



Workshop report

Presentation of the results of scientific modelling of management options and revision of action plans in Kigaruni (Wenje) WRUA, Hola Sub County, Tana River County

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Summary

This was a two and a half day field mission to Tana River to present the results of scientific modelling of management options previously identified by the stakeholders in the county and to revise the action plans previously developed. The management option modeled was grazing management which had been identified by participants. Resting of the grazing pastures for one month during the dry season was also modelled. The goal of the model was to determine which management option could balance between forage production and water flows according to the participants' preferences.

Acronyms

GMC – Grazing Management Committees

ILRI – The International Livestock Research Institute

IUCN – The International union for Conservation of Nature and Natural Resources

TRCG – Tana River County Government

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Project Background

The productivity of African landscapes is very low (one tenth or less of their potential). Water, land and ecosystem quality is degrading over substantial areas. Yet many areas face serious pressures from increasing rural and urban populations, compounded by the threat of global climate change. Rangeland resources are numerous but the ecosystems are fragile requiring appropriate management strategies to ensure sustainable productivity. Changes in these landscapes will be brought about through individual decisions. But for change to be sustainable it must be systemic, facilitated and directed by institutions that support communities of women and men (ILRI Proposal 2014).

This project addresses these challenges by assisting policymakers, planners and pastoralists use insights on the role of ecosystem services to support the livelihoods of pastoralists and to identify grazing and rangeland management options that will strengthen livelihood support over the long-term. An analysis of available practices, of their potential impacts on water, biodiversity and forage, and of the potential tradeoffs among them could help to identify best bet practices. Incorporating such analyses into local and watershed-level decision-making could contribute to minimizing impacts on the environment and to enhancing of ecosystem services from rangelands. Furthermore, this screening will contribute substantially to the knowledge of pastoral livelihoods and ecosystems in Africa, and the diverse interactions between human uses and the natural environment.

IUCN's role in the project is to lead the community and stakeholder engagement processes of the project; provide introductions and liaison between ILRI scientists and local stakeholders; facilitate local stakeholders to develop plans for the maintenance/improvement of ecosystem services; lead the development of planning and stakeholder engagement tools and contribute to the writing of a scientific report, to be led by ILRI, on the overall project.

This mission was to present results of a scientific modelling of ecosystem services management options previously identified by stakeholders in Tana River County. During the workshop, participants also reviewed and refined the community action plans for two ecosystem management options previously identified which were grazing management and opening up of watering corridors.

Recap of the previous workshop

A recap of a workshop held in 2015 was done with main highlights of the ecosystem services identified by participants and the management options identified. The main ecosystem services identified in the 2015 workshop were

- Water supply which is a provisioning ecosystem service.
- Pasture which is a provisioning ecosystem service.
- Food which is a provisioning ecosystem service.
- Forests which is a provisioning, supporting and regulating ecosystem service.
- Wildlife and wildlife habitat which provides provisioning and supporting ecosystem services
- Cultural ecosystem service.

Table 1 Ecosystem management options identified at previous workshop

Ecosystem service	Management Options
Water supply (provisioning service), water purification (regulating service), water cycling (supporting service)	<ul style="list-style-type: none"> • Establishment of water storage facilities for instance water Pans, dams, rain water harvesting. • Construction of animal troughs • Opening up of Malka corridors • Water catchment rehabilitation/ and protection • Water purification. • Fish farming. • Flood receding farming. • Tree planting. • Strengthening of water utilities and water committees.
Pasture (provisioning service)	<ul style="list-style-type: none"> • Adherence of grazing patterns / Rotational grazing. • Reservation of pasture areas (milking herds) • Pasture management committees • Feed storage. • Fodder farming. • Destocking. • Value addition of prosopis to produce fodder. Eg charcoal production. • Clear policies on land use and grazing management. • Reseeding. • Enclosures. • Empowerment / diversification.
Food (provisioning service)	<ul style="list-style-type: none"> • Provision of farming equipment • Provision of fertilizer and pest control subsidies. • Construction of storage facilities. • Alternative livelihoods. • Re-afforestation. • Water harvesting. • Tree planting. • Integrated farm management practices. • Increased food production. • Population control measures. • Creating awareness on natural foods. • Irrigation • Creation of more market centers. • Capacity building. • Transparency and accountability.

<p>Forests (provisioning service)</p>	<ul style="list-style-type: none"> • Gusa bylaws • Community forest organizations • Restriction on charcoal burning • Traditional rotational management systems • Re-afforestation • Empowerment of WRUAs and CFAs • Awareness creation. • Law enforcement and surveillance. • Advocacy for change of land tenure. • Income generating activities. • Irrigation.
<p>Wildlife and wildlife habitats (supporting service) and tourism (Cultural service)</p>	<ul style="list-style-type: none"> • Knowledge sharing on the importance of wildlife • Fencing • Establishment of community based conservancies • Law enforcement and surveillance. • Community empowerment and education. • Animal control to avoid conflict. • Alternative wildlife farming. • Habitat rehabilitation. • Income generating activities. • Opening of wildlife corridors. • Fire management. • Manageable families.
<p>Cultural services</p>	<ul style="list-style-type: none"> • Strengthen traditional economic activities. • Equality on resource sharing and representation. • Establishment of cultural centers. • Introduction of cultural education in the school curriculum • Protection of cultural sites by WRUAs and CFAs • Exposure visits. • Publicity.

Introduction of scenario modelling and presentation of results from the modelling

Introduction

A presentation was made of the process of scenario modelling. It was explained that model development is a long process and there is need to prioritize the variables to include in the model. Priority should be given to larger effect variables as compared to smaller ones. A model is also expected to act as a guide to help in decision making. There is no perfect model but with a model, the community and decision makers can be able to simulate different cause effect situations. A useful draft model had been developed from the results of the previous workshop and this model can be used to assess how “good” or “bad” different management ideas are, relative to one another. The model could also be used to test the best ideas that suit the stakeholder’s goals.

From the management options previously identified by stakeholders, implementation of grazing rules similar to traditional wet season and dry season grazing areas was modelled. The other management options identified by participants were not easily modeled, did not agree among groups, or would not have substantial effects on forage or water (for example, clay pans and sand dams are too small to affect water flows). In developing the model, the scientists also added another management option which was resting of the dry pastures for one month per year. Table 2 below provides a summary of the scenarios that were modelled. These scenarios were modelled for forage production, forage consumption and ground water recharge.

Table 2 Scenarios Modelled

Scenario	All pastures	Dry season pastures	Wet season pastures
Baseline situation			
Wet / dry season grazing rules			
Introduction of 1 month resting period in the dry season			
Introduction of 1 month resting period in the wet season			

The main goal of this modelling exercise was to determine the management options that can balance among forage production and water flows according to the stakeholder preferences.

Results from the model

Forage production

Implementation of wet and dry season grazing rules

With the implementation of the wet and dry season grazing rules, there is forage decrease for the dry season pastures. There is however an increase in the wet season pastures under the wet season and dry season grazing rules.

Table 3 Forage Production, kg/ha/year

Scenario	All pastures	Dry season pastures	Wet season pastures
Baseline situation	427	568	369
Wet / dry season grazing rules	-38	-244	11
Introduction of 1 month resting period in the dry season	0	28	-2
Introduction of 1 month resting period in the wet season	-4	3	0

Introduction of a one month dry resting period

The introduction of a one month dry rest for the dry season pastures results in an increase in pasture production. There is however a slight reduction in pasture production for the wet season pasture with this one month dry rest.

Introduction of a one month wet resting period

Dry pasture production increases with the introduction of a one month rest period. The wet season pasture on the other hand does not change with this adjustment.

Forage consumption

Implementation of the wet and dry season grazing rules

Forage consumption decreases with the implementation of the wet and dry season grazing rules in the dry season pastures. The consumption however slightly increases in the wet season pastures with the implementation of the wet and dry season grazing rules.

Table 4 Forage Consumption, kg/ha/year

Scenario	All pastures	Dry season pastures	Wet season pastures
Baseline situation	54	249	28
Wet / dry season grazing rules	-38	-244	11
Introduction of 1 month resting period in the dry season	0	0	0
Introduction of 1 month resting period in the wet season	-3	-24	2

Introduction of a one month dry resting period

The introduction of a one month dry resting period has no impact on both the wet and dry season pastures.

Introduction of a one month wet resting period

A one month wet resting period results in an increase in the dry season pastures. On the other hand, there is a minimal increase in forage consumption for the wet season pastures with the introduction of a one month wet resting period.

Ground water recharge and soil water

The level of ground water recharge and soil water was also analysed by the model for both the dry season pastures and the wet season pastures under the dry and wet season grazing rules, a one month resting period during the dry season and the wet season. The results of this are presented in table 3 below.

Table 5 Ground water recharge and soil water

Groundwater recharge, mm / year				Soil water, mm			
Scenario	All pasture	Dry season pasture	Wet season pasture	Scenario	All pasture	Dry season pasture	Wet season pasture
Baseline	44	55	54	Baseline	60	70	74
Wet/Dry Rules	-2	-14	0	Wet/Dry Rules	-1	-5	0
1 month dry rest	0	0	-1	1 month dry rest	0	0	0
1 month wet rest	-1	-9	-1	1 month wet rest	-1	-3	0

Ground water recharge reduced in the dry season pastures under the wet and dry season grazing rules. There was however no change in the wet season pastures. Soil water on the other hand also reduced marginally in the dry season pastures with the wet and dry season grazing rules. In the wet season pastures, there was no change in the amount of soil water.

An introduction of a one month resting period during the dry season had no impact for the ground water recharge in the dry season pastures and a very marginal decrease in the wet season pastures. There was equally no change in the amount of soil water under a one month resting period in the dry season for both the dry season and wet season pastures.

The introduction of a one month rest during the wet season resulted in a decrease in ground water recharge for the dry season pastures. There was however a slight decrease in ground water recharge for the wet season pastures. The amount of soil water on the other hand reduced slightly for the dry season pastures and there was no change for the wet season pastures.

Participants were in agreement with most of the results from the modelling work. They however sought clarification on how possible it was for the recharge of ground water to reduce with the introduction of a one month resting period during the wet season. According to the participants, resting both the wet

season and dry season pastures in the wet season for one month is expected to increase the amount of biomass and hence increase infiltration of water into the underground aquifers. It was however explained that with an increase in biomass due to the resting period, there would be increased demand for water by the biomass, there would also be increased evapotranspiration which would reduce the amount of water which eventually infiltrates into the underground aquifers.

The results of the model are attached as annex 1 of this report.

Scenario vetting

After presenting the results from the modeling work, participants discussed the relevance of the results and if the situations presented from the models were identical to what they have on the ground. Participants agreed that the model results and the actual scenario on the ground are almost similar. There are however some slight modifications that they suggested should be incorporated in revising the models especially the distances from the water points and distance moved by livestock in the different grazing seasons. Participants were also in agreement that the model aligns with the local knowledge of the community. Some of the reflections from the participant discussion of the model include:

- The model estimated that dry season grazing areas are located 0-2kms from swamps, rivers and forest wet lands. Participants however explained that 5 km is the minimum distance covered during the dry season and this could go up to 10kms. They explained that distance from the delta also determined the distance covered. For instance, those who are near the delta could move a distance of 3 kms. This however increases when one comes from further away from the delta. Distance covered also depends on the type of animals. Goats would normally go a shorter distance compared to the cattle. The average distance would be about 8km.
- It was also agreed that the first dry season begins on January 1st and ends on 3rd April compared to the model baseline which stated that the first dry season begins January 31st and ends March 31st. There was agreement on the beginning and the end of the second dry season as stated by the model baseline.
- Participants also agreed that, unlike the baseline model which stated that in the dry season 100% of the animals are in the dry season grazing area, 5% of the animals would normally remain in the settlement areas during this season. This 5% of animals would include the milking herd, in calf and weak animals would remain in the settlement areas.
- Participants also agreed that in the wet season 30% of animals would normally be in the dry season grazing area as stated in the model baseline. They however also included that about 10% which include the lactating animals, in calf, the young ones and the weak would remain in the wet season grazing areas and near the settlements.
- Participants disagreed with the model baseline, which stated that in the dry season 0% of animals are in the wet season grazing areas. Instead they informed us that about 30% would remain in the settlements and these include the weak and the lactating animals. They also agreed that up to about 70% of the animals would normally be more than 7 to 10kilometres away from the water.
- Tables 6 and 7 below give a summary of livestock proportion during the wet and dry seasons in Wenje WUA and Tana River County as agreed by the participants.

Table 6 Livestock proportion in Wenje WRUA during the wet and dry season grazing periods

Wenje WRUA	Group 1		Group 2	
	Dry season	Wet season	Dry season	Wet season
Dry season grazing areas	80%	20%	80%	20%
Wet season grazing areas	20%	80%	20%	80%

Table 7 Livestock proportion in Tana River County during the wet and dry season grazing periods

Tana River County	Group 1		Group 2	
	Dry season	Wet season	Dry season	Wet season
Dry season grazing areas	80%	20%	70%	30%
Wet season grazing areas	20%	80%	30%	70%

Economic valuation of the impacts of range management practices in Tana River County

This was a presentation of a study carried out to determine the economic implications of rangeland management practices in Tana River County. The goal of the study was to improve land management planning at local, landscape and watershed scales. The study was guided by one specific objective which was to value the economic contribution of impacts of rangeland management practices through economic analysis of pastoralists' preferences for grazing management practices; the economic values pastoralists attach (welfare impacts) to the effective rangeland management practices and the socio-economic factors influencing the willingness to pay for grazing management. The findings of this study are meant to inform the social and economic net benefits of rangelands practices that could lead to efficient allocation investments in conservation.

The results of the study were twofold: Pastoralists have a higher probability of selecting a grazing management practice that will ensure more water storage capacity for the community as well as the biomass yield that will be able to sustain their animals; and pastoralists do not prefer a grazing management option that would lead to over grazing like keeping livestock in one area for a long time until the entire pasture is used up. Such a management option is likely to affect the regrowth of biomass leading to overgrazing. The presentation on the economic valuation of the impacts of range management practices in Tana River County is attached as annex 2 of this report.

Influence of modeling on revision of the action plans and decision-making processes

Influence on revision of action plans

Once the scenarios were vetted, participants were tasked with revising the action plans for two management options which they agreed on. These included the grazing management which they prioritized as the most important management option for the community in Wenje WRUA and opening up of watering corridors commonly referred to as Malkas. During the previous workshop, participants had identified the top two important management options as grazing management and strengthening of water committees. However, during this workshop, the two important ones stated by the participants were grazing management and opening up and rehabilitation of the livestock watering corridors. They mentioned that establishment of water committees would fall under the opening up and rehabilitation of watering corridors.

Comparison between activities identified in the previous action plans and the current for the grazing management option

In comparing the key activities identified by the participants in the previous and current workshop, it was evident that the modeling work had influenced the participants approach to action planning to some extent. This can be demonstrated by the detailed activities identified by participants in the current action plan for grazing management as compared to the previous action plan as outlined in table 4 below.

Table 8 Comparison of key activities between past and present workshop

Previous key activities	Current key activities
<ul style="list-style-type: none"> • Sensitization on the importance of grazing management • Formation and capacity building of grazing committee members • Setting up grazing blocks – dry and wet season grazing blocks. • Grazing bill or by laws 	<ul style="list-style-type: none"> • Community mobilization on the importance of grazing management • Formation of grazing management committees and formalization • Capacity building of the Grazing Management Committee. • Setting up grazing blocks and patterns • Community baseline survey (participatory) • Policy awareness creation • Resource mapping

Participants also agreed that in revising the action plans, they used knowledge gained from the modeling results presented. For instance in the delineation of grazing areas and allowing pastures time to rest for some time during the wet and dry seasons. They also mentioned that the issue of distributing animals among the different grazing pastures was also considered in the revision of the action plans. The revised action plans are attached as annex 3 of this report.

Influence on decision making processes

After developing the revised action plans, participants deliberated on the relevance of the models presented in the revision of their action plans and management options selected. Participants agreed on the need to develop grazing management bylaws to ensure that grazing patterns were observed by community members and outsiders accessing the pastures to ensure reduced degradation. Participants agreed that in developing the grazing management bylaws, it is important to involve the traditional leaders, opinion leaders, chiefs and county government officials since they are the ones who know the herders both from within and outside the region and the grazing patterns. Participants agreed that the grazing committees should involve all these stakeholders.

In developing these by laws, it was also agreed that there is need to involve outsiders since the pasture areas are also used by people from outside the Wenje sub catchment. The planning process in developing the bylaws should include all stakeholders to ensure the bylaws are owned by all. The bylaws developed should also be communicated to outsiders through mainstream media like the Tana River radio station and in local barazas.

Participants agreed that government experts should mainly provide technical expertise in the development of these bylaws. The process of developing the bylaws should be community driven. The bylaws also have to be validated by the greater community and all the stakeholders to ensure they are acceptable and not contradictory to existing laws.

Conclusion

The results of the modelling work were generally acceptable to the participants of the workshop and they were in agreement with the traditional grazing patterns of the pastoral community in the county. Despite the inability to model all the management options previously identified by stakeholders, participants at the workshop agreed that the model is meant to guide them to decide on what management options would be most ideal for their county and even test some of the management options to determine their suitability.

The model was useful in analyzing the management options identified by the stakeholders. It was however evident that there is need to improve some aspects of the model to ensure it reflected the reality in the study area. Some of the issues raised included the livestock density in the wet season and dry season grazing areas.

The issue of reduction in ground water recharge with the introduction of a one month resting period in the wet season also requires more analysis. Participants needed to understand how this would lead to a reduction instead of an increase in ground water recharge since a resting period would likely result in increased biomass which would then reduce runoff and possibly increase infiltration.

In refining the action plans previously developed, participants provided a detailed set of activities compared to the previous action plans. This was a result they attributed to the model. It was however not certain whether other factors could have contributed to this. For instance, the period of time between when the previous plans were developed and currently or maybe they might have had a greater understanding of the management option currently than they had before. The composition of the participants from both periods remained the same and it is unlikely that this could have influenced the discussions.

The results from the model are also expected to guide decision making at the county level as mentioned by the different county sectors present at the workshop. There is however need to follow up and monitor how this is reflected in county planning and decision making.

Annexes

Annex 1. Results of the scientific modelling of management options

Annex 2. Presentation on economics

Annex 3. Revised action plans

Annex 4. List of Participants

Revision of Action Plans

Group 1: Action Plan

Grazing Management

Key activities	Rationale (Why)	Resources	Time frame	Location	Cost (Kshs)	Responsibility (Who)
Community mobilization on the importance of grazing management	Awareness creation for community participation	Human resource for instance trainers; facilitation; finance	2 months (April to June)	Kinakosa ward	1 million	WRUA; National government; County government; NGOs
Formation of grazing management committees and formalization	Implementation of grazing management plans	Human resource for instance trainers; facilitation; finance	2 months (July – September)	Kinakosa ward	500,000	WRUA; National government; County government; NGOs; community; social services
Setting up grazing blocks and patterns	Ensure availability of pasture and water in all seasons (Dry and wet). Control diseases and conflict.	Human resource for instance trainers; facilitation; finance	3 months (October – January)	Kinakosa ward	1.5 million	WRUA; National government; County government; NGOs; community; social services

Opening up of watering corridors (Malkas)

Key activities	Rationale (Why)	Resources	Time frame	Location	Cost (Kshs)	Responsibility (Who)
Community mobilization on the Malkas	Awareness creation for community participation.	Finance; human resources.	1 month (February - March)	Kinakoma ward.	500,000	WRUA; national government; county government; community; well-wishers (donors)
Identification of Malkas	Avoid conflict	Finance; human resources.	1 month (April – May)	Kinakoma ward.	500,000	WRUA; national government; county government; community; well-

						wishers (donors)
Construction of new and repair of existing Malkas	Avoid conflict; control livestock congestion	Finance; human resources.	3 months (June – September)	Kinakoma ward.	3 million	WRUA; national government; county government; community; well-wishers (donors)
Completion, launching and handing over the project to stakeholders	Implementation, taking over, ownership	Finance; human resources.	1 month (October – November)	Kinakoma ward.		WRUA; national government; county government; community; well-wishers (donors)

Group 2: Action Plan

Management option – Grazing Management

Key activities	Rationale (Why)	Resources	Time frame	Location	Cost (Kshs)	Responsibility (Who)
Community baseline survey (participatory)	To determine the actual situation before intervention	Manpower; transport; stationary.	10 days	Wenje WRUA areas and the neighboring villages	1 million	IUCN; WRUA; Community
Community mobilization and sensitization	To establish a Grazing Management Committee (GMC)	Transport; stakeholder forum.	3 days	Wenje WRUA areas and the neighboring villages	30,000	IUCN; Tana River County Government (TRCG)
Capacity building on GMC	To enhance capacity of the GMC in understanding their roles	Funds; expertise; trainings; workshops; exposure visits; demonstrations; field day.	1 month	Wenje; Hola; Malindi; Kajiado.	1.2 million	IUCN
Formulation of grazing laws	To regulate and manage grazing resources	Transport; manpower; finance; expertise; county assembly	6 months	Wenje	1.1 million	Committee; IUCN; TRCG, WRUAs
Policy awareness creation	To create awareness to the community on existing laws through	Public baraza; finance; public actors; security; refreshments; transport.	7 days	7 WRUA villages	70,000	Committee; IUCN; TRCG, WRUAs

	public barazas					
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Opening up of watering corridors (Malkas)

Key activities	Rationale (Why)	Resources	Time frame	Location	Cost (Kshs)	Responsibility (Who)
Baseline survey of the pathways and watering points	To mark and demarcate existing malkas / pathways.	Transport	10 days	WRUA areas	250,000	IUCN; TRCG
Establish and rehabilitate existing and new pathways	To minimize community conflicts	Funds; transport.	1 month.	WRUA areas	1.5 million	IUCN; NGOs; CDF; TRCG
Awareness creation on Makas and trainings	To enhance ownership and sustainability; exit strategy	Public barazas; funds; opinion leaders.	14 months	WRUA areas.	140,000	IUCN; CDF; TRCG

Group 3 Action Plan

Grazing Management

Key activities	Rationale(why)	Resources	Time frame	Location(wh ere)	Costs(Kshs)	Responsible body/persons
Publicity on the importance of grazing management	Awareness creation to the community. Community participation and support/stakeholder involvement.	Funds and human capital.	Six months	Kinakomba ward	1m	Extension staff NGO's National government County government.
Formation of grazing management committees	Have a functional effective body to oversee the grazing management patterns	Trainers Experts	3months	Kinakomba	200,000	Social services WRUA Livestock County Government National Government.
Capacity building of grazing management committees	Impart knowledge and skills on grazing management	Trainers Training materials.	6months(3phases)	Kinakomba	1m	Line ministries.
Resource mapping	Identify available	Local community	3months	Kinakomba	800,000	Line ministries

	resources	Opinion leaders Council of elders				County government National Government. WRUA
Setting of grazing blocks-dry and wet season grazing blocks	Ensure sustainability of the pasture resources Reduce conflict Planning purposes for infrastructures.	Council of elders , opinion leaders, Religious leaders	6 months	Kinakomba	500,000	Line ministries County government National Government. WRUA
Bench marking	To exchange ideas on grazing management activities	Grazing management committees	1month	Kinakomba	1.5m	NGO'S Line Ministries Community.
Development of community grazing management bylaws.	Ensure effectiveness, enforcement of the laws and avoid conflicts	Committees expertise	3months	Kinakomba	500,000	Line ministries County Government National government WRUA's
Community sensitization and Validation of the community bylaws	Create awareness and participation in implementation.	Grazing management committee Expertise Finance.	3months	Kinakomba	200,000	Line ministries County Government National government WRUA's

Opening up of watering corridors (Malkas)

Key activities	Rationale(why)	Resources	Time frame	Location (where)	Costs(Kshs)	Responsible body/persons
Publicity on the importance of watering corridors	Awareness creation to the community and community participation	Funds and human capital.	5months	Kinakomba ward	800,000	Extension staff(Line ministries) NGO's National government County government. WRUA
Establishment of water corridors Management committee	Conflict resolution and harmonization and utilization of the water corridors	Funds Human capital	3months	Kinakomba	500,000	Line ministries. County government National Government WRUA

Capacity building water corridors committees	Have effective body to oversee the utilization and proper management of Malkas. Reduce conflicts	Funds Expert to train	2months	Kinakomba	400,000	Line ministries County government National Government WRUA'S NGO'S
Mapping of the water corridors	Identify location of the Water corridors	Funds Human capital	3months	Kinakomba	500,000	Social services WRUA Livestock County Government National Government. Community.
Community sensitization and Validation of the identified corridors	To avoid conflicts	Funds Human capital	1month	Kinakomba	500,000	Line ministries WRUA NGO's County Government National Government
Dermarkation ,re opening and construction of the water corridors and water points.	Reduce conflicts	Funds Human capital	10months	Kinakomba	1m	Line ministries. County government National Government WRUA Community.