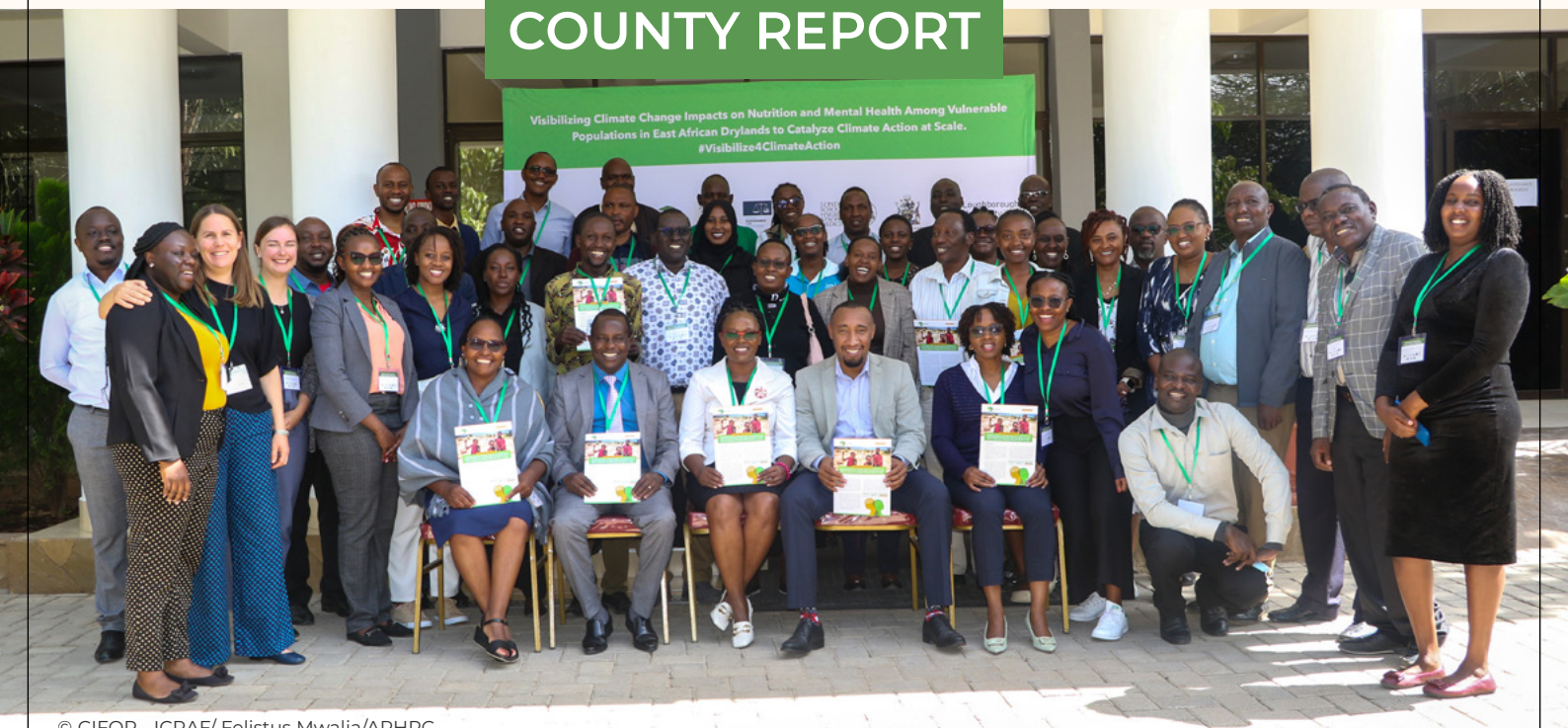
COUNTY REPORT



VISIBILIZE 4 CLIMATE ACTION PROJECT

Laikipia County Inception and Stakeholder Engagement Workshop Report

1st and 2nd July 2024

Nanyuki, Laikipia County

Mukhwana, L., Bourne, M., Trautman, S. 2024. *County Report: Visibilize 4 Climate Action Project Laikipia County Inception and Stakeholder Engagement Workshop Report.* Bogor, Indonesia: CIFOR: Nairobi, Kenya: ICRAF.

This work is funded by the **Wellcome Trust** *to the Visibilize 4 Climate Action in Eastern African Drylands Project: Visibilizing climate change impacts on nutrition and mental health among vulnerable populations in Eastern African drylands to catalyse climate action at scale* [grant number 228064/Z/23/Z].

CIFOR
Jl. CIFOR, Situ Gede
Bogor Barat 16115
Indonesia
T +62 (251) 8622622
F +62 (251) 8622100
E cifor@cifor-icraf.org

ICRAF
United Nations Avenue, Gigiri
PO Box 30677, Nairobi, 00100
Kenya
T +254 (20) 7224000
F +254 (20) 7224001
E worldagroforestry@cifor-icraf.org

cifor-icraf.org

TABLE OF CONTENTS

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 and stakeholder engagement workshop was held on July 1st and 2nd, 2024, in Nanyuki, Laikipia 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.

A total of 57 participants attended, including county government officials, national government representatives, non-governmental organizations (NGOs), community-based organizations (CBOs), private sector representatives, media, and project partners. The participants' characteristics, including gender and stakeholder categories, are shown in Figures 1 and 2 below.

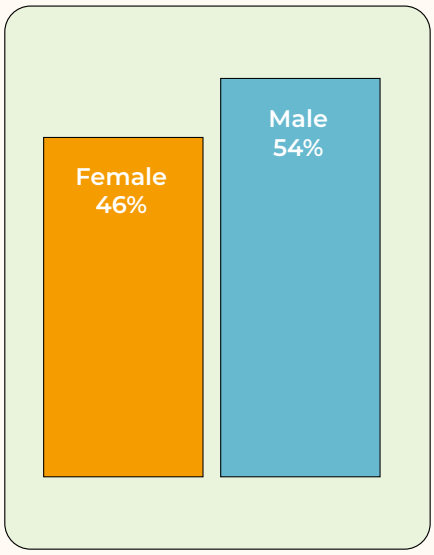


Figure 1: Participants' gender

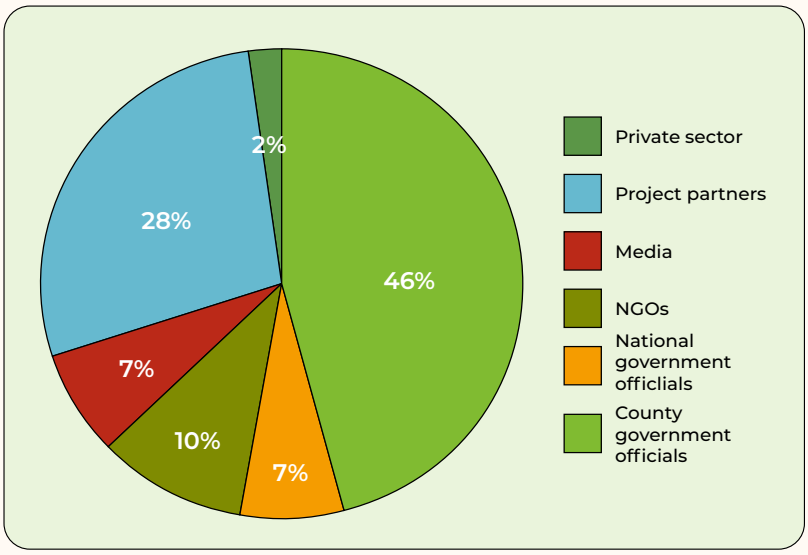


Figure 2: Stakeholder categories represented in the workshop

WELCOME AND OPENING

Ms Esther Anono welcomed the participants to the workshop and facilitated an icebreaker activity, asking them to reflect on the proverb, **"Words are sweet but cannot take the place of food."** This exercise set the tone for the workshop, encouraging participants to consider the tangible impacts of climate change on food security and health. Following this, the participants introduced themselves, and Ms Anono outlined the workshop's objectives. The workshop agenda and participant list can be found in Annex 1 and 2.


© CIFOR - ICRAF/ Ann Ngunjiri/Laikipia County Government

OFFICIAL OPENING REMARKS

Hon Leah Njeri, County Executive Committee Member (CECM) for Water, Environment, and Natural Resources

Hon Leah Njeri emphasized the importance of a multi-stakeholder approach in achieving the objectives of the Visibilize 4 Climate Action Project. She expressed appreciation for the project's research-based approach and its policy engagement component. She noted that Laikipia County has faced challenges in research and policy development and highlighted how the project could help address these gaps. Hon. Njeri concluded by expressing her optimism for fruitful engagement and affirmed the County's commitment to collaborate for the project's success.

Hon Edwin Dennis Kasoo, County Executive Committee Member (CECM) for Agriculture, Livestock, and Fisheries

Hon Edwin Dennis Kasoo praised the project's integration of agriculture, highlighting its significance as a primary livelihood source. He noted that examining agriculture and climate change requires a focus on both food and animal production, along with the adoption of practices to reduce emissions and mitigate climate change. Hon. Kasoo commended the project for addressing these critical aspects.

Hon Albert Wagura Taiti, County Executive Committee Member (CECM) for Health

Hon Albert Taiti provided insights into the broad aspects of health and underscored the timeliness of the project in contributing to the "One Health" discourse, which encompasses human, ecological, and animal health. He explained that the causes of ill health and health determinants often go beyond medical factors, emphasizing that nutrition is the foundation of health. Hon Taiti expressed appreciation for the project's comprehensive approach, which goes beyond hospital care to include nutrition, and recognized the need for research in this area, which has not received adequate attention.

H.E. Reuben Kamuri, Laikipia County Deputy Governor

H.E. Reuben Kamuri began by thanking the participants for attending the workshop and commended the project's multi-sectoral approach. He highlighted the interconnectedness of climate change, nutrition, and health, stressing the need for collaboration among stakeholders, including County government for policy development and the community, who are directly impacted. He emphasized the importance of public participation and engagement, as the community is at the center of these challenges.


© CIFOR-ICRAF/ Ann Ngunjiri/Laikipia County Government

H.E. Kamuri shared that he had previously struggled to understand the nexus between climate change, health, and nutrition but now appreciates that addressing climate change is crucial for protecting food systems. He noted that the Visibilize 4 Climate Action Project aligns with the County Governor's manifesto on ensuring food security and health. He urged the project partners to share preliminary research findings within the next six months to inform the 2025-2026 budget cycle.

H.E. Kamuri also provided examples of the County government's land restoration initiatives, such as promoting water harvesting and the planting of 10 million trees towards a target of 30 million trees. He concluded by reaffirming the County government's support for the project and offered office space to the project partners.

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 African Population and Health Research Center (APHRC), the rationale for the Visibilize 4 Climate Action Project, and the roles of the project partners. She also outlined the project objectives and its focus areas, or work packages.

The Visibilize 4 Climate Action Project's overall objective is to make visible, through research and public and policy engagement, the impact of climate change on the nutritional status and mental health of vulnerable populations in the East African drylands (arid, semi-arid, and dry sub-humid zones). The goal is to catalyze context-specific climate policy and practice changes at scale (see Figure 3 for the main focus of the project).

Figure 3: Project Main Focus

This project is particularly significant because Africa is one of the most vulnerable regions in the world to the projected impacts of climate change on health. For instance, it is projected that food security and agricultural productivity in Sub-Saharan Africa could decline by up to 34%. This reduction is expected to lead to severe consequences for food security, nutrition, and health in the eastern Africa region, with vulnerable populations in the East African drylands bearing the greatest burden (see Figure 4 for the pathways illustrating the impact of climate change on food systems, food security, and nutrition). For more information on the Visibilize 4 Climate Action Project, please click here.

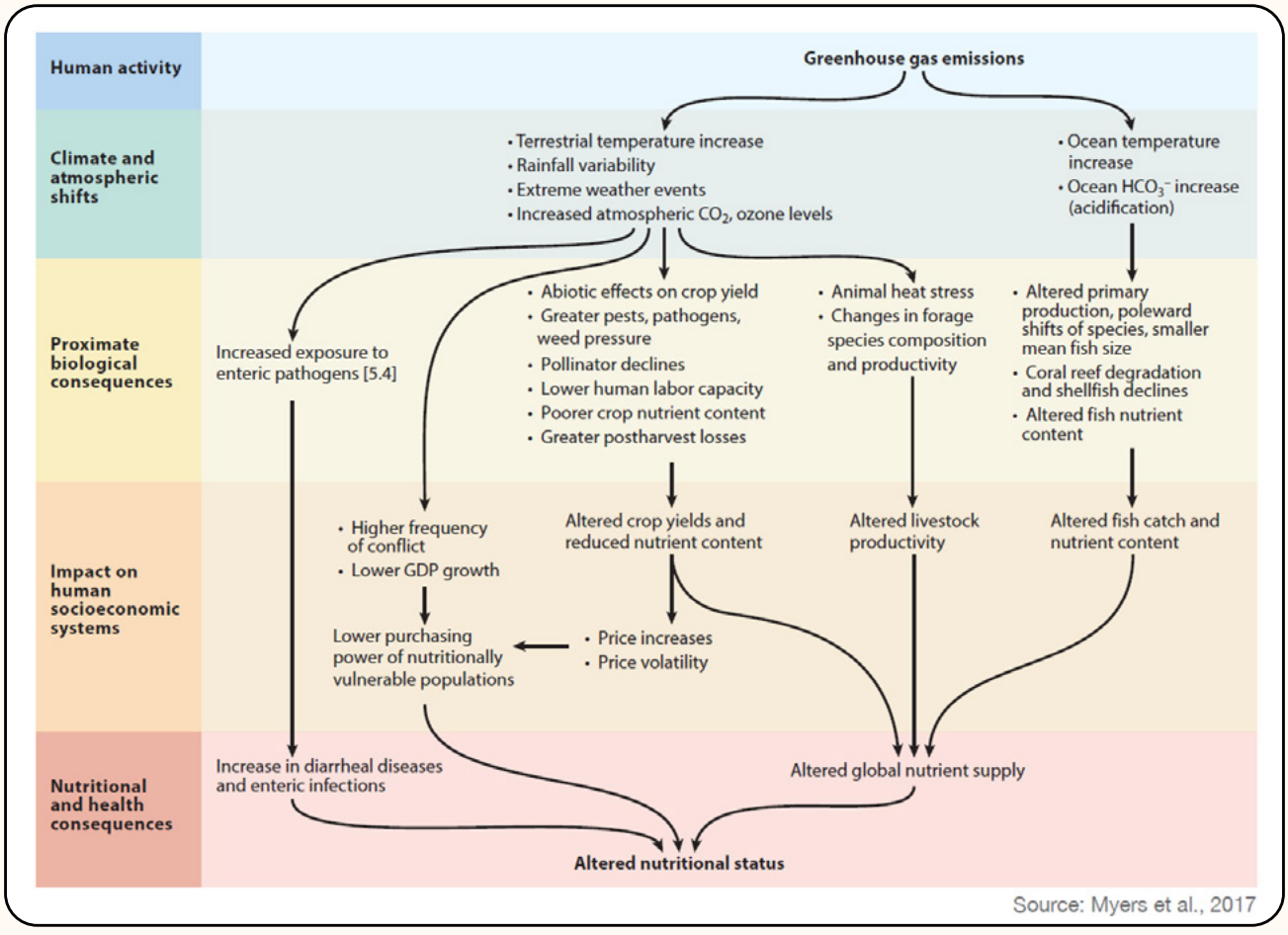


Figure 4: Pathways for Impacts of Climate Change

QUESTIONS, ANSWERS, AND COMMENTS

QUESTION 1

A lot has been done around agroecology, demonstration farms, and food forests. For example, Groots Kenya works on agroecology and agroforestry initiatives. What is different in this project, and where are the areas for partnership?

ANSWER

PELUM and Groots can have a bilateral meeting to explore opportunities for collaboration, as PELUM will lead the capacity-building efforts on agroecology in this project.

QUESTION 2

Why are we separating mental health from health?

ANSWER

We need to get into the mental health space and understand the status, which will be addressed in Work Package 2 of the project. Additionally, the modelling of health, addressed in Work Package 3, lacks evidence on mental health, whereas evidence exists for other aspects of health and well-being, which is why it has been singled out.

QUESTION 3

Will the gender perspective be examined in the research? Are you going to disaggregate mental health effects by gender and age?

ANSWER

Yes, climate change affects men/boys and women/girls differently. We will disaggregate data by gender and age through both qualitative and quantitative methods. For example, focus group discussions (FGDs) on how nutrition has changed and how it has directly impacted women and men, including their mental health and nutrition, with a particular focus on children under five and women of reproductive age.

QUESTION 4

Who is the target population in this research? What sampling technique will be employed?

ANSWER

The research will target households with children under five years old and women of reproductive age. Random sampling will be used to select households, but different sampling techniques will be employed based on the research objectives. Household and land health surveys will be conducted using various instruments.

QUESTION 5

Could you clarify what you mean by women of reproductive age? Is there a specific age range?

ANSWER

Women of reproductive age are those between 15 and 49 years. This includes adolescent mothers.

QUESTION 6

The issue of mental health is becoming rampant in Kenya, especially among young girls, women, and youth in general. What is the project's strategy for addressing this? Will you involve counsellors and health practitioners in studying how climate change affects mental health?

ANSWER

We will research anxiety, depression, and post-traumatic stress in collaboration with the County Government of Laikipia and local practitioners through key informant interviews.

QUESTION 7

Regarding objectives 1 and 2, what are the variables that will be measured, and which analysis tool will be used for land health? How will objective 3 be measured?

ANSWER

The Land Degradation Surveillance Framework (LDSF) will be used for land health. Variables include land use (current and historical), land degradation, topography, soil land cover, rangeland health, and others.

QUESTION 8

The County Government of Laikipia is developing two policies—a rangeland policy and an agroecology strategy. How will the project contribute to these policy matters?

ANSWER

PELUM Kenya is supporting the creation of an agroecology strategy. Further discussions on policy support will be held tomorrow as we explore policy opportunities.

QUESTION 9

What are the focus areas of the project?

ANSWER

The project focuses on three counties: Laikipia (Laikipia West Sub County, which is dry sub-humid), Samburu (semi-arid), and Turkana (arid).

QUESTION 10

Given that the project addresses climate change and APHRC is a research institution, how will you address the impact of business entities such as ranches and flower farms in Laikipia, which strain water resources and leave indigenous communities more vulnerable?

ANSWER

Modeling will be used to show the interaction of various variables, such as land degradation and its causal effects on health.

QUESTION 11

Since there is an action component involving actual implementation, how long will the research component last?

ANSWER

The research will be cross-sectional and brief, lasting three months to inform further actions and engagements. Public and policy engagement will take more time.

QUESTION 12

The project's geographic focus in Laikipia is Laikipia West Sub County, which is sub-humid. For example, Salama in Laikipia West is a dry area. How will you work around that?

ANSWER

A cross-sectional study will be conducted in Laikipia West Sub County, and households will be selected randomly. Different areas will have tailored research designs.

COMMENTS

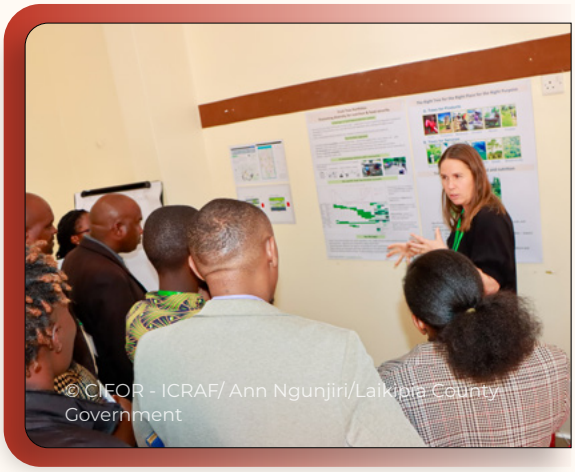
- The project partners need to map out the various groups working in the intervention areas to effectively structure the capacity-building efforts.
- Emerging trends, such as the impact of climate change on local businesses (specifically on mental health), should be captured to ensure a holistic approach to sustainability.

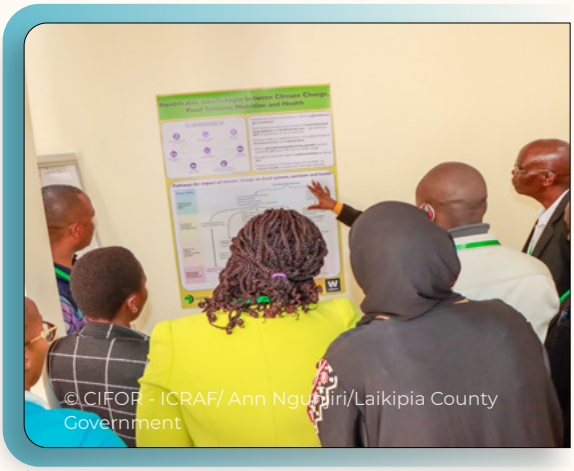
THE CLIMATE CHANGE-FOOD SYSTEMS-HEALTH NEXUS

Participants in this session explored the nexus between climate change, food systems, and health. The session involved participants interacting with a data wall, where they were divided into four groups. Each group visited four stations on the wall in cycles of 15 minutes. A data wall presents data and information across different themes to allow participants to interact with data, discuss it, and integrate it.

The four stations focused on the following topics: food tree portfolios and agroforestry, agroecology, food systems, and land health. The various aspects of each topic were explained with the help of posters and participants were allowed to interact, pose questions and make comments.

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





Images: Participants Interacting with the data wall

THE QUESTIONS AND COMMENTS MADE ARE SUMMARIZED BELOW

STATION

Food tree portfolios and agroforestry

- Where do you include Non-Timber Forest Products (NTFPs)?
  - Typically, they are placed in the “Uses” section, but they may need a separate category depending on the context.
- What about the people doing irrigation? They may also experience food insecurity.
  - This could be highlighted, but it may not have a significant impact due to the project’s focus on specific crops.
- Does ICRAF have a repository of fruit trees suitable for all areas of Kenya?
  - Yes, ICRAF has one for indigenous species and some exotic species.
- What can be done to reduce food insecurity?
  - Growing diverse varieties of food crops and portfolios helps communities make informed decisions about which crops to cultivate, thereby reducing food insecurity.
- Are you able to consider the complementarity of crops?
  - Yes, this is addressed in the agroecology focus of the project.
- Any perspectives on the use of firewood?
  - The county is discouraging the use of firewood due to associated respiratory health issues.
- How do you sample macronutrients?
  - Macronutrient analysis is conducted using a standard database, while community engagements provide specific lists of foods for analysis.
- Is the dashboard available for government use?
  - Yes.
- Why is there food insecurity even when it rains?
  - There can be a lag between the onset of rains and crop growth, leading to temporary food shortages.

- Why is there food insecurity despite the availability of wild fruits?
  - This is due to insecurity in the plots and limited accessibility to wild foods.
- Will water harvesting be considered in this portfolio approach?
  - Yes, it is part of the portfolio approach.
- Have you compared the nutritional value of fruits from Laikipia to those from other areas?
- How can he issue of waste management be integrated into agroforestry? E.g., using ashes and food waste to reduce fertilizer use.
- Can herbs and spices be incorporated to enhance the taste of indigenous trees in the approach?
- Are you focusing on indigenous or exotic speciesA in the portfolios?
- Is sorghum included among the crops in the Rumuruti-Laikipia portfolio?

Value addition:

- **Is there a way to preserve harvested** crops?
  - Having a diversity of crops is one way of doing this.
  - Laikipia Isiolo Samburu Transforming Environment through Nexus (LISTEN) Project by SNV promotes clean cooking jikos and value addition using solar driers.
- Can we add value to fruits to ensure supply?
- Does value addition reduce the nutritional content?
- Could you investigate how methods to preserve different species can be preserved and maintain their nutritional content?

Comments and Recommendations:

- Consider the taste of food crops when selecting food trees in this methodology.
- Groots Kenya has established food forest projects.
- Agroforestry should incorporate soil and water conservation measures.
- Support communities in growing trees for their use.
- Select trees in agroforestry that fix nitrogen to improve soil fertility and promote crop rotation.
- Laikipia has legumes (e.g., Nyota beans) that are critical for food security.
- Trees should be selected based on their utility to the community.
- Encourage communities to establish tree nurseries to provide seedlings for agroforestry.
- The Department of Health has unused land that could be used as demonstration sites for communities to diversify their diets, such as at hospitals.
- Are demonstration sites in hospitals sustainable?
- There is a need for policy development to support the use of hospital land for such purposes.
- The Laikipia Afia Mashinani Programme (LAMP) has approved a cabinet paper on the program, supporting policy development.
- Community health promoters will form community groups.
- This could also be done in collaboration with schools through 4K and environmental clubs.
- The Department of Health is promoting the following preventive measures for malnutrition:
  - Planting the right species.
  - Establishing demonstration kitchen gardens.
  - Promoting the concept of circularity.
  - Emphasizing organic farming practices.

STATION
Agroecology

- Are people ready to adopt agroecology?
- Yes, PELUM Kenya, through its members, has reached more than 2 million farmers. However, government goodwill is still needed, such as providing subsidies for organic inputs.
- Is there any minimal incentive given to farmers?
- We have supported farmers with dam liners for water harvesting, seeds, free training, establishment of demo farms etc.
- How can agroecology be viewed as a business?
- Value addition is important to fetch good/premium price. A holistic approach is needed to make money. PELUM Kenya has supported organic markets to ensure farmers can sell their produce.

Comments:

- Small spaces can be utilized in agroecology.
- Urban farmers can incorporate vertical gardens.
- Laikipia County is in the process of formulating a National Agroecology Strategy.

STATION
Food Systems & Health

- Focus on other interlinkages that impact health, such as poor sanitation, which influences disease, water access, and pests and diseases, which affect crop and livestock production.
- Reduced household income is a bottleneck in the food systems, specifically household food security. Diseases such as cancer also lead to reduced human labour capacity, which impacts food security.
- In the livestock economy, there is inadequate technical support (manpower) to treat livestock diseases, which leads to the use of over-the-counter drugs for treating animals. This has led to the hypothesis that antimicrobial resistance in humans may be due to the consumption of such livestock products.
- Food production issues include the use of chemicals to ripen food products such as tomatoes.
- Government approaches to mitigate climate impacts on health include adopting a collaborative approach at the cabinet level, ensuring that line ministries and departments (Agriculture, Health, Environment, Wildlife) work together rather than in silos. This is also driven by budget cuts in each ministry.
- There are zoonotic diseases that are transmitted from animals to humans, such as Rift Valley Fever, which impacts the health of the population.
- Community health promoters can be utilized to pass on key messages to the community.
- There is a need for policies that protect disadvantaged members of the community.
- Work with communities by linking farmers to Water Resource Users Associations (WRUAs).
- Utilize indigenous and local knowledge in the adoption of climate change practices.


© CIFOR - ICRAF/ Ann Ngunjiri/Laikipia County Government

- There is a need to address issues around water availability and the quality of water for agriculture and household use, including drinking water. This impacts food systems; for example, arrowroots (nduma) are grown with poor water quality.
- It is important to incorporate food vendors in the discussion on food systems.
- Gender plays a significant role in the food system, where women are key in nutrition at the household level. Food preparation can enhance or diminish food nutrition.
- Promote the palatability of traditional foods among children and youth through initiatives such as soup kitchens.
- Energy is crucial in food systems, specifically fossil fuels. The adoption of renewable energy sources like solar for irrigation pumps is essential in food production. Additionally, most of the population uses traditional three-stone stoves for food preparation, which utilize firewood or charcoal. There is a need to adopt clean energy for cooking.
- It is necessary to address the use of fertilizers and biodiversity loss within the community.
- There is a need to resolve human-wildlife conflicts, such as those involving people and elephants.
- The use of antibiotics in livestock and its effects on human health should be addressed.
- Gender issues, such as including boys and men in nutrition conversations, should be considered.
- The impact of plant-based drugs (miraa, muguka) on mental health should be examined.
- There is a need to include vulnerable groups, especially women, children, and persons with disabilities, in the conversation.
- Shared resources should be managed properly following established policies.
- Create green spaces and relaxing areas to help people cope with mental health challenges. This includes repurposing riparian land to create spaces for people to enjoy calmness and relaxation.

- Include older persons in the conversation.
- Education is impacted due to school dropouts caused by drought.
- Understand the linkage between drug abuse and climate change.
- Gender-based violence (GBV) increases due to food shortages.
- Address the issue of heavy pesticide use in food production.
- Identify target markets for effective food system transformation.
- Address issues concerning persons with disabilities and prioritize their ability to access food. This also includes the elderly and children under five.
- Gender issues should be addressed by including women, who are often involved in unpaid work, and men in the interventions.
- Teenage mothers need to be included in the conversation.
- Increased morbidities such as diarrhea, urinary tract infections (UTIs), and malaria are occurring due to climate change.
- Invasive species like Opuntia stricta are spreading rapidly, a phenomenon attributed to climate change.
- Capacity building in the community is essential.
- Through carbon credits (NRT), the community should use the funds for bursaries and land conservation.
- Partnerships are needed to mitigate the effects of climate change and leverage the positive outcomes.
- Food production should include the transport sector and improve the processing chain through post-harvest management (e.g., traceability). Currently, 30% of food is wasted.
- Adopt agroecology practices as income-generating activities.
- Establish market linkages (internal and external), such as certification of origin. Linkages are mostly crop-based, such as for avocados.
- Security and interior coordination should be involved.
- Food waste management: Plant what can be consumed and assess markets before planting. Educate on value addition.
- Link food systems initiatives to the Sustainable Development Goals (SDGs).
- Linkages for small-scale farming need to be considered in comparison to large-scale agriculture.
- Promote innovations such as drought-resistant crops and animals, circular economy practices (e.g., zero grazing, post-harvest management, irrigation systems, kitchen gardens, and soak pits).
- Government interventions should focus on information dissemination and regulation.
- GMOs: Laikipia is advanced in horticulture, particularly in growing tomatoes.
- Sensitize the community on the use of pesticides and encourage organic farming to combat land degradation.
- The positive effects of climate change include the use of carbon credit money through NRT to support community projects like paying school fees for children.
- Consider how human-wildlife conflict can be addressed within the project components.
- What component will address human-wildlife conflict?

STATION
Land health

- Are we able to assess the invasive species, and will they be included or excluded from the study?
  - There have been sightings of invasive woody species like Opuntia in Samburu. It would be beneficial to identify other invasive species in the study sites and determine appropriate management strategies.
- Issue of replication – numerous studies have been done on rangeland restoration. What more does the project bring to the table beyond data collection?
  - The project focuses on generating contextualized data to support evidence-based decision-making tailored to specific policy needs.
- Many studies have focused on forests, leaving a gap in research on drylands and grasslands, which store significant carbon. Plant diversity in these areas is correlated with soil-carbon and soil health.
- Issues with pests and diseases that cannot be controlled organically (large-scale organic farming can be challenging and poses a threat to health).
- The Flority app is used to capture images of land degradation. Is it the same as the one presented by Stephen Muriithi?
- Horticulture, particularly commercial tomato farming in Laikipia West, has increased rapidly. How can farmers be encouraged to transition from chemical use to organic farming?
- How easy is the Land Degradation Surveillance Framework (LDSF) for everyone to use? Is it readily available and user-friendly?
  - There is a downloadable manual and an app available for future use, which will be accessible and user-friendly. In Laikipia, the Essential Biodiversity Variables (EBV) framework is being utilized in the county.
- First-hand products generating income pose a significant threat to forests, wildlife, and human conflict. How can this be addressed?
  - Complementary planning strategies should be holistic and integrated.
- There is limited knowledge about the capacity of rangelands to sequester carbon. How can we address this misconception?

- Nitrogen excess: Which soils can retain it, and how can we educate communities in rangelands?
- The soil has been degraded, and the fruit tree projects that started in 2017 may not be feasible. How can we return to indigenous species?
- Does vegetation determine soil health?
  - Yes, greater vegetation cover leads to better carbon sequestration.
- Clarification is needed on land being heterogeneous.
- Will you consider the loss of land capacity (livestock population) in rangeland farming systems?
- Will the impact of different farming systems on soil health be considered?
- There are segregated lands for grazing, but some rangelands are not used due to insecurity and cultural restrictions. How can this be addressed?
- How will the issue of overstocking be addressed, given its cultural significance?
  - Area of collaboration: The LISTEN Project is involved in removing invasive species in rangelands.
  - In other areas, innovative technologies like long-term water conservation using semi-circular bunds are used to reseed degraded areas.
  - The role of animals in rangeland rehabilitation is not well captured.
- Why are grasslands better at carbon sequestration compared to crops or trees?
  - Grasses in drylands store more carbon in their root systems than woody species.
- Is the LDSF being used in other counties, and is the evidence informing policies and practices?
  - Yes, it is being implemented in West Pokot (Chepareria) and Turkana. Stakeholders and other actors are also involved in Kajiado.
- Some soils, due to topography, provide more nutrients to crops.
  - Crop nutrient content is reflective of soil health.
- Manure use and raising awareness are essential.
- Will we engage counties in finding solutions?
  - Yes, that is the goal.
- Land use – Please address issues related to protected areas and private land ownership.
  - Consider community or communal land ownership.
- Is soil health seasonal?

Participants' reflections of the data wall exercise on the nexus between climate change, food systems, nutrition, and health were:

- All the dimensions are intertwined and linked; hence, we need collaborative efforts to mitigate the impacts of climate change. The government should develop policies.
- The community is a key aspect. Hence, there is a need for public engagement/community engagement.


© CIFOR - ICRAF/ Ann Ngunjiri/Laikipia County Government

MAPPING A VISION FOR CLIMATE AND HEALTH IN THE COUNTY

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

For the exercise, they were divided into six groups, with each group focusing on one of the six dimensions to define what success would look like in their respective area. They had 20 minutes to discuss and respond to the following question:

"You wake up in 2034 (10 years from now), and the work of all actors in the County on sustainable land management and improved food systems for climate change adaptation to reduce health impacts has been a success!"

Below summarises the visions developed for each dimension.

VISIONS FOR EACH DIMENSION

DIMENSION
Agricultural Productivity

- Minimal livestock migration due to stable grasslands and sufficient pasture and water.
- Reduced human-wildlife and resource conflicts.
- Decreased incidence of livestock diseases.
- Improved agricultural productivity due to enhanced soil health, better pasture, increased water availability, and reduced disease prevalence.
- Restoration and management of rangelands, leading to a reduction in invasive species.
- Sustainable food systems contributing to food and nutrition security.
- Improved socio-economic status and living standards.
- Increased student enrolment in schools.

DIMENSION
Environmental

- Restored ecosystems, including land, rivers, forests, wetlands, grasslands, ice caps on Mount Kenya, and soils.
- Achieving net zero emissions of greenhouse gases.
- Increased carbon credits.
- Circular economy through sustainable waste management, improved health, employment opportunities, and technological innovations.
- Vibrant livestock and crop production.
- Increased awareness of food systems, environmental health, and climate change.
- Improved livelihoods, leading to higher standards of living.
- Greater use of green energy.
- Implementation of policies and legal frameworks.
- Reduction of conflicts (human-human, human-wildlife, and livestock-wildlife conflicts).
- Increased biodiversity.
- Reduced impacts of climate change, such as improved flood control, drought mitigation, and increased water harvesting.
- Conservation efforts at the household level, including dams, pans, and ponds.
- Sustainable sand harvesting practices.

DIMENSION
Health

Sustainable land management:

- Successful land reclamation and reduced fertilizer use.
- Afforestation and agroforestry, forest conservation, and policy enforcement on afforestation.
- Embracing technology and operational/ implementation research on technology.
- Land titles and boundaries.
- Manage overstocking and the issue of over-cultivating one crop.
- Land degradation
- Deforestation
- Lack of technology
- Land ownership

Improved food systems:

- Technological interventions.
- Streamlined supply chains from farm to consumer, increasing access to safe and nutritious food.
- Affordability and accessibility of safe and nutritious food.
- Crop diversity through planting a variety of nutritious foods.
- Promotion and adoption of palatable indigenous foods.
- Address cultural issues, myths, and misconceptions around food.
- High human productivity and reduced mortality.
- Reduced stress on the health system.

DIMENSION
Socio cultural

- Strengthened social bonds due to increased happiness.
- Better preservation of cultural sites and heritage.
- Increased population with lower mortality rates.
- Reduction in crime rates due to overall life satisfaction.
- Enhanced fertility rates.
- Availability of indigenous foods such as fats, milk, meat, cassava, yams, and wild fruits.
- Reduction of conflicts between communities.
- Enforcement of wildlife protection laws.
- Increase in cultural events, such as songs, dances, and initiation ceremonies.
- Empowerment of women through leadership positions.
- Preservation and promotion of traditional pastoralism.
- Increased use of traditional medicine.
- Strengthening of family structures.
- Government policies that recognize and support socio-cultural aspects.
- Recognition and documentation of indigenous knowledge.
- Inadequate empowerment of women, perpetuation of patriarchy, and marginalization.
- Lack of policies to protect cultural practices.
- Degraded value system among the younger generation, leading to increased corruption.
- Lack of political will to support initiatives such as teaching mother tongue languages and indigenous knowledge practices.

DIMENSION
Economic

Vision

- Automation of the land registry and judicial system to optimize land use as a factor of production.
- Increased land availability enables production for food systems, including production, processing, value addition, and more.
- Improved access to markets and outlets through e-commerce, value addition, and the prevention of post-harvest losses.
- A healthier population contributes labour, serving as a foundation for production and economic growth.
- Achieving harmony between ecology and economy, as well as between agroecology and agroeconomy.

Barriers

- Limited access to land for production.
- Weak land use policies.
- Food systems challenges, such as post-harvest losses.
- Lack of market access.
- Insufficient adoption of modern farming techniques, tools, and technologies.
- Weak financial credit policies for agricultural productivity, e.g., financing discrepancies between purchasing a lorry and supporting tomato farming.
- Lack of integrated information systems, including comprehensive monitoring and real-time data reporting.

DIMENSION
Institutional

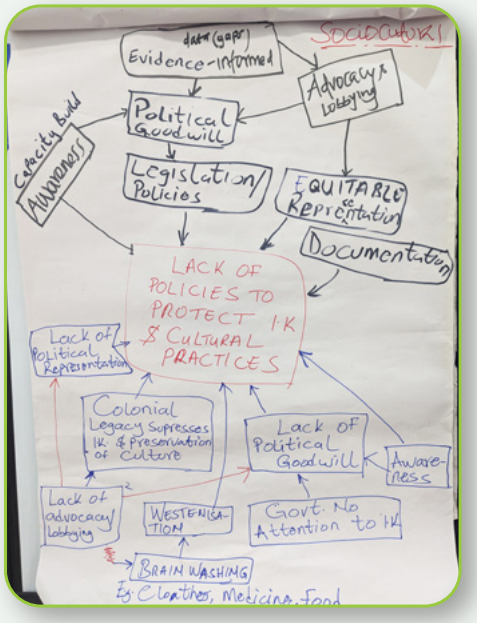
- Clearly defined roles for each branch of the government.
- Collaborative and coordinated efforts among all institutions, including:
  - Government
  - NGOs/CSOs
  - Community
  - Donors
  - Researchers
- Transparent processes to ensure accountability by all actors.
- Participatory formulation and implementation of policies.
- Clear communication strategy for all stakeholders.
- Lack of awareness about existing policies and programs.
- Inadequate policies at the county level.
- Insufficient resources.
- Limited technical expertise.
- Lack of coordination and duplication of efforts.
- Conflicts of interest.
- Insufficient manpower.

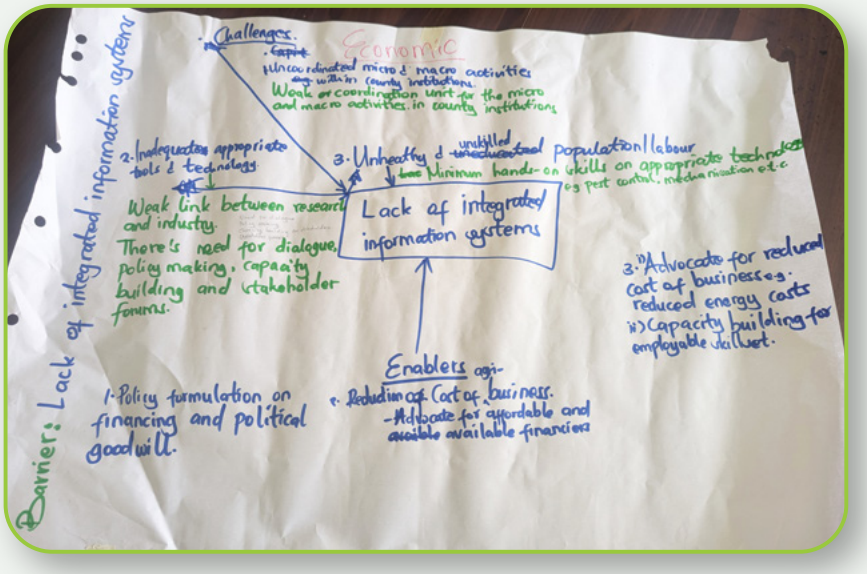

© CIFOR - ICRAF/ Ann Ngunjiri/Laikipia County Government

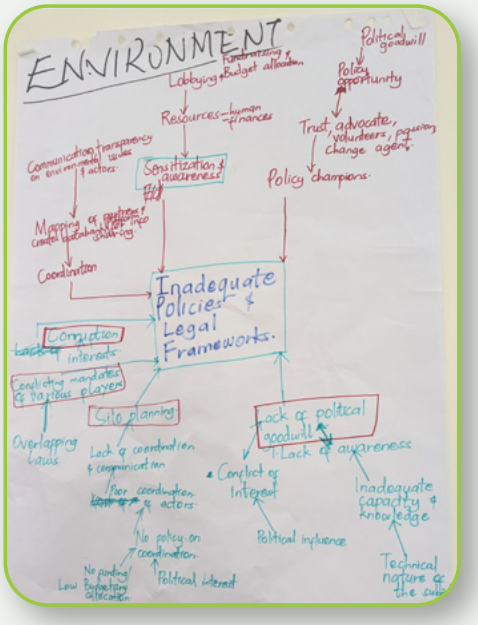
CAUSAL MAPPING ANALYSIS – THE RELATIONSHIPS BETWEEN CLIMATE, FOOD SYSTEMS, AND HEALTH

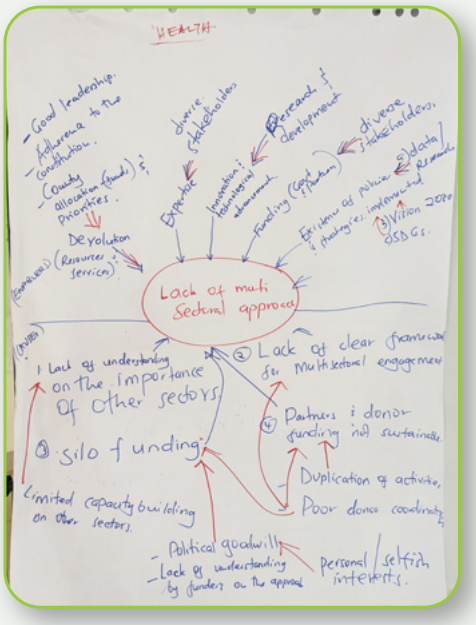
Participants engaged in a causal mapping analysis exercise to identify the key barriers and enablers to achieving the vision developed in the previous exercise. Working in the same groups as in the visioning exercise, they discussed the following questions and mapped their responses on flipcharts:

- **What is stopping us from achieving this vision?** Each group identified the most significant barrier, which was then placed in the centre of a flipchart, followed by an exploration of the root causes.
- **What if the key barrier is solved?** They then identified the underlying enabling conditions necessary to overcome the barrier.



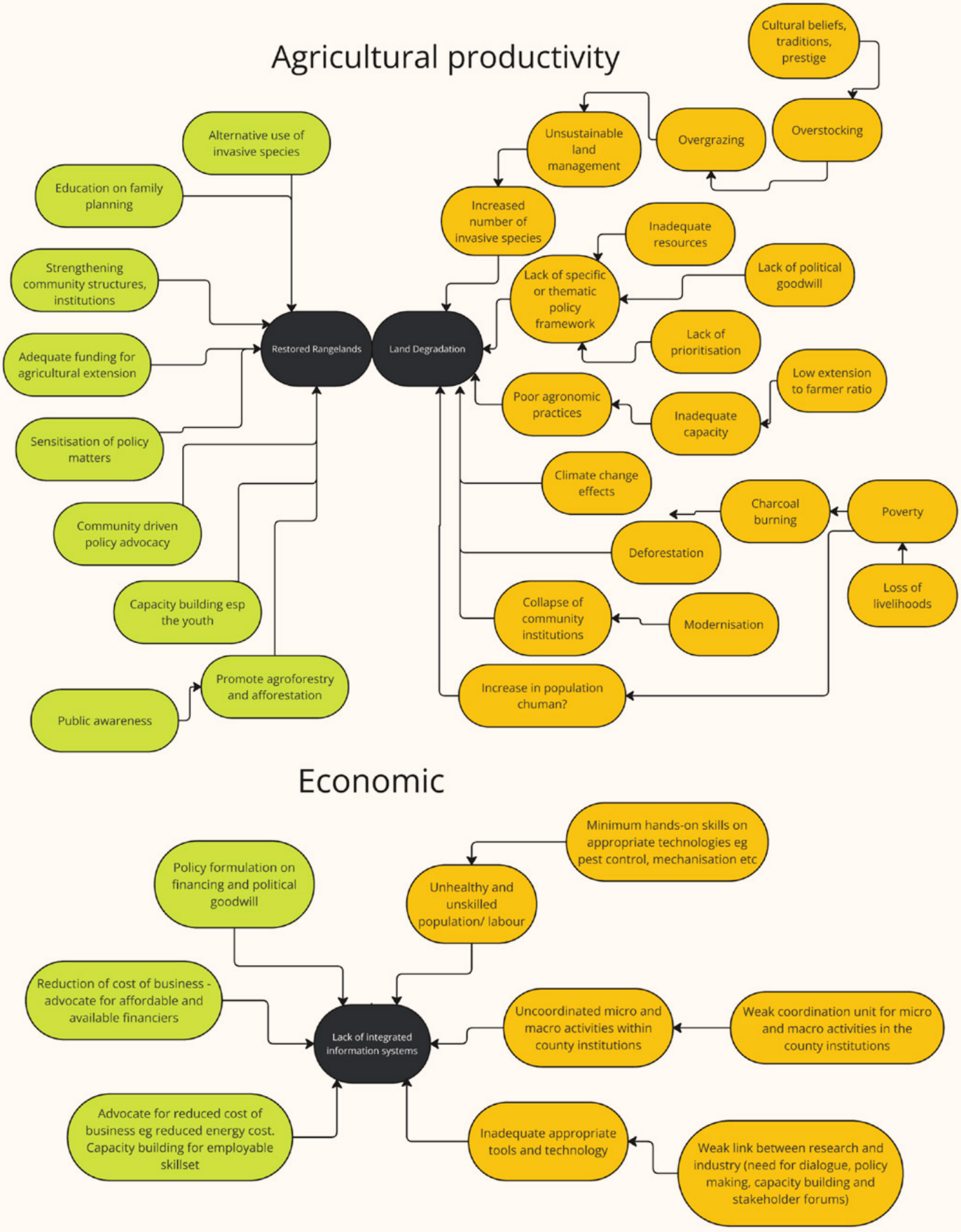






Images: Photographs of Causal Mapping Analysis

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



Summary of common themes:

- Communication
- Coordination of actors
- Lobbying and advocacy

Figure 5: Causal Mapping Analysis

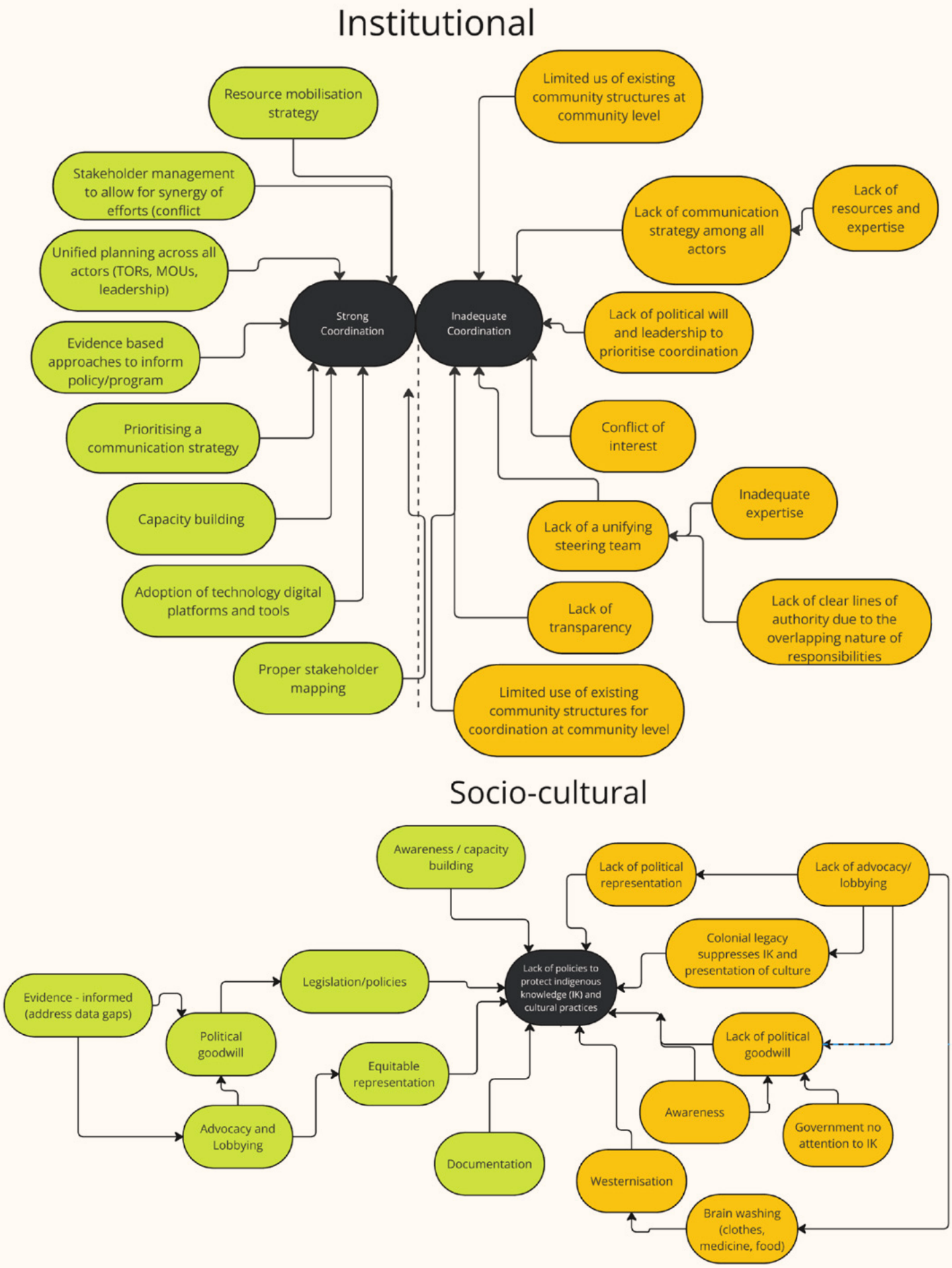


Figure 5: Causal Mapping Analysis CONT.

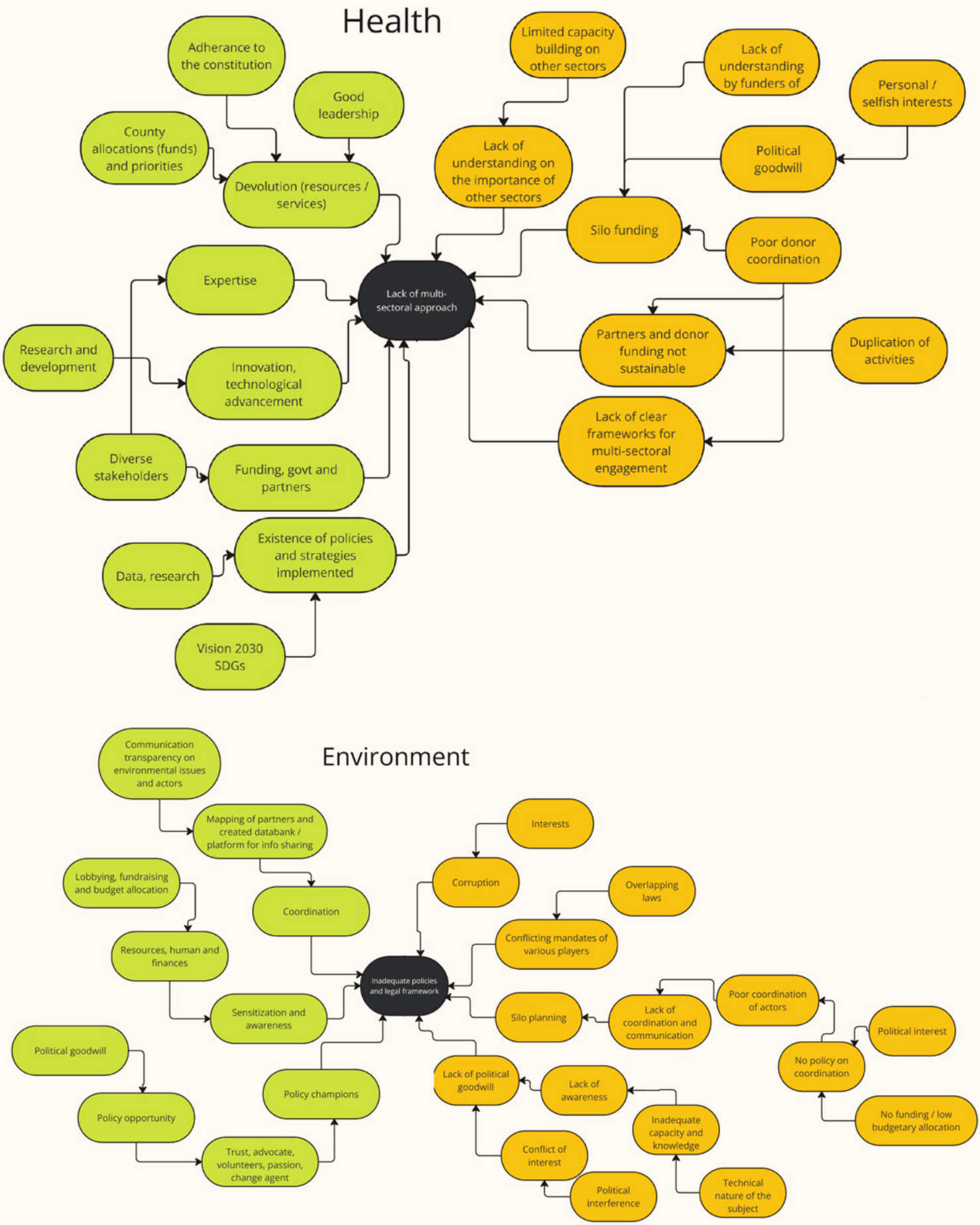


Figure 5: Causal Mapping Analysis CONT.

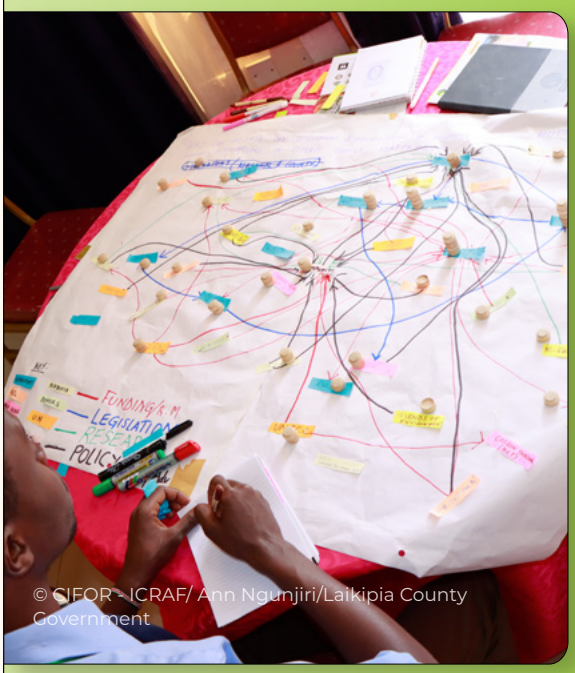
RECAP OF DAY 1

Key take-aways

- The biggest challenge within government and institutions is the tension between need and greed.
- Each of us is a key stakeholder in connecting food systems, mental health, and climate change.
- Women and youth are particularly vulnerable to the impacts of climate change and must be at the forefront of efforts to combat it, collaborating with other stakeholders, including through this project.
- Many organizations are working on similar initiatives, highlighting the need for synergy; for example, Groots Kenya is also engaged in agroecology.
- Political goodwill is essential for effective policy implementation.
- Context-specific policies that align with county visions are necessary.
- There is a need for capacity building in county-level policy development, as well as in innovations and technologies such as the Laikipia County Dashboard.

NETMAPPING

Participants engaged in a net mapping exercise to identify the key stakeholders in the climate change–food systems–health nexus in Laikipia County and to analyze their influence and interests as part of the stakeholder mapping process. A netmap is a social network analysis tool that uses influence mapping to help people understand, visualize, discuss, and improve situations. It offers a transparent and participatory method for exploring networks of influence.



© CIFOR - ICRAF/ Ann Ngunjiri/Laikipia County Government

Four groups were formed, and each group picked one question from the list below to do the net mapping exercise. The four questions discussed were:

1. Who can influence the development and implementation of evidence-informed policies for improved interventions in climate change adaptation?
2. Who can influence the establishment and sustenance of stakeholder synergies (partnerships/collaborations) toward improved climate adaptation and mental health outcomes?
3. Who can influence the establishment and sustenance of stakeholder synergies (partnerships/collaborations) toward strengthened food systems and nutrition outcomes?
4. Who can influence the reversal and halting of land degradation for improved ecological and livelihood outcomes?


© CIFOR - ICRAF/ Ann Ngunjiri/Laikipia County Government

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

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

1. **Identifying specific actors** relevant to their chosen issue, categorized into groups such as government, private sector, NGOs, multilateral organizations, development partners and donors, and others.
2. **Exploring how the actors are connected**, including identifying the types and nature of interactions.
3. **Assessing each actor's position** in terms of their influence over and interest in the issue.

The netmaps developed are shown below.

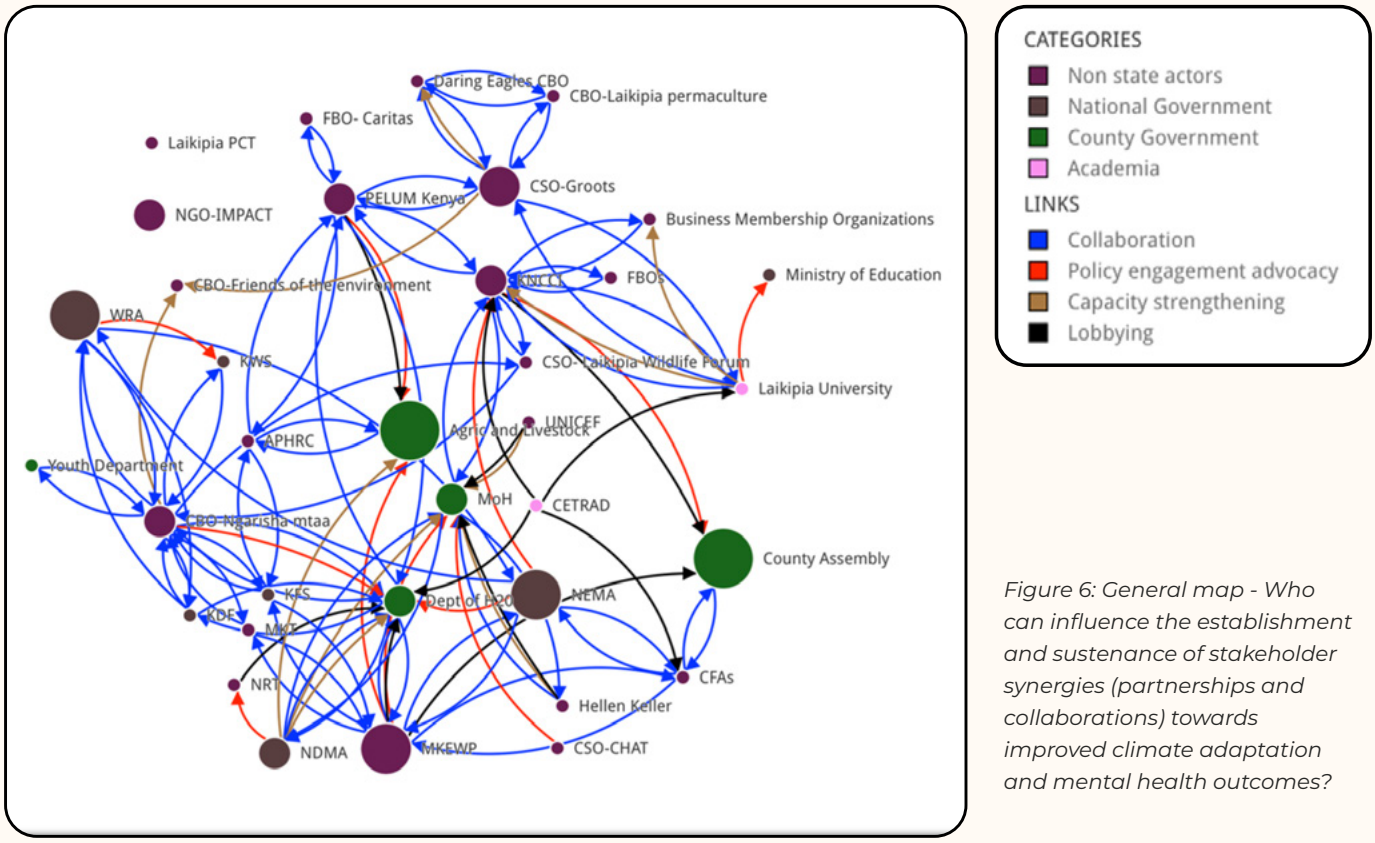


Figure 6: General map - Who can influence the establishment and sustenance of stakeholder synergies (partnerships and collaborations) towards improved climate adaptation and mental health outcomes?

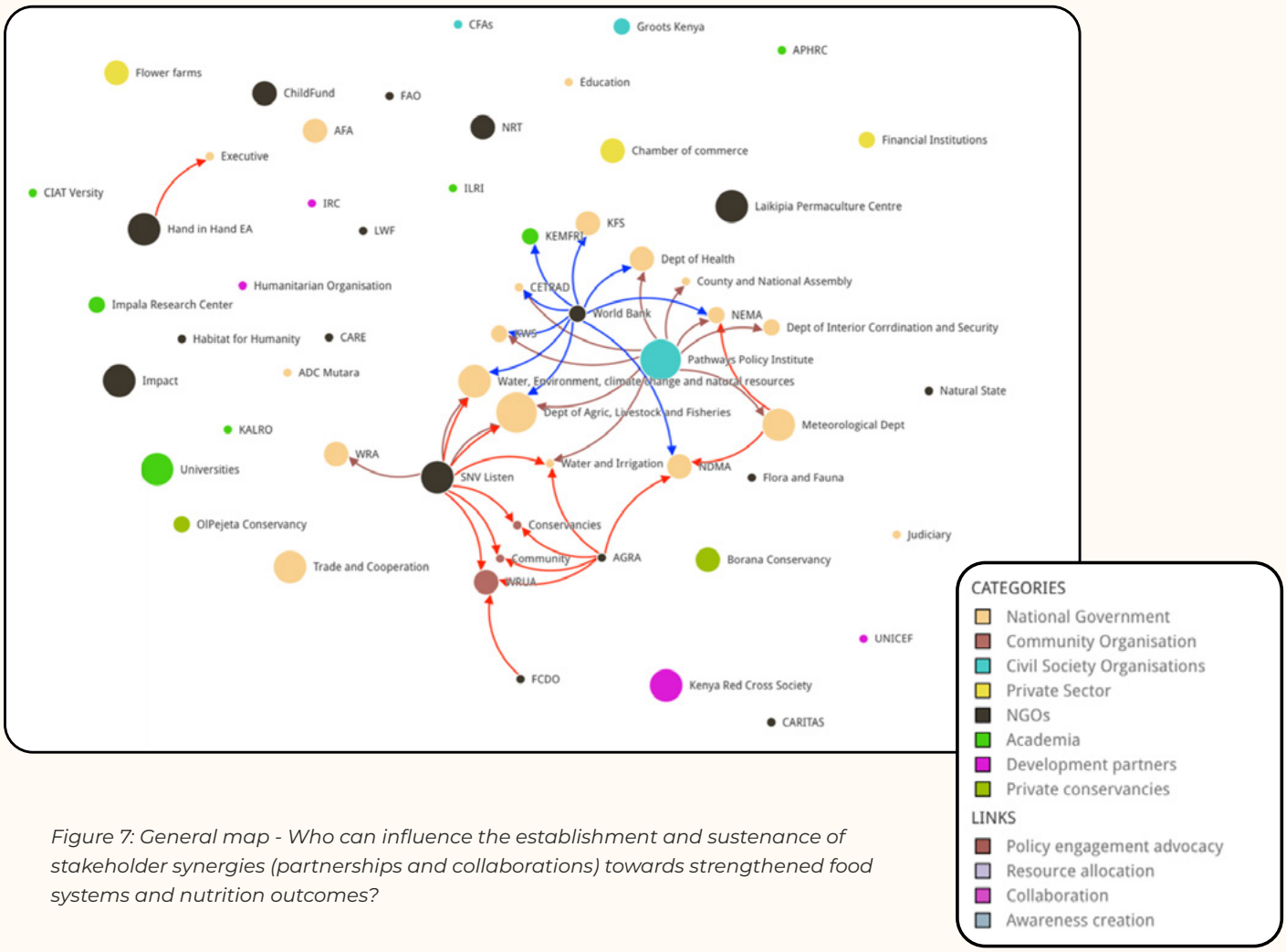


Figure 7: General map - Who can influence the establishment and sustenance of stakeholder synergies (partnerships and collaborations) towards strengthened food systems and nutrition outcomes?

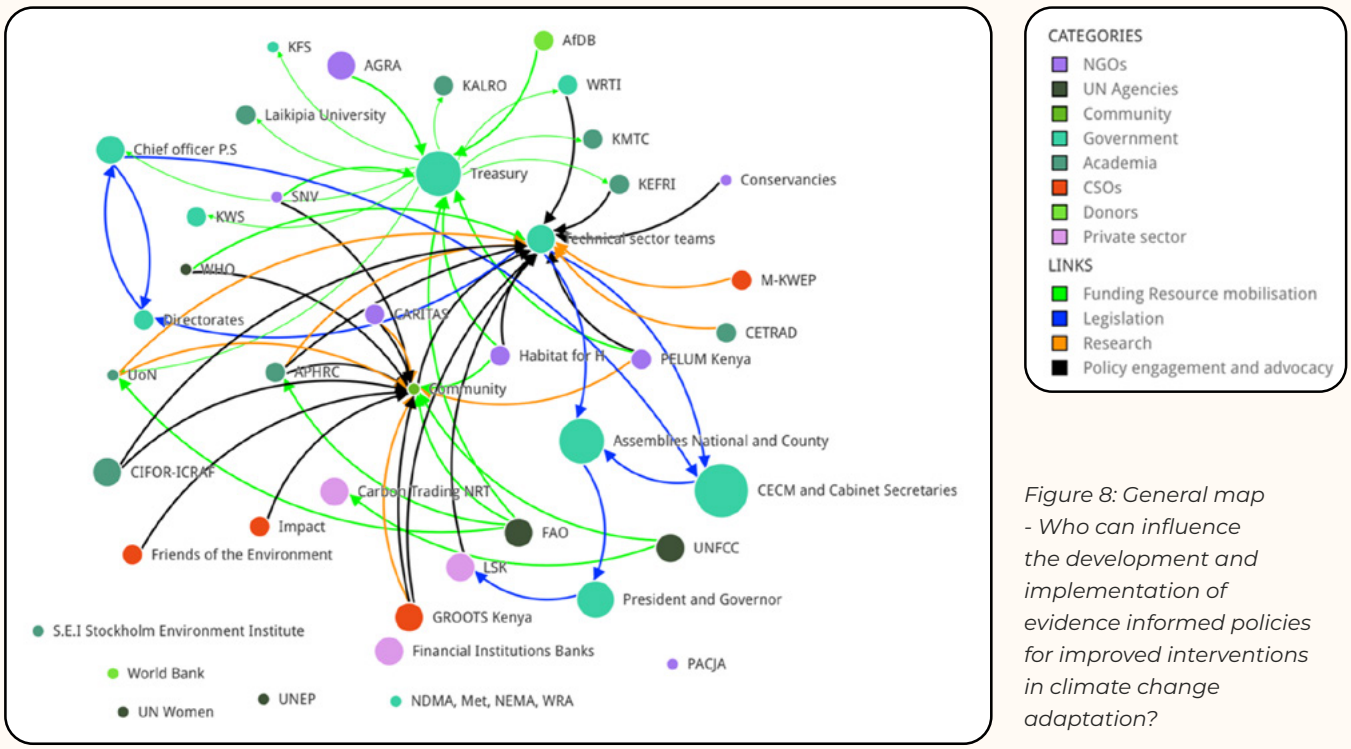


Figure 8: General map - Who can influence the development and implementation of evidence informed policies for improved interventions in climate change adaptation?

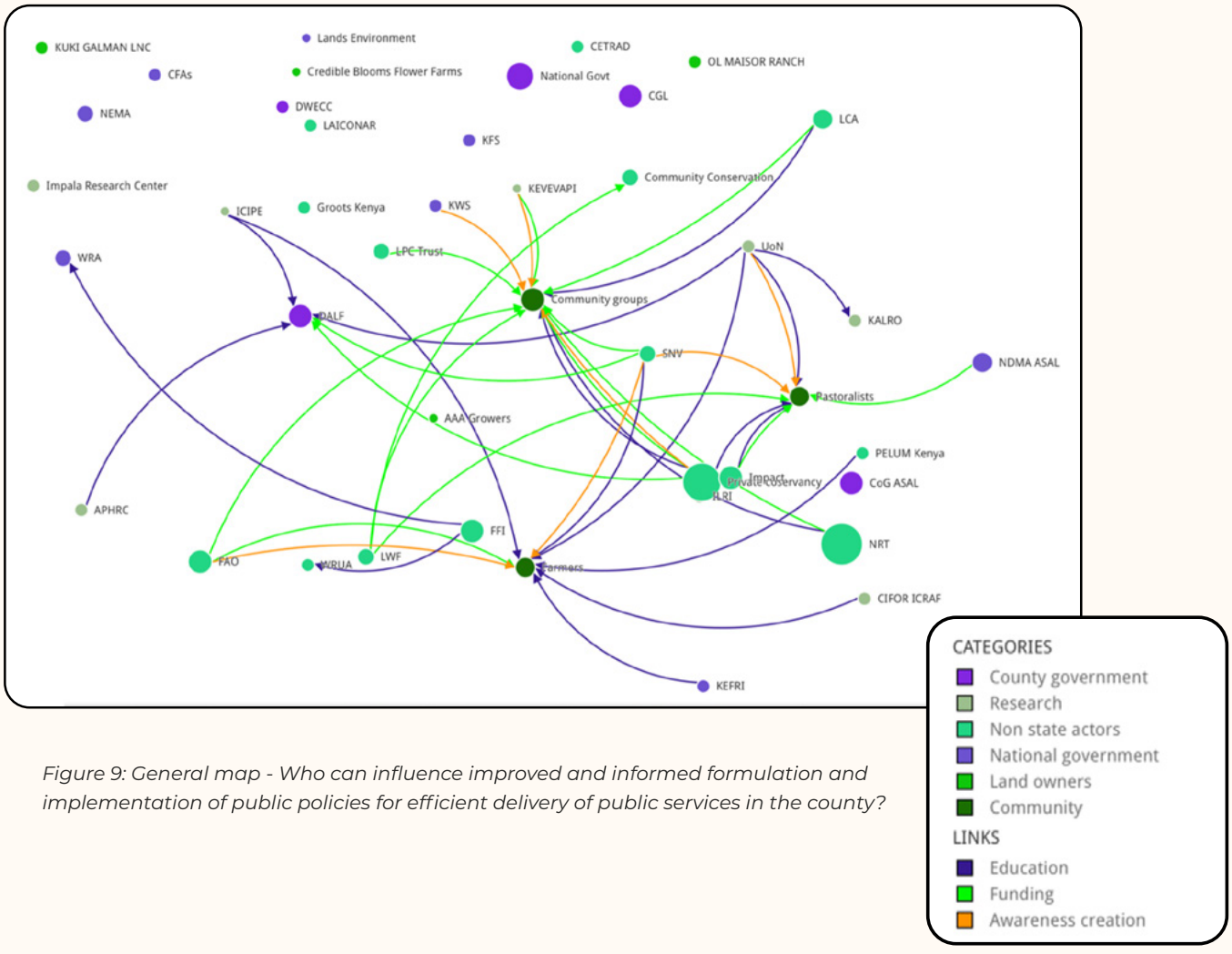


Figure 9: General map - Who can influence improved and informed formulation and implementation of public policies for efficient delivery of public services in the county?

POLICY OPPORTUNITIES

This session focused on identifying policy engagement opportunities in Laikipia County. Participants were asked to share existing policies related to climate change, the environment, food systems, and health sectors, as well as policy gaps, successes, and areas for improvement. They highlighted the following policies:

- Rangeland Management Policy
- Climate Change Act
- Food and Nutrition/Food Security Policy
- Agroecology Policy (in progress)
- Water Act
- Sustainable Waste Management Act (draft)
- Carbon Credits Policy
- Climate Change Impact on Health Community Response Strategy
- Nutrition and Organic Food Systems and Production Policy/Framework
- Health Facilities Land Utilization Policy
- Multi-sectoral (inter-departmental) Collaboration Policy
- Laikipia County Integrated Development Plan (CIDP) and the Governor's manifesto also influence policy.

Policy Challenges and Gaps

- Policy development is a lengthy process.
- Community inclusion in the policy development process is limited due to a lack of awareness of the government policy process and a lack of interest. To address this, individuals must take initiative and be alert to calls for public participation. The County government could improve this by disseminating these notices on social media platforms.
- Although policies are in place, they are often not implemented.
- Lack of coordination between government departments.

© CIFOR - ICRAF/ Ann Nguinjiri/Laikipia County Government

What is working well?

- Community structures, such as ward climate change planning committees and ward planning committees, are in place, though they need strengthening.
- The County government has built the capacity of stakeholders regarding the Laikipia County Climate Change Act.
- The County government is receptive to stakeholder projects and eager to collaborate.
- The infrastructure and structures for policymaking are adequate.
- Formulation of policies is progressing well.

Areas for Improvement

- Improve policy implementation.
- Eliminate the culture of expecting payment for participation in workshops and policy processes, as the County cannot sustain this practice. This change would increase inclusion, leading to more robust policies and effective implementation.

Proposed Solutions

- Health themes should be disaggregated by gender and age.
- Gender-based violence and gender issues should be considered as drivers of mental health problems.
- An integrated dashboard should be used to share information and promote partner collaboration and communication. The community health promoters' dashboard, which shows their ongoing work, could be used to share clear messages on climate change and nutrition with the community. The promoters are drawn from 154 community health units across Laikipia.
- There needs to be a paradigm shift in how we perceive health, emphasizing preventative measures and aspects when engaging communities on health and climate change.
- The project should actively involve men, as they are often excluded from such initiatives.
- Involve youth more in food production to address their contribution to environmental degradation.
- Capacity building for policymakers, especially Members of the County Assembly (MCAs) and County Executive Committee members, is needed. While several policies align with climate change, food systems, and health, there is a challenge in resource allocation.

CLOSING REMARKS

Dr Alice Karanja

In closing, Dr Alice Karanja thanked the participants for attending the workshop and giving their valuable contributions. She also shared the following next steps for the Project:

Research

- Protocol development (ongoing)
- Ethical approvals and research permit
- Data collection (spread across three months-tentative November 2024)
- Data analysis and synthesis (3-5 months)
- Sharing of research findings (May –July 2025)
- Development of knowledge products

Policy engagement

- County-level –continuous engagement
- National -annually
- Regional (Kenya, Tanzania, Ethiopia and Tanzania) - 2026

Public engagement

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

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
16.15 - 16.30	
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	**Hon Reuben Kamuri**	Deputy Governor, Laikipia County
2	**Waihenya Mwangi**	Director, Laikipia Health Services
3	**Albert Wagura Taiti**	County Executive Committee Member (CECM) -Health
4	**Edwin Dennis Kasoo**	County Executive Committee Member (CECM) - Agriculture, Livestock and Fisheries
5	**Leah Njeri**	County Executive Committee Member (CECM) - Water, Environment Natural Resources and Climate Change
6	**Hannah Munyui**	County Nutrition Coordinator, Laikipia Health Services
7	**Elizabeth Mwangi**	Chief Officer, Directorate of Crop Development and irrigation - Department of Agriculture, Livestock and Fisheries
8	**Peterson Njeru Njue**	Director, Directorate of Fisheries - Department of Agriculture, Livestock and Fisheries
9	**Daniel Kinyumu**	Director, Directorate of Crop Development and Irrigation - Department of Agriculture, Livestock and Fisheries
10	**Elijah Mbugua**	Department of Agriculture, Livestock and Fisheries
11	**Jackson Ngebere**	Directorate of Veterinary Services, Department of Agriculture, Livestock and Fisheries
12	**Joseph Mwangi**	Department of Agriculture, Livestock and Fisheries
13	**Godfrey K. Mambo**	Department of Agriculture, Livestock and Fisheries
14	**Beatrice Kamande**	Laikipia Health Services
15	**Lewis Mweu**	Climate Change Unit, Department of Water, Environment & Natural Resources
16	**Kingori David**	Director, Environment and Natural Resources - Water, Environment & Natural Resources
17	**Benson Ndungu**	Department of Agriculture, Livestock and Fisheries
18	**John Felix**	Laikipia Health Services
19	**Peterson Njeru Njue**	Directorate of Fisheries - Department of Agriculture, Livestock and Fisheries
20	**Wangechi Ndegwa**	Department of County Government Coordination, Administration, ICT & Public Service
21	**Godwin Gitau**	Department of Agriculture, Livestock and Fisheries

Appendix 2: Participants list CONT.

	NAME	INSTITUTION
22	**Enid Sarah Khanda**	Department of Water, Environment and Natural Resources
23	**Anne Ngunjiri**	Laikipia County Communications Department
24	**Bernice Kaleve**	Water Resources Authority (WRA) Regional Office
25	**Janet Okoth**	National Drought Management Authority (NDMA)
26	**Sammy Edupu**	Friends of Environment Laikipia
27	**Stanley Kirimi**	Mount Kenya Ewaso Water Partnership (MKEWP)
28	**Duncan Ndegwa Gitonga**	Kenya National Chamber of Commerce (KNCC) Laikipia Chapter
29	**Bathsheba Moraa Ratemo**	PELUM Kenya
30	**George Foro**	PELUM Kenya
31	**Manei Naanyu**	PELUM Kenya
32	**John Nyapola**	Kenya Agricultural Business Development Project (KABDP)
33	**Kamila Mohamed**	SNV-Listen
34	**Wambui Gikonyo**	Kenya Red Cross Society Laikipia
35	**Alicia Karanja**	African Population and Health Research Center (APHRC)
36	**Stephen Murethi**	University of Nairobi
37	**Evans Chimoita**	University of Nairobi
38	**Gillian Chepkwoy**	African Population and Health Research Center (APHRC)
39	**Alice Ritho**	African Population and Health Research Center (APHRC)
40	**Esther Anono**	African Population and Health Research Center (APHRC)
41	**Felistus Mwalia**	African Population and Health Research Center (APHRC)
42	**Chris Maero**	African Population and Health Research Center (APHRC)

Appendix 2: Participants list CONT.

	NAME	INSTITUTION
43	**Laura Mukhwana**	Center for International Forestry Research and World Agroforestry (CIFOR-ICRAF)
44	**Jane Winnie Njihim**	GROOTS Kenya
45	**Cecilia Wambui**	GROOTS Kenya
46	**Brian Muchema**	African Population and Health Research Center (APHRC)
47	**Katarzyna Pruystupa**	Center for International Forestry Research and World Agroforestry (CIFOR-ICRAF)
48	**Bernard Maranga**	Kenya Broadcasting Corporation (KBC)
49	**Freidah Wanda**	Center for International Forestry Research and World Agroforestry (CIFOR-ICRAF)
50	**Mieke Bourne**	Center for International Forestry Research and World Agroforestry (CIFOR-ICRAF)
51	**Muturi Mwangi**	Media
52	**Lawrence Munyaka**	Media
53	**Patience Njoki**	Media
54	**Mwangi Ndirangu**	Media
55	**Moses Muruithi**	UN Women
56	**Ochen Mayani**	Borana Conservancy
57	**Yoakim Kuraru**	Mayianat Rapunye

© CIFOR - ICRAF/Ann Ngunjiri/
Laikipia County Government

CONTACT

APHRC
Dr. Elizabeth Wambui Kimani-Murage
ekimani@aphrc.org

CIFOR-ICRAF
Mieke Bourne
m.bourne@cifor-icraf.org