Kiindu Catchment: Mulango Location, Central Division (50 Participants)

Household Demography

Head of the Household sex

Sex	**Percent**
Female	48.0
Male	52.0
Total	100.0

Head of the Household age category

Age bracket	**Percent**
20 ò years	0
20 < years ó 35	10.0
35 < years ó 55	48.0
55 < years ó 70	48.0
70 < years	4.0
Total	100.00

Head of Household level of education

Level	**Percent**
informal	36.0
primary	44.0
secondary	20.0
tertiary	0
Total	100.0

Head of household main occupation (%)

Occupation	**Percent**	
	Main occupation	**Secondary occupation**
subsistence farmer	98.0	4.0
businessman	0	6.0
regular employment	2.0	0
wage earner	0	2.0
other	0	12.0
not reported	0	76.0
Total	100.0	100.00

Household annual income-% (KShs.)

Income	**Percent**
10,000 ò income	14.0
10,000 < income ó 30,000	54.0
30,000 < income ó 50,000	12.0
50,000 < income ó 100,000	16.0
100,000 < income	4.0
not reported	0
Total	100.0

Household size(%)

Size	**Percent**
3 ò members	2.0
3 < members ó 8	72.0
8 < members ó 12	26.0
12 < members	0
Total	100.0

Household composition (%)

Composition	**Percent**
females =males	24.0
females > males	38.0
females < males	38.0
Total	100.0

Household income sources (%)

	Percent	
	Main	**Secondary**
crop farming	50.0	42.0
livestock	6.0	4.0
business	18.0	0
regular employment	16.0	6.0
wage earning	10.0	8.0
other	0	4.0
no response	0	0
not reported	0	36.0
Total	100.0	100.00

Income sources contribution (%)

	Percent	
(KShs.)	***Main (%)***	***Second (%)***
10,000 ò	4.0	14.0
10,000 < income ó 30,000	32.0	26.0
30,000 < income ó 50,000	26.0	16.0
50,000 < income ó 100,000	24.0	6.0
10,000 < income	14.0	0
no response	0	0
not reported	0	38.0
Total	100.0	100.0

Household Inventory (Assets)

Number of houses (%)

Number of houses	**Percent**
one	0
two or three	62.0
four or five	38.0
Total	100.0

Main house thatch

Thatch type	**Percent**
iron sheets	84.0
grass	16.0
Total	100.0

Main house floor type

	Percent
cemented	52.0
un-cemented	48.0
Total	100.0

Main house number of rooms

Number of houses	**Percent**
one room	32.0
two or three	34.0
four or five	26.0
six and more	8.0
Total	100.0

Wall material- main house

Wall material	**Percent**
brick/mud	46.0
brick/cement	54.0
block/cement	0
Total	100.0

Household with toilets

	Percent
households with toilets	90.0
households without toilets	10.0
Total	100.0

Other household possessions

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

	Percent		
	Chicken/ducks	Cows	Goats
nil	10.0	32.0	16.0
one	4.0	38.0	42.0
1 < number ó 5	26.0	24.0	24.0
5 < number ó 10	26.0	0	0
10 < number	30.0	0	16.0
not reported	4.0	6.0	2.0
Total	100.0	100.0	100.0

Number of donkeys

	Percent
nil	52.0
0 < donkeys ó 3	42.0
3 < donkeys ó 5	0

not reported	6.0
Total	100.0

Number of jembes, spades, mattocks, etc.

	Percent
nil	0
0 < jembes ó 5	34.0
5 < jembes ó 10	58.0
10 < jembes	8.0
Total	100.0

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

	Ox-ploughs	bicycles	carts/wheel barrows	plant machines	radios	TV	motor vehicles
nil	34.0	42.0	60.0	50.0	32.0	74.0	92.0
0 < numberó 3	62.0	52.0	36.0	46.0	66.0	20.0	0
3< number	0	0	0	0	2.0	0	0
not reported	4.0	6.0	4.0	4.0	0	6.0	8.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Land

Land ownership total land rented (acreage)

	Percent	
	owned	rented
5 ò acres	48.0	4.0
5 < acres ó 10	28.0	0
10 < acresó 20	22.0	0
50 < acres	2.0	0
not reported	0	96.0
Total	100.0	100.00

Main land use (%)

Use	*Participants*	
	main use	*second main use*
homestead	0	44.0
agriculture	82.0	18.0
livestock grazing	18.0	38.0
rented out	0	0
not reported	0	0
Total	100.0	100.0

Source of energy

Source of energy

	Percent	
	main	second main

firewood	100.0	0
kerosene	0	74.0
charcoal	0	22.0
not reported	0	4.0
Total	100.0	100.0

Food intake:

Type of Breakfast (%)

	(Before IWSS)	(After IWSS)
tea/coffee	68.0	86.0
porridge	28.0	14.0
other	4.0	0
Total	100.0	100.0

Breakfast value before and after IWSS (KShs.)

	(Before IWSS)	(After IWSS)
140 ò value	24.0	10.0
140 < value ó 350	56.0	40.0
350 < value ó 500	14.0	42.0
500 < value	4.0	8.0
no response	2.0	0
Total	100.0	100.0

Lunch before and after IWSS (%)

	(Before IWSS)	(After IWSS)
ugali	72.0	90.0
githeri	26.0	8.0
other	2.0	2.0
not reported	0	0
Total	100.0	100.0

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

	(Before IWSS)	*(After IWSS)*
140 ò value	4.0	2.0
140 < value ó 350	36.0	22.0
350 < value ó 500	36.0	56.0
500 < value	22.0	20.0
not reported	2.0	0
Total	100.0	100.0

Dinner/supper before and after IWSS (%)

	(Before IWSS)	(After IWSS)
ugali	24.0	16.0
githeri	74.0	78.0
other	2.0	6.0
Total	100.0	100.0

Dinner value before and after IWSS (KShs.)

	(Before IWSS)	(After IWSS)

140 ò value	2.0	2.0
140 < value ó 350	62.0	46.0
350 < value ó 500	14.0	28.0
500 < value	22.0	24.0
not reported	0	0
Total	100.0	100.0

Preparation, service and order of service

	Percent		
	Who prepares	Who serves	Who is served first
wife	36.0	44.0	0
Husband	0	0	36.0
children	24.0	24.0	2.0
house-help	0	0	2.0
husband/wife	0	0	6.0
wife/children	36.0	30.0	2.0
wife/house-help	4.0	2.0	0
all members	0	0	52.0
Total	100.0	100.0	100.0

Migration

Year of migration

	Percent
1990-1992	2.0
1993-1997	8.0
1998-2001	18.0
not migrated	72.0
Total	100.0

Nature of migration

	Percent
permanent	12.0
temporary	2.0
working outside the location	14.0
not migrated	72.0
Total	100.0

Place of settlement

	Percent
village	12.0
town	14.0
abroad	0
not applicable	72.0
not reported	2.0
Total	100.0

Reasons for migration

	Percent

in search of employment	16.0
land inadequacy	10.0
marriage	2.0
not migrated	72.0
Total	100.0

Daily water use

Daily water use before and after IWSS- litres

	Cooking		***Washing/cleaning***		***livestock watering***		***Other uses***	
	Before IWSS	After IWSS	Before IWSS	After IWSS	Before IWSS	After IWSS	Before IWSS	After IWSS
20 ò litres	38.0	4.0	22.0	4.0	22.0	20.0	2.0	2.0
20 < litres ó 40	58.0	58.0	58.0	38.0	12.0	8.0	0	2.0
40 < litres ó 60	4.0	22.0	10.0	20.0	4.0	12.0	0	2.0
60 < litres ó 80	0	6.0	8.0	28.0	2.0	4.0	0	0
80 < litres ó 100	0	2.0	2.0	2.0	2.0	8.0	0	0
100 < litres	0	0	0	0	0	0	0	0
no response	0	0	0	0	0	10.0	0	8.0
not reported	0	8.0	0	8.0	58.0	38.0	98.0	86.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

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

Dry season

Factor/Percentage	*Rank 1*	*Rank 2*	*Rank 3*	*Rank 4*	*Rank 5*	*Rank 6*
distance	76.0	4.0	6.0	0	0	0
quality	6.0	14.0	10.0	0	0	0
quantity	12.0	22.0	4.0	0	0	0
Multiple use	6.0	6.0	2.0	0	0	0
Reliability	0	16.0	8.0	2.0	0	0
No alternative	0	24.0	30.0	10.0	0	0
not reported	0	10.0	40.0	88.0	100.0	100.0
Total	100.0	100.0	100.0	100.0	100.0	100.0

Wet season

Factor/Percentage	Rank 1	Rank 2	Rank 3	Rank 4	Rank 5	Rank 6
distance	42	6.0	6.0	0	0	2.0
quality	6	38.0	8.0	4.0	0	0
quantity	1	18.0	26.0	6.0	0	0
Multiple use	1	10.0	2.0	2.0	0	0
Reliability	0	4.0	20.0	18.0	2.0	0
No alternative	0	16.0	18.0	18.0	2.0	0
not reported	0	8.0	20.0	52.0	96.0	98.0
Total	100.0	100.0	100.0	100.0	100.0	100.0

Main Source of Water

Source	**Before IWSS**		**After IWSS**	
	Dry season	***Wet season***	***Dry season***	***Wet season***
river	0	34.0	0	4.0
piped	0	0	0	0
springs	0	2.0	0	0
scoop-hole	92.0	40.0	16.0	4.0
roof catchment	2.0	16.0	2.0	14.0
sand dam	0	2.0	68.0	62.0
wells	6.0	6.0	14.0	16.0
earth dam	0	0	0	0
not reported	0	0	0	0
Total	100.0	100.0	100.0	100.0

Depth of scoop holes (ft)

Depth (ft)	***(Before IWSS)***	***(After IWSS)***
2 ò depth	4.0	88.0
2 < depth ó 5	34.0	10.0
5 < depth ó 10	48.0	2.0
10 <depth ó15	8.0	0
15 <depth	6.0	0
not applicable	0	0
not reported	0	0
Total	100.0	100.0

Quality of water from main source before and after IWSS

	Before IWSS		**After IWSS**	
Quality	***Dry season***	***Wet season***	***Dry season***	***Wet season***
Clean/clear/good	88.0	70.0	98.0	84.0
Dirty/coloured/bad smell	12.0	30.0	2.0	14.0

Salty	0	0	0	2.0
Other	0	0	0	0
not reported	0	0	0	0
Total	100.0	100.0	100.0	100.0

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

	(Before IWSS)		**(After IWSS)**	
Litres	***Dry season***	***Wet season***	***Dry season***	***Wet season***
40 ò quantity	22.0	6.0	4.0	2.0
40<quantityó60	14.0	8.0	8.0	4.0
60<quantityó80	20.0	16.0	20.0	4.0
80<quantityó100	32.0	38.0	18.0	32.0
100>quantity	12.0	32.0	50.0	58.0
not reported	0	0	0	0
Total	100.0	100.0	100.0	100.0

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

	(Before IWSS)		**(After IWSS)**	
Kilometres	***Dry season***	***Wet season***	***Dry season***	***Wet season***
0.5 ò Km	10.0	22.0	50.0	42.0
0.5 < Km ó 2	34.0	46.0	46.0	42.0
2 < Km ó 5	34.0	16.0	4.0	4.0
5 < Km ó 10	20.0	2.0	0	0
10 < Km ó 15	2.0	0	0	0
not reported	0	14.0	0	12.0
Total	100.0	100.0	100.0	100.0

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

	(Before IWSS)		**(After IWSS)**	
Hours	***Dry season***	***Wet season***	***Dry season***	***Wet season***
0.5 ò hour	26.0	62.0	84.0	72.0
0.5 < hours ó 1	16.0	6.0	12.0	12.0
1 < hours ó 2	34.0	10.0	4.0	4.0
2 < hours ó 5	22.0	8.0	0	0
5 < hours ó 10	2.0	0	0	0
10 > hours	0	0	0	0
not reported	0	14.0	0	12.0
Total	100.0	100.0	100.0	100.0

Trips to the main water source in a day

	(Before IWSS)		**(After IWSS)**	
Trips	***Dry season***	***Wet season***	***Dry season***	***Wet season***
0ne	34.0	22.0	14.0	14.0
two	36.0	26.0	22.0	22.0
three	12.0	12.0	12.0	8.0

four and five	16.0	18.0	14.0	14.0
more than five	2.0	8.0	36.0	28.0
not reported	0	14.0	2.0	14.0
Total	100.0	100.0	100.0	100.0

Main water use from the main water source

	(Before IWSS)		**(After IWSS)**	
Main use	***Dry season***	***Wet season***	***Dry season***	***Wet season***
washing/cleaning	2.0	0	2.0	2.0
drinking	0	2.0	2.0	0
general	96.0	94.0	94.0	96.0
cooking	2.0	2.0	0	0
livestock watering	0	2.0	2.0	2.0
not reported	0	0	0	0
Total	100.0	100.0	100.0	100.0

Who used to fetch water before and after IWSS?

Who	(Before IWSS)	(After IWSS)
husband	0	2.0
wife	28.0	10.0
boys	2.0	4.0
girls	12.0	20.0
D.I.L	0	0
house-help	4.0	4.0
husband/wife	0	0
wife/boys	10.0	8.0
wife/girls	26.0	24.0
wife/house-help	0	0
boys/girls	14.0	20.0
boys/house-help	0	2.0
wife/Children	4.0	6.0
wife/D.I.L	0	0
Total	100.0	100.0

Means of fetching water (main) before and after IWSS

Means	(Before IWSS)	(After IWSS)
human labour	56.0	60.0
donkey	26.0	22.0
cart/wheel barrow	2.0	2.0
motor vehicle	0	0
human labour/donkey	16.0	16.0
human labour/cart/wheel barrow	0	0
donkey/cart/wheelbarrow	0	0
not reported	0	0
Total	100.0	100.0

General Impact of IWSS

	increased	decreased	no change	no response	not reported	Total
water	92.0	4.0	0	0	4.0	100.0

distance	6.0	70.0	0	0	24.0	100.0
disease	12.0	32.0	0	0	56.0	100.0
crop farming	46.0	4.0	0	0	50.0	100.0
kitchen gardening	44.0	2.0	0	0	54.0	100.0
vegetable growing	74.0	0	0	0	26.0	100.0
livestock watering	82.0	0	0	0	18.0	100.0
brick making	56.0	0	0	0	44.0	100.0
bee keeping	30.0	0	0	0	70.0	100.0
body washing	52.0	0	0	0	48.0	100.0
clothes washing	52.0	0	0	0	48.0	100.0
utensil washing	30.0	0	0	0	70.0	100.0
tree nurseries	48.0	0	0	0	52.0	100.0
house washing	26.0	0	0	0	74.0	100.0
terracing	24.0	0	0	0	76.0	100.0
other	30.0	0	0	0	70.0	100.0

Water rationing (%)

	(Before IWSS)	(After IWSS)
yes	40.0	0
no	60.0	100.0
not reported	0	0
Total	100.0	100.0

Mode of water rationing before and after IWSS (%)

	Before IWSS	After IWSS
Restricted to a fixed amount of water per day	14.0	0
Queuing	24.0	0
other	2	0
not reported/no rationing	60.0	100.0
Total	100.0	100.0

Accessibility of your nearest dam

	Percent
accessible	100.0
not accessible	0
other characteristics	0
not reported	0
Total	100.0

Satisfied with the sand dam project?

	Percent
Satisfied	90.0
Not satisfied	10.0
not reported	0
Total	100.0

Why satisfied?

	Percent
Plenty of water for domestic use	74.0
Farm productivity has increased	6.0

Increased water for watering animals	2.0
Water helped in construction of houses	0
Reduced distances to water source	6.0
Other reasons	0
Not reported	12.0
Total	100.0

If not satisfied, why?

	Percent
No opportunity for multiple use	
The well dries up in the dry season (too shallow)	8.0
The water is not clean	0
The well is too shallow	0
Other reasons	2.0
Not reported	90.0
Total	100.0

Shift from the traditional water source?

	Percent
Shifted	78.0
Not shifted	22.0
No response	0
Not reported	0
Total	100.0

If not shifted, reason

	Percent
Traditional water source nearer	12.0
No opportunity for multiple use	0
the well dries up in dry season	0
water not clean	2.0
other	2.0
no response	4.0
not reported	80.0
Total	100.0

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	12.0	86.0	54.0	98.0	56.0	58.0	10.0	26.0
once	40.0	4.0	2.0	0	4.0	34.0	26.0	6.0
twice	38.0	0	10.0	0	34.0	6.0	6.0	4.0
thrice	8.0	10.0	34.0	0	6.0	0	2.0	14.0
rarely	0	0	0	0	0	0	0	
when dirty	0	0	0	0	0	0	0	
never used to/doesn't	0	0	0	0	0	0	2.0	2.0
not applicable	0	0	0	0	0	0	30.0	32.0

not reported	2.0	0	0	2.0	0	2.0	24.0	16.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Protection of water points before and after IWSS

	(Before IWSS)	(After IWSS)
fencing	20.0	26.0
covering well with lid	4.0	50.0
watchman	0	0
no protection	74.0	20.0
not applicable	0	0
locking gate	0	0
local arrangements	0	4.0
not reported	2.0	0
Total	100.0	100.0

Soil conservation

Terracing before and after IWSS (%)

	(Before IWSS)	(After IWSS)
nil	24.0	6.0
0 < number ó 3	20.0	10.0
3 < number ó 5	24.0	22.0
5 < number ó 10	22.0	48.0
10 < number	8.0	14.0
not reported	2.0	0
Total	100.0	100.0

Tree planting before and after IWSS (%)

	(Before IWSS)	(After IWSS)
nil	36.0	6.0
0 < number ó 5	8.0	10.0
5 < number ó 10	14.0	18.0
10 < number ó 50	26.0	38.0
50 < number	10.0	26.0
not reported	6.0	2.0
Total	100.0	100.0

Gabions before and after IWSS (%)

	(Before IWSS)	(After IWSS)
nil	88.0	84.0
0 < number ó 5	0	0
5 < number ó 10	0	0
10 < number	0	4.0
not reported	12.0	12.0
Total	100.0	100.0

Misonzo (Ridges) before and after IWSS (%)

	(Before IWSS)	(After IWSS)
nil	44.0	40.0

0 < number ó 5	22.0	22.0
5 < number ó 10	22.0	14.0
10 < number	0	14.0
not reported	12.0	10.0
Total	100.0	100.0

Grass planting before and after IWSS (%)

	(Before IWSS)	(After IWSS)
Yes	32.0	74.0
No	62.0	24.0
Not reported	6.0	0
Total	100.0	100.0

Waterborne Disease incidences

Typhoid

Typhoid incidence before and after IWSS

	(Before IWSS)		(After IWSS)	
	Frequency	Percent	Frequency	Percent
Affected	8	16.0	7	14.0
Not affected	42	84.0	43	86.0
Total	50	100.0	50	100.0

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

	(Before IWSS)		(After IWSS)	
	Frequency	Percent	Frequency	Percent
nil	0	0	0	0
500ò cost	2	4.0	1	2.0
500 < cost ó 1000	0	0	0	0
1000 < cost ó 2000	1	2.0	2	4.0
2000 < cost	5	10.0	4	8.0
Total	8	16.0	7	14.0

Typhoid- outcome Before and after IWSS

	(Before IWSS)		(After IWSS)	
	Frequency	Percent	Frequency	Percent
recovered	8	16.0	7	14.0
other	0	0	0	0
no response	0	0	0	0
Total	8	16.0	7	14.0

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

	(Before IWSS)		(After IWSS)	
	Frequency	Percent	Frequency	Percent
2 < days ó 5	2	4.0	0	0
5 < days ó 10	0	0	0	0
10 < days ó 30	1	2.0	4	8.0
30 < days	2	4.0	3	6.0
no response	0	0	0	0

Total	8	16.0	7	14.0

Malaria

Malaria incidence before and after IWSS

	(Before IWSS)		(After IWSS)	
	Frequency	Percent	Frequency	Percent
Affected	40	80.0	33	66.0
Not affected	10	20.0	17	34.0
Total	50	100.0	50	100.0

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

	(Before IWSS)		(After IWSS)	
	Frequency	Percent	Frequency	Percent
nil	0	0	1	2.0
500 ò cost	4	8.0	2	4.0
500 < cost ó 1000	8	16.0	6	12.0
1000 < cost ó 2000	11	22.0	10	20.0
2000 < cost	17	34.0	14	28.0
Total	40	80.0	33	66.0

Malaria- outcome Before and after IWSS

	(Before IWSS)		(After IWSS)	
recovered	40	80.0	33	66.0
other	0	0	0	0
Total	40	80.0	33	66.0

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

	(Before IWSS)		(After IWSS)	
	Frequency	Percent	Frequency	Percent
nil	0	0	2	4.0
One day	0	0	0	0
2 < days ó 5	1	2.0	4	8.0
5 < days ó 10	3	6.0	1	2.0
10 < days ó 30	22	44.0	17	34.0
30 < days	14	28.0	9	18.0
no response	0	0	1	2.0
Total	40	80.0	33	66.0

Amoeba

Amoeba incidence before and after IWSS

	Before IWSS		After IWSS	
	Frequency	Percent	Frequency	Percent
Affected	13	26.0	5	10.0
Not affected	37	74.0	45	90.0
Total	50	100.0		100.0

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

	Before IWSS	After IWSS

	Frequency	Percent	Frequency	Percent
nil	0	0	0	0
500 ò cost	1	2.0	0	0
500 < cost ó 1000	3	6.0	0	0
1000 < cost ó 2000	4	8.0	2	4.0
2000 < cost	5	10.0	3	6.0
Total	13	26.0	5	10.0

Amoeba- outcome Before and after IWSS

	(Before IWSS)		(After IWSS)	
	Frequency	Percent	Frequency	Percent
Recovered	13	26.0	5	10.0
Died	0	0	0	0
no response	0	0	0	0
Total	13	26.0	5	10.0

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

	(Before IWSS)		(After IWSS)	
	Frequency	Percent	Frequency	Percent
nil	0	0	0	0
2 < days ó 5	0	0	0	0
5 < days ó 10	0	0	1	2.0
10 < days ó 30	3	6.0	1	2.0
30 < days	10	20.0	3	6.0
no response	0	0	0	0
Total	13	26.0	5	10.0

Cholera

Cholera incidence before and after IWSS

	Before IWSS		After IWSS	
	Frequency	Percent	Frequency	Percent
Affected	7	14.0	0	0
Not affected	43	86.0	50	100.0
Total	50	100.0	50	100.0

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

	Before IWSS		After IWSS	
	Frequency	Percent	Frequency	Percent
500 ò cost	1	2.0		
500 < cost ó 1000	2	4.0		
1000 < cost ó 2000	1	2.0		
2000 < cost	3	6.0		
Total	7	14.0		

Cholera- outcome Before and after IWSS

	Before IWSS		After IWSS	
	Frequency	Percent	Frequency	Percent
Recovered	6	12.0		

Died	1	2.0		
Total	7	14.0		

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

	Before IWSS		After IWSS	
	Frequency	Percent	Frequency	Percent
one day	1	2.0		
1 < days ó 5	2	4.0		
5 < days ó 10	1	2.0		
10 < days ó 30	1	2.0		
30 < days	1	2.0		
no response	1	2.0		
Total	7	14.0		

Trypanosomiasis

Trypanosomiasis incidence before and after IWSS

	(Before IWSS)		(After IWSS)	
	Frequency	Percent	Frequency	Percent
Affected	1	2.0	0	0
Not affected	49	98.0	50	100.0
Total	50	100.0	50	100.0

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

	Before IWSS		After IWSS	
	Frequency	Percent	Frequency	Percent
nil	0	0		
500ò cost	0	0		
500 < cost ó 1000	0	0		
1000 < cost ó 2000	1	2.0		
Total	1	2.0		

Trypanosomiasis - outcome Before and after IWSS

	Before IWSS		After IWSS	
	Frequency	Percent	Frequency	Percent
Recovered	1	2.0	0	0
Died	0	0	0	0
Total	1	2.0	0	0

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

	Before IWSS		After IWSS	
	Frequency	Percent	Frequency	Percent
nil	0	0	0	0
10 < days ó 30	0	0	0	0
30 < days	1	2.0	0	0
Total	1	2.0	0	0

Scabies

Scabies incidence before and after IWSS

	Before IWSS		After IWSS	
	Frequency	Percent	Frequency	Percent
Affected	3	6.0	0	0
Not affected	47	94.0	50	100.0
Total	50	100.0	50	100.0

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

	Before IWSS		After IWSS	
	Frequency	Percent	Frequency	Percent
500 ò cost	1	2.0	0	0
500 < cost ó 1000	1	2.0	0	0
1000 < cost ó 2000	0	0	0	0
2000 < cost	1	2.0	0	0
Total	3	6.0	0	0

Scabies- outcome Before and after IWSS

	Before IWSS		After IWSS	
	Frequency	Percent	Frequency	Percent
Recovered	3	6.0	0	0
Died	0	0	0	0
Total	3	6.0	0	0

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

	Before IWSS		After IWSS	
	Frequency	Percent	Frequency	Percent
one day	0	0	0	0
1 < days ó 5	0	0	0	0
5 < days ó 10	1	2.0	0	0
10 < days ó 30	1	2.0	0	0
30 < days	1	2.0	0	0
no response	0	0	0	0
Total	3	6.0	0	0

Conjunctivitis

Conjunctivitis incidence before and after IWSS

	Before IWSS		After IWSS	
	Frequency	Percent	Frequency	Percent
Affected	0	0	0	0
Not affected	50	100.0	50	100.0
Total	50	100.0	50	100.0

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

	Before IWSS		After IWSS	
	Frequency	Percent	Frequency	Percent
nil	0	0	0	0
Total	0	0	0	0

Conjunctivitis - outcome Before and after IWSS

	Before IWSS	After IWSS

	Frequency	Percent	Frequency	Percent
Recovered	0	0	0	0
Total	0	0	0	0

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

	Before IWSS		After IWSS	
	Frequency	Percent	Frequency	Percent
5 < days ó 10	0	0	0	0
Total	0	0	0	0

Waterborne diseases mitigation measures

Boiling (%)

	(Before IWSS)	(After IWSS)
Boil drinking water	46.0	94. 0
not reported	54.0	4.0
Total	100.0	100.0

Chemicals application before and after IWSS (%)

	(Before IWSS)	(After IWSS)
Treat drinking water with chemicals	0	4.0
not reported	100.0	96.0
Total	100.0	100.0

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

	(Before IWSS)	(After IWSS)
clean/clear compound	0	10.0
not reported	100.0	90.0
Total	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 (%)

	(Before IWSS)	(After IWSS)
Inoculation	0	0
not reported	100.0	100.0
Total	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	2.0

not reported	100.0	98.0
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	100.0
Total	100.0	100.0

Other measure before and after IWSS (%)

	Before IWSS	After IWSS
other measure	2.0	2.0
not reported	98.0	98.0
Total	100.0	100.0

Mode of choosing water source committee members/dam committee members

Nomination?

	Dam committee			
	Nomination	Election	Selection	Other mode
Yes	16.0	54.0	40.0	98.0
Other	84.0	46.0	60.0	2.0
Total	100.0	100.0	100.0	100.0

If nomination, by whom?

By whom	Dam committee			
	Nomination	Election	Selection	Other mode
not reported	82.0	46.0	58.0	98.0
community	16.0	44.0	30.0	0
provincial administration	2.0	4.0	10.0	0
dam members	0	0	2.0	0
Other	0	6.0	0	2.0
Total	100.0	100.0	100.0	100.0

Duration in office- dam committee

	Percent
not reported	0
one month	4.0
half-year	6.0
one year	2.0
two years	2.0
more than two years	12.0
not stated	6.0
indefinitely	68.0
no response	0
Total	100.0

Benefits as a committee member

	Percent
none	16.0

respect	10.0
position in other committees	4.0
seminars/studies/knowledge	20.0
other	44.0
unanswered question	4.0
not reported	2.0
Total	100.0

Impact of dam committee in regard to:

Factor	*Positive*	*Negative*	*no impact*	*indifferent*
age	68.0	0	22.0	4.0
religion	76.0	0	20.0	0
political party affiliation	72.0	0	22.0	0
wealth	74.0	0	22.0	0
gender	82.0	2.0	14.0	0

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

	Participants
yes	66.0
no	34.0
no response	0
not reported	0
Total	100.0

Linkage between dam and other committees?

	Participants
yes	68.0
no	32.0
not reported	0
Total	100.0

If yes to linkage, how?

	Participants
considering community committee members in dam committee	8.0
dam committee members considered in other community committee	20.0
dam committee members opinion sought in development issues	36.0
other	6.0
no response	2.0
not reported	28.0
Total	100.0

Participants: Other general benefits derived from IWSS

	Percent
yes	80.0
no	12.0
not reported	8.0
Total	100.0

Participants: If yes benefits yes

	participants
advice from older people to young members of the society	4.0
community members interact freely while working together	28.0
women contribute to a fund to uplift their welfare	6.0
community formed groups for planting vegetables and seedlings for sale	10.0
formation of groups to help in harvesting/terracing and other undertakings	13.0
making new friends	2.0
other	4.0

Influence of development agenda by community

	Participants
yes	78.0
no	16.0
not reported	6.0
Total	100.0

If influence yes, how:

How	*Participants*
the community is free to express its interests during development meeting	10.0
before any law/bylaw/rule is passed people community is consulted	4.0
done through *barazas* whereby members air their views freely	13.0
through consultation with those concerned	8.0
involved when discussing development ideas	4.0
headman (administrators) consults with the people and forwards their views	2.0
chairpersons of groups, headmen and other leaders consulted through formation of groups	12.0
any other way	3.0

Impact of increased water after IWSS:

	improved	declined	the same
health	84.0	6.0	6.0
cleanliness	94.0	2.0	0
leisure	70.0	18.0	2.0
girl-child school absenteeism	2.0	38.0	26.0
boy-child school absenteeism	0	38.0	26.0
girl-child school punctuality	54.0	2.0	10.0
boy-child school punctuality	58.0	2.0	8.0
cooking at the right time	94.0	2.0	0

Increase in water impact

	improved	declined	the same
security	86.0	4.0	8.0
pregnancy rates	24.0	24.0	50.0
community cohesiveness	76.0	10.0	10.0
marriage rates	32.0	28.0	32.0

Is trekking long distances by girls regarded as good?

	Participants
good	0
bad	98.0
no response	0
not reported	2.0
Total	100.0

bad

	Participants
tiring	32.0
compromise other household duties	26.0
develop irresponsible behaviour-	22.0

early pregnancies/marriages	
leads to school absenteeism/lateness	6.0
not generally safe	22.0
other reason	2.0

good

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

Impact of the project in relation to trek

	percent
time	30.0
absenteeism/lateness in school improved	2.0
school drop out rates lowered	14.0
improved security of girls	34.0
increased time for leisure	12.0
distance to water source reduced	2.0
other impact	22.0
no impact	0

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

religion

	(Before IWSS)	(After IWSS)
rarely	0	0
never misses	4.0	2.0
never attends	4.0	4.0
once	6.0	4.0
twice	10.0	2.0
thrice	12.0	2.0
four time and more	62.0	84.0
no response	2.0	2.0
not reported	0	0
Total	100.0	100.0

market days

	Before IWSS	After IWSS
rarely	8.0	14.0
never misses	4.0	4.0
never attends	14.0	8.0
once	40.0	30.0
twice	22.0	28.0
thrice	2.0	4.0
four time and more	6.0	10.0
no response	2.0	2.0
not reported	2.0	0
Total	100.0	100.0

funerals

	Before IWSS	After IWSS
rarely	2.0	2.0
as they occur	96.0	96.0
never misses	0	0
never attends	0	0
once	0	0
twice	0	0
thrice	0	0
four time and more	0	0
no response	2.0	2.0
not reported	0	0
Total	100.0	100.0

mwethya

	Before IWSS	After IWSS
rarely	22.0	12.0
as they occur	56.0	60.0
never misses	10.0	20.0
never attends	10.0	6.0
no response	2.0	2.0
not reported	0	0
Total	100.0	100.0

parties

	Before IWSS	After IWSS
rarely	54.0	50.0
as they occur	32.0	46.0
never misses	0	2.0
never attends	12.0	0
not reported	2.0	2.0
Total	100.0	100.0

harambee

	Before IWSS	After IWSS
rarely	60.0	58.0
as they occur	28.0	36.0
never misses	0	2.0
never attends	10.0	2.0
not reported	2.0	2.0
Total	100.0	100.0

visiting friends

	Before IWSS	After IWSS
frequently	12.0	12.0
when necessary	32.0	34.0
when need arises	4.0	6.0
occasionally	36.0	42.0
never visits	10.0	4.0

not reported	6.0	2.0
Total	100.0	100.0

Hours of sleep

	Participants (Before IWSS)		Participants (After IWSS)	
	dry season	wet season	dry season	wet season
2 ò hours	0	0	2.0	0
2 < hours ó 4	4.0	0	0	0
4 < hours ó 6	36.0	2.0	0	2.0
6 < hours ó 8	28.0	36.0	36.0	34.0
8 < hours	32.0	62.0	62.0	64.0
not reported	0	0	0	0
Total	100.0	100.0	100.0	100.0

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

	Participants
husband (in the household)	16.0
husband (elsewhere)	0
wife (in the household)	12.0
wife (elsewhere)	0
friends	32.0
local administration (headman/Ass. Chief/Chief)	16.0
none	20.0
religious leaders	0
other	0
not reported	4.0
Total	100.0

Factor promoting community cooperation: (% age mentioned)

	Participants
Hard work	18.0
commitment	38.0
unity	82.0
listening to people views	12.0
peace	6.0
good leadership	4.0
other	8.0

Factor limiting community cooperation: (% age mentioned)

	Participants
political party affiliation	16.0
gossip	22.0
lack of respect	6.0
poverty	2.0
diseases	6.0
hatred	18.0
poor leadership	36.0
illiteracy/ignorance	30.0

corruption	6.0
other	22.0

Economic activities (%):

Mentioned	Participant (Before IWSS)	Participant (After IWSS)
agriculture	98.0	98.0
goat/sheep	22.0	30.0
cattle	10.0	12.0
vegetable growing	8.0	22.0
kitchen gardening	8.0	10.0
brick making	4.0	8.0
tree nurseries	20.0	32.0
bee keeping	6.0	6.0

New crops/activities introduced after IWSS:

New crop/activity	Percent
spinach growing	6.0
vegetable growing	6.0
fish	46.0
sukuma wiki	0
onions	6.0
tomatoes	2.0
ndania	8.0
sugar cane	0
arrow roots	4.0
fruits	6.0
other crop	22.0

Contribution of the following activities after IWSS (KShs)

Activity	500ò value	500<valueó1000	1000<valueó5000	5000<valueó10000	10,000< value
agriculture	0	0	2.0	2.0	6.0
goats/sheep	0	0	0	0	0
cattle	0	0	4.0	2.0	2.0
vegetable growing	0	4.0	16.0	16.0	6.0
kitchen gardening	0	0	6.0	0	2.0
brick making	0	2.0	2.0	4.0	2.0
tree nurseries	2.0	2.0	12.0	4.0	2.0
bee keeping	0	2.0	2.0	0	0
sugar cane	0	2.0	2.0	0	0
business	0	0	0	0	0

Indirect benefits:

	mentioned (%)
increased land value	2.0
increased livestock reproduction rates	3.0

able to pay school fees- increased income	2.0
able to cloth the family- increased income	2.0
increased land productivity- increased water and terracing	22.0
soil fertility- tree planting and terracing	10.0
reduced cost of buying salt lick for animals	0
vegetables- plenty and cheap	22.0
increased sand for construction	14.0
other benefit	28.0

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

	Percent
attracted- total	48.0
leased land to cultivate	48.0
paid sand dam fees before leasing the land	0

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

	Participants
yes	10.0
no	88.0
not reported	2.0
Total	100.0

Use of time saved from walking long distances:

	Percent
Shamba work	34.0
taking care of livestock	8.0
making bricks	8.0
kitchen gardening	48.0
tending tree nursery	28.0
business	8.0
leisure	2.0
other activities	6.0

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	0	2.0	2.0	2.0	4.0	2.0	4.0
500 < value ó 1,000	4.0	0	2.0	4.0	4.0	0	0
1000 < value ó 5,000	10.0	0	0	16.0	14.0	6.0	0
5,000 < value ó 10,000	6.0	0	0	8.0	4.0	0	0
10,000 < value	12.0	0	6.0	6.0	4.0	0	0

Time budget in hours

Before and after IWSS

Dry season

	Cultivation	Water fetching	Grazing	Household	Other activities

							duties			
	Before IWSS	After IWSS	Before IWSS	After IWSS	Before IWSS	After IWSS	Before IWSS	After IWSS	Before IWSS	After IWSS
2 ò hours	12.0	8.0	26.0	18.0	6.0	6.0	16.0	22.0	16.0	16.0
2 < hours ó 4	24.0	32.0	22.0	6.0	2.0	8.0	24.0	12.0	8.0	10.0
4 < hours ó 6	6.0	14.0	4.0	4.0	8.0	4.0	18.0	18.0	8.0	8.0
6 < hours ó 8	2.0	10.0	0	0	2.0	0	2.0	6.0	6.0	2.0
8 < hours	2.0	2.0	0	0	0	0	4.0	4.0	2.0	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	16.0	16.0	18.0	18.0	6.0	12.0	18.0	22.0	18.0	24.0
2 < hours ó 4	34.0	30.0	10.0	2.0	6.0	2.0	18.0	10.0	6.0	8.0
4 < hours ó 6	10.0	10.0	2.0	0	6.0	2.0	16.0	16.0	16.0	6.0
6 < hours ó 8	2.0	8.0	0	0	0	4.0	8.0	8.0	2.0	2.0
8 < hours	2.0	2.0	0	0	0	0	2.0	2.0	6.0	8.0

Cost of water per 20 litre jerrican (KShs)

	Dry season		Wet season	
	Before IWSS	After IWSS	Before IWSS	After IWSS
5 ò shillings	26.0	74.0	0	80.0
5 < shillings ó 10	56.0	22.0	82.0	20.0
10< shillings ó 15	10.0	0	16.0	0
15 < shillings ó 20	6.0	2.0	2.0	0
20 < shillings	2.0	0	0	0

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

	Participants
yes	84.0
no	10.0

Controlled measure

Measure	Participants
covering the well with a lid	6.0
washing of clothes not allowed in the IWSS	4.0
only participants are allowed	18.0
planting of grass to check erosion	2.0
children not allowed to play near the IWSS	28.0
other control/plan (eg. prayers)	22.0

If not controlled, why?

Why	Participants
it is a public/natural resource	0
participants are responsible people- respect their efforts	2.0
other reason	6.0

Pollution penalties/action(%)

Type of pollution	pays fine	report to dam committee	report to provincial administration	report to Sasol	warning/ cautioned	excommunicated
washing inside the dam/well	36.0	4.0	24.0	0	4.0	4.0
washing clothes inside the dam/well	36.0	4.0	24.0	0	4.0	4.0
watering animals in the dam/well	24.0	6.0	24.0	0	2.0	4.0
spraying vegetables/crops chemicals around the dam/well	30.0	4.0	30.0	0	2.0	4.0
defecating/urinating near the dam/well	30.0	4.0	28.0	0	4.0	4.0
dropping objects in the source	30.0	4.0	28.0	0	4.0	4.0

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

	Participants
dam committee members	56.0
chairperson of the dam committee	18.0
provincial administration	8.0
community	16.0
watchman	0
no body/party	2.0
no maintenance required	0
owner	0
Sasol	0
not reported	0
Total	100.0

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

	Participants
dam committee members	72.0
chairperson of the dam committee	20.0
provincial administration	0
community	0
politicians	0
no funds needed	0
Sasol	0
not reported	8.0
Total	100.0

Operation and maintenance contribution by households if applicable (KShs)

	Participants
25 ò KShs.	12.0
25 < KShs ó 50	0
50 < KShs ó 75	0
75 < KShs ó 100	4.0

100 < KShs	0
in kind (labour)	4.0
no funds needed	0
not reported	80.0
Total	100.0

Frequency of dam committee meetings

	Participants
monthly	52.0
never meet	12.0
once per three month	2.0
semi-annually	6.0
annually	2.0
when there is need	22.0
other	2.0
no committee reported	0
not reported	2.0
Total	100.0

Services/goods considered necessary:

	Participants
Food	100.0
water	96.0
shelter	32.0
clothing	34.0
clean environment	10.0
money	32.0
education	44.0
medical services	0
fuel	48.0
land	50.0
livestock	0
transport	0
other	10.0

Control over family resources:

	Income		Labour		Expenditure	
	Before IWSS	After IWSS	Before IWSS	After IWSS	Before IWSS	After IWSS
husband	38.0	38.0	26.0	26.0	26.0	26.0
wife	28.0	34.0	44.0	44.0	40.0	40.0
husband/wife	28.0	28.0	30.0	30.0	32.0	32.0
boys	0	0	0	0	2.0	2.0
children	0	0	0	0	0	0
father-in-law	0	0	0	0	0	0
other	0	0	0	0	0	0
not reported	6.0	0	0	0	0	0

Impact of increased family income to family unit

	Percent
positive	82.0
negative	2.0

the same	2.0
no response	2.0
not reported	12.0
Total	100.0

Has increased incomes/opportunities led to conflict at:

	Percent
at family level- reported	6.0
at family level not reported	94.0
at community level- reported	3
at community level not reported	47

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

	Percent
100 ò KShs	0
100 < KShs ó 200	12.0
200 < KShs ó 500	22.0
500 < KShs ó 1,000	14.0
1,000 < KShs	16.0
not fixed	20.0
not reported	16.0
Total	100.0

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

	Percent
sheep	0
goat	2.0
cow	2.0
other	2.0
not reported	94.0
Total	100.0

Value household attach to their water source

	Participants
500 ò KShs	4.0
500 < KShs ó 1,000	8.0
1,000 < KShs ó 5,000	0
5,000 < KShs ó 10,000	0
10,000 < KShs	0
not acceptable (invaluable)	78.0
not reported	10.0
Total	100.0

Willingness to pay for improved water resource

	Participants
500 ò KShs	32.0
500 < KShs ó 1,000	22.0
1,000 < KShs ó 5,000	28.0
5,000 < KShs ó 10,000	8.0

10,000 < KShs	10.0
not reported	0
Total	100.0

Ownership of water resource (sand dam):

	True	False
community	96.0	4.0
individual	2.0	98.0
government	18.0	82.0
schools	2.0	98.0
KANU	0	100.0
SASOL	40	60.0
NGOs	0	100.0
SDP	0	100.0
Christians	2.0	98.0
Kathambi	0	100.0
other	4.0	96.0

Why own the water resource (sand dam): Reasons

	community participated	it is a natural resource	sponsored	other	no response
community	96.0	0	0	4.0	0
individual	74.0	0	4.0	20.0	2.0
government	4.0	6.0	34.0	56.0	0
schools	0	0	30.0	0	70.0
KANU	50.0	0	8.0	42.0	0
SASOL	4.0	0	34.0	56.0	6.0
NGOs	96.0	0	0	4.0	0
SDP	6.0	0	18.0	76.0	0
Christians	0	0	16.0	84.0	0
Kathambi	0	0	20.0	78.0	2.0
other	0	0	0	4.0	96.0

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

	Participants	
	As an individual	As a member of the community
ask him/her why	2.0	0
report to dam committee chairperson	8.0	0
report to other members	14.0	0
report to the head man	32.0	0
report to the provincial administration	0	22.0
report to SASOL	4.0	8.0
report to the police	22.0	22.0
beat up the person	0	34.0
banish him/her	0	0
use force to stop him/her	16.0	10.0
no action	0	0
other	0	0

no response	2.0	4.0
Total	100.0	100.0

Any other comment

	Participants
more dams needed	28.0
congratulations- SASOL	30.0
sand dams are beneficial- increased incomes	12.0
satisfied with the location	2.0
sand dam too far, water source near home required	20.0
need IWSS	6.0
water source near home required	0
no comment	0
not reported	2.0
Total	0