative	11.1
the same	44.4
not reported	13.3
Total	100.0

#### Has increased incomes/opportunities led to conflict at:

	Percent
at family level not reported	93.3
at community level not reported	91.1

#### Laid down conditions for joining IWSS to non-participants: pays fees (KShs)

	Percent
100 ò KShs	0
100 < KShs ó 200	11.1
200 < KShs ó 500	17.8
500 < KShs ó 1,000	17.8
1,000 < KShs	4.4
not fixed	24.4
not reported	24.4
Total	100.0

#### Laid down conditions for joining IWSS to non-participants: fines in kind

	Percent
sheep	2.2
goat	2.2
other	2.2
not reported	93.3
Total	100.0

#### Value household attach to their water source

	Non-participants	Participants
500 ò KShs	3.8	6.7
500 < KShs ó 1,000	6.3	4.4
1,000 < KShs ó 5,000	21.5	20.0
5,000 < KShs ó 10,000	13.9	11.1
10,000 < KShs	43.0	53.3
not acceptable (invaluable)	8.9	0
not reported	2.5	2.2
Total	100.0	100.0

Willingness to pay for improved water resource

	Non-participants	Participants
500 ò KShs	44.3	60.0
500 < KShs ó 1,000	6.3	6.7
1,000 < KShs ó 5,000	19.0	20.0
5,000 < KShs ó 10,000	8.9	0
10,000 < KShs	12.7	6.7
not reported	8.9	6.6
Total	100.0	100.0

Suppose you perceive wrong committee management (dam committee), what measure would you take?

	Participants	Non-participants
report to chair/person	20.0	2.5
report to provincial administration	2.2	2.5
quit the source	2.2	0
report to SASOL	0	0
question the dam committee	22.2	0
alert other members and ask for a meeting	24.4	1.3
advice the management accordingly	8.9	0
request management to quit office	6.7	1.3
other	11.1	1.3
not reported	2.2	91.1
Total	100.0	100.0

Willingness to take up leadership position

	Participants	Non-participants
willing to up leadership position	77.8	1.3
not willing to lead	17.8	2.5
not reported	4.4	96.2
Total	100.0	100.0

Ownership of water resource (sand dam):

	Non-participants		Participants	
	True	False	True	False
community	59.5	40.5	84.4	11.1
individual	40.5	59.5	6.7	86.7
government	1.3	98.7	0	91.1
schools	1.3	98.7	88.9	0
KANU	1.3	98.7	88.9	0
SASOL/ NGOs	1.3	98.7	88.9	2.2
SDP	1.3	98.7	91.1	0
Christians	1.3	98.7	91.1	0
<i>Kathambi</i>	1.3	98.7	91.1	0
other	1.3	98.7	37.8	0

Why own the water resource (sand dam): Reasons

	community participated		it is a natural resource		sponsored		other	
	NP	P	NP	P	NP	P	NP	P

community	38.0	84.4	32.9	2.2	0	0	19.0	6.7
individual	12.7	66.7	34.2	6.7	32.9	11.1	10.1	8.9
government	7.6	4.4	34.2	6.7	13.9	77.8	32.9	2.2
schools	7.6	0	34.2	6.7	13.9	82.2	32.9	2.2
KANU	7.6	0	34.2	6.7	13.9	82.2	32.9	2.2
SASOL/ NGOs	7.6	4.4	34.2	6.7	13.9	75.6	32.9	4.4
SDP	7.6	0	34.2	6.7	13.9	82.2	32.9	2.2
Christians	7.6	0	34.2	6.7	13.9	80.0	32.9	2.2
<i>Kathambi</i>	7.6	0	34.2	6.7	13.9	82.2	32.9	2.2
other	1.3	0	0	2.2	0	44.4	0	0

Suppose somebody started demolishing your water resource (sand dam), what action would you take (%):

	Non-participants		Participants	
	As an individual	As a member of the community	As an individual	As a member of the community
ask him/her why	15.2	0	6.7	0
report to dam/source committee chairperson	0	5.1	15.6	2.2
report to other members	2.5	0	4.4	0
report to the head man	0		48.9	0
report to the provincial administration	40.5	50.6	0	71.1
report to SASOL/sponsor	0	1.3	4.4	0
report to the police	17.7	2.5	4.4	0
beat up the person	0	0	0	4.4
banish him/her	0	2.5	0	2.2
use force to stop him/her	3.8	5.1	0	8.9
no action	12.7	2.5	8.9	0
other	6.3	21.5	0	8.9
no response	1.3	8.9	6.6	2.2
Total	100.0	100.0	100.0	100.0

Any other comment

	Non-participants	Participants
more dams needed	15.2	35.6
congratulations- SASOL	0	4.4
sand dams are beneficial- increased incomes	2.5	8.9
satisfied with the location	1.3	2.2
sand dam too far, water source near home required	0	13.3
need IWSS	10.1	11.1
water source near home required	48.1	0
no comment	1.3	0
not reported	21.5	24.4
Total	100.00	100.0