

[Interviews with the WRUA members]

Summary Transcriptions and Interview Notes (Redacted to anonymise participants and identifying information)

1. WRUA 1

Years lived/stayed: 30 years +

Since she was young

Apart from going to school

Interviewee: members

User groups are many

The point of L.Basin

There are several groups;

Individual members

Institutions: Schools can be among their members

Flower farmers are not part of the WRUA. The flower farmers are new.

Roles

As WRUA members, we are the people who use water in the community.

We train on the importance of conserving watersheds in the community—notably, many rivers are seasonal; therefore important to conserve the river.

Inform on the impact of not conserving the catchment area

Sensitising the community on the importance of conservation.

Drilling boreholes- they give comment form for any community members who want to drill the borehole. Advise on whether it's okay or not.

Drought years.

2 years ago, it was good

[Interviews with the WRUA members]

2019- there was a drought until the community was given food was given good and from the government.

Post-election time 2018: was the worst period ever

2013: animal death due to lack of food and water shortage.

EWS.

They can be there, but most of us do not know how to interpret them.

The older people are the ones who can tell you that if you see this, then the drought is looming.

Most of us do not know if it is a sign of drought.

Many people do not believe in superstitions.

KMD: they do not get information from them.

Coping mechanism:

Small scale farming., Food aid

During drought periods, they tend to dwell more into

-small businesses

- wage labour from a farm that can afford irrigation.

Some years back in the Eburu forest, their fence was not there; it was the first option for many people during drought season, particularly in the year 2000 charcoal burning was done in high numbers.

Rhino arc intervened by fencing (electrical fence). Therefore charcoal burning is reduced, but we do not lack criminals, which means we have illegal activities around the forest.

Illegal logging is also a survival/coping mechanism.

Some people farm with irrigation but not river/ seasonal nut from the borehole.

Quality: Animals get into the water hence dirtying the water.

Too many problems during drought.

Conflict resolution.

[Interviews with the WRUA members]

Most of the conflicts around the area us between the pastoralists and other community members because of scrambling for animal drinking and other uses in the household.

We are able to control.

Biodiversity: not seen new plants or animals. The locusts were not seen in the area because they were not plants or greens.

Seasonal rivers dry up completely.

Policies

Water dries drought resilience.

The policies or laws are not known to them. I know there is a water act 2016 but not read it in detail, but I think it helps regulate water use.

The river is seasonal; not much conflict during the dry season.

The community listen to them when they try to advise on water usage.

Recommendation/advice

In my own opinion, the community should be taught or told about the drought or early warning signs,

We should also be taught what crop to farm during this period and how long the crop can last within the period the water is available before the drought hits.

Shadrack and Robai to confirm the registration year of the WRUA.

Sand harvesting- is being done illegally, and it depletes the river.

Floods: sometimes we have floods, i.e. 2020. The source of the marmanet river is the Eburu forest. There was a tributary burst (landslides and the river banks broken and floods were seen in the centre sacked)

Impact: people displaced, no deaths and destruction of people hosted in schools for sometimes food aid and then they sought them out. Most were in rental houses.

In one case, we need to be prepared because they do not know where the flood will come again.

The aged people say that sometimes there was a flash flood in the same areas.

2. WRUA 4

Flower farm

Hotels

Geothermal

Different from other WRUAs. Other members are commercial.

Flower farms are predominantly the most significant users of water.

Years lived: more than 30 years

Number of Years in WRUA- from 2008.

Drought 2022- rains do not consist, and farmers are confused that planting time is unknown.

The rain did not come as projected.

2019: severe drought

Impact: food insecurity, water shortage, drying of borehole

Conflicts: conflicts between different users, pastoralists, commercial farmers, and hoteliers. Water to access the lake. When the lake researched the farmers, 3 hoteliers wanted to access and dug trenches to the lakes/canals. The pastoralists would use the lake and pastures 2. Canals would pose a hazard or danger for the animals and pastoralist (while looking for pasture and water. The canals would pose risk to them, and the animal would fail)

Fencing from a flower in or around the lake causes conflicts and blocks the pastoralist from accessing the water and pasture.

Management of conflict.

WRUAs- come together as members and solve the issues. They talk to them about how to accommodate each other facilitated by the government, NGOs e.t.c

2000- drought, but I was still young. Therefore I cannot comment much

EWS

Nowadays, it is confusing

The MD is also confusing.

[Interviews with the WRUA members]

It is not like those days when you could see birds or when you see butterflies. You would tell if it's flying from one end to the other, you could tell it's going to rain/or not.

Nowadays, it's difficult for traditional view decent work because of changes in biodiversity.

KMD would tell you it's going to rain, but it does not happen but rain comes at different times. It's not reliable.

Coping mechanism

In our case, some flower farmers have built reservoirs, harvested water from their rooftops and greenhouses, and pumped water from the lake to blend it.

Groundwater/boreholes are dug.

Community: few farmers, the ones that are there, are adopting resilient crops (Mbaazi) pigeon pears.

Fast-growing crops, maize that is drought resilient that requires less water. That is what is at the top of my memory.

Using an efficient method in the flower farm, and the vast is taken for the shared task and pumped back.

It is no longer feasible to do outdoor farming/irrigation because and competition with water.

The techniques in helping;

The government has introduced a water ferry to try and regulate water shortage because you can pay for it.

Therefore, make sure you can use water appropriately.

Quality

Pollutants will concentrate in the water since the WRUA is in the part of the catchment. All sorts of pollutants ie fertilisers, chemicals etc flow to the lake.

Therefore, there is much investment in water purification.

Ecosystem changes.

During the dry period, the papyrus around the lake shrinks.

Small-scale farmers cultivate where papyrus has dried therefore altering fish laying ground.

[Interviews with the WRUA members]

He also affects the bird hatching areas since birds also hatch there. Fishermen catch a lot due to the small fishing area, and the spilling effect of the fish population decreases due to over-harvesting.

At the end of the day no breeding and therefore reduced fish population.

Change in livelihood.

Small-scale farmers venture into other areas because it is not sustainable. People are less water and less water dependent.

Fast-growing crops, the commercial aspect there is water

Allocation plan- it is a kind of rotational plan

This makes you reduce the area of operation and therefore reduce the workforce.

Others move into small businesses to supplement

Illegal fishing operations are not (registered).

Ecotourism is not much- recently the government come up with a waterfront but it has not materialised.

Challenges

Conflict is a challenge: management of all issues such as illegal activities e.g. fishing, poaching and food security.

Policy

The policies in the county are in the pipeline, and it is sad because it's 10 years down the line.

Some policies have gone through, but they concentrate on the issue of terraces rather than conservation. At the same time, others have not been implemented.

Lack of goodwill, and many people do not even know policies exist.

Recommendation.

Effect of water- use less water as much as possible

Invest and venture into areas of water usage-

Venture into fast-growing crops and those that are drought resistant.

[Interviews with the WRUA members]

Pastoralist-its are no longer possible. They have diverse and look at areas of increasing production (maximising production)

Agro-pastoralist -since the area for grazing is reducing (carrying capacity).

The Laikipia issue is looming.

The river journey: the journey of River Malewa from the source to the end.

Capacity building on the community on the conservation of water catchment.

Floods: activities or encroachment in the lake around the lake are altered due to water flow.

The terrain is the slope.

3. WRUA 2

Roles

Planting trees (own farm)

Drought:

2010: severe drying of streams, but there was not much on farms.

Ishana/indication: during of streams, dying of animals, crop death

Trees dying beyond

Food shortage

Stream diversion to their farms brought in many conflicts.

EWS

Not there

Traditional indications are not reliable and are not there due to abadare ranges

Animals such as birds are affected, particularly those that look for food on the ground. They have to look for other alternative (hadada ibis) birds.

Water Quantity

Reduced a lot even this year stream/streams have not swollen

[Interviews with the WRUA members]

No irrigation, only water provided in the tap water for household use

Conflicts

Official taught-conflict management(reconcile)

Livelihood: vegetation, dairy farming and potatoes

Drought: affect the production of dairy, and diseases increase, but there are veterinary services to help.

Poverty has increased due to drought.

Women depend on labour usage, but the drought has reduced a lot.

Due to drought, sweet potatoes and vegetables are not there, leading to increased costs for buying food such as maize flour.

Coping mechanism

Farms dry, no milk- big problem

Illegal vandalism of water pipes to divert water to their farms.

Increased petty crimes

Charcoal burning is not a lot since the forest is fenced electrically

Policies

Irrigation of water should be provided

Small water pans on the farm

Runoff water harvesting

Dams/water pan to harvest water.

Water guards to be employed to pour water catchment area

Floods: no floods

Swelling of water in rivers

Committee to be formed on flood management

4. WRUA 3

The region has been affected a lot by climate change. Rainfall was in plenty. This area had plentiful rainfall, and all gauges had water flowing.

Logging: started the red cedar trees mainly. There was a lot of tree cutting until the hill/mounts remained bare.

In the 1990s the climate changed particularly frostbite, which affected crops greatly, leading to crop loss.

Ten years back, things worsened; the rivers started drying, particularly in the 2nd, 3rd and 4th months. The river would dry up, and the level would go down.

Fishes started dying because of a lack of oxygen

Enforcement was brought in a little after too many complaints about illegal activities.

This year. 3 months back. We have been affected; many rivers have not been flowing. The only people who could access water were those on high ground with high intakes and could get water through gravity. River Malewa, dependent upon lake Naivasha, started becoming drier. Therefore, many complaints started coming to WRUAs and writing about what they have done to the river up there by downstream WRUAs. Right now, people have planted no water for irrigation, and the plants have started drying up. If we do not have rain, therefore hunger is looming. Roadside used to have flowing water throughout the year. Even using the ones from lake Turkana would appreciate the water and ask if they would drink it.

Quantity – bad

Early warnings

Winds are flowing from down to up, particularly yesternight. It was heavy until the tree fell.

Coping mechanism

Rationing of water- particularly schools, inspection are given priority in the day then at night other community users.

Stopping irrigation completely- majorly is domestic water.

Lack of food/hunger- not so much if someone has no food; they are lazy since it does not dry so much.

Quantity: low

Quality: it is becoming better since enforcing the law was enacted.

[Interviews with the WRUA members]

The youth groups who had come together were grazing on the mountain, stepping in the water, making it dirty, but now they were removed; therefore, the water quality has improved.

Conflict: yes

That is the hardest for WRUAs, particularly during rationing. The people who bring conflicts are the illegal abstractors who do not pay permits.

When they sell potatoes, they bring back pipes and connect illegally. We seek help from WARMA, then bring in reinforcement and dismantle all the connected illegal pipes.

Ecosystem biodiversity

They do affect within 2 years we have experienced a lot. i.e Frogs and fishes in water lack oxygen due to reduced water. People collect fish with baskets, they are not dead yet but due to lack of oxygen, they become weak.

Wild animals do not disturb them since the fences were put around the abadares apart from the monkeys, in 1963 that when elephants used disturb, and the first elephant was killed by the KWS.

Poverty: There is no shortage of food in Nyandarua. The poverty that is here is the lack of money but not food. We have a lot of food but what we lack is the market. People here are willing to help the people starving if only a lorry can be brought to collect the food. I remember Muhammed, director of WFP asked if we feed food to animals, why don't we help. Each WRUA contributed food, and 4 trucks were loaded.

Drought is a blessing in this area since it does not dry to the point of lacking food. The food prices are high, they can be able to sell. When it is dry, the people here have money.

Floods. No. The water gauges are very low; therefore, floods are not experienced.

What do flower farmers do?

Harvest water in dams from greenhouse rooms.

The community is also trying to do water harvesting through water pan.

Fish farming.

5. WRUA 6.

The wrua is divided into three Upper, middle and lower zone

WRUA- members group

Drought: it is there but not severe since we are in the upper catchment

2022- a lot of drought experience until the end of April. We experienced many droughts even in the upper catchment

Signs

Increased food prices such as cabbages, potatoes etc. the families here are used to potatoes, but it is brought from far in the hills. Therefore, it will be accessed but very expensive.

Water shortage increased water prices to access due to transport

Drought: 2022 felt drought. Many people can attest that, this year was dry.

River kianjogu water was reduced, and Streams dried up except 2.

Warning system

Delay of rain shows drought.

Reduced intake showed Shortage of money which was a threat to schools (low school enrollment). Here food is usually in plenty compared to money. Therefore, you will find school enrollment is reduced due to the money for school fees used to purchase food.

Cash flow is low due to reduced rainfall.

Trees drying up- particularly the exotic ones e.g pine, Cyprus- fully grown trees. The indigenous are resistant to drought.

Signs

The wind was in plenty and blowing in one direction. Particularly dry winds. Wind blowing in one direction- dry wind carrying sand.

Coping mechanism

The people here are farmers; therefore nothing to do when rains fail. Although you will find school children are taken out of the schools to burn charcoal to survive.

Motorbike business in carrying water. They go far to look for water

WRUA Responsibility.

[Interviews with the WRUA members]

Conservation due to reduced rainfall. The conservation started due to climate change and reduced rainfall. We looked at the ways how to restore our farms.

Tree planting.

River restoration

On-farm tree planting, particularly trees that take long in the farm, Long term tree planting to help reduce the effect of strong winds

Training on terraces

Giving seedlings, trees, pasture/fodder

WRUA- look for donors ie WWF and Imarisha Naivasha. We tell them we do conservation, and they bring money, and we do the work such as tree planting. GIZ was also part of the donors.

We have also had the carbon credit project, payment for the environmental services. It ended 3 years ago. It deals more on soil conservation. For now we are involved with the carbon credit project in the conservation project

Water Quantity- reduced but does not dry in river.

Water does not get to many places and even rationing does not get to many people. Most people fetch water from Kianjogu river

Quality: does change but they don't have instruments to test water pollution but they can tell that the water quality is bad due to usage and animals stepping in water,

Conflict: no conflict experienced.

They have many alternatives. The people in upper zone have boreholes and have been used during water shortage. Water harvesting, boreholes help in the order of the day. Others go to Kianjogu and others to Malewa river.

We are used to the problem are therefore we have boreholes and people learn to get water for usage. Some have tanks and other means of storing water.

Wild animal invasion- human-animal conflict is not seen here. The only thing we see is domestic animals breaking into farms.

Poverty levels: yes. It increases due to high food prices and Shortage of food, water and pasture leading to buying of everything. Such as food like onions, cabbages etc the things we are not used to buying now we have to buy. Even water is bought. Therefore, money gets depleted very fast and poverty looms.

[Interviews with the WRUA members]

Reduced milk production which is the major source of income. Therefore, reduced money. People here depend on animal farming as well as horticultural farming.

Policies

We do not know if law exists. We are clarified as fuel sufficient areas no subsidies therefore no help rendered by government. We are classified as food secured areas. This area is known to have food.

Going forward recommendation.

Areas to be reclassified as hardship areas particularly some area are very dry and food insecurity.

Government should be involved in soil conservation, water restoration particularly farming.

County government stop fighting WRUA and project brought by donors.

The government doesn't bother the problem attacking the community, they need to establish feeding programs.

The government should recognise WRUA since they do a lot in the community

The complainants should be taken seriously and action followed

WRUA should be empowered to be able to function well.

The government should dig boreholes to continue farming during drought periods e.g, kitchen gardens.

6. WRUA 5

Roles: on-farm tree planting, Land rehabilitation, Training on tree nurseries sponsored by WWF, Registration and visiting the farms, then the mapping is done and seedlings distributed.

Drought:1984 severe drought

From 2006-rainfall delay experienced e.g. right now we are in the middle of May, and planted crop have not come out well. Shortage of water and no irrigation water

The planting is usually done in March but now Its May and others have not planted

Signs

Shortage of rain

Streams/river dries up completely

No irrigation is done under borehole water but no one does.

Effects

Lack of pasture/fodder for grazing-natural grass

Death of livestock (cows and sheep)

Prices of agricultural produce- vegetables e.g. cabbage

Early –rely on 2 types of wired

Wind from Naivasha(south to north) shows rain. But the wind from north to south shows-
drought no rain

The appearance of ants, and sparrows show rain is near.

Shedding of trees- a sign of drought

Coping mechanism

Life is the most challenging due to the water shortage and only 1 river for one i.e and Nyairoko
River.

Recently water brought piped water through the county government.

The government concluded water pan construction. Water harvesting to those who can afford
it but dry up at some point, and some water pans also dry up.

Chief and village elders map the affected areas, offering aid but not enough.

Quality: stagnant water is not of good quality and smells at some points, so it is not suitable
for human and animal consumption.

Conflicts: yes

Flower farmers draw water from the river Malewa. The community goes and destroys their
piped water due to shortages. The WRUA solve the conflict by getting letters from WARMA
asking flower farmers not to pump water during the day but at night.

Biodiversity

Ants arrival- indicate drought

2006 we used to have “Njururi”, toads i.e reduced a lot due to chemicals and fertilisers. Used in jams.

Poverty: yes, Due to the deaths of animals and crop failure. I lost four cows.

Livelihoods

Work is available when it rains, but as soon as drought crops, there is reduced labour and, therefore, no wages.

Charcoal burning

Tree cutting- no indigenous trees

Planting of blue gums in plenty

Blue gums are taken as a cash crop

Challenges

Water harvesting requires capital to buy tanks or do the water pan, and many people in the community do not afford

Water buying which is experienced due to long distance- high transport cost. The motorbikes are used to transport water from far distances.

Policies

Just a little but no reinforcement meteorological report sent, but the information given is not reliable at all, i.e. this year, no report was provided to them from the county. The MET usually send information before the rains start so that we write them on the boards for farmers.

Recommendation

Government should bring water and dig dams/boreholes because it is expensive for the community or individual members to drill a borehole.

The silting of old dams and rehabilitation should be done.

The Chiefs should be given the power to handle issues properly in the community.

7. WRUA 11

It started with many people, about 400. Most of the members are abstractors.

Every project with its members.

According to the Governance of the WRUA, registering as a member is a must because water must be managed during the dry season, and rules and regulations need to govern the WRUA, particularly for abstractors. You will not get water for the abstractors if you are not a member. But other households and domestic uses its voluntary registration.

Irrigation is done if water is enough in the river.

We draft a rationing timetable into 3 zones; ABC. We have 26 abstraction points. 26 water projects. The zones are into 3.

The zones are managed according to the number of projects in each zone. A zone must have water daily.

Levy is charged for abstractors, and scouts are hired to control water distribution. The levy costs 100 per month during the dry season.

Sensitisation meetings; creation awareness- we bring back the information that we have learned back to the members and train them i.e environment, conservation, Sustainable agriculture

Donors are not funding at the moment—the WWF funds sensitisation meetings.

Drought:

1984-yellow maize was distributed to the community—Lack of food, Crop failure, Livestock death, and High food prices.

2004:

2017: water shortage-no deaths

2009: no rain, Food shortage, drying of streams

2021-2022: Drought for a prolonged period, Water shortage-no rain. Delayed rains. The short rains started in the seventh month. Diseases came, such as lethal maize necrosis. The short rains were not enough. Delayed raining- with low levels

The short rain came in July and Maize lethal necrosis affected maize; therefore, crop failure

EWS

[Interviews with the WRUA members]

Wind blowing directions from north to south indicates short of rains.

Butterflies show drought sign

Management information is not reliable. We have a board by WWF displayed in places where people see and therefore not reliable. The information is unreliable because they said the rain would go on for the whole month at some point, but to our surprise, it only rained for three days and stopped.

The information is not equally distributed (spatial distribution)

Locust 2019- caused much havoc. The minister told as the locusts are old they will die, but they caused much havoc in the area

Coping mechanism

Water rationing

No relief aid- the area is taken as an area which can sustain itself.

Greenbelt offered containers for water harvesting and arrow roots given to a few people to plant, taken as a resistant crop to drought.

Water Quantity: Reduced

Water Quality: no change in quality because we are near the foot of arbadare ranges where water comes from.

Conflict: yes

That is why WRUA can control and manage conflict

Therefore water for irrigation is introduced and now the conflict is eliminated. This has reduced conflicts in the area

Biodiversity

New pests such as locust

We are coming back to normal due to WRUA management.

Wildfires are the problem in these areas- they come from the arbadare ranges where illegal charcoal burning and honey gathering occurs.

Livelihood: depends on farming through irrigation. Farmers are investing in irrigation.

[Interviews with the WRUA members]

The farmers feed crops to livestock to help in milk production i.e. carrots and cabbages, instead of selling them.

Poverty: not yet

Challenges

Water rationing is a challenge in distributing water to 600 members. The officials are very occupied during the day.

Low levy to manage or higher more people

Dam construction by the county reduced water levels

Preventing conflicts takes much of their time

Complains became too much

Policies

Not favourable at all.

The water act 2016 says that for irrigation to be done, you need to have a reservoir that lasts for 3 months, which is not realistic for peasant farmers to afford.

Being in the boundary of the Ewaso Nyiro basin, the lake Naivasha charges a water use charge while the neighbour does not. Therefore the community does not understand why the differences are just neighbours.

Levy has been increased from 50 cents to 5 ksh per cubic meter.

People think that the official is eating money (corruption). At the same time, the individual does their piping from the river to their farms. Therefore, why do they have to pay? They want us to buy the meter and they collect the money.

Recommendation

Propose a mega dam in the hills to harvest flood waters and then use it during that dry season to avoid rationing so everyone can access the water. The dam was shifted to lake Naivasha-low levels.

Water harvested from Nyandarua is supplied to other counties, such as Nakuru and Baringo, while we lack water.

The proposed site will only help the Nakuru people. Therefore where will we get money, the Nyandarua people, Kipipiri etc.

[Interviews with the WRUA members]

OLWASO- dams water from up and taken to Olkalao.

The water table is high; therefore, the government's borehole can help the community since the mega dam will take longer to construct. Farmers' response to tree planting is low; they require a woodlot, and the farm is small.

There should be planting of trees on the hill and forest policies implemented

There should be monitoring of planted trees

The policies are not implemented; they should come from the book to the table.

Floods. NO

Tree planting: WWF has a tree planting project but needs it done as a woodlot. The survey and public participation concluded that the farms here are small enough to accommodate woodlots.

KFS policies, such as farming within the forest, do not work again because of the regulations implemented.

Lack of monitoring when trees are planted is also a challenge.

8. WRUA 8

The WRUA registration is voluntary with ksh 1000 with a renewal fee of 300 per year.

Groups: not yet. Apart from the Water abstractor who pay a KSH. 5000 registration and 3000 renewals per year.

Irrigation: not done here, but only me (secretary) who is doing irrigation because I am registered and permitted by WARMA.

Roles/mandate

We Solve conflicts between the water users person to person, animal to people.

We are trying to seek funds from donors to help in the project through proposal writing through the umbrella lake Naivasha basin WRUA.

We write proposals through LANAWRUA- umbrella

Reforestation program in Lake Naivasha basin through WWF. 300000 seedlings are planted now; they have 40000 seedlings (map farms).

[Interviews with the WRUA members]

Gold standard projects-carbon credits are given after 3 years. Guiding farmers to plant trees, all farmers are included whether they are members or not.

Map farms and provide seedlings to any person willing or in need.

The government wanted to de-silt the dams while the embankment was weak, but the WRUA refused since it would have caused much damage. They had to source more money until the dam embankment was done before de-silting was done.

Close coordination between WRUAs, the county and the national government.

Hydrological assessment must be done to avoid damage or loose water through the rift valley crevices if disturbed. We need to involve all the stakeholders carefully when dealing with the dam to avoid damages and loss of water.

Conflict: yes, wild animals

Farmers graze goats but cannot feed them on their farms; therefore, they bring them to the banks of the dam areas where trees have been planted, destroying the trees

Nyakiambi girl provided people to plant 3000 seedlings, but they are not there at the moment due to political interference. They allow people to graze

Charges were being given to anyone trespassing the area. Although politicians interfere during the election year, they allow farmers to graze through bull dozing to garner votes. Paddocking was done.

Blue gum is a problem because they use much water; therefore, the farmers were talked to and were advised to cut down, but this is a toll order.

Drought: food aid

1984: yellow maize- Shortage of water, Crop failures, Livestock death; Wa Kiongo dam was the only standing dam for use. Many people would have come from far to fetch water, feed animals etc.

1997: not very- Shortage of food, Increased food prices, Water level reduced, Malnourished livestock

2017: not severe- high food prices, The government reduced flour prices

2022: high food prices, Reduced water levels, Crop failure, lack of fodder, Shortage of rains, No piped water, Wells/springs have dried up. No jobs. This year is terrible; nothing is happening. I have a permit to do irrigation, but I have no capital to do irrigation. Animals lack fodder, and buying from other places has become very expensive. Boreholes have dried, and some people have to buy water 20litre cans for 20 shillings.

[Interviews with the WRUA members]

EWS sign

Wind blowing at high velocity from north to the south indicates low rains

Delayed wind -come in January

Butterflies come in November

Since October 2021, no rains until now no rains. Delay in rains prolonged drought.

Coping mechanism

Selling water

Charcoal burning- is illegal. It's not allowed, but people do it.

Tree selling- timber-illegal

Water Quantity- low

Water Quality: dirty due to high abstraction or usage by humans and animals

Biodiversity: butterflies and pests increased, which were not there before.

WWF provides the boards. The Met gives information, but the farmers do not read it from the board. They are given advice but not very consistent but not very bad. The farmers are told if it is short or long rains and what to do or plant. Mostly here, people do horticultural crops (3 months crops).

Using resistant seed/crops

Challenges

Conflict management- people upstream use sandbags to block water; therefore, downstream people may lack water.

a farmer with the dams complained that she had blocked water at the end of the day, and the community burned her farm. The problem was low levels from the source. She refused to allow the WRUA officials to address the issue, and the community set fire to the farm.

The people downstream have many problems.

We do a lot of settlement science through WWF. Test water etc., we have the equipment to do that.

Policies

[Interviews with the WRUA members]

Water act 2016- is not in use; it needs to be implemented

Reinforcement/empowerment of WRUAs to handle specific issues on the ground

Proper coordination from national levels to WRUAs

Improve policy on usage of a public utility such as the dams

Involves administration to protect WRUAs

Increase findings to improve the environment

Capacity building of farmers is needed on the importance of trees and conservation of the environment.

9. WRUA 10

2011: Registration

Drought: some places in Gilgil are much drier. Our area is very dry compared to the neighbouring WRUA.

2022: butterflies are in plenty at the moment, which shows drought presence, the Presence of pests, and a kind of caterpillar(greyish). The old age knowledge seems to be correct—the death of livestock of the pastoralists.

2018/2017: crop failure- increased food prices, death of livestock.

2014: crop failure

Livestock death drying of rivers- too much irrigation is being done, which has reduced water levels in the rivers.

Roles

On-farm tree planting and conflict resolution.

Water allocation due to the high demand for irrigation

Conflict: yes, we are lacking; the rain just came from nowhere. Otherwise, things would have been bad in terms of conflicts.

Because of the Shortage of water and everyone needs water to use.

[Interviews with the WRUA members]

Flower farmers feel they have the right to use the water and do not care about the other users.

EWS: Butterflies, pests, Dying trees

Met information is fake; they are not reliable.

Water Quality: changed. We do many river nutritional assessments and note acidity in the water.

Ecosystem change:

Some insects in the water indicate fresh water. The insects found in freshwater are no more due to the reduced quality of water (little Gilgil and river Gilgil).

Livelihood.: mainly in the area, people are farmers (animals and farming); The animals are dead, and those involved in irrigation have no water. Therefore the people downstream have resorted to road construction jobs. Construction jobs are the main alternative in the area.

Charcoal burning is not there since we have no trees

Poverty: yes

Farmers invest in irrigation through loans, but through Shortage of water, they end up with crop failures and total loss and cannot afford to service the loan.

Challenges

Water rationing, Wild animals invasion looking for food and water, i.e. zebras

Policies

They do not help a lot. However, the government is trying but implement it at the wrong time.

Recommendation.

Harvesting of runoff

Water act sensitisation: the people believe water is there for their use. They need to be informed on proper usage to reduce wastage.

Water pan construction- this should be done timely before the rains. The ones done were done after the rains.

Promotion of the cut one plant two rule was there during the president Moi Era. We need to plant five. People are not even planting trees, and others have encroached on riparian land for farming purposes.

[Interviews with the WRUA members]

Program to teach farmers about short-term crops and drought-resistant crops such as Katumani maize and pigeon peas.

Agricultural extension officers should do quite a lot of sensitisation. (I am not sure what they do, yet the county has employed many of them.)

Donors. Only WWF

Floods. No. The topography is steep. Therefore, they are not affected.

10. WRUA 7

Drought: yes

The climate in the area has changed so much. The rains have reduced, and too much sunshine. Even this year, it is scorched. We usually have much grass, but now the ground is bare.

Years

2002: it was severe. Water shortage and only one river could sustain them. X would draw water using his track, leaving it dry, and others would luck. People would travel for long distances in search of water.

The sheep farming group: All the sheep died, even goats and cows. The ones that survived were the ones that were transported to other areas in search of pasture and water.

Food prices were high

1984: many people waited for the rain the whole year; therefore, searching for food and water was the order of the day. The dams dried up, and the food was found in the Maela areas. The women suffered a lot, moving long distances in search of food. The government gave food aid.

Food prices were high but also very scarce people fought to buy the food, and the strongest would survive the ordeal.

1997: some women died as they had hiked a lorry to search for water due to an accident.

Signs of drought

It is not easy to know. We can be able to see clouds, but it disappears again. The winds that blow the opposite way to the eburu forest indicate rain. The elders here can attest that the drought alternate within 2-3 years.

Some insects (dragonflies) that fly from Naivasha indicate drought because they love breeding in colder areas. When the lake is

Coping strategies

Search for food elsewhere

Charcoal burning

Very little irrigation is done through the use of smaller water pans. It depends on the farmer's capacity for the pans. But the majority do not have the capacity; therefore, they depend on rain.

Water quality and quantity

The borehole water has many fluorides during the drier seasons. The dam waters also get dirty and smell, and even animals cannot consume.

Conflicts: Yes, due to water shortage and the long queues. Kanyiriri springs remain the only water source in the area when it is very dry. The WRUA solve the conflicts with the help of the administration.

Poverty: Yes. We depend so much on onion farming. The seed to produce onions is costly, about ksh 30000. When it is dry, the seedlings die in the nursery, which is a significant loss. Children and animals, therefore, lack food because of a lack of money.

Policies.

Water policy is essential. Both humans and animals use the water here; therefore, the regulations put in place help a lot. For example, the women would wash clothes inside the river, but through the sensitisation meeting, we can advise them to draw water and wash from the sides to avoid polluting the water for the downstream users. We have the upper, middle and lower catchments.

Recommendations

Sensitisation and teachings on climate change and how to solve or adapt to the problem, to improve the biodiversity and environment and encourage tourists attraction.

Construction of mega water pans to hold more water that can last through the drought.

Ruoff water harvesting should be the government's priority since much water is lost when it rains.

Tree nursery business to be encouraged among the youths. The seedlings can be sold in the community.

[Interviews with the WRUA members]

Farmers should be trained to avoid Eucalyptus but embrace indigenous trees. However, the farmers have come to understand the damages that are brought about by the eucalyptus trees. Some avoid and others plant and cut it when still young for construction purposes.

11. WRUA 9

There is a lot of destruction in the forest Aaah. We have actually seen it people cutting down trees. It is only good that now that the government has reiterated, that there is a lot of control of the forest. That is they are now guarded. So the destruction we believe will reduce. What we are doing is Like now we have a county committee, actually it was launched in January by Governor Kimemia, so for this committee mitigate climate change that is, tree planting, water harvesting all that. Because what we have just noted is that there is a lot of water, water runoff. The stormwater. I don't know whether, but floods are so much something that was not there before. Then whenever there is a runoff you can actually see water with red colour what does that mean? Sweeping all our topsoil

Facilitator: Yeah

And then end up in Lake Naivasha when we hear that Lake Naivasha is rising. Nothing else is because silting and I think desilting is very expensive

So it is good to take care of our environment upstream

So for us what we need to do is it is good to take care of our environment upstream

There some proposals we had done on tree planting on government institutions, there are also proposals on water harvesting. On tree planting we are supporting tree nurseries especially to youth so that we have seedlings planted by them

There are also other organizations like COMASA doing a lot of tree planting

I hope they are not bringing Eucalyptus trees I know COMASA, they are doing a lot of tree planting

Yaah

Let me actually not mention them because it's their business

I wanted to mention about these Eucalyptus. Okay they are good trees

Okay where I come from in my place of birth, Eucalyptus were planted at river banks and later cut down, I went there like last year, and stream is coming back after people agreed to cut down those Eucalyptus. In Kinangop situation is horrible, planting of Eucalyptus trees. It's a tree for business

Short term

[Interviews with the WRUA members]

Yes

So for COMASA let me just stop

Facilitator: No, it is alright. For COMASA I have interacted with them and they have good business strategy and have big following they have a good business.

Facilitator: Okay

Facilitator: The problem I have with them is that they do not tell people. They says their species is from South Africa its not as harmful as other species that one I can tell you for free they lie to people, it is wrong.

For us in committee we insisting planting of indegenous trees. For Eucalyptus we tell them no, Cyprus is okay, gravellia is okay

Facilitator: Yes

But we are insisting indeginous species. I think I have done a lot of talking

Facilitator: It is fine

Facilitator: How long have you been in this county

1 year

Facilitator: 1 year

Yes. Why,in this county working with county government or

Facilitator: Even living

Living?

Facilitator: Yes

[redacted identifying data]

Yes

So have you experienced drought in the county

Yes

[Interviews with the WRUA members]

Facilitator: Which year?

I can even tell you the sequence because there is the issue of pattern

Facilitator: That is actually what we are asking

Because there is issue of pattern

Facilitator: Yes

Because in 1980 I was young but I can remember very well. I think it was worst

It was worst, there was yellow maize. Even in this day people remember that, then in 1984 there was drought but not severe than 1980,

Yes

In 1988, its like its a pattern of 4 to 5 years, in 1993 there was drought

Its 4 years, 5 years.

Let mention them as you have said,

1980, 1984, 1988, 1993 which else?

2002 to 2003 around there

You see if 6 months goes without rain in Nyandarua that is drought

Facilitator: Mmmh

Although not that severe but you see a drought lasting 6 months with no rain on in higher zone in Nyandarua is drought, because what usually happen, like now there is drought because short rains of November were inadequate. Like it rained for like 1 or 2 months and continued until April.

Facilitator: So on this drought you have mentioned, you can tell us some of indicators of those droughts for example in 1980 you told us it was severe

Remember those days, okay, let me not talk much about 1980, I think in 1980 I was in class one

I remember there was a cooperative movement of lifting cows. Cows were completely weak. It was a big indicator

Facilitator: Were there livestock deaths?

[Interviews with the WRUA members]

So much

So we can say cows were weak and death of livestock what else

Severe crop failures

Facilitator: What about access to water, was it a challenge?

So much, it was extreme, because all wells had dried, water pans and rivers

Facilitator: What about in 1984

The same

Facilitator: Although first one was severe?

Yes, first one was very severe

Facilitator: What about food prices?

They were extremely high, especially the staple food. Unfortunately people rely on rain fed agriculture and especially staple food is maize. It is not only the sun that affect but a lot the frost. The frost burn crops especially when it is dry and when it is extremely cold you see a very good pasture and in the morning when there is frost it burns

Facilitator: So are there early drought warning mechanism

Aaah, I don't think

Facilitator: Even in the county

I am talking about the county?

Facilitator: You know the drought affects the entire county

For early drought warning maybe they were there but our people were not aware

Facilitator: What about now are they there, maybe meteorological information or any other sign?

There could be but we do not access

Facilitator: Okay, so at community level what are the coping mechanisms in the event of drought?

[Interviews with the WRUA members]

Aaaha, now, what I can say is that this is something that we are trying to tell our people. We are educate people to do thses drought resistant crops

Facilitator: Yes

There is a firm that I saw they are planting sun flower

Facilitator: Mmmh

People are guided to plant short term crops that can go for three months

Facilitator: Mmmmh

Yes

Also tree planting that is especially, the drought resistant trees,

Facilitator: Mmmh

High value fruit trees something like that

Facilitator: Mmmh

We call them something like that?

Facilitator: Mmmh, yes

Because you see one that one will mitigate the effects of climate, the drought

Facilitator: Okay

And wind breakers

Facilitator: Okay, what about on the vent of drought, after now the drought has come how are people supported to contnue moving on with their life? what does the county do?

Okay, I think the immediate is food aid

Facilitator: Food aid?

Food aid

Facilitator: Mmh

I think it is not sustaionable but what the county does

[Interviews with the WRUA members]

Facilitator: Its short term

But at least now what the government has done, the county government is doing is scoping of dams

Facilitator: Yes

Scoping of dams so that we can be able to harvest runoff,

Facilitator: Yes

store water, we can use to do farming. We are also educating our people on moving away from rain fed agriculture

Facilitator: Yes

That is something being done across the county

Facilitator: Mmmh

Maybe drier sub counties of Ndaragua

Facilitator: Mmmh, Okay, have you started doing irrigation?

[redacted identifyin information]

Yes

Facilitator: Can you say there has been changes in weather

Yes, that is evident

Facilitator: You had indicated earlier that this year there was drought?

Yes, that is the reality

Fcailitator: Its not a story, anaymore

Its not a story anymore it is the reality

Facilitator: You have said irrigation is happening in X, how would you comment on irrigation water has it been increasing or decreasing?

Eeeh, yes, you see

Eeeh, because you see like now when its dry everybody want at least to maximize

[Interviews with the WRUA members]

Facilitator: Yes

So resources is versatile and low of demand, demand is so high and resource is constant

Facilitator: That means there is alot of overdraft, where they draw water

Yes

Facilitator: That is lead to conflict

There are conflict, I remember there was a time I was working in X

Facilitator: Mmmh

There was a complain that people from Upstream are using, okay, there was a lot of damage

Facilitator: Mmmh, they block the river I know

Yes they block. Eventually the downstream it was dry

Facilitator: Has the quality of water changed?

Yes, that one is real

Facilitator: You had mentioned conflict, is it rampant or only few cases?

Place like in Nyandarua good, it is not that much

Facilitator: What about the ecosystem, has is changed much?

Somehow

Facilitator: What are some of the indicators you can say ecosystem has changed?

The top soil has been eroded, and so you see, that support agriculture has been washed away

Facilitator: Mmmh

Crop production will be affected because fertile soil has been eroded

Facilitator: What about other habitats, wild animals, have they been affected

Shortly they have been affected, like there is fencing of forest. Before fencing was done, you know people were usually moving up up up. You can actually see for yourself. You can tell people have moved up almost

[Interviews with the WRUA members]

Facilitator: To mountain top?

Yes,

Facilitator: Invaded?

Yes, invaded. but I think in those days, the government did not take action, and people are now right up at mountain. You see like now during the Nyayo time, there was alot of construction og gabion which is not taking place now and that is why our water is now red

Facilitator: Mmmh

Yes

Facilitator: Maybe its extension that is no longer there, to train people?

Yes, exactly although right now as a county we are starting extension, we are having these environment officers. That is the reason we are educating people on that

Facilitator: Mmmh, okay

You know before there was a crop of old extension officers.

Facilitator: Yeah

When they retired, there was a type of a lacuna

Facilitator: Yeah

After now the government

Facilitator: Maybe also the approach, initially it was supply driven but now is demand driven

Yes

Facilitator: Okay, can we say there has been change in livelihood because of drought?

Yes

Facilitator: Like which ones?

You see especially now with the community that rely on agriculture

Facilitator: Mmmh

[Interviews with the WRUA members]

Community depends on agriculture, there has been rampant crop failures because people depend on subsistence farming,

Facilitator: Mmmh

That means one, there no food supply

Facilitator: Mmmh

Therefore no surplus to sell

Facilitator: So what is the alternative way of living?

Start small businesses

Facilitator: Ooh they start small business

Yes

Facilitator: Mmmh

Whivh is also not so dependable. You know the problem is that they depend on farmers

Facilitator: Yes

Those farmers taht are doing irrigation

Facilitator: Mmmh

You know our community is commercial, they want to maximise on everything

They operate on law of demand and supply

Facilitator: Mmmh

So the supply is usually very low, the demand is high so what happens? The price will go high

Facilitator: Does the late of crime also increase because of drought

What?

Facilitator: Rate of crime? Generally?

Okay I think so. Somehow

[Interviews with the WRUA members]

Facilitator: Mmmh

One, in small towns people try to survive, we used to have a lot of chicken theft because they have nothing to do

Facilitator: Mmmh, what about cutting trees, burning charcoal such activities?

Yes, by the way they do, they do. Especially like now. They have to do that. We tell people if they have to do that, to cut trees, we tell them to plant.

Facilitator: Mmmh

We tell them when they cut one they plant two

Facilitator: Mmmh

There is a lot of tree cutting. Sometimes they just cut, without informing the administration

Facilitator: Mmmh

They say they planted on their own

Facilitator: Which challenges do you face when managing drought? For example you said they rely on food aid and that food aid is not sustainable? which other challenges?

It is not sustainable

Facilitator: Which other challenge?

It is also a costly exercise

Facilitator: Mmmh

Even to the government

Facilitator: How?

You know we have to do mapping,

Facilitator: Do you also think making a decision on who to give and who not to give food is it a challenging exercise?

Yes it is challenging

[Interviews with the WRUA members]

Facilitator: Mmmh

It is a big challenge, it is also a big challenge,

Facilitator: Mmmh

Eventually, anyway, people are funny, because you might find people who do not deserving are also there, after that they go and sell

Facilitator: Yeah

Yes

Facilitator: I was somewhere one time and the policy of giving of children and old people

Mmmh

Facilitator: Then the food was little, and decision had to come that old and children could not get food anymore

Mmmh

Facilitator: So that is a decision that somebody has to make and it is a tuff decision, whom do you prioritize? It is quite challenging, that is why I am asking you?

They have a plan, because you see a lot of things that you wish they are not happening. You know there is one person who want to get more, than everybody else, when giving one someone want three or even four

Facilitator: I wish we just reach a point as a country we don't discuss giving food. When lining up for food is demoralizing

By the way, one of the thing maybe I forgot that

Facilitator: Mmmh

You know pangs of drought, even in 1980, 1984 maybe only one or two of you were there

Facilitator: Yes

You see the technology has helped. If you go to every village at least there is a group that is not there. There was reports in Central Kenya that population is going down. Because when we get educated we go to Nairobi

[Interviews with the WRUA members]

Facilitator: Yes

I think in my opinion, it is not bad

Facilitator: Education has helped

Yes, and also technology has helped because if you mother calls and say there is no flour, you send even if it is Kenya Shillings 100 you send via Mpesa you can send money in rural areas. I had forgotten that

Facilitator: So those are the challenges especially at the office level like yours, deciding whom to give food aid and who not to give, can we say the food aid is adequate?

It is not

Facilitator: Its not adequate because you are deciding who to give and who not to give?

Yes

Facilitator: What about at the community level? Are there challenges specifically at community level?

Challenges to do with the?

Facilitator: On drought management?

I think the biggest challenge is tree cutting

Facilitator: Mmmh

Also people are not well informed, okay, we are there who understand climate change but some do not understand

Facilitator: Yes

Lack of knowledge on climate

Facilitator: How can you say the policy and regulatory structures have affected drought resilience?

What?

Facilitator: Regulatory are laws and structures

I think laws are there, we have good laws and implementation is the problem, implementation actually

[Interviews with the WRUA members]

Facilitator: So implementation is the problem

Yes,

Facilitator: What would you say as your advises in building resilience going forward?

Read the question again, you asking these questions

About drought resilient

The questions you are asking is for somebody who had done environment

Facilitator: I repeat the question, your advice to resilient to drought going forward, your advice as a policy person? What need to be done

Upscale irrigation. I said moving from rain fed

Facilitator: Yes, any other

Water harvesting

Facilitator: Yes

Like now, when it rain all water get drained, what God has given us we do not use.

I don't know, there is a policy can be made on water harvesting, even in Nairobi, you can imagine the roofs that we have and we complain about water. If we do not have policies we will keep on talking about water shortages.

Facilitator: Are there cases of floods in this county

Floods?

Facilitator: Yes,

Yes, but I don't think not that severe because of terrain that can happen in plateau

Facilitator: Anything you may want to add or we have not asked relevant on drought and drought resilient

No

Facilitators: We are so grateful

12. WRUA 12

Facilitator: And members belong to groups or?

There are others in groups, some are in other groups but we pick even schools

Facilitator: You include also schools?

Yes

Facilitator: [redacted identifying information]

No. They are separate as members of WRUAs we usually get information n involving them

Facilitator: So there are institutions such as schools?

Yes even hospitals

Facilitator: Ooh okay I have understood. Do these members pay a registration fee or monthly levy?

Yes, we were doing registration of KES 500, institution KES 1000 while we were starting, that os what our constitution stipulates

Ooh

Facilitator: What about monthly fee? do they pay?

That is the challenge, it is in the constitution but they do not pay it

Facilitator: How much is the amount?

Kenya shillings (KES) 50.00

Facilitator: KES 50.00 per month

Yes

Facilitator: And do members use water for irrigation

We do irrigation in small portion. You know our main work is water. So those who have water in their homes are groups. Our work is to conserve water

Facilitator: Ooh, So Water Resource Users Association (WRUAs) is to conserve water, what else do you do?

[Interviews with the WRUA members]

Yes to manage the Riperian is okay to increase water

Facilitator: What about on farm tree planting to farms?

Yes, we are also offered trees seedlings

Facilitator: Oooh. When was this WRUA registered?

It has been here for long, it was registered in 2010

Now we are focusing on drought

Facilitator: Okay. Would you say that you have experienced drought in this area?

A lot, it is the most affected area

Facilitator: Okay, what is the name of this sub County?

We are in X

Facilitator: Okay

We have two sub counties, X and X. We are at the boundary. This WRUA touches two counties, X and X. So part of it is in X and part of it in X

Facilitator: What is the name of this area?

X sublocation and X sub county

Facilitator: Okay, you have said you are most affected by drought

Yes

Facilitator: Which year would you say you were affected by drought?

There is occurrence of drought every one year

Facilitator: Like now when did you experience it last?

In 2021. Although now it has rained

Facilitator: So in 2021 you experienced it?

Yes

Facilitator: Which other year, even if it is earlier years

[Interviews with the WRUA members]

In 1984 there was severe drought

Facilitator: What signs indicated there was drought

Because of hunger, we were going far to get food aid. We were travelling to get food from far

Facilitator: Were you going to be given or buy?

We were going to buy, we were getting potatoes in Nyandarua. Nyandarua was not included in food relief program. People who look at economy, they go to the market to check but before they could go to ground. Today they go to market and when they see food in market they say the area is not hunger stricken whereas those commodities come from other areas

Facilitator: In 1984, what were impact of drought?

Livestock death, but reach were the ones with cows

Facilitator: Oooh

Facilitator: How was the situation in 2021?

It was not severe. It was only 2 months that were severe. It was only in 2 months

Facilitator: Okay

End of 2021 rain came late and came in February 2022

Facilitator: What are the indicators that there will be drought, the drought early warning system?

If no rains in March, there is a sign of drought and if no drought a sign of hunger because rain will be little. Like now, the crops we have planted like beans and potatoes could be ready by now. To recover from that loss take time. So there will be little harvest.

Facilitator: Which signs do you see and predict there will be drought/ Early Warning system maybe see some insects or wind, or any other thing that indicate there could be drought

Sometimes we see butterflies when there will be drought

Facilitator: When there is drought what do people do to cope

That is where irrigation comes in. That is why the WRUAS were formed

People use water from river to irrigate affecting Lake Naivasha

Facilitator: They do irrigation,

Yes

Facilitator: So it brings conflict?

Yes

Facilitator: They do irrigation?

Yes

Facilitator: So it brings conflict?

Yes

Facilitator: And are the conflicts a lot?

Not a lot

Facilitator: Mmh

It takes place in only some areas

Facilitator: Ooh

The people pumping water must be licensed so that incase of water shortage it can be controlled

Facilitator: Is there human wildlife conflict?

In this area no but in some areas it is there because we have big farms with Zebras and buffalos

Facilitator: Do people start other coping strategies when there is drought?

People use savings and other sell trees, burn charcoals

Facilitator: Does the quality of water changes during drought

Yes

Facilitator: During drought?

When there is drought, quality of water is good but during rainy season quality changes and colour changes due to soil erosion and it is brown in color

Facilitator: So it changes in rainy season not drought

[Interviews with the WRUA members]

Yes because there is a lot of dirt getting in it

Facilitator: Are there pests or insects that come during drought, for example you said during drought there are butterflies

on the land?

Facilitator: On land or in water

No

Facilitator: Okay, when there is drought do people have coping strategies

People rely in their pockets, even if it's selling their trees, burning charcoals especially in Nyandarua with big lands so they are even ones contributing to drought, people in upstream

So that does not happen in your area, our land size is small about 1 acre, because we planted trees on our own, so one cut only when you are really in need

Ooh

Facilitator: Do you experience challenges in this WRUA to solve conflict

Not a lot because our river is big and does not completely dry up, water just decreases in the river

Facilitator: Ooh, what name of your river?

X River

Facilitator: The water flows up to Naivasha

Yes, it is from far in the mountain and takes water to Naivasha

Facilitator: The rules that have been put in place on water and drought resilience what are your views on how they help people on drought resilience

Let's say they have helped because like planting trees is a mitigation mechanism, we are also told to diversify like rear poultry which is also a source of income besides crop production and can give you income within a short time and give you food

Facilitator: Oooh

So that one does not only rely on maize which you can plant and you will not harvest

Facilitator: Who trains you on this?

[Interviews with the WRUA members]

WWF because we are agent, WRUA is a group in the government. We are also trained by Ministry of Water

Facilitator: What are your recommendations on coping mechanism in the event of drought?

What can help?

Facilitator: Yes

If people can be allowed irrigation water, because here land is fertile what is lacking is only water.

Facilitator: So you do not have piped water you rely on water from river

Here we have just little water within a small area here that cannot be used for irrigation because it is not legalized for farming

Facilitator: Ooh,

Even if we are using it

Facilitator: You are forcing it?

Yes,

Facilitator: I understand

Because water is not ours

Facilitator: Oooh

We don't have a project

Facilitator: So you applied for water?

It is local arrangement and agreement. When X passed their water here, they had to give us

Facilitator: Ooh

Before privatization of water, we were relying on the government

Facilitator: Mmmh

So when they came, we were handed over to them

Facilitator: Yes

[Interviews with the WRUA members]

Since we did not have any other source of water

Facilitator: Mmmh

They could not get that water through other way to get that water, we have had conflicts with them, we have even gone to court

Facilitator: Waah,

While they were denying us water

Facilitator: Now the government

No. The company that is given tender by government

Facilitator: Mmmh

But we are trying to establish a farming group within this area. Like in this area people to contribute towards a project is not easy

Facilitator: Is there any other recommendation, you have said irrigation water, which other one,

We would also like to get market for the produce

Facilitator: Any other?

Projects like growing Avocadoes, rearing poultry, dairy goats, and zeroi grazing because land are small

Facilitator: Land are small

Yes and they are reducing because people are increasingly selling land

Facilitator: Do you experience floods?

Yes there is overflowing of the river when there is heavy rain, although the river is deep, sometimes up the bridge that you cannot cross

So it is not flood that get up to houses or carry people

Facilitator: Ooh. We are through with our questions. Thank you so much for your time we are grateful

THE END