COUNTY REPORT

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VISIBILIZE 4 CLIMATE ACTION PROJECT

Samburu County Inception and Stakeholder Engagement Workshop Report

4th and 5th July 2024

Maralal, Samburu County

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BACKGROUND

Climate change poses a critical threat to the health of millions of vulnerable populations living in the East African drylands. It affects key social and environmental determinants of health, including access to sufficient food, which in turn contributes to undernutrition and mental health challenges. These impacts occur through direct pathways, such as increased heat and more frequent droughts and floods, as well as indirect pathways linked to land use changes and reduced agricultural productivity.

A recent systematic review and meta-analysis highlighted a significant relationship between climate change proxies—such as climate variability, floods, and drought—and nutrition outcomes. Specifically, drought conditions were found to increase the odds of wasting and underweight by nearly 50%. Malnutrition is particularly severe in the East African region, where one-third (33%) of children under five experience stunting. Despite projections that malnutrition will be the leading contributor to climate change-related morbidity and mortality by 2030 and 2050, the evidence on its attributable impact remains limited. Additionally, a meta-analysis of 163 studies across 142 countries demonstrated that climate change-related disasters can trigger mental health disorders. In a recent study, more than half of the population in six African countries acknowledged the impacts of climate change, reporting its effects on their mental health. Negative impacts on the mental health of farmers due to climate change and variability have also been indicated, although the evidence on this burden in East Africa remains limited.

The *Visibilizing Climate Change Impacts on Nutrition and Mental Health among Vulnerable Populations in East African Drylands to Catalyse Climate Action at Scale* (Visibilize 4 Climate Action) project aims to highlight the impact of climate change on the nutritional status and mental health of vulnerable populations in East African drylands—including arid, semi-arid, and dry sub-humid zones—through research, public engagement, and policy advocacy. The ultimate goal is to catalyze climate policy and practice change at scale, tailored to the specific contexts of these communities.

The African Population and Health Research Center (APHRC) is implementing the project in collaboration with research partners including the Center for International Forestry Research - World Agroforestry (CIFOR-ICRAF), the University of Nairobi, Participatory Ecological Land Use Management (PELUM) Kenya, the London School of Hygiene & Tropical Medicine (LSHTM), Oxford University, and Loughborough University.

The project is being carried out in Kenya's Samburu, Turkana, and Laikipia counties.

INTRODUCTION

The Visibilize 4 Climate Action Project inception workshop was held on July 4th and 5th, 2024, in Maralal, Samburu County. The workshop aimed to:

- Introduce the Visibilize 4 Climate Action Project.
- Discuss the relationship between climate change, food systems, and health.
- Understand the stakeholders working in this space and identify opportunities for engagement.

The workshop brought together 72 participants, including county government officials, national government representatives, non-governmental organizations (NGOs), community- based organizations (CBOs), the private sector, media, and project partners. Figures 1 and 2 below display the participants' characteristics in terms of gender and stakeholder categories.

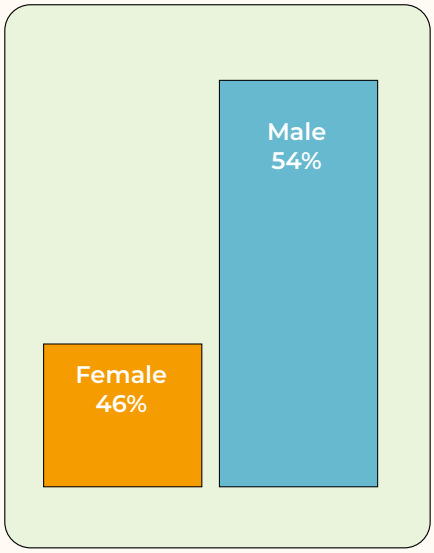

Figure 1: Participants' gender

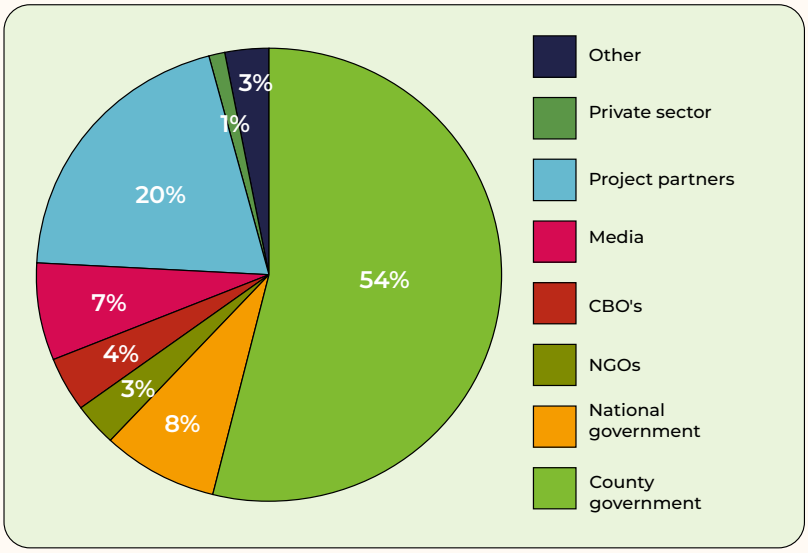

Figure 2: Stakeholder categories represented in the workshop

WELCOME AND OPENING

Ms Esther Anono welcomed the participants to the workshop. To break the ice, she asked them to reflect on the proverb: **"If everyone is moving forward together, then success takes care of itself,"** and share their thoughts on its meaning.

The participants' feedback on the proverb highlighted the following themes:

- Teamwork, respect, and understanding.
- Bringing everyone on board.
- Success varies for different people, but collaboration and inclusion are key.
- The need to focus on building a strong team.
- Unity and teamwork as strengths—success is achievable when everyone shares the same mindset.
- Synergy—two heads are better than one.
- Ensuring no one is left behind.
- Addressing strengths and opportunities collectively.

The participants also considered the following elements to be intrinsic to success:

- Achieving planned targets/goals within the allocated time and resources.
- Accomplishing a clear aim or purpose.
- Reaching an agreed objective or status.
- Making success measurable.
- Personal goals, happiness, and fulfilment, alongside positive impact.
- Achieving positive outcomes in one's efforts.
- Goal achievement, personal development, and positively impacting others, even in small ways.

Following this discussion, participants introduced themselves, and the workshop's objectives were presented.

OFFICIAL OPENING REMARKS

Ms Rose Lenairerei, Samburu Central Sub-County Administrator

Ms Lenairerei welcomed the participants to Samburu County, noting that the Assistant County Secretary had also welcomed the Project team to the County offices the previous day. She explained that the Samburu County government officials attending the workshop were drawn from departments aligned with the Project's objectives. Ms Lenairerei expressed her optimism that the Project would bring positive change to the County.

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Mr Moses Leluata, County Executive Committee Member (CECM) for Agriculture, Livestock Production, and Fisheries

Mr Leluata welcomed the Project partners to Samburu County, expressing his admiration for the Project's objectives. He emphasized the reality of climate change and its impact, noting that the three goals of Kenya's national agriculture policy—food security and nutrition, increased food exports, and reduced imports—cannot be achieved without addressing climate change. He cited unreliable rainfall and widespread rangeland degradation as major challenges tied to climate change. He stressed the importance of Samburu County developing its own data on the effects of climate change and noted that the involvement of County representatives in data collection would be crucial.

Mr Patrick Lekimain, County Executive Committee Member (CECM) for Water, Environment, Natural Resources, Climate, and Energy

Mr Lekimain underscored that climate change is no longer a topic of discussion but a reality. He commended the Project's efforts to address climate change in Samburu County and expressed his eagerness to continue this dialogue. He concluded by reaffirming the commitment of the County's environmental and agricultural departments to collaborate with partners to tackle climate change.


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Mr Peter Mitiso Kilonzo, Deputy County Commissioner

Mr Kilonzo emphasized that leaders are representatives of the social fabric of society and must reflect on their responsibilities toward the people. He encouraged the Project partners to continue implementing initiatives that help advance Samburu County.

Mr Fredrick Lenturkan, Deputy County Secretary

Mr Lenturkan expressed his excitement to be part of the workshop and his privilege in welcoming the Project team to the County governor's office the previous day. He voiced his hope that the Project would positively impact the livelihoods of Samburu County residents.

H.E. Gabriel Lenengwesi, Deputy Governor

H.E. Gabriel Lenengwesi welcomed the Project partners to Samburu County. He acknowledged that climate change impacts are a reality in Samburu and across Africa. He noted that while Kenya excels in developing policies that other African countries have adopted—the country struggles with policy implementation. He urged stakeholders to avoid duplication of efforts and encouraged County officials to communicate their needs and priorities to the Project leads to ensure alignment.

Mr Wilson Lesuuda, Samburu County Secretary

Mr Lesuuda welcomed the partners and participants, expressing gratitude for the partnership with Samburu County through the Visibilize 4 Climate Action Project. He recognized the contribution of partners to the County's development and echoed the call for collaboration. He urged participants to engage fully in the workshop and share lessons learned with their colleagues.

OUTLINE OF THE VISIBILIZE 4 CLIMATE ACTION PROJECT

Presentation by Ms Esther Anono, Research Officer, African Population and Health Research Center (APHRC)

Ms Esther Anono provided an overview of the APHRC, outlining the rationale behind the Visibilize 4 Climate Action Project, the roles of the Project partners, and their contributions. She also highlighted the Project's objectives and key focus areas.

The overall objective of the Visibilize 4 Climate Action Project is to make visible, through research, public engagement, and policy advocacy, the impact of climate change on the nutritional status and mental health of vulnerable populations in East African drylands (arid, semi-arid, and dry sub-humid zones). The ultimate goal is to catalyze context-specific climate policy and practice changes at scale (see Figure 1 for the Project's focus).

Figure 3: Project Main Focus

The significance of the Project stems from Africa's high vulnerability to the projected health impacts of climate change. For instance, it is estimated that food security and agricultural productivity in Sub-Saharan Africa could decline by up to 34%. This reduction will have cascading effects on food security, nutrition, and health in the eastern African region, with vulnerable populations in the East African drylands being disproportionately affected (see Figure 4 for pathways illustrating the impacts of climate change on food systems, food security, and nutrition). For more information on the Project, read here.

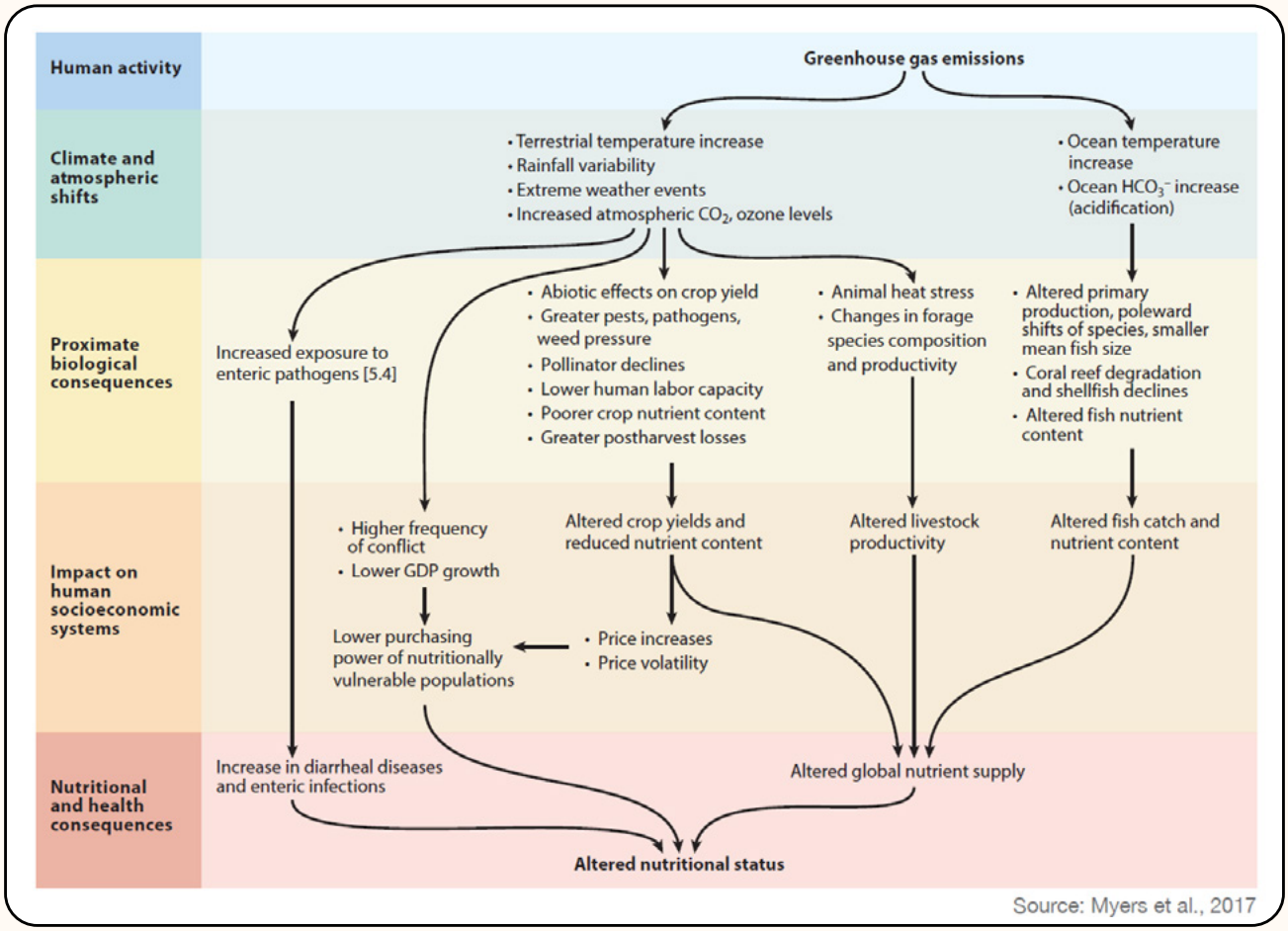

Figure 4: Pathways for Impacts of Climate Change

QUESTIONS, ANSWERS, AND COMMENTS

QUESTION 1

Does the Project cover all of Samburu County or only specific wards?

ANSWER

The Project will be implemented in three counties: Samburu, Laikipia, and Turkana. Site selection is based on the type of ecosystem—arid, semi-arid, and semi-humid. In Samburu, it will focus on a purely semi-arid ward, specifically Samburu Central. We aim to focus on this area to generate evidence that will inform future policy.

QUESTION 2

Will the Project cover all of Samburu Central Sub-County or just specific wards? Some wards practice crop farming, yet malnutrition is still prevalent in Samburu Central.

ANSWER

All seven wards in Samburu Central will be targeted.

QUESTION 3

How will you help farmers map areas suitable for different crops? KALRO has done some mapping and found that some soils contain aflatoxin, but these soils are still being used.

ANSWER

ICRAF will conduct soil analysis and assess land health, including soil organic carbon levels. The tools for soil analysis will be discussed further during the data wall session.

QUESTION 4

How will you address the issue of invasive species?

ANSWER

This will be examined during the landscape-level assessment and local/field validation, and interventions will be tailored to address specific invasive species.

QUESTION 5

How will the County benefit from this Project? Will local residents be employed?

ANSWER

The Project has local field coordinators who will work closely with the community. Selected locals, primarily youth, will be trained to assist with data collection and public engagement activities. APHRC's recruitment policy emphasizes understanding the local language and context. The County government will be consulted on the recruitment process, and the job advertisements will be shared with County officials for dissemination.

QUESTION 6

How will the Project use local media for implementation?

ANSWER

The most listened-to community radio stations will be utilized. Bernard work on packaging programmes focused on climate change and development, which will be aired in the morning and evening, when most people tune in. Additionally, local journalists will be trained to report on climate change issues.

QUESTION 7

The County government has various climate change policies in place. Have you familiarized yourselves with them?

ANSWER

A session on policies is scheduled for tomorrow, during which these policies will be explored.

QUESTION 8

Can ongoing research be incorporated into the Project?

ANSWER

Including local research is encouraged. We have a stakeholder mapping session later where we hope to identify relevant local research and researchers.

QUESTION 9

What measures are in place to ensure the Project's sustainability?

ANSWER

Sustainability will be promoted through public engagement and capacity building in areas like agroecology and Nature-Based Solutions (NBS) to encourage ownership. A sustainability needs mapping will also be conducted.

QUESTION 10

Does the Project include a component on fodder production/ management, given that most residents are pastoralists? Fodder production contributes to climate resilience, but climate change has hindered it, leading to conflicts.

ANSWER

PELUM Kenya will integrate fodder production into demonstration farms.

QUESTION 11

What is the Project's timeframe?

ANSWER

It is a three-year Project, running until 2026, with continuous engagement throughout this period.

QUESTION 12

Will the Project have offices in each of the three counties or operate from one central office?

ANSWER

Each county will have coordinators, but the work will be carried out by local residents.

QUESTION 13

One of the Project's objectives is to build on the County government's plans for climate change resilience, such as local knowledge. How will this be done?

ANSWER

The Project aligns with the Samburu County Integrated Development Plan (CIDP) and annual plans.

COMMENTS

- The focus on mental health is interesting. It's important to broaden the scope to include other contributing factors, such as conflicts, while examining mental health in relation to climate change.
- The research results should be widely shared across partners and County government departments to influence policy.
- Soil analysis has not been mentioned, yet food security depends on soil health. A proper soil analysis is needed to support food production.
- This Project will contribute to the literature on the impacts of climate change on food utilization at the household level. The National Drought Management Authority (NDMA) already examines the effects of drought on nutrition and food security, so there is an opportunity for NDMA to collaborate with the Project.
- It's exciting that PELUM Kenya will be training farmers on agroecology.
- The logo used in the Project presentation is not the official County logo. The seal on the logo should be removed.
- The Project should prioritize employing local residents.
- The ward climate change committees in Samburu County should be involved in the Project's implementation.
- Limiting the Project to only one Sub-County may be a disadvantage, as the other two sub-counties are also arid.
    - **Response:** Data collected in the Sub-County will be analysed and presented as that of the Sub-County and not a projection of the entire County.
- The Project should build on and leverage the County government's climate resilience efforts and local knowledge.

THE CLIMATE CHANGE-FOOD SYSTEMS-HEALTH NEXUS

Participants in this session explored the nexus between climate change, food systems, and health. The session featured a data wall, where participants were divided into four groups. Each group cycled through four stations on the wall, spending 15 minutes at each station. A data wall presents data and information across various themes, enabling participants to interact with the data, discuss it, and integrate insights.

The four stations covered the following topics: food tree portfolios and agroforestry, agroecology, food systems and health, and land health. Each topic was explained using posters, and participants were encouraged to ask questions, provide comments, and engage actively with the material.

The posters displayed on the data wall can be accessed here.

Images: Participants Interacting with the data wall

THE QUESTIONS AND COMMENTS MADE ARE SUMMARIZED BELOW

STATION

Food trees portfolios and agroforestry

The portfolio approach

- The “Right Tree for the Right Place for the Right Purpose” approach is suitable for Samburu County. Information should be tailored and shared with the community.
- The resilience design program in Samburu East could benefit from this approach.
- Are indigenous fruit species included in the food portfolios?
- Will apiculture be integrated?
- How is seasonality considered since many trees and crops are dependent on seasons?
- Does the current portfolio include grazing systems?
- Can irrigation be factored in? (**Yes**)
- Are water availability issues considered? Water scarcity in Maralal challenges tree-growing.
- Who will be targeted in Samburu Central? (**Answer:** Individual landowners)

Suitability of the portfolio approach for Samburu County:

- Highly relevant and applicable to Samburu County.
- Livestock products and apiculture should be incorporated into the portfolio.
- The approach will work well if applied at the kitchen garden scale.
- Indigenous species can regenerate naturally in fenced/ protected areas and can survive drought.
- More tree nurseries are needed, with careful consideration of nursery locations.
- The portfolio should map to livestock products and accessibility.

Tree species selection considerations:

- Include trees both inedible to livestock and suitable for fodder, while restricting livestock movement around them.
- Consider fruit trees like mangoes.
- Trees acting as windbreakers, like Acacia, are essential due to sandstorms.
- Additional considerations: support for beekeeping, soil fertility improvement, income generation (5Fs: food, fuel, fodder, fertility, fruit).
- Indigenous drought-resistant tree species.
- Conduct suitability analysis for fruit trees, identifying water requirements.
- Factor in cultural norms during species selection.

Challenges in tree-growing:

- Crop stagnation. There is a need to diversify species.
- Crop failure due to pollinators' death from locust spraying and two failed seasons. Tree species should be selected with a focus on species that are favourable to pollinators.
- Pests and diseases are issues managed by agrochemicals.
- Several invasive species are present in Samburu, including Prosopis juliflora, lketurai, and lchurai, especially in the Angata-Nanyekie ward. Grazing committees have been trained on invasive species management through utilisation by the University of Nairobi.
- Water is a major challenge to crop production, so boreholes are required.
    - The Project focuses on research rather than development, but it should seek to integrate partners who can assist with development efforts. One potential approach is to start on a smaller scale, such as practicing agroforestry in kitchen gardens using wastewater.

Other comments:

- Promote livestock diversification (e.g., dairy goats).
- Honey production provides some micronutrients.
- Promote climate-smart agriculture (CSA), such as aquaponics.
- There is a need to research the size of trees for carbon accounting.
- Malnutrition affects the population during the drought, so it is important to examine how to provide nutrition throughout the year.
- Changing land tenure from communal to private is an opportunity to promote tree-growing as people will directly benefit from it.
- All types of fruits are available in the market throughout the year.
    - The approach focuses on the farm-level.
- Likes the aspect of social benefits - aesthetic values of trees contribute to mental health and will add value.
- Ecosystem restoration can reduce conflicts and NBS enterprises such as beekeeping.
- Some areas can support fruit trees.
- There is a gap in adopting agroforestry, which is an opportunity.

STATION
Agroecology

- How do you address the issue of food safety, such as transporting raw meat?
- What livelihood diversification options would be appropriate for Samburu Central?
- Azolla is an alternative feed for livestock including chicken. However, its production might be affected by the high population in the County.
- Explain the use of Azolla for chicken feed.
- What organic farming/practices on crops are appropriate for Samburu?
  - Water harvesting: use semi-circular bands/holes to ensure the roots grow deep
- Are there any ways of managing pests biologically without including chemicals?
- Emphasis on agroforestry as land subdivision has been done in Samburu East.
- Most farmers do not have information or knowledge regarding soil health and how to test soil health. How can they get this information?
  - There are simple ways to test the soil that PELUM will train on them.
- When are the ideal channels that you can use to advocate for the Samburu population to embrace agroecological practices?
- How will PELUM help with marketing?
  - Do not sell unless you have a surplus (needs to be organic).
- Link market access to agroecology training.
- There are many invasive species in Samburu. How can invasive species be better utilized? In the past, people tried using invasive species for charcoal production and animal feed.
- Include some videos in the Samburu language.
- Collaborate more to tailor information to the local Samburu context.
- Rabbit farming:
  - How do you regulate wild rabbits?
  - Work with PELUM to introduce rabbit and where can you introduce them?
  - Provide more information about rabbits and fruit trees.
  - Rabbit-keeping is a taboo in the Samburu culture.
  - Provide more information on the use and benefits of rabbit urine.

STATION
Food Systems & Health

- There is a high demand for commodities, but people cannot access them, which may be attributed to high food prices and limited availability. Furthermore, not all markets, especially in rural areas, offer a variety of foods.
- Water is essential to sustain kitchen gardens, yet it remains inaccessible due to the long distances people have to trek.
- Despite practicing farming, there is a lack of adequate knowledge about proper nutrition, leading to some areas recording high Global Acute Malnutrition (GAM) rates.
- There is a need to create awareness about the utilization and preparation of locally available foods.
- Livelihood diversification, such as shifting from agriculture and livestock to activities like beekeeping, should be encouraged.
- Agroforestry should be promoted to enhance moisture retention and reduce extreme heat.

- We should advocate for livestock breeds like Sahiwal and Dopper, which can better withstand drought conditions.
- Conflict is a significant issue, as it leads to the loss of livelihoods and lives, while also affecting the mental well-being of those impacted.
- Health-seeking behaviour within the community should be encouraged by leveraging community health promoters.
- The preservation of indigenous fruits and vegetables should be promoted as a source of food security during times of scarcity.
- We need to understand how both economic and non-economic factors impact the healthcare system.
- It is important to develop ways to package information and knowledge in a manner that local communities can easily utilize.
- Education at the household level is necessary, focusing on the impacts of climate and health.
- Promoting climate-smart agriculture within communities is essential.
- Water availability is affected by the declining water table in the community, which has implications for agriculture.
- There are limited resources allocated for pasture production.
- Climate change has exacerbated soil erosion, affecting flora and fauna. This loss of natural resources also leads to conflicts.
- The way agriculture is practiced in some communities contributes to climate change impacts. However, agriculture is essential to ensure food security.
- There has been an increased incidence of diseases, like eye infections, due to high heat.
- Climate change impacts livelihoods and coping mechanisms, leading to increased migration, which results in conflicts over land.
- There is a need to find ways to promote fodder and grass storage during seasons of plenty to avoid conflicts during the dry season when resources are scarce.
- The community relies heavily on livestock as a main source of livelihood, so issues around livestock must be addressed.
- Conflicts have hindered food production, as people in affected areas can no longer engage in farming activities.
- Mental health issues in the community are linked to the conflicts that have caused the death of loved ones and the loss of livestock, which is a primary source of livelihood.
- It is necessary to rethink alternative livelihoods or redefine livestock herding, as the nomadic lifestyle wastes a significant amount of time.
- Encouraging smart agriculture and crop diversification—such as creating awareness and introducing fruit farming—will be beneficial.
- Drought in the region has led to insecurity, which affects the mental well-being of those left behind, such as women and Morans. It is important to understand how they manage and cope with drought.
- Gender issues and climate change need to be explored to understand how men and women are differently affected. Do they cope in different ways?
- Strengthening land tenure systems and finding innovative solutions to combat climate change is crucial.
- A stronger focus is needed on the market system: how can we encourage production so that there is a surplus that can be exported to other markets?
- Gender-based violence (GBV) has reportedly increased, especially during times of drought.
- Regarding policy, it is important to assess how familiar people are with existing policies on nutrition, climate change, and resilience. How effective are these policies? Are there gaps in the interlinkages between these policies?

- Youth inclusion in food systems is essential, especially in encouraging them to embrace agriculture.
- Changes in rainfall patterns have led to increased nomadism among livestock herders, leaving behind vulnerable women and children.
- There are gaps in integrating climate and health policies with other sectors.
- Communities practicing irrigation should be linked to water preservation technologies and financial institutions to help them adopt these technologies.
- Communities should be educated and empowered on financial systems, such as Village Savings and Loans Associations (VSLAs) and microfinance institutions.
- Livestock should be included in food systems, rather than having agriculture as the sole focus.
- Livelihood diversification is critical to mitigating the impacts of climate change on food systems.
- We need to promote agricultural practices that enhance food quality and reduce food losses.
- Increasing crop yields and promoting crop diversification at the farm level is necessary.
- Focusing on selected value chains, such as agro-processing (value addition), will enhance food security.
- Food aggregation centres should be established to prevent food loss and store food for lean seasons, which they can also sell. These centres must meet the required standards, such as ensuring appropriate ventilation to extend food shelf life.
- Smart agriculture practices should be supported by agricultural extension workers.
- There is a need to educate the community on appropriate water collection and storage strategies.
- Livestock diseases need to be addressed. One way to do this is by ensuring the availability of nutritious fodder.
- Food utilization can be improved through awareness campaigns on the importance of diet diversity and the consumption of locally produced foods, using social behaviour change communication (SBCC).
- Early warning systems and messaging about weather updates should be made available weekly and communicated to the community. Additionally, the challenges around the uptake and transmission of these early warning messages need to be addressed.


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STATION
Land health

- Carbon credit – how far has the government gone in developing policies on carbon credit, and what measures are in place to ensure the funds trickle down to the community? There is a knowledge gap in carbon credit information.
- How much is the Conservancy making from carbon credit, and how much is going to the people?
    - At the national level, there are plans – Nairobi Climate Change Summit.
- Acacia nilotica – does it have effects on the soil structure?
    - Acacia is leguminous and should fertilise the soil unless there are factors like overgrazing and removal of herbaceous plants affecting the soil.
- Concern of water table – it is part of land health – hydrogeological surveys show water, but drilling does not yield water – can the aspect be included in the study to generate a database that can be used to inform future water Projects?
    - Water infiltration is determined by vegetation and grass, so the water tables are going lower due to lack of vegetation – land restoration (tree planting) presents an opportunity to rectify this and protect the catchment.
- Are there policies on soil protection? Soil poaching from rural lands to other areas.
    - The County should take the initiative to protect its soil and have policies.
- How will we make the community understand carbon credit? How will they benefit from community forests?
    - Community forests belong to the government, so they can manage it.
- Soil testing – advise on the crops for different areas within the County.
- Most land restoration will work best in Samburu North and East as they have more grasslands and drylands.
- How will the community benefit from making decisions on types of livelihoods?
- What grasses are being used for rangeland restoration?
- Will this Project replicate what is happening in Waba in Samburu Central in terms of restoration?
    - This is a research project, then the evidence generated can be used to seek funds for interventions and inform policies.
- Are there refunds for communities with invasive species where they are advised to return it against their will?
- Is there research being done on the invasive species, i.e. Lketurai, which is covering Angata-Nanyekie?
- Rangeland health also has to do with animal diversity, especially insect composition. Will the tool be able to tell insect diversity in a given rangeland unit over time?
- Is there available data on terrestrial soil organic carbon in Samburu as some communities in Samburu East are already benefiting from carbon credit?
- Develop a suitability map for the entire County.

Participants shared the following reflections from the data wall exercise on the nexus between climate change, health, and food systems:

- The impacts of climate change include crop failure, leading to food insecurity and malnutrition.
- Unsustainable agricultural practices contribute to climate change.
- Food production is dependent on climate conditions, which in turn affects health.
- Land health determines pasture availability, emphasizing the need for ecosystem restoration.
- The direct and indirect costs of climate change impacts, such as malnutrition's effect on education, are not well understood.
- Water quality is closely linked to food security.
- Innovations need to be aligned with land tenure systems and integrate local knowledge.
- Apiculture plays a vital role in food security and should be incorporated.
- Economic diversification is necessary, for example, using animal waste to produce manure and biogas, which is often hindered by a lack of awareness.

Emerging gaps include:

- A lack of funds to acquire seeds.
- Limited knowledge on crop production diversification and climate-smart agriculture.
- The County lacks its own data on population, soils, and crop production. Scientific data is essential for evidence-based policies and decision-making.
- Limited awareness of climate change adaptation strategies.
- The absence of appropriate and affordable farming technologies/methods, leading to the use of poor farming practices.

MAPPING A VISION FOR CLIMATE AND HEALTH IN THE COUNTY

Participants engaged in a visioning exercise to create a vision for climate and health in Samburu County, describing success across six key dimensions: economic, environmental, agricultural productivity, health, institutional, and socio-cultural.

For the exercise, participants were divided into six groups, with each group focusing on one of the six dimensions. They were tasked with describing success under their respective dimension within a 20-minute discussion.

VISIONS FOR EACH DIMENSION

DIMENSION
Agricultural Productivity

Agricultural Productivity

- Good and effective policies
- Land restoration
- Youth and women involvement in agriculture
- Improved livestock breeds
- Climate-smart agriculture
- Increased land productivity
- Crop and livestock diversification
- Establishment of agro-processing plants
- Achieving food security for every household

Barriers to food security:

- Inadequate resources (capital)
- Conflicts and insecurity
- Lack of diversification in agricultural productivity
- Low capacity and awareness
- Pests and diseases
- Post-harvest losses
- Lack of storage for farm produce
- High dependency on rain-fed agriculture

DIMENSION
Environmental

- Working environmental policy in place and widely accepted
- An environmentally conscious society
- Restored environment with improved water availability
- Reduced pollution and minimized use of inorganic substances
- Well-conserved biodiversity
- Reduced greenhouse gas (GHG) emissions and adoption of renewable energy
- Increased tree cover
- Reliable and predictable weather patterns
- Improved microclimate
- A resilient and well-adapted community
- Increased carbon sequestration through agroforestry, including afforestation, forest conservation, and sustainable farming practices
- Sustainable waste management
- Increased rangeland carrying capacity
- Adoption of a circular economy
- Re-emergence of threatened species due to improved ecosystems
- Development of sustainable cities and urban areas
- Increased wetland areas
- Improved soil health and fertility
- Increased forage and adequate pasture availability
- Reduced poverty levels

DIMENSION
Socio cultural

- Embracing and strengthening indigenous knowledge on land management, weather, food, fruits, etc.
- Structured, empowered, and inclusive communal land management committees
- Breaking cultural taboos and embracing new eating habits, e.g., eating birds, which is currently taboo
- Embracing positive cultural aspects while addressing negative ones, e.g., allowing pregnant women to eat eggs
- Providing psychosocial support to address the effects of climate change, such as drought, which causes mental stress in men due to the loss of livestock
- Amplifying women's voices in decision-making spaces

DIMENSION
Institutional

- Realistic and achievable policies
- People-driven policies and interventions, ensuring communities are informed and involved
- Good governance practices, free from corruption and nepotism
- Technically competent institutions leveraging relevant tools and expertise
- Enhanced oversight from national and county governments
- Adequate resources to implement institutional mandates
- Synergized operations, with partnerships and collaboration

Overall vision: Institutions that are effective and efficient through realistic and achievable policies by the people, for the people.

DIMENSION
Economic

- With the proper policy framework in Samburu County, land use systems through land adjudication will enhance economic growth, food security, mental health, and address climate change.

DIMENSION
Health

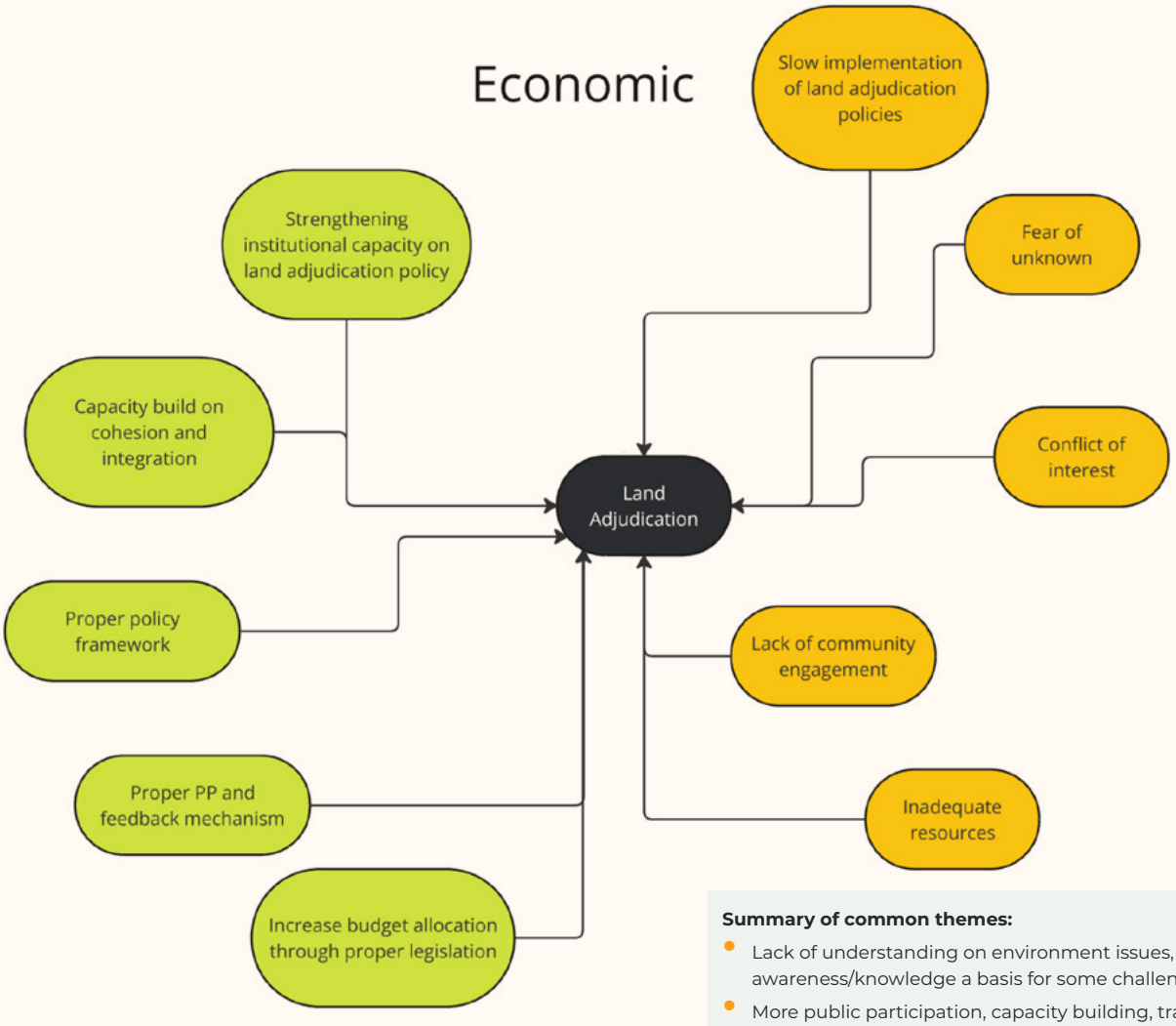
- Improvement of household food security and nutritional status through agroforestry, drought-resistant crops, and appropriate technologies.
- Diversification of livelihoods to improve nutrition outcomes.
- Availability of water at the household level.
- A multi-sectoral approach to tackling nutrition issues.
- Improved capacity of households to cope with the impacts of climate change, supported by the community health system and health workers.
- The health department should be at the centre of the multi-sectoral forum.
- Develop and implement customized policies and strategies on Social and Behaviour Change (SBC) communication to demystify and mitigate climate change.
- Create and implement mental health interventions to address climate change-related mental health challenges.

CAUSAL MAPPING ANALYSIS – THE RELATIONSHIPS BETWEEN CLIMATE, FOOD SYSTEMS, AND HEALTH

Participants engaged in a causal mapping analysis exercise to identify the key barriers and enablers to achieving the vision developed in the previous exercise. Working in the same groups as the visioning exercise, they discussed the following questions:

- **What is stopping us from achieving this vision?** Participants identified the most important barriers, which were then placed in the centre of a flipchart. From there, they traced the root causes of these barriers.
- **What if the key barrier is solved?** They explored the underlying enabling conditions necessary for overcoming the barrier.

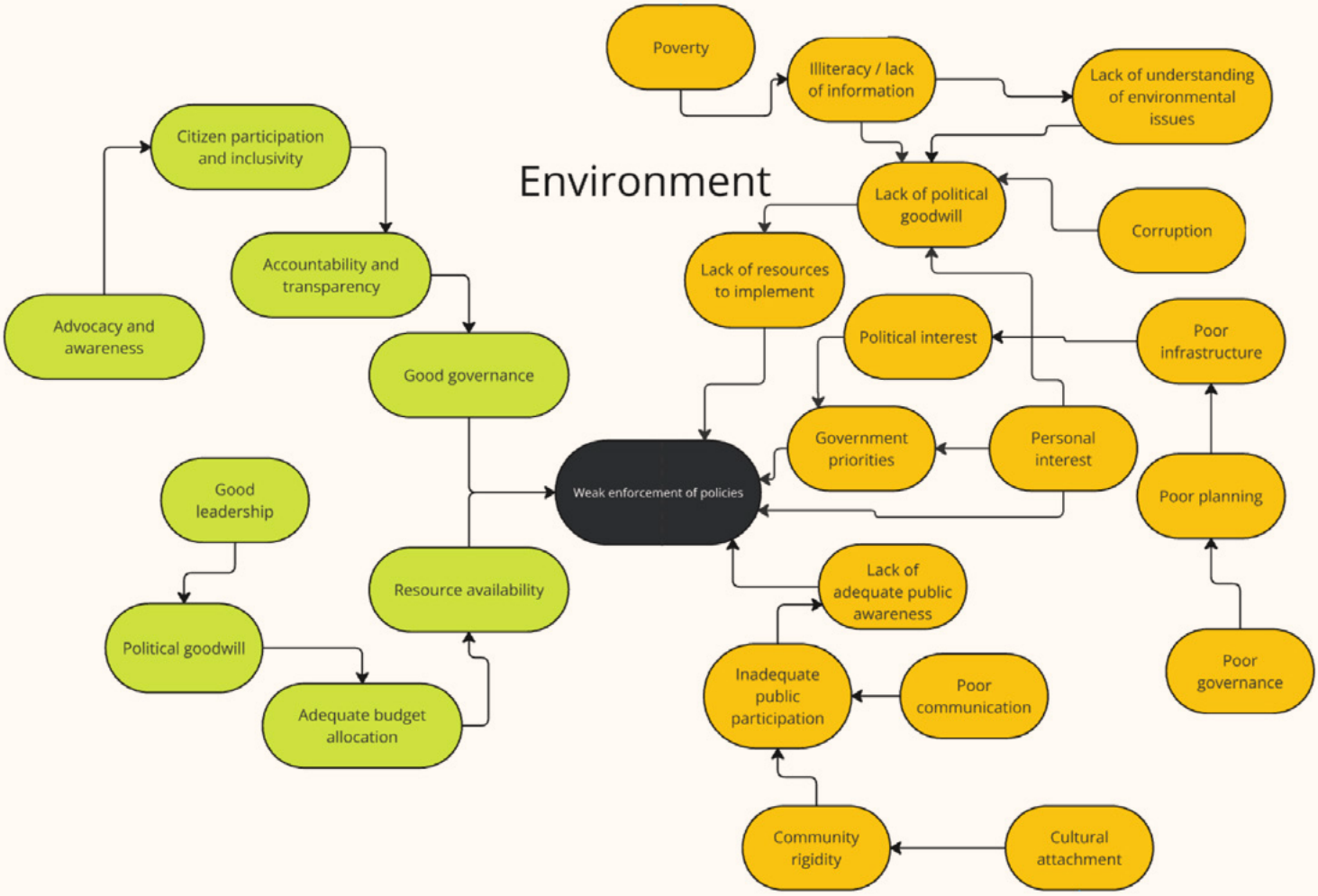
The results of the causal mapping analysis are illustrated in the figure below.



Summary of common themes:

- Lack of understanding on environment issues, general awareness/knowledge a basis for some challenges
- More public participation, capacity building, transparency/ accountability and adequate resources identified as enablers
- Corruption/political interference/personal interests, illiteracy and negative cultural norms common causes

Figure 5: Causal Mapping Analysis



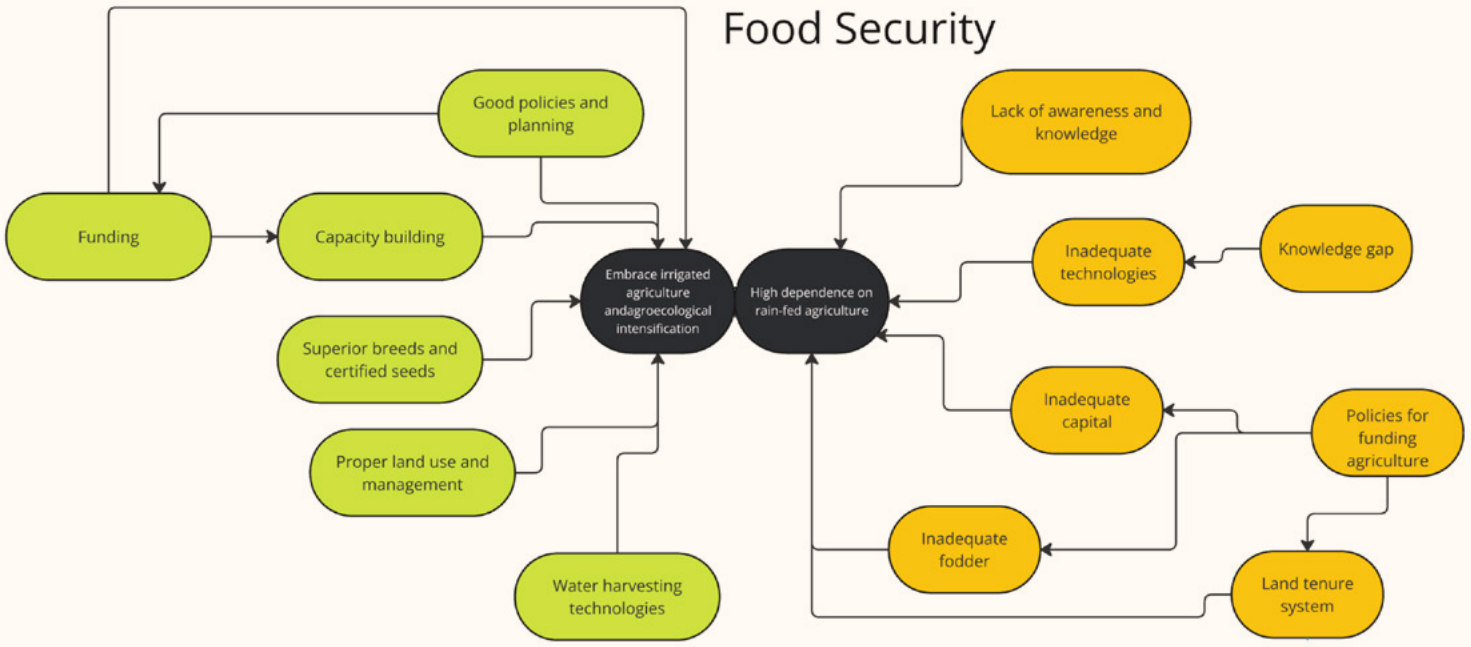
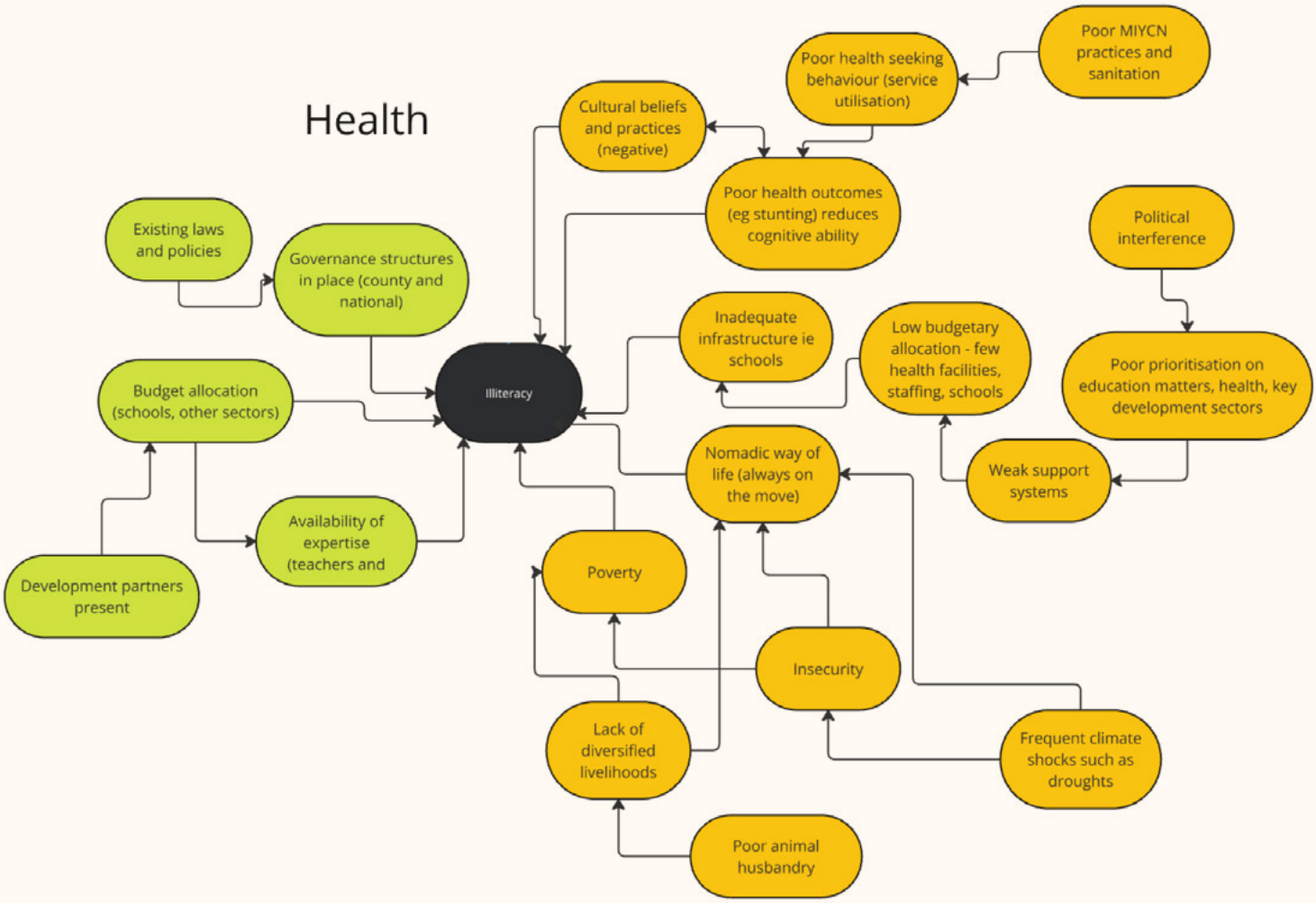


Figure 5: Causal Mapping Analysis CONT.



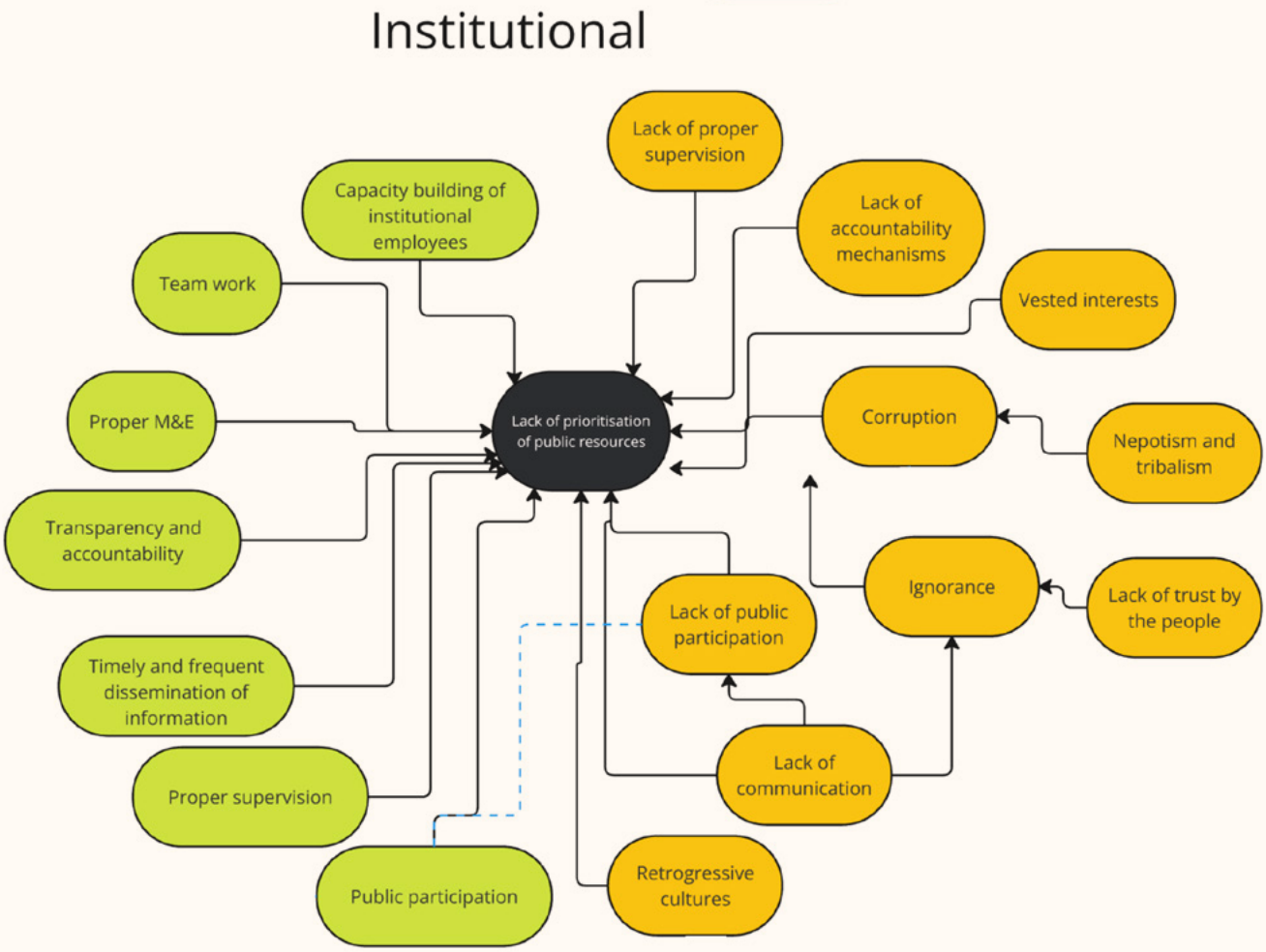


Figure 5: Causal Mapping Analysis COMT.

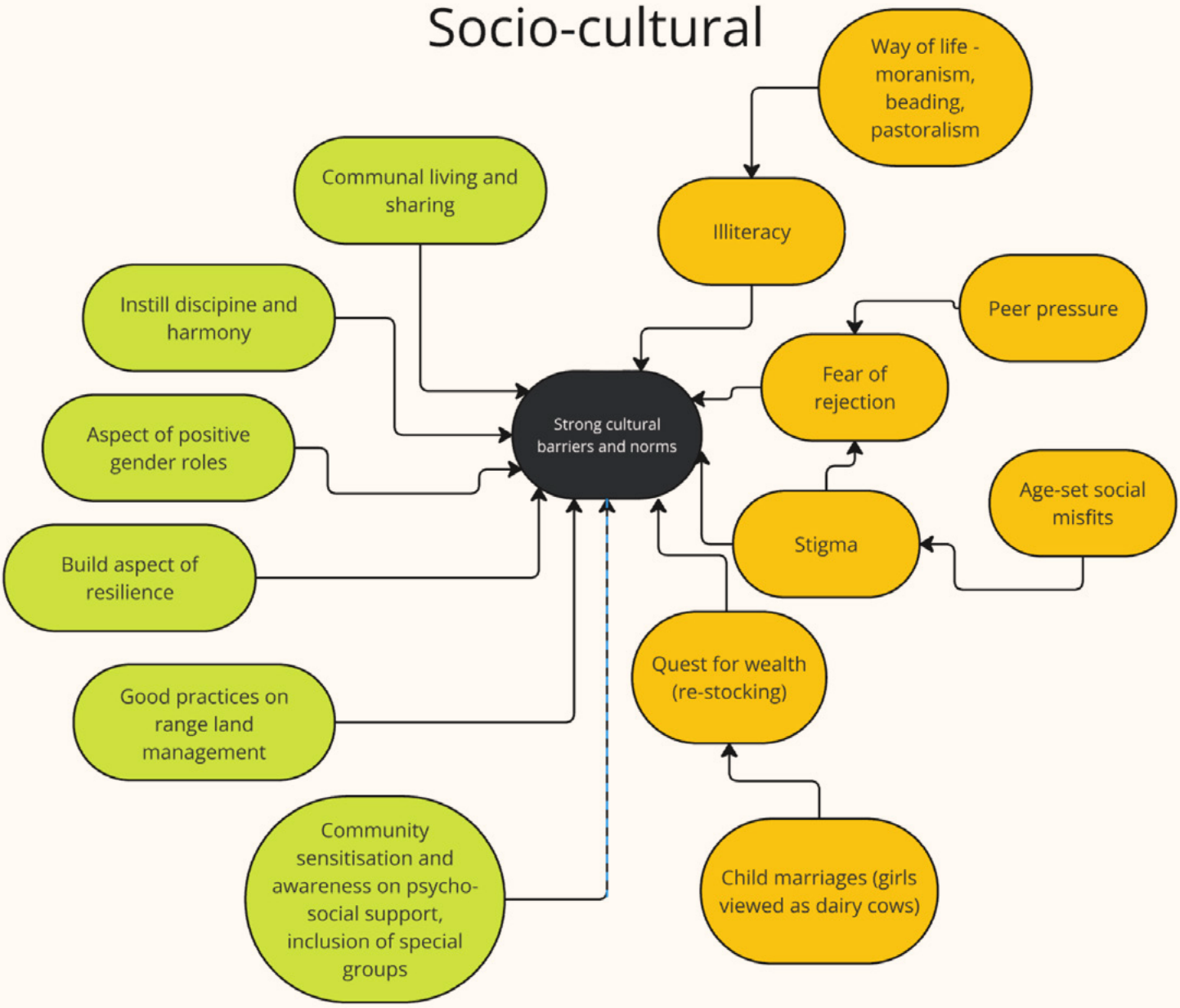


Figure 5: Causal Mapping Analysis COMT.

CLOSING REMARKS (DAY 1)

Mr Wilson Lesuuda, County Secretary
Mr Lesuuda closed day 1 of the workshop by thanking the participants and expressing his appreciation for the workshop's facilitating team. He urged the partners to collaborate with the County government and keep them updated on the Project's activities and progress. He also stated that he was optimistic about the Project based on what had happened in the workshop. He pointed out that APHRC differed from other partners, some of which the County was unhappy with.

He went on to state that he was impressed by how knowledgeable the County officials were, as demonstrated in the workshop. He urged them to put their knowledge to work to develop the County. Mr Lesuuda concluded his remarks by urging the County officials to attend the workshop the next day.

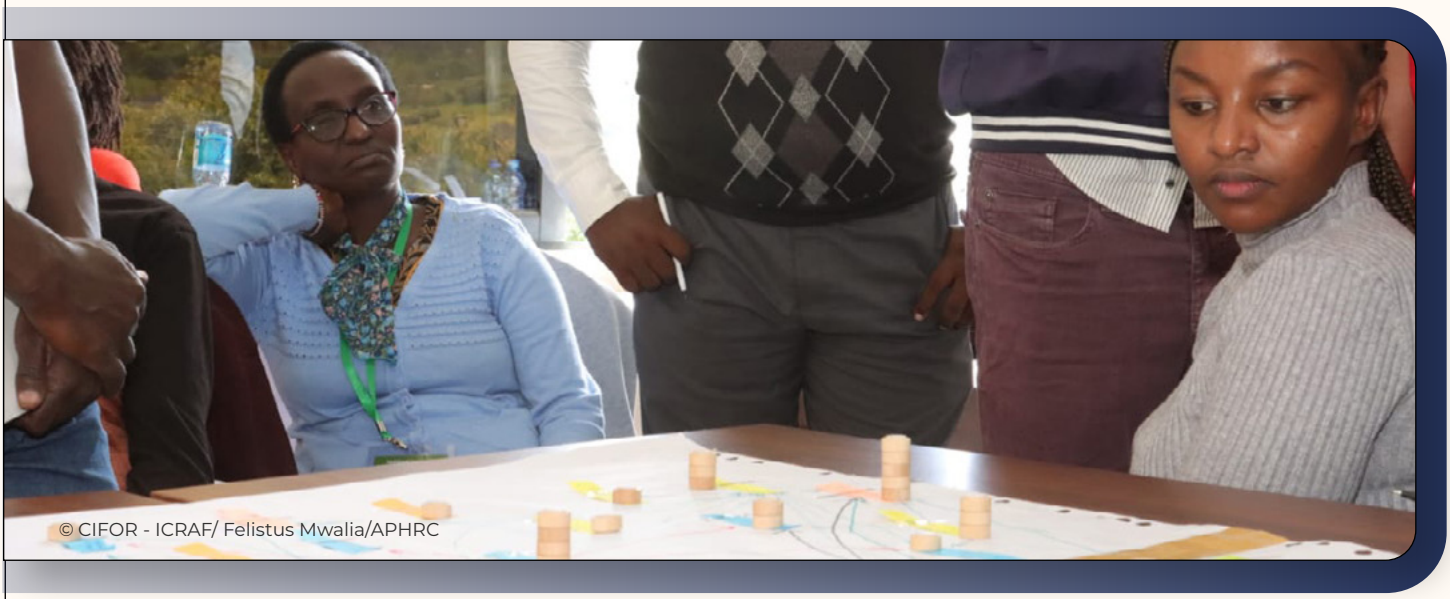
RECAP OF DAY 1

Key take-aways

- Understanding the relationship between climate change and mental health is a new dimension or perspective. This is because mental health was a new concept not often spoken about in the African culture.
- The application of new technologies in rangeland management. Looking forward to learning their application to improve the efficiency of rangeland management.
- The use of technology to help engage youth in agriculture and interact with other farmers.
- Mapping a vision for the County exercise - from the institutional dimension, there was discussion about how the County government can have SMART (Specific, Measurable, Achievable, Realistic, and Timely) policies.
- The is a need for people to understand that natural resources belong to them, so they need to protect them. Just as the late Wangari Maathai said – "you cannot protect the environment unless you empower people." The people need information about environmental conservation.

Remaining questions

- Will the Project, specifically APHRC, partner with the County government to help in policy development?
  - Yes, APHRC has a policy department and will help.
- At what stage of the Project will local knowledge be incorporated? For example, knowledge of the uses of wild fruits. It will be interesting to see how local knowledge of local fruits and vegetables and their nutritional aspects will be integrated.
  - This will be done through the food trees portfolio component of the Project.
- The soil analysis aspect of the Project should be enhanced by training youth on it as a means of creating employment for them.



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NETMAPPING

Participants engaged in a netmapping exercise to understand the key stakeholders in the climate change -food systems-health nexus in Samburu County, and their influence and interests as part of the stakeholder mapping exercise. A netmap is a social network analysis tool that uses influence mapping to help people understand, visualize, discuss, and improve situations. It is a transparent and participatory way of exploring networks of influence.

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Four groups were formed and each group discussed the following questions:

1. Who can influence the formulation and implementation of land policies for enhanced livelihoods of residents in Samburu County?
2. Who can influence informed and enhanced agroecological practices for sustainable livelihoods in the County?
3. Who influences recognition and application of informed cultural norms towards inclusive involvement of residents in climate change adaptation and health?
4. Who can influence improved and informed formulation and implementation of public policies for efficient delivery of public services in the County?

These questions were developed based on the key barriers or issues to achieving the desired vision of climate, health, and food systems created and identified during the causal analysis exercise.

In the four groups, the participants developed net maps by following these steps:

1. **Identifying the specific actors relevant to the overarching issue**, they focused on who were grouped into categories (e.g., government, private sector, NGOs, multilateral organizations, development partners and donors, etc.).
2. **Exploring how the actors are connected**, including identifying the types and nature of interactions.
3. **Assessing each identified actor's position** in relation to their influence over and interest in the issue.

The netmaps developed are shown below.

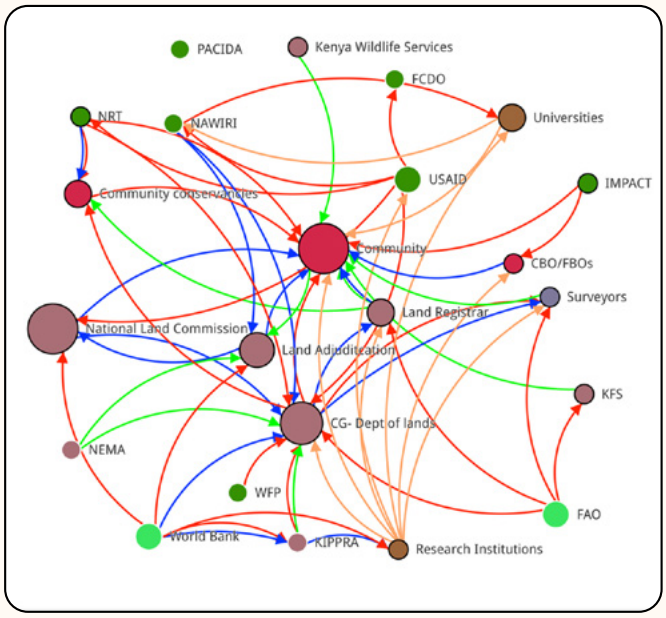


Figure 6: General map - Who can influence the formulation and implementation of land policies for enhanced livelihoods of residents in Samburu County?

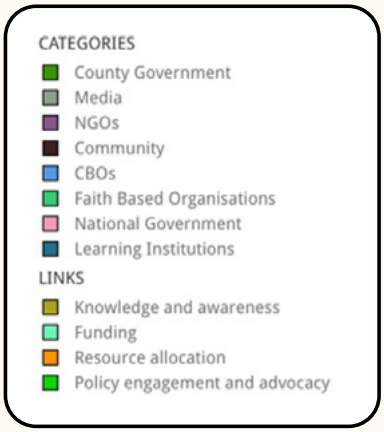
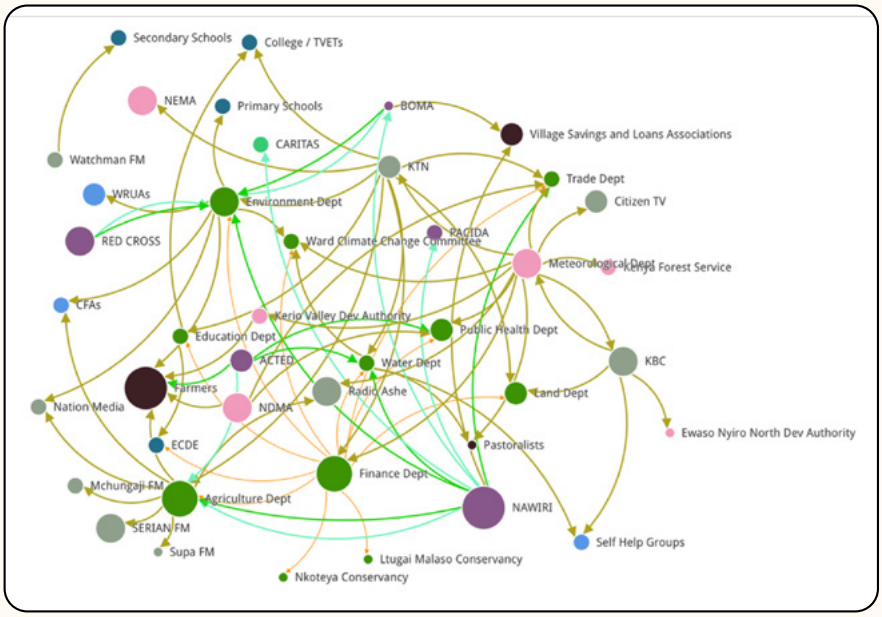


Figure 7: General map - Who can influence informed and enhanced agroecological practices for sustainable livelihoods in the county?



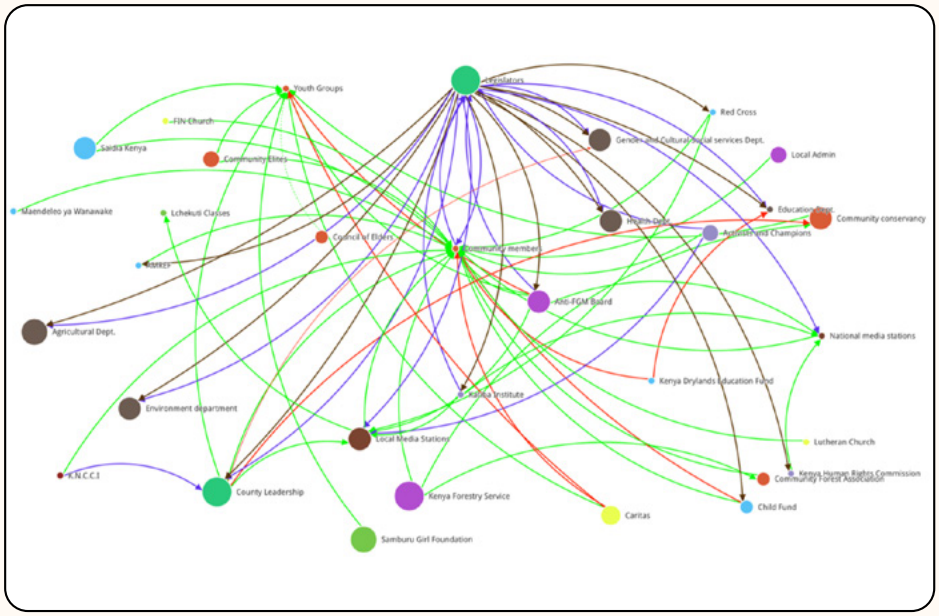


Figure 8: General map - Who influences recognition and application of informed cultural norms towards inclusive involvement of residents in climate change adaptation and health?

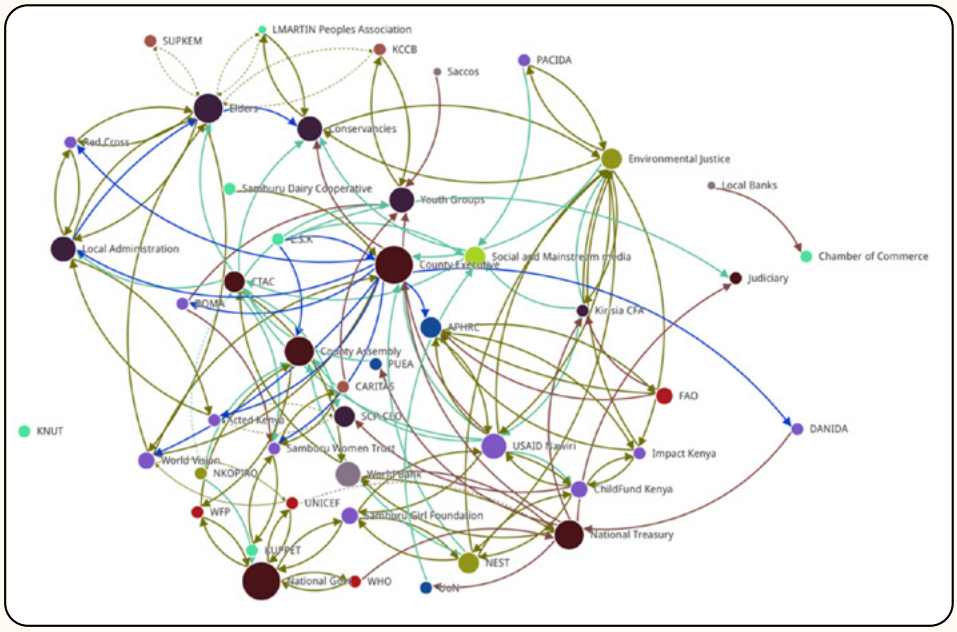


Figure 9: General map - Who can influence improved and informed formulation and implementation of public policies for efficient delivery of public services in the county?

CLOSING REMARKS

Dr Alice Karanja, Project Manager, African Population and Health Research Center (APHRC)

Dr Alice Karanja outlined the next steps for the Project with respect to research, public, and policy engagement.

Research

- Protocol development, which is ongoing.
- Seeking ethical approvals and research permits.
- Data collection for three months tentatively from tentative November 2024, followed by data analysis and synthesis for 3-5 months.
- Sharing of research findings (May –July 2025).
- Development of knowledge products.

Policy engagement

- Continuous County-level engagement.
- Annual national engagement.
- Regional engagement (Kenya, Tanzania, Ethiopia, and Tanzania) in 2026.

Public engagement

- Community Engagement - community organised groups, community-based organizations, and farmer groups/ associations.
- Media engagement - create awareness and disseminate knowledge.

Mr Peter Mitiso Kilonzo, Deputy County Commissioner (DCC)

Mr Peter Mitiso Kilonzo encouraged the Project partners to ensure that Project's impacts are felt during its implementation, and to adhere to its objectives. He appreciated the workshop's interactive and engaging facilitation, adding that he had learned a lot. He also alluded to the good relationship between the national and county governments, stating that they collaborated well. He concluded his remarks by requesting the Project partners to inform his office when the data collection will be done, to ensure that officers are allocated to work with the data collection team for security purposes.

Ms Lydia Letinina, Investment and Partnership Coordinator, Office of the Governor

Ms Lydia Letinina expressed appreciation for the collaboration and partnership brought on by the Project. She acknowledged that the County officials had learned a lot from the workshop. She further appreciated that the Project team came through the County Secretary, given the growing concerns from the community about the numerous NGOs working in the County, which had no tangible impacts. She noted this was partly due to the lack of a framework for engagement. To address this issue, the co-ordinator requested the Project team to organise to pay a courtesy call to the Office of the County Attorney. The purpose of the call would be to firm up the partnership by signing a formal partnership agreement.

Ms Letinina recommended that a technical team with focal points from various County departments should established for the Project, through the County Secretary to guarantee consistency in the participation of the County government. In conclusion, she emphasized that the investment and partnership team was available for collaboration. Ms Lydia then requested a copy of the Project workplan to facilitate team engagement and ensure that a representative was present even when others were out of the office.

Mr Wilson Lesuuda, County Secretary

Mr Wilson Lesuuda thanked the Project partners for coming to Samburu County. He also thanked the deputy County Commissioner for his collaboration and availability to work with the County government. Mr Lesuuda assured the Project team that they will enjoy implementing the Project in Samburu and requested them to officially inform his office about the next visit. He mentioned that some NGOs working in the County did not have an impact on the ground. To conclude his remarks, he thanked the workshop's participants and wished the Project team a good trip to Turkana, where the next engagement was planned.

ANNEXES

Annex 1: Agenda

DAY 1	
Time	**Session**
8.30 - 9.00	Registration and welcome
9.00 - 9.30	Welcome, introductions and workshop objectives
9.30 - 10.00	Outline of the Visibilize 4 Climate Action Project
10.00 -10.30	Break
10.30 - 11.30	Feedback on the Project / discussion
11.30 - 13.00	The health-land-climate change nexus
13.00 - 14.00	Lunch break
14.00 - 14.40	Mapping a vision for climate and health in the county
14.40 - 15.50	Causal mapping analysis – the relationships between climate/land/health
15.50 - 16.15	Stakeholder mapping (individual)
16.15 - 16.30	Closing
DAY 1	
Time	**Session**
8.30 - 9.00	Registration and welcome
9.00 - 9.30	Recap of Day 1
9.30 - 11.00	Net mapping (groups)
11.00 - 11.30	Break
11.30 - 12.30	Policy opportunities
12.30 - 13.00	Engagement process
13.00 - 13.15	Closing
13.15	Lunch and departure

Annex 2: Participants list

	NAME	INSTITUTION
1	**Abdi Salad**	ACTED
2	**Alicia Karanja**	African Population and Health Research Center (APHRC)
3	**Esther Anono**	African Population and Health Research Center (APHRC)
4	**Felistus Mwalia**	African Population and Health Research Center (APHRC)
5	**Chris Maero**	African Population and Health Research Center (APHRC)
6	**Brian Muchema**	African Population and Health Research Center (APHRC)
7	**Alice Ritho**	African Population and Health Research Center (APHRC)
8	**Gillian Chepkwoy**	African Population and Health Research Center (APHRC)
9	**Lesepe Niwa**	Ag. Ward Admin Lodokejek
10	**Robin Letunta**	Ag. Ward Admin -Lodokejek
11	**Kahelo Cleophas**	Caritas Maralal
12	**Freidah Wanda**	Center for International Forestry Research and World Agroforestry (CIFOR-ICRAF)
13	**Laura Vanessa Mukhwana**	Center for International Forestry Research and World Agroforestry (CIFOR-ICRAF)
14	**Katazyna Przystupa**	Center for International Forestry Research and World Agroforestry (CIFOR-ICRAF)
15	**Mieke Bourne**	Center for International Forestry Research and World Agroforestry (CIFOR-ICRAF)
16	**Peter Mutiso**	Deputy County Commissioner
17	**Lokitambaa Andrew**	Environmental Justice Team Samburu
18	**Richard Lemooli**	Kenya Forest Service (KFS)
19	**Salina Lelegwe**	Kenya Meteorological Department (KMD)

	NAME	INSTITUTION
20	**Lenaola Samuel**	Kenya National Bureau of Statistics (KNBS)
21	**Andrew Washington Leakono**	Kenya National Chamber of Commerce and Industry (KNCCI)-Samburu
22	**Patrick Mwithia**	Kerio Valley Development Authority (KVDA)
23	**Peter Leparie**	KRCS
24	**Dicilsa Schulel**	LMAMFU
25	**Boniface Barasa**	Media
26	**Bernard Maranga**	Media - Kenya Broadcasting Corporation (KBC)
27	**Geoffrey Ondieki**	Media - Nation Media Group
28	**Emmanuel Matano**	Media - Radio Ashe
29	**Sammy Leatoro**	Media - Watchman Radio
30	**Cassim Zuberi**	National Drought Management Authority
31	**Richard Lemarkat**	National Environment Management Authority (NEMA)
32	**Bathsheba Ratemo**	PELUM Kenya
33	**Israel Lemako**	Persons of Influence
34	**Martha Kisise**	Persons of Influence
35	**Kennedy Ngiemae**	Samburu County Govenrment
36	**Mary Bett**	Samburu County Government
37	**Christine Letunta**	Samburu County Government
38	**Emily Lekarkar**	Samburu County Government
39	**John Leshalote**	Samburu County Government
40	**David Lewaseiyan**	Samburu County Government

Annex 2: Participants list CONT.

	NAME	INSTITUTION
41	**Fredrick Lenturkan**	Samburu County Government
42	**Jonathan Namunai**	Samburu County Government
43	**Vincent Leboo**	Samburu County Government
44	**Patrick Lekimain**	Samburu County Government
45	**Anthony Lemeleki**	Samburu County Government
46	**Rotich Joseph**	Samburu County Government
47	**Lebarleiya Dan**	Samburu County Government
48	**Lydia Letinina**	Samburu County Government
49	**Lolmingam Simon**	Samburu County Government
50	**Lepana Fabiano**	Samburu County Government
51	**Simitwa Geoffrey**	Samburu County Government
52	**Rose Lenairerei**	Samburu County Government - Administration
53	**Sammy Lekula**	Samburu County Government - County Executive Committee Member (CECM) Agriculture, Livestock Production and Fisheries
54	**Delphina Kaaman**	Samburu County Government - County Nutrition Coordinator
55	**Wilson Lesuuda**	Samburu County Government - County Secretary
56	**Moses Leluata**	Samburu County Government - Department of Agriculture, Livestock Development, Veterinary Services & Fisheries
57	**Fred Lelemoyog**	Samburu County Government - Department of Agriculture, Livestock Development, Veterinary Services & Fisheries

	NAME	INSTITUTION
58	**Nasieku Letipila**	Samburu County Government - Department of Culture, Social Services, Gender, Sports & Youth Affairs
59	**Letipila Gloria**	Samburu County Government - Department of Culture, Social Services, Gender, Sports & Youth Affairs
60	**Lotukoi Monica**	Samburu County Government - Department of Water, Environment, Natural Resources & Energy
61	**Lenolkulah Sammy**	Samburu County Government - Department of Water, Environment, Natural Resources & Energy
62	**Mark Leagile**	Samburu County Government - Department of Water, Environment, Natural Resources & Energy
63	**HE Gabriel Lenengwesi**	Samburu County Government - Deputy governor
64	**Lemoosa Sylvester**	Samburu County Government - Directorate of Crop Production
65	**Lelesiil Kamatin**	Samburu County Government - Directorate of Economic Planning and ICT
66	**Philip Letowon**	Samburu County Government - Directorate of Education
67	**Simon Lepakiyio**	Samburu County Government - Directorate of Irrigation
68	**Augustine Lkeitan**	Samburu County Government - Directorate of Public Health and Sanitation
69	**Dr. Stephen Mureithi**	Univerisity of Nairobi (UON)
70	**Evans Chimoita**	University of Nairobi (UoN)
71	**Lenkobe Charles**	Ward Admin Porro
72	**Musarini Lentoijoni**	Ward admin-Baawa

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