

## ***Kyangunga Sub-Location, Mulango Location, Central Division (43 Participants & 17 Non-participants)***

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### **Household Demography**

Head of the Household sex (%)

<b>Sex</b>	<b>Participants</b>	<b>Non-participants</b>
Female	65.1	64.7
Male	34.9	35.3
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	2.3	5.9
20 < years ó 35	34.9	58.8
35 < years ó 55	53.5	17.6
55 < years ó 70	4.7	17.6
70 < years	4.7	0
Total	100.00	100.00

Head of Household level of education

<b>Level</b>	<b>Participants</b>	<b>Non-participants</b>
informal	39.5	41.2
primary	48.8	47.1
secondary	9.3	11.8
tertiary	2.3	0
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	67.4	23.3	76.5	23.5
businessman	11.6	0	5.9	0
regular employment	4.7	0	5.9	0
wage earner	9.3	2.3	11.8	11.8
other	2.3	2.3	0	0
not reported	4.7	72.1	0	64.7
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	65.1	35.3
10,000 < income ó 30,000	18.6	52.9
30,000 < income ó 50,000	4.7	5.9
100,000 < income	9.3	5.9
not reported	2.3	0
Total	100.0	100.0

**Household size(%)**

Size	Participants	Non-participants
3 ò members	11.6	5.9
3 < members ó 8	65.1	82.4
8 < members ó 12	23.3	11.8
Total	100.0	100.0

**Household composition (%)**

Composition	Participants	Non-participants
females =males	34.9	29.4
females > males	37.2	35.3
females < males	27.9	35.3
Total	100.0	100.0

**Household income sources (%)**

	Participants		Non-participants	
	Main	Secondary	Main	Secondary
crop farming	58.1	41.9	70.6	23.5
livestock	2.3	11.6	0	5.9
business	7.0	7.0	5.9	0
regular employment	16.3	2.3	5.9	0
wage earning	11.6	14.0	17.6	11.8
other	4.7	0	0	0
no response	0	2.3	0	0
not reported	0	20.9	0	58.8
Total	100.0	100.00	100.0	100.0

**Income sources contribution (%)**

(KShs.)	Participants		Non-participants	
	Main (%)	Second (%)	Main (%)	Second (%)
10,000 ò	48.8	55.8	35.3	29.4
10,000 < income ó 30,000	25.6	18.6	47.1	17.6
30,000 < income ó 50,000	9.3	0	11.8	0
50,000 < income ó 100,000	7.0	0	5.9	0
10,000 < income	9.3	2.3	0	0
no response	0	2.3	0	0
not reported	0	20.9	0	52.9
Total	100.0	100.0	100.0	100.0

***Household Inventory (Assets)*****Number of houses (%)**

Number of houses	Participants	Non-participants
one	4.7	11.8
two or three	93.0	76.5
four or five	2.3	11.8
Total	100.0	100.0

Main house thatch

Thatch type	Participants	Non-participants
iron sheets	79.1	82.4
grass	20.9	17.6
Total	100.0	100.0

#### Main house floor type

	Participants	Non-participants
cemented	25.6	23.5
un-cemented	74.4	76.5
Total	100.0	100.0

#### Main house number of rooms

<i>Number of houses</i>	<i>Participants</i>	<i>Non-participants</i>
one room	18.6	29.4
two or three	67.4	58.8
four or five	11.6	5.9
six and more	2.3	5.9
Total	100.0	100.0

#### Wall material- main house

Wall material	Participants	Non-participants
brick/mud	65.1	64.7
brick/cement	34.9	35.3
Total	100.0	100.0

#### Household with toilets

	Participants	Non-participants
households with toilets	72.1	82.4
households without toilets	27.9	17.6
Total	100.0	100.0

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

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

	Participants			Non-participants		
	Chicken/ducks	Cows	Goats	Chicken/ducks	Cows	Goats
nil	25.6	60.5		23.5	64.7	41.2
one	9.3	39.5		23.5	0	35.3
1 < number ó 5	39.5	0		29.4	29.4	11.8
5 < number ó 10	16.3	0		11.8	0	11.8
10 < number	9.3	0		11.8	5.9	0
Total	100.0	100.0		100.0	100.0	100.0

##### Number of donkeys

	Participants	Non-participants
nil	58.1	64.7
0 < donkeys ó 3	41.9	35.3
Total	100.0	100.0

Number of jembes, spades, mattocks, etc.

	Participants	Non-participants
nil	9.3	0
0 < jembes ó 5	55.8	76.5
5 < jembes ó 10	32.6	17.6
10 < jembes	2.3	5.9
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	72.1	67.4	72.1	97.7	27.9	90.7	100.0
0 < numberó 3	25.6	32.6	27.9	2.3	72.1	9.3	0
3< number	2.3	0	0	0	0	0	0
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	64.7	88.2	76.5	88.2	64.7	100.0	94.1
0 < numberó 3	35.3	11.8	23.5	11.8	35.3	0	5.9
3< number	0	0	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
not reported	0	86.0	0	100
5 ò acres	83.6	9.4	82.3	0
5 < acres ó 10	16.4	2.3	5.9	0
10 < acres	0	0	11.8	0
no response	0	2.3	0	0
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	4.7	46.5	0	70.6
agriculture	83.7	7.0	94.1	0
livestock grazing	4.7	41.9	5.9	29.4
not reported	7.0	4.7	0	0

Total	100.0	100.0	100.0	100.0
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***Source of energy***

Source of energy

	Participants		Non-participants	
	main	second main	main	second main
firewood	93.0	4.7	94.1	0
kerosene	7.0	79.1	5.9	82.4
charcoal	0	16.3	0	17.6
Total	100.0	100.0	100.0	100.0

***Food intake:***

Type of Breakfast (%)

	Non-participants	Participants (Before IWSS)	Participants (After IWSS)
tea/coffee	76.5	58.1	60.5
porridge	23.5	34.9	37.2
other	0	7.0	2.3
Total	100.0	100.0	100.0

Breakfast value before and after IWSS (KShs.)

	Non-participants	Participants (Before IWSS)	Participants (After IWSS)
140 ò value	35.3	32.6	30.2
140 < value ó 350	35.3	46.5	51.2
350 < value ó 500	11.8	14.0	11.6
500 < value	11.8	7.0	7.0
no response	5.9	0	0
Total	100.0	100.0	100.0

Lunch before and after IWSS (%)

	Non-participants	Participants (Before IWSS)	Participants (After IWSS)
<i>ugali</i>	58.8	51.1	46.5
<i>githeri</i>	35.3	41.9	44.2
other	5.9	2.3	4.7
not reported	0	4.7	4.7
Total	100.0	100.0	100.0

Lunch value before and after IWSS (KShs.) (%)

	Non-Participants	Participants (Before IWSS)	Participants (After IWSS)
140 ò value	5.9	7.0	9.3
140 < value ó 350	29.4	44.2	39.5
350 < value ó 500	35.3	20.9	30.2
500 < value	17.6	23.3	16.3
not reported	11.8	4.7	4.7
Total	100.0	100.0	100.0

Dinner/supper before and after IWSS (%)

	Non-participants	Participants (Before IWSS)	Participants (After IWSS)
ugali	52.9	37.2	34.9
githeri	47.1	60.5	62.8
other	0	2.3	2.3
Total	100.0	100.0	100.0

Dinner value before and after IWSS (KShs.)

	Non-participants	Participants (Before IWSS)	Participants (After IWSS)
140 ò value	11.8	9.3	4.7
140 < value ó 350	35.3	39.5	44.2
350 < value ó 500	5.9	34.9	37.2
500 < value	41.2	16.3	14.0
not reported	5.9		
Total	100.0	100.0	100.0

Preparation, service and order of service

	Participants			Non-participants		
	Who prepares	Who serves	Who is served first	Who prepares	Who serves	Who is served first
wife	51.2	51.2	4.7	52.9	47.1	11.8
Husband	0	0	48.8	11.8	17.6	41.2
children	7.0	7.0	0	0	0	0
househelp	7.0	7.0	0	0	0	0
husband/wife	2.3	2.3	0	0	0	0
wife/children	32.6	32.6	0	35.3	35.3	0
all members			46.5	0	0	47.1
Total	100.0	100.0	100.0	100.0	100.0	100.0

**Migration**

Year of migration

	Participants	Non-participants
1990-1992	2.3	0
1993-1997	2.3	0
1998-2001	4.7	0
not migrated	90.7	100.0
Total	100.0	100.0

Nature of migration

	Participants	Non-participants
permanent	4.7	0
temporary	4.7	0
not migrated	90.7	100.0
Total	100.0	100.0

Place of settlement

	Participants	Non-participants
village	4.7	0
town	4.7	0
abroad	2.3	0
not applicable	88.3	100.0
Total	100.0	100.0

Reasons for migration

	Participants	Non-participants
in search of employment	4.7	0
land inadequacy	4.7	0
marriage	4.7	0
not migrated	86.0	100
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		11.6	4.7	25.6	23.3	4.7	7.0
20 < litres ó 40	69.8	79.1	58.1	41.9	7.0	4.7	2.3	0
40 < litres ó 60	25.6	20.9	18.6	39.5	11.6	11.6	0	0
60 < litres ó 80	0	0	2.3	7.0	2.3	0	0	0
80 < litres ó 100	0	0	2.3	2.3	0	2.3	0	0
100 < litres	0	0	4.7	2.3	2.3	0	0	0
not reported	4.7	0	2.3	2.3	51.2	58.1	93.0	93.0
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>
				5.9
20 ò litres	11.8	35.3	41.2	5.9
20 < litres ó 40	70.6	41.2	35.3	0
40 < litres ó 60	17.6	17.6	11.8	0
60 < litres ó 80	0	5.9	5.9	0
80 < litres ó 100	0	0	5.9	0
100 < litres	0	0	0	0
not reported	0	0	0	88.2
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	72.1	14.0	4.7	0	0	2.3

quality	23.3	27.9	11.5	0	0	0
quantity	2.3	41.9	25.6	0	0	2.3
Multiple use	0	7.0	2.3	7.0	0	2.3
Reliability	0	4.7	16.3	4.7	2.3	0
No alternative	0	2.3	2.3	0	4.7	2.3
not reported	2.3	2.3	37.2	88.4	93.0	90.7
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	46.5	20.9	11.6	4.7	0	9.3
quality	37.2	34.9	11.6	2.3	0	0
quantity	9.3	18.6	16.3	2.3	0	0
Multiple use	4.7	16.3	9.3	0	2.3	0
Reliability	0	0	7.0	4.7	2.3	0
No alternative	0	4.7	2.3	0	2.3	2.3
not reported	2.3	4.7	41.9	86.0	93.0	88.4
Total	100.0	100.0	100.0	100.0	100.0	100.0

**Non-participants- dry season**

Factor/Percentage	Rank 1	Rank 2	Rank 3	Rank 4	Rank 5	Rank 6
distance	58.8	41.2	5.9	0	0	0
quality	23.5	23.5	23.5	5.9	0	0
quantity	5.9	35.3	11.8	0	0	5.9
Multiple use	0	0	0	0	5.9	0
Reliability	0	0	11.8	11.8	5.9	5.9
No alternative	5.9	0	5.9	5.9	0	0
not reported	5.9	0	41.2	76.5	88.2	88.2
Total	100.0	100.0	100.0	100.0	100.0	100.0

**Non-participants- wet season**

Factor/Percentage	Rank 1	Rank 2	Rank 3	Rank 4	Rank 5	Rank 6
distance	17.6	41.2	29.4	5.9	0	0
quality	64.7	17.6	11.8	0	0	0
quantity	0	11.8	11.8	5.9	0	0
Multiple use	0	17.6	11.8	0	0	5.9
Reliability	0	5.9	5.9	0	5.9	0
No alternative	5.9	5.9	0	11.8	0	11.8
not reported	11.8	0	29.4	76.5	94.1	82.3
Total	100.0	100.0	100.0	100.0	100.0	100.0

**Main Source of Water**

	Non-Participants		Participants (Before IWSS)		Participants (After IWSS)	
	Dry Season	Wet season	Dry season	Wet season	Dry season	Wet season
river	0	47.1	4.7	46.5	4.7	14.0
piped	0	0	2.3	2.3	7.0	2.3
springs	0	0	4.7	11.6	2.3	4.7
scoop-hole	88.2	35.3	86.0	14.0	32.6	14.0
roof catchment	0	0	0	11.6	2.3	4.7

sand dam	0	0	0	2.3	46.5	46.5
wells	11.8	11.8	0	2.3	4.7	4.7
not reported	0	5.9	2.3	9.3	0	9.3
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	29.4	14.0	53.5
2 < depth ó 5	29.4	27.9	11.6
5 < depth ó 10	29.4	44.2	4.7
not applicable	0	11.6	18.6
not reported	11.8	2.3	11.6
Total	100.0	100	100

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

<b>Quality</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>
Clean/clear/good	76.5	76.5	65.1	72.1	76.7	69.8
Dirty/coloured/bad smell	23.5	23.5	32.6	20.9	23.3	20.9
Salty	0	0	0	4.7	0	0
Other	0	0	2.3	2.3	0	2.3
not reported	0	0	0	0	0	7.0
Total	100.0	100.0	100.0	100.0	100.0	100.0

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

<b>Litres</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>
40 ò quantity	11.8	11.8	4.7	14.0	9.3	9.3
40<quantityó60	23.5	11.8	25.6	18.6	16.3	14.0
60<quantityó80	23.5	17.6	20.9	25.6	23.3	32.6
80<quantityó100	17.6	23.5	27.9	27.9	32.6	23.3
100>quantity	23.5	29.4	20.9	14.0	16.3	18.6
not reported	0	5.9	0	0	2.3	2.3
Total	100.0	100.0	100.0	100.0	100.0	100.0

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

<b>Kilometres</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>

0.5 ò Km	58.8	52.9	25.6	39.5	44.2	51.2
0.5 < Km ó 2	29.4	29.4	58.1	44.2	51.2	41.9
2 < Km ó 5	5.9	5.9	14.0	9.3	0	2.3
10 < Km ó 15	5.9	0	2.3	4.7	2.3	2.3
not reported	0	11.8	0	2.3	2.3	2.3
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	52.9	52.9	32.6	44.2	51.2	53.5
0.5 < hours ó 1	29.5	29.4	48.8	39.5	39.5	34.9
1 < hours ó 2	17.6	0	11.6	11.6	9.3	11.6
2 < hours ó 5	0	5.9	4.7	2.3	0	0
10 > hours	0	0	2.3	0	0	0
not reported	0	11.8	0	2.3	0	0
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	23.5	11.8	8.6	25.6	14.0	20.9
two	29.5	29.4	46.5	39.5	39.5	39.5
three	23.5	17.6	23.3	18.6	34.9	23.3
four and five	23.5	29.4	9.3	14.0	11.6	16.3
not reported	0	11.8	2.3	2.3	0	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	17.6	17.6	7.0	9.3	9.3	7.0
drinking	5.9	0	0	14.0	0	7.0
general	76.5	70.6	86.0	69.8	86.0	74.4
cooking	0	5.9	0	2.3	0	7.0
livestock watering	0	0	0	0	0	2.3
not reported	0	5.9	7.0	4.7	4.7	2.3
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	0	7.0	4.7
wife	11.8	25.6	27.9
boys	0	4.7	2.3
girls	0	2.3	4.7
house-help	5.9	4.7	7.0
husband/wife	0	4.7	0
wife/boys	41.2	7.0	7.0
wife/girls	11.8	11.6	9.3
wife/house-help	0	4.7	7.0
boys/girls	5.9	7.0	7.0
wife/Children	17.6	20.9	23.3
wife/D.I.L	5.9	0	0
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	58.8	41.9	51.2
donkey	29.4	41.9	34.9
cart/wheel barrow	5.9	2.3	2.3
motor vehicle	0	2.3	0
human labour/donkey	0	9.3	9.3
human labour/cart/wheel barrow	0	2.3	0
not reported	5.9	0	2.3
Total	100.0	100.0	100.0

### General Impact of IWSS (Participants)

	increased	decreased	no change	no response	not reported	Total
water	83.7	7.0	0	4.7	4.7	100.0
distance	11.6	79.1	0	4.7	4.7	100.0
disease	30.2	44.2	4.7	4.7	16.3	100.0
crop farming	39.5	0	9.3	4.7	46.5	100.0
kitchen gardening	32.6	2.3	0	4.7	60.5	100.0
vegetable growing	60.5	0	0	4.7	34.9	100.0
livestock watering	65.1	0	0	4.7	30.2	100.0
brick making	79.1	0	0	4.7	16.3	100.0
bee keeping	51.2	0	0	4.7	44.2	100.0
body washing	65.1	0	2.3	4.7	27.9	100.0
clothes washing	58.1	0	2.3	4.7	34.9	100.0
utensil washing	55.8	2.3	2.3	4.7	34.9	100.0
tree nurseries	34.9	2.3	4.7	4.7	53.5	100.0
house washing	37.2	2.3	0	4.7	55.8	100.0
other	11.6	2.3	2.3	4.7	79.1	100.0

### Water rationing (%)

	Non-participants	Participants (Before IWSS)	Participants (After IWSS)
yes	23.5	13.9	2.3
no	64.7	79.1	81.4
not reported	11.8	7.0	16.3
Total	100.0	100.0	100.0

Mode of water rationing before and after IWSS (%)

	Non-participants	Before IWSS	After IWSS
Restricted to a fixed amount of water per day	29.4	20.9	0
Queuing	0	0	16.3
other	11.8	0	0
not reported	58.8	79.1	76.7
Total	100.0	100.0	100.0

Accessibility of your nearest dam

	Percent
accessible	79.3
not accessible	12.0
other characteristics	4.7
not reported	4.0
Total	100.0

Satisfied with the sand dam project?

	Percent
Satisfied	74.4
Not satisfied	20.9
not reported	4.7
Total	100.0

Why satisfied?

	Percent
Plenty of water for domestic use	39.5
Farm productivity has increased	11.6
Increased water for watering animals	9.3
Water helped in construction of houses	4.7
Reduced distances to water source	2.3
Other reasons	9.3
Not reported	23.3
Total	100.0

If not satisfied, why?

	Percent
No opportunity for multiple use	7.0
The well dries up in the dry season	14.0
The water is not clean	2.3
The well is too shallow	2.3
Other reasons	9.3
Not reported	65.1
Total	100.0

Shift from the traditional water source?

	Percent
Shifted	48.9
Not shifted	46.5
No response	2.3
Not reported	2.3

Total	100.0
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If not shifted, reason

	Percent
Traditional water source nearer	23.3
No opportunity for multiple use	4.7
the well dries up in dry season	4.7
water not clean	7.0
other	11.6
no response	7.0
not reported	41.9
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	16.3	11.6	79.1	83.7	53.5	44.2	11.6	9.3
once	39.5	20.9	7.0	0	11.6	9.3	25.6	23.3
twice	20.9	18.6	2.3	7.0	18.6	25.6	2.3	2.3
thrice	20.9	48.9	9.3	7.0	4.7	9.3	2.3	2.3
rarely	0	0	0	0	2.3	2.3	0	0
when dirty	0	0	0	0	9.3	9.3	0	0
never used to	0	0	0	0	0	0	9.3	9.3
not applicable	0	0	0	0	0	0	41.9	46.5
not reported	2.3	0	2.3	2.3	0	0	7.0	7.0
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	House washing
daily	17.6	76.5	17.1	0
once	41.2	11.8	0	0
twice	23.5	5.9	0	0
thrice	11.8	0	0	0
rarely	0	0	0	5.9
when dirty	0	0	78.0	0
never used to	0	0	0	0
not applicable	0	0	0	89.2
not reported	5.9	5.9	5.9	5.9
Total	100.0	100.0	100.0	100.0

Protection of water points before and after IWSS

	Non-participants	Participants (Before IWSS)	Participants (After IWSS)
fencing	17.6	39.5	32.6
covering well with lid	5.9	4.7	7.0
watchman	5.9	4.7	4.6
no protection	47.1	44.2	48.8
not applicable	0	2.3	2.3
local arrangements	23.5	0	4.7
not reported	0	4.7	0
Total	100.0	100.0	100.0

**Soil conservation**

Terracing before and after IWSS (%)

	Non-participants	Participants (Before IWSS)	Participants (After IWSS)
nil	47.1	51.1	41.9
0 < number ó 3	11.8	16.3	20.9
3 < number ó 5	23.5	14.0	23.3
5 < number ó 10	11.8	11.6	11.6
10 < number	5.9	2.3	2.3
not reported	0	4.7	0
Total	100.0	100.0	100.0

Tree planting before and after IWSS (%)

	Non-participants	Participants (Before IWSS)	Participants (After IWSS)
nil	58.8	62.8	58.1
0 < number ó 5	0	11.6	11.6
5 < number ó 10	23.5	11.6	16.3
10 < number ó 50	5.9	4.7	4.7
50 < number	5.9	0	2.3
not reported	5.9	9.3	7.0
Total	100.0	100.0	100.0

Gabions before and after IWSS (%)

	Non-participants	Participants (Before IWSS)	Participants (After IWSS)
nil	76.4	83.7	79.1
0 < number ó 5	5.9	2.3	2.3
5 < number ó 10	0	0	4.7
10 < number	5.9	2.3	2.3
not reported	11.8	11.6	11.6
Total	100.0	100.0	100.0

Misonzo before and after IWSS (%)

	Non-participants	Participants (Before IWSS)	Participants (After IWSS)
nil	70.6	67.4	60.5
0 < number ó 5	0	16.3	25.6
5 < number ó 10	11.8	2.3	4.6
10 < number	5.9	0	2.3
not reported	11.8	14.0	7.0
Total	100.0	100.0	100.0

Grass planting before and after IWSS (%)

	Non-participants	Participants (Before IWSS)	Participants (After IWSS)
Yes	82.4	44.2	53.5
No	11.8	51.1	41.8
Not reported	5.9	4.7	4.7
Total	100.0	100.0	100.0

**Waterborne Disease incidences**

**Typhoid**

Typhoid incidence before and after IWSS

	Non-participants		Participants (Before IWSS)		Participants (After IWSS)	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Affected	4	23.5	5	11.6	4	9.3
Not affected	13	76.5	38	88.4	39	90.7
Total	17	100.0	43	100.0	43	100.0

Typhoid - cost of treatment (KShs)- before and after IWSS

	Non-participants		Participants (Before IWSS)		Participants (After IWSS)	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
nil	0	0	1	2.3	0	0
500ò cost	1	5.9	0	0	0	0
500 < cost ó 1000	1	5.9	0	0	1	2.3
1000 < cost ó 2000	2	11.8	1	2.3	0	0
2000 < cost	0	0	3	7.0	3	7.0
Total	4	23.5	5	11.6	4	9.3

Typhoid- outcome Before and after IWSS

	Non-participants		Participants (Before IWSS)		Participants (After IWSS)	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
recovered	4	23.5	5	11.6	4	9.3
other	0	0	0	0	0	0
Total	4	23.5	5	11.6	4	9.3

Typhoid - time laid off (days)-Before and after IWSS

	Non-participants		Participants (Before IWSS)		Participants (After IWSS)	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
2 < days ó 5	0	0	0	0	1	2.3
10 < days ó 3	0	0	3	7.0	1	2.3
30 < days	2	11.8	1	2.3	2	4.7
no response	2	11.8	1	2.3		
Total	4	23.5	5	11.6	4	9.3

**Malaria**

Malaria incidence before and after IWSS

	Non-participants		Participants (Before IWSS)		Participants (After IWSS)	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Affected	7	41.2	12	27.9	11	25.6
Not affected	10	58.8	31	72.1	32	74.4
Total	17	100.0	43	100.0	43	100.0

Malaria - cost of treatment (KShs)- before and after IWSS

	Non-participants		Participants (Before IWSS)		Participants (After IWSS)	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
nil	0	0	0	0	0	0
500 ò cost	2	11.8	2	4.7	3	7.0
500 < cost ó 1000	3	17.6	3	7.0	2	4.7
1000 < cost ó 2000	2	11.8	3	7.0	1	2.3
2000 < cost	0	0	4	9.2	5	11.6
Total	7	41.2	12	27.9	11	25.6

Malaria- outcome Before and after IWSS

	Non-participants		Participants (Before IWSS)		Participants (After IWSS)	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
recovered	7	41.2	12	27.9	11	25.6
other	0	0	0	0	0	0
Total	7	41.2	12	27.9	11	25.6

Malaria - time laid off (days)-Before and after IWSS

	Non-participants		Participants (Before IWSS)		Participants (After IWSS)	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
One day	0	0	0	0	1	2.3
2 < days ó 5	0	0	2	4.7	1	2.3
5 < days ó 10	2	11.8	2	4.7	1	2.3
10 < days ó 30	5	29.4	2	4.7	1	2.3
30 < days	0	0	5	11.6	6	14.0
no response	0	0	1	2.3	1	2.3
Total	7	41.2	12	27.9	11	25.6

**Amoeba**

Amoeba incidence before and after IWSS

	Non-participants		Participants (Before IWSS)		Participants (After IWSS)	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Affected	6	35.3	8	18.6	9	20.9
Not affected	11	64.7	35	81.4	34	79.1
Total	17	100.0	43	100.0	43	100.0

Amoeba - cost of treatment (KShs)- before and after IWSS

	Non-participants		Participants (Before IWSS)		Participants (After IWSS)	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
nil			1	2.3	1	2.3
500 ò cost	1	5.9	1	2.3	2	4.7
500 < cost ó 1000	1	5.9	2	4.7	0	0
1000 < cost ó 2000	3	17.6	1	2.3	2	4.7
2000 < cost	1	5.9	3	7.0	4	9.2
Total	6	35.3	8	18.6	9	20.9

Amoeba- outcome Before and after IWSS

	Non-participants		Participants (Before IWSS)		Participants (After IWSS)	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Recovered	6	35.3	5	16.3	9	20.9
Died	0	0	1	2.3	0	0
Total	6	35.3	8	18.6	9	20.9

Amoeba - time laid off (days)-Before and after IWSS

	Non-participants		Participants (Before IWSS)		Participants (After IWSS)	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
2 < days ó 5	2	11.8	3	7.0		
5 < days ó 10	1	5.9	1	2.3	2	4.7
10 < days ó 30	0	0	3	7.0	1	2.3
30 < days	1	5.9	1	2.3	5	11.6
no response	2	11.8	0	0	1	2.3
Total	6	35.3	8	18.6	9	20.9

**Schistosomiasis**

Schistosomiasis incidence before and after IWSS

	Before IWSS		After IWSS	
	Frequency	Percent	Frequency	Percent
Affected	2	4.7	1	2.3
Not affected	41	95.3	42	97.7
Total	43	100.0	43	100.0

Schistosomiasis - cost of treatment (KShs)- before and after IWSS

	Before IWSS		After IWSS	
	Frequency	Percent	Frequency	Percent
500 ò cost	2	4.7	1	2.3
Total	2	4.7	1	2.3

Schistosomiasis - outcome Before and after IWSS

	Before IWSS		After IWSS	
	Frequency	Percent	Frequency	Percent
Recovered	2	4.7	1	2.3

Total	2	4.7	1	2.3
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Schistosomiasis - time laid off (days)-Before and after IWSS

	Before IWSS		After IWSS	
	Frequency	Percent	Frequency	Percent
10 < days ó 30	1	2.3	0	0
30 < days	1	2.3	1	2.3
Total	2	4.7	1	2.3

**Cholera**

Cholera incidence before and after IWSS

	Before IWSS		After IWSS	
	Frequency	Percent	Frequency	Percent
Affected	0	0	2	4.7
Not affected	43	100	31	95.3
Total	43	100.0	43	100.0

Cholera - cost of treatment (KShs)- before and after IWSS

	Before IWSS		After IWSS	
	Frequency	Percent	Frequency	Percent
1000 < cost ó 2000	0	0	2	4.7
Total	0	0	2	4.7

Cholera- outcome Before and after IWSS

	Before IWSS		After IWSS	
	Frequency	Percent	Frequency	Percent
Recovered	0	0	2	4.7
Total	0	0	2	4.7

Cholera - time laid off (days)-Before and after IWSS

	Before IWSS		After IWSS	
	Frequency	Percent	Frequency	Percent
one day	0	0	1	2.3
no response	0	0	1	2.3
Total	0	0	2	4.7

**Trypanosomiasis**

Trypanosomiasis incidence before and after IWSS

	Before IWSS		After IWSS	
	Frequency	Percent	Frequency	Percent
Affected	0	0	1	2.3
Not affected	43	100	42	97.7
Total	43	100.0	43	100.0

Trypanosomiasis - cost of treatment (KShs)- before and after IWSS

	Before IWSS		After IWSS	
	Frequency	Percent	Frequency	Percent
1000 < cost ó 2000	0	0	1	2.3

2000< cost	0	0		
Total	0	0	1	2.3

#### Trypanosomiasis - outcome Before and after IWSS

	Before IWSS		After IWSS	
	Frequency	Percent	Frequency	Percent
Recovered	0	0	1	2.3
Died	0	0	0	0
Total	0	0	9	2.3

#### Trypanosomiasis - time laid off (days)-Before and after IWSS

	Before IWSS		After IWSS	
	Frequency	Percent	Frequency	Percent
10 < days ó 30	0	0	1	2.3
Total	0	0	1	2.3

### **Waterborne diseases mitigation measures**

#### Boiling (%)

	Non-participants	Participants (Before IWSS)	Participants (After IWSS)
Boil drinking water	76.5	60.5	76.7
not reported	23.5	39.5	23.3
Total	100.0	100.0	100.0

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

	Participants (Before IWSS)	Participants (After IWSS)
Treat drinking water with chemicals	2.3	2.3
not reported	97.9	97.7
Total	100.0	100.0

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

	Non-participants	Participants (Before IWSS)	Participants (After IWSS)
clean/clear compound	5.9	0	0
not reported	94.1	100.0	100.0
Total	100.0	100.0	100.0

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

	Before IWSS	After IWSS
Dry stagnant water	0	2.3
not reported	100.0	97.7
Total	100.0	100.0

Inoculation before and after IWSS (%)

	Non-participants	Participants (Before IWSS)	Participants (After IWSS)
Inoculation	5.9	0	0
not reported	94.1	100.0	100
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
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
Total	100.0	100.0

Observing cleanliness of utensils before and after IWSS (%)

	Before IWSS	After IWSS
Utensil cleanliness	0	0
not reported	100.0	100
Total	100.0	100.0

Other measure before and after IWSS (%)

	Before IWSS	After IWSS
other measure	2.3	0
not reported	97.7	100
Total	100.0	100.0

**Mode of choosing water source committee members/dam committee members  
No water source committee reported in non-participants**

Nomination?

	Participants (Dam committee)			
	Nomination	Election	Selection	Other mode
Yes	11.6	30.2	38.1	4.7
Other	88.4	69.8	61.9	95.3
Total	100.0	100.0	100.0	100.0

If nomination, by whom?

By whom	Participants (Dam committee)			
	Nomination	Election	Selection	Other mode
not reported	69.8	60.5	51.2	90.7
community	16.3	16.3	18.6	2.3
provincial administration	7.0	9.3	14	7.0
dam members	7.0	14.0	14	0
Other	0	0	2.3	0
Total	100.0	100.0	100.0	100.0

Duration in office- dam committee

	Percent
not reported	11.6
one month	20.9
half-year	32.6
one year	14.0
two years	2.3
not stated	9.3
indefinitely	9.3
Total	100.0

Factored considered when choosing dam committee member

<i>Factor</i>	<i>Considered</i>	<i>not mentioned</i>	<i>Total</i>
honesty	11.6	88.4	100.00
transparency	2.3	97.7	100.00
trustworthy	2.3	97.7	100.00
respectable	11.6	88.4	100.00
religious	4.7	95.3	100.00
social	7.0	93.0	100.00
ability to lead	30.2	69.8	100.00
hard working	7.0	93.0	100.00
faithful	9.3	90.7	100.00
active	4.7	95.3	100.00
commitment	7.0	93.0	100.00
age/experience	4.7	95.3	100.00
good in communication	16.3	83.7	100.00
maturity	16.3	83.7	100.00
participation	11.6	88.4	100.00
availability	4.7	95.3	100.00
wealth	4.7	95.3	100.00
other aspect	14.0	86.0	100.00

Attitudes towards dam committee in regard to:

<i>Factor</i>	<i>Positive</i>	<i>Negative</i>
corruption	48.8	32.6
composition: age	79.1	7.0
composition: gender	86.0	0
composition: religion	83.7	0
composition: education	83.7	2.3
composition: political party affiliation	67.4	14.0
composition: wealthy	86.0	0
operation	86.0	2.3
accountability	88.4	0
transparency	83.7	4.7
commitment	83.7	4.7
nepotism	62.8	25.6
patience	83.7	7.0
greed	74.4	16.3

maturity	86.0	4.7
listening to others needs	81.4	7.0
bossy	74.4	16.3
ready to serve	88.4	2.3
respect/care for people and property	76.7	0

Impact of dam committee in regard to:

<i>Factor</i>	<i>Positive</i>	<i>Negative</i>
age	51.2	11.6
religion	51.2	4.7
political party affiliation	53.5	9.3
wealth	55.8	16.3
gender	51.2	25.6

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

	Non-participants	Participants
yes	0	39.5
no	17.6	53.5
no response	5.9	2.3
not reported	76.5	4.7
Total	100.0	100.0

Linkage between dam and other committees?

	Non-participants	Participants
yes	0	20.9
no	58.8	55.8
not reported	41.2	23.3
Total	100.0	100.0

If yes to linkage, how?

	Participants
considering community committee members in dam committee	16.3
dam committee members considered in other community committee	7.0
no response	2.3
not reported	74.4
Total	100.0

Participants: Other general benefits derived from IWSS

	Percent
yes	60.5
no	27.9
not reported	11.6
Total	100.0

Non-participants: Member of any community group?

	Percent
no response	5.9
yes	29.4

no	64.7
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	14.0	0
community members interact freely while working together	25.6	0
women contribute to a fund to uplift their welfare	9.3	11.8
community formed groups for planting vegetables and seedlings for sale	20.9	0
formation of groups to help in harvesting/terracing and other undertakings	25.6	17.6
making new friends	18.6	0
other	18.6	5.9

**Influence of development agenda by community**

	Non-participants	Participants
yes	47.1	39.5
no	47.1	39.5
not reported	5.9	20.9
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	5.9	32.6
before any law/bylaw/rule is passed people community is consulted	0	20.9
done through <i>barazas</i> whereby members air their views freely	5.9	23.3
through consultation with those concerned	0	11.6
involved when discussing development ideas	0	4.7
headman (administrators) consults with the people and forwards their views	5.9	11.6
chairpersons of groups, headmen and other leaders consulted through formation of groups	17.6	4.7
any other way	5.9	14.0

Participants: Impact of increased water after IWSS:

	improved	declined	the same
health	34.9	27.9	4.7
cleanliness	65.1	4.7	7.0
leisure	65.1	4.7	2.3

girl-child school absenteeism	18.6	7.0	7.0
boy-child school absenteeism	16.3	2.3	14.0
girl-child school punctuality	37.2	2.3	23.3
boy-child school punctuality	34.9	0	25.6
cooking at the right time	51.2	2.3	20.9

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

	positive	negative	no effect
health	41.2	23.5	0
cleanliness	64.7	5.9	0
leisure	52.9	5.9	0
girl-child school absenteeism	29.4	0	5.9
boy-child school absenteeism	29.4	0	5.9
girl-child school punctuality	29.4	0	23.5
boy-child school punctuality	29.4	0	23.5
cooking at the right time	47.1	0	23.5

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

	positive	negative	no impact
health	11.8	29.4	5.9
cleanliness	5.9	41.2	0
leisure	0	41.2	0
girl-child school absenteeism	0	17.6	5.9
boy-child school absenteeism	0	17.6	0
girl-child school punctuality	5.9	17.6	11.8
boy-child school punctuality	5.9	17.6	5.9
cooking at the right time	5.9	17.6	5.9

Participants: Increase in water impact

	improved	declined	the same
security	62.8	25.6	4.7
pregnancy rates	34.9	44.2	16.3
community cohesiveness	65.1	11.6	16.3
marriage rates	27.9	14.0	48.8

Non-participants: water availability impact on the following

	positive	negative	no impact
security	41.2	0	29.4
pregnancy rates	5.9	29.4	35.3
community cohesiveness	52.9	11.8	11.8
marriage rates	5.9	29.4	41.2

Non-participants: water scarcity impact on the following

	positive	negative	no impact
security	0	41.2	11.8
pregnancy rates	17.6	11.8	17.6
community cohesiveness	23.5	11.8	5.9
marriage rates	0	23.5	11.8

Is trekking long distances by girls regarded as good?

	Non-participants	Participants
good	5.9	11.6
bad	88.2	76.7
not reported	5.9	11.6
Total	100.0	100.0

bad

	Non-participants	Participants
tiring	52.9	20.9
compromise other household duties	29.4	18.6
develop irresponsible behaviour-early pregnancies/marriages	29.4	20.9
leads to school absenteeism/lateness	0	9.3
not generally safe	23.5	39.5
other reason	11.8	9.3

good

	Non-participants	Participants
body exercise and good health	5.9	9.3
test of adulthood- could take care of themselves	5.9	2.3
other reason	0	9.3

Impact of the project in relation to trek (Participants)

	percent
time	7.0
absenteeism/lateness in school improved	4.7
school drop out rates lowered	14.0
improved security of girls	23.3
increased time for leisure	14.0
distance to water source reduced	16.3
other impact	4.8
no impact	7.0

**participation in social functions/month (before and after IWSS):**

religion

	Non-participants	Participants (Before IWSS)	Participants (After IWSS)
rarely	5.9	18.6	20.9
never misses		2.3	4.7
never attends	17.6	14.0	14.0
once	23.5	9.3	7.0
twice		7.0	14.0
thrice	5.9	11.6	7.0
four time and more	29.4	30.2	30.2
not reported	17.7	7.0	2.3
Total	100.0	100.0	100.0

market days

	Non-participants	Before IWSS	After IWSS
rarely	11.8	25.6	30.2
never misses	0	2.3	0
never attends	5.9	14.0	14.0
once	23.5	23.3	23.3
twice	11.8	7.0	4.7

thrice	5.9	2.3	4.7
four time and more	29.4	20.9	20.9
not reported	11.8	4.7	2.3
Total	100.0	100.0	100.0

funerals

	Non-participants	Before IWSS	After IWSS
rarely	17.6	7.0	14.0
as they occur	58.8	74.4	69.7
never misses	0	0	0
never attends	11.8	14.0	14.0
once	0	0	0
twice	0	0	0
thrice	0	0	0
four time and more	0	0	0
not reported	11.8	4.6	2.3
Total	100.0	100.0	100.0

mwethya

	Non-participants	Before IWSS	After IWSS
rarely	0	11.6	11.6
as they occur	47.1	41.9	41.9
never misses	11.8	11.6	11.6
never attends	23.5	27.9	30.2
not reported	17.7	7.0	4.7
Total	100.0	100.0	100.0

parties

	Non-participants	Before IWSS	After IWSS
rarely	11.8	16.3	20.9
as they occur	29.3	39.5	41.9
never misses	0	2.3	0
never attends	41.2	39.5	34.9
not reported	17.7	2.3	2.3
Total	100.0	100.0	100.0

**harambee**

	Non-participants	Before IWSS	After IWSS
rarely	5.8	18.6	16.3
as they occur	41.2	37.2	41.9
never misses	0	7.0	7.0
never attends	41.2	32.5	30.1
not reported	11.8	4.7	4.7
Total	100.0	100.0	100.0

visiting friends

	Non-participants	Before IWSS	After IWSS
frequently	23.5	14.0	11.6
when necessary	5.9	41.9	44.2
when need arises	29.4	9.3	14.0

occasionally	23.5	9.3	11.6
never visits	0	9.3	9.3
not reported	17.7	16.2	9.3
Total	100.0	100.0	100.0

### 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		2.3	2.3	
2 < hours ó 4	0	5.9			4.7	
4 < hours ó 6	5.9	5.9	18.6	9.3	11.6	9.3
6 < hours ó 8	47.1	52.9	51.2	35.1	44.2	39.5
8 < hours	35.2	23.5	27.9	51.2	34.9	48.9
not reported	11.8	11.8	2.3	2.3	2.3	2.3
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)	23.5	20.9
husband (elsewhere)	0	4.7
wife (in the household)	5.9	4.7
wife (elsewhere)	5.9	0
friends	29.4	9.3
local administration (headman/Ass. Chief/Chief)	11.8	51.2
religious leaders	0	2.3
other	11.8	0
not reported	11.8	7.0
Total	100.0	100.0

### Factor promoting community cooperation: (% age mentioned)

	Non-participants	Participants
Hard work	35.3	13.9
commitment	17.6	11.6
unity	23.5	34.9
listening to people views	0	11.6
peace	11.8	18.6
good leadership	5.9	9.3
other	29.4	18.6

### Factor limiting community cooperation: (% age mentioned)

	Non-participants	Participants
political party affiliation	0	4.7
gossip	11.8	16.3
lack of respect	0	9.3
poverty	11.8	7.0
diseases	5.9	2.3
hatred	41.2	27.9
poor leadership	17.6	18.6

illiteracy/ignorance	5.9	18.6
corruption	5.9	4.7
other	11.8	23.3

Economic activities (%):

Mentioned	Non-participants	Participant (Before IWSS)	Participant (After IWSS)
agriculture	100.0	86.0	76.7
goat/sheep	35.3	39.5	39.5
cattle	41.2	39.5	30.2
vegetable growing	17.6	23.3	32.6
kitchen gardening	23.5	14.0	34.9
brick making	41.2	32.6	44.2
tree nurseries	17.6	9.3	18.6
bee keeping	5.9	11.6	7.0

New crops/activities introduced after IWSS:

New crop/activity	Percent
spinach growing	11.6
vegetable growing	53.5
fish	2.3
<i>sukuma wiki</i>	9.3
onions	4.7
tomatoes	7.0
<i>ndania</i>	2.3
sugar cane	2.3
arrow roots	2.3
fruits	2.3
other crop	2.3

Contribution of the following activities after IWSS (KShs)

Activity	5000 value	500<value61000	1000<value65000	5000<value610000
agriculture	11.6	4.7	2.3	4.7
goats/sheep	2.3	2.3	0	0
cattle	2.3	0	2.3	0
vegetable growing	4.7	4.7	7.0	0
kitchen gardening	0	2.3	2.3	4.7
brick making	0	0	7.0	0
tree nurseries	0	4.7	4.7	0
bee keeping	2.3	0	0	0
sugar cane	0		0	0
business	0	2.3	0	0

Indirect benefits:

	mentioned (%)
increased land value	18.6
increased livestock reproduction rates	2.3
able to pay school fees- increased income	2.3

able to cloth the family- increased income	2.3
increased land productivity- increased water and terracing	14.0
soil fertility- tree planting and terracing	7.0
reduced cost of buying salt lick for animals	4.7
vegetables- plenty and cheap	14.0
increased sand for construction	4.7
other benefit	16.3

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

	Percent
attracted- total	7.0
leased land to cultivate	2.3
paid sand dam fees before leasing the land	0

Whether there are some negative social and economic costs associated with your water resource (IWSS)

	Non-participants	Participants
yes	5.9	20.9
no	88.2	60.4
not reported	5.9	18.7
Total	100.0	100.0

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

	Percent
<i>Shamba</i> work	16.3
taking care of livestock	4.7
making bricks	7.0
kitchen gardening	4.7
tending tree nursery	4.7
business	0
leisure	2.3
other activities	4.7

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

	Shamba work	tending livestock	making bricks	kitchen gardening	tending tree nursery	business	leisure	other activities
500 ò value	2.3	4.8	7.1	2.3	2.4	4.7	2.3	2.3
500 < value ó 1,000	11.6	0	7.1	0	0	4.7	4.7	4.7
1000 < value ó 5,000	9.3	2.4	2.4	4.7	2.4	2.3	4.7	4.7
5,000 < value ó 10,000	9.3	0	0	0	0	0	2.3	2.3
10,000 < value	4.7	0	2.4	0	0	0	0	0

**Time budget in hours**

**Participants: before and after IWSS**

Dry season

	Cultivation	Water fetching	Grazing	Household duties	Other activities

	Before IWSS	After IWSS								
2 ò hours	4.7	2.3	4.7	20.9	7.0	4.7	9.3	14.0	14.0	16.3
2 < hours ó 4	34.9	27.9	9.3	9.3	16.3	7.0	2.3	2.3	14.0	20.9
4 < hours ó 6	18.6	32.6	4.7	9.3	0	2.3	0	0	11.6	9.3
6 < hours ó 8	4.7	7.0	2.3	4.7	2.3	0	2.3	0	4.7	9.3
8 < hours	7.0	2.3	0	0	0	0	0	0	0	0

#### Wet season

	Cultivation		Water fetching		Grazing		Household duties		Other activities	
	Before IWSS	After IWSS	Before IWSS	After IWSS	Before IWSS	After IWSS	Before IWSS	After IWSS	Before IWSS	After IWSS
2 ò hours	4.7	2.3	4.7	9.3	7.0	4.7	9.3	9.3	14.0	14.0
2 < hours ó 4	34.9	0	9.3	2.3	16.3	2.3	2.3	4.7	14.0	11.6
4 < hours ó 6	18.6	51.2	4.7	7.0	0	4.7	0	0	11.6	4.7
6 < hours ó 8	4.7	14.0	2.3	2.3	2.3	0	2.3	0	4.7	0
8 < hours	7.0	4.7	0	0	0	0	0	0	0	0

#### Non-participants:

##### Dry season

	Cultivation	Water fetching	Grazing	Household duties	Other activities
2 ò hours	0	17.6	11.8	17.6	5.9
2 < hours ó 4	29.4	5.9	11.8	5.9	23.5
4 < hours ó 6	41.2	0	0	0	11.8
6 < hours ó 8	11.8	0	0	0	0
8 < hours	5.9	0	0	0	0

##### Wet season

	Cultivation	Water fetching	Grazing	Household duties	Other activities
2 ò hours	5.9	11.8	17.6	5.9	5.9
2 < hours ó 4	5.9	5.9	5.9	0	11.8
4 < hours ó 6	41.2	0	0	0	5.9
6 < hours ó 8	29.4	0	0	0	0
8 < hours	11.8	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	52.9	46.5	53.5	58.8	60.5	67.4	
5 < shillings ó 10	23.5	37.2	34.9	23.5	30.2	95.3	
10 < shillings ó 15	17.6	0	2.3	5.9	4.7	0	
15 < shillings ó 20	0	7.0	2.3	0	0	0	
20 < shillings	0	0	0	0	0	0	

Is the use of your water resource (IWSS) controlled/planned to avoid negative consequences

	Non-participants	Participants
yes	4	41.9

Controlled measure

Measure	Non-participants	Participants
covering the well with a lid	0	25.6
washing of clothes not allowed in the IWSS	0	4.7
only participants are allowed	0	2.3
planting of grass to check erosion	0	7.0
children not allowed to play near the IWSS	0	9.3
other control/plan (eg. prayers)	1	2.3

If not controlled, why?

Why	Non-participants	Participants
it is a public/natural resource	41.2	7.0
participants are responsible people- respect their efforts	0	9.3
other reason	0	14.0

Participants: Pollution penalties/action(%):

Type of pollution	pays fine		report to dam committee		report to provincial administration		warning/ cautioned		excommunicated	
	NP	P	NP	P	NP	P	NP	P	NP	P
washing inside the dam/well	29.4	32.6	0	2.3	0	23.3	5.9	7.0	5.9	2.3
washing clothes inside the dam/well	29.4	16.3	0	4.7	0	27.9	11.8	9.3	5.9	2.3
watering animals in the dam/well	29.4	18.6	0	2.3	0	25.6	11.8	4.7	5.9	2.3
spraying vegetables/crops chemicals around the dam/well	29.4	18.6	0	2.3	0	25.6	0	4.7	5.9	2.3
defecating/urinating near the dam/well	35.3	20.9	0	2.3	0	23.3	5.9	11.6	5.9	2.3
dropping objects in the source	29.4	20.9	0	4.7	0	18.6	11.8	16.3	5.9	2.3

NP= Non-Participants; P= Participants

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

	Non-participants	Participants
dam committee members	0	20.9
chairperson of the dam committee	0	7.0
provincial administration	5.9	2.3
community	52.9	41.9
watchman	11.8	0
no body/party	0	9.3
no maintenance required	11.8	0
owner	11.8	0
other	5.9	4.7
not reported	0	14.0
Total	100.0	100.0

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

	Non-participants	Participants
dam committee members	0	58.1
chairperson of the dam committee	0	9.3
provincial administration	0	2.3
community	0	2.3
politicians	5.9	0
no funds needed	94.1	0
not reported	0	27.9
Total	100.0	100.0

Operation and maintenance contribution by households if applicable (KShs)

	Non-participants	Participants
25 ò KShs.	5.9	14.0
25 < KShs ó 50	0	11.6
50 < KShs ó 75	0	2.3
in kind (labour)	0	7.0
not reported	94.1	65.1
Total	100.0	100.0

Frequency of dam committee meetings

	Non-participants	Participants
monthly	0	41.9
never meet	58.8	34.9
when there is need	0	11.6
other	0	2.3
not reported	41.2	9.3
Total	100.0	100.0

Services/goods considered necessary:

	Non-participants	Participants
Food	94.1	83.7
water	70.6	58.1
shelter	5.9	11.6
clothing	11.8	7.0
clean environment	0	9.3
money	0	7.0
medical services	11.8	0
education	11.8	0
fuel	41.2	14.0
land	11.8	2.3
other	11.8	7.0
transport	5.9	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	35.3	44.2	39.5	29.4	44.2	34.9	23.5	30.2	25.6
wife	52.9	25.6	30.2	47.1	27.9	30.2	47.1	34.9	34.9
husband/wife	5.9	25.6	27.9	11.8	25.6	32.6	11.8	32.6	37.2
children	0	2.3	2.3	0	2.3	2.3	5.9	2.3	2.3
other	5.9	0	0	5.9	0	0	5.9		0
not reported	0	2.3	0	5.9	0	0	5.9	0	0

Impact of increased family income to family unit

	Percent
positive	46.5
negative	16.3
the same	25.6
not reported	11.6
Total	100.0

Has increased incomes/opportunities led to conflict at:

	Percent
at family level not reported	91.7
at community level not reported	93.0

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

	Percent
100 ÷ KShs	25.6
100 < KShs ó 200	16.3
200 < KShs ó 500	7.0
500 < KShs ó 1,000	0
1,000 < KShs	2.3
not fixed	46.5
not reported	2.3
Total	100.0

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

	Percent
sheep	9.3
goat	7.0
not reported	83.7
Total	100.0

Value household attach to their water source

	Non-participants	Participants
500 ÷ KShs	5.9	2.3
500 < KShs ó 1,000	17.6	7.0
1,000 < KShs ó 5,000	17.6	30.2
5,000 < KShs ó 10,000	17.6	23.3
10,000 < KShs	35.3	27.9

not acceptable (invaluable)	5.9	4.7
not reported	0	4.7
Total	100.0	100.0

Willingness to pay for improved water resource

	Non-participants	Participants
500 ò KShs	58.8	58.1
500 < KShs ó 1,000	17.6	4.7
1,000 < KShs ó 5,000	17.6	23.3
10,000 < KShs	5.9	2.3
not reported	0	11.6
Total	100.0	100.0

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

	Non-participants	Participants
report to chair/person	5.9	16.3
report to provincial administration	11.8	4.7
quit the source	0	2.3
report to SASOL	0	2.3
question the dam committee	0	27.9
alert other members and ask for a meeting	0	20.9
advice the management accordingly	0	7.0
request management to quit office	0	4.7
other	0	7.0
not reported	82.3	7.0
Total	100.0	100.0

Willingness to take up leadership position

	Non-participants	Participants
willing to up leadership position	5.9	60.4
not willing to lead	0	32.6
not reported	94.1	7.0
Total	100.0	100.0

Ownership of water resource (sand dam):

	Non-participants		Participants	
	True	False	True	False
community	94.1	5.9	83.7	7.0
individual	23.5	70.6	2.3	88.4
government	94.1	5.9	7.0	81.4
schools	94.1	5.9	2.3	83.7
KANU	94.1	5.9	2.3	83.7
SASOL	0	0	4.7	81.4
NGOs	94.1	5.9		
SDP	94.1	5.9	2.3	83.7
Christians	94.1	5.9	2.3	83.7
<i>Kathambi</i>	94.1	5.9	2.3	86.0
other	5.9	58.8	4.7	60.5

Why own the water resource (sand dam): Reasons

	community participated		it is a natural resource		sponsored		other		no response	
	NP	P	NP	P	NP	P	NP	P	NP	P
community	17.6	83.7	70.6	7.0	0	0	11.8	0	0	9.3
individual	5.9	48.8	70.6	9.3	17.6	23.3	0	4.7	5.9	14.0
government	5.9	4.7	70.6	9.3	17.6	60.5	0	9.3	5.9	16.3
schools	5.9	2.3	70.6	7.0	17.6	65.1	0	9.3	5.9	16.3
KANU	5.9	4.7	70.6	7.0	17.6	62.8	0	9.3	5.9	16.3
SASOL	0	4.7	0	7.0	0	62.8	0	9.3	0	16.3
NGOs	5.9	0	70.6	0	17.6	0	0	0	5.9	0
SDP	5.9	2.3	70.6	7.0	17.6	62.8	0	11.6	5.6	18.6
Christians	5.9	2.3	70.6	7.0	17.6	67.4	0	9.3	5.6	14.0
<i>Kathambi</i>	5.9	2.3	70.6	9.3	17.6	62.8	0	9.3	5.6	16.3
other	5.9	2.3	35.3	7.0	11.8	51.2	0	0	41.2	45.4

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	5.9	0	14.0	0
report to dam committee chairperson	0	0	9.3	16.3
report to other members	5.9	0	4.7	0
report to the head man	0	0	41.9	0
report to the provincial administration	47.1	47.1	0	48.8
report to SASOL	0	0	7.0	4.7
report to the police	17.6	0	0	2.3
beat up the person	0	0	0	2.3
banish him/her	0	5.9	0	0
use force to stop him/her	5.9	35.3	2.3	4.7
no action	11.8	5.9	0	0
other	5.9	5.9	11.6	14.0
no response	0	0	9.3	2.3
Total	100.0	100.0	100.0	100.0

Any other comment

	Non-participants	Participants
more dams needed	0	37.2
congratulations- SASOL	0	2.3
sand dams are beneficial- increased incomes	0	23.3
satisfied with the location	0	4.7
sand dam too far, water source near home required	0	16.3
need IWSS	11.8	7.0
water source near home required	23.5	
no comment	64.7	52.9
Total	100.00	100.0