

THE

ICI

KENYA



# RESEARCH PROGRAMME



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# RESEARCH PROGRAMME OVERVIEW

## The ICI Kenya research programme seeks to support biocultural conservation and community-based monitoring among pastoralist communities in the Mid-Ewaso Ng'iro River Basin

Indigenous pastoralists across the Mid-Ewaso Ng'iro River Basin have conserved its diverse ecosystems, landscapes, and species for centuries, guided by unique socio-cultural and knowledge systems. The ICI Kenya research programme seeks to preserve and promote these systems, while supporting the self-strengthening of pastoralists to continue conserving their territories in line with their own aspirations – delivering global biodiversity benefits in the process.

This research ambition involves two aims. The first is to document pastoralists presence and contributions to biodiversity conservation across the Mid-Ewaso over time, evidencing the knowledge and practices used to conserve ecosystems and landscapes and protect diverse species of animals (domestic and wild) and plants (grasses, herbs, shrubs, trees). This aim aligns with Component 1 of ICI Kenya.

The second aim will use this evidence to develop community-based monitoring and evaluation systems. This essential aspect of self-strengthening will allow pastoralists to generate their own data and evidence and monitor conservation outcomes based on their own approaches to assessing if socio-ecological systems within their territories are healthy.

This aim feeds into Component 4 of ICI Kenya.

Over the past two years, two major projects have been completed as part of these aims. These projects involve research into:

- **Cultural keystone species** that are integral to biocultural diversity and conservation across the Mid-Ewaso Ng'iro River Basin
- Pastoralist's knowledge of **animal health** within their territories, including pathways and strategies for preventing transmission between wildlife, livestock, and people

During the third year of the project (2025-2026), the ICI Kenya research programme will start a new research project into **biocultural indicators** used by pastoralists to assess the health of rangeland ecosystems, shared by livestock and wildlife, and guide interventions as needed.

Further details of each of these projects is included in the rest of this report, including information on methods, key findings, outputs, future action, and research clearance.

All ICI Kenya research projects make use of open-ended, participatory research designs to ensure that the aspirations, languages, needs, and values, etc., of pastoralists shape the research process, guide knowledge products, and direct cross-sectoral and intergenerational knowledge sharing and learning.

Our research is guided by CARE, FAIR, and FPIC principles. Each project also undergoes ethical review and obtains research clearance from Kenya's National Commission for Science, Innovation, and Technology (NACOSTI).



A group of women observe a fig tree, a culturally significant species for many communities across the Mid-Ewaso Ng'iro Basin. Sacrifices are often performed at the base of this impressive, towering tree.





# CULTURAL KEYSTONE SPECIES

**Some species, known as Cultural Keystone Species (CKS), hold exceptional significance to pastoralists in the Mid-Ewaso Ng'iro River Basin. The identification, recognition, and protection of CKS represent a potential pathway towards more inclusive conservation.**

## Methods

This research involved interviews with over 120 knowledge holders from 22 Maasai, Samburu, Turkana, and Borana communities in the Mid-Ewaso Ng'iro. The research was undertaken between 2024 and 2025 with ethical approval from the University of Birmingham and research clearance from NACOSTI (NS474374).

## Findings

We used characteristics outlined by Garibaldi and Turner (2004) to identify CKS, such as 'Intensity, type and multiplicity of use' and 'Role in narratives, ceremonies, or symbolism'.

Approximately 30 CKS were identified. The most frequently referenced CKS include cattle, sheep, lion, elephant, kudu, bees, giraffe, umbrella thorn, African olive, Strangler fig, Black frankincense, Blackthorn, and grasses.

Despite many shared CKS, species of importance to some communities in the Mid-Ewaso Ng'iro may be less important to others. The same applies to species of significance to different ages, genders, livelihood groups, and other social categories.

The CKS concept refers not only to specific species but also to the relationships that people hold with these species, including the practices they use to manage and conserve them. As part of this research, we have documented these practices. One example includes a set of Indigenous-led management practices to support healthy bee populations related to placement of traditional hives, use of land around hives, and harvesting of honey.

## Outputs (in progress)

ICI published outputs

- Cultural Keystone Species in Kenya's Mid-Ewaso Ng'iro River Basin: A Field Guide
- Community Biocultural Reference Books

Peer-reviewed academic article

- Cultural keystone species to support locally led conservation. To be submitted to *Conservation Science and Practice*.

## Next Steps

We will soon begin working with communities to establish their own community-based monitoring systems. Communities may choose to include the monitoring of CKS in this system, timed species counts, transects walks, or their own observational techniques to approximate species richness of an area a few times each year.

Over time, this type of monitoring can help inform predictions about populations sizes and growth, demonstrating how communities conserve species that are important to them and reinforcing their role as CKS guardians.



Giraffes are one of the most important species for Borana pastoralists, with the species playing a vital social and ecological role across the river basin—maintaining vegetation in rangelands to allow for new growth.





# ANIMAL HEALTH INDICATORS

**Pastoralists in the Mid-Ewaso Ng'iro hold in-depth understanding about livestock and wildlife health, as well as transmission dynamics between both and humans. This knowledge can be used to strengthen animal health surveillance and promote greater inclusivity in conservation.**

## Methods

This research drew on approaches and methods from participatory epidemiology. The research was undertaken between 2023 and 2024 with ethical approval from the University of Manchester and research clearance from NACOSTI (NS221).

## Findings

Pastoralists' knowledge of livestock health is well-documented, but we add evidence of pastoralists' extensive knowledge of wildlife health and disease to existing literature. Pastoralists involved in this research were adept at identifying clinical signs of diseases in diverse wildlife species. Population size, number of births, body composition, coat/skin condition, and feeding habits were indicators used by pastoralists to assess the health of both livestock and wildlife in shared environments.

Pastoralists' knowledge can help improve understanding of and efforts to prevent the spread of animal and zoonotic disease in the mid-Ewaso Ng'iro River Basin that may impact conservation efforts, as well as livestock and human health.

For example, there remains a paucity of data on if and how livestock diseases in this region affect different species of wildlife. This can lead to the assumption that certain species are unaffected, especially if they suffer less obvious clinical manifestations of disease than livestock. Yet, pastoralists are attuned to and able to report signs of ill-health in wildlife rarely reported in scientific literature. For example, pastoralists describe the impacts of coenurosis on wild herbivores while academic studies on the signs and impacts of coenurosis in wildlife are relatively rare (Kibona et al. 2022).

## Outputs

Peer-reviewed academic article:

- Weaving knowledge to support wildlife health surveillance in Kenya's pastoral rangelands. *Conservation Biology*

## Next Steps

ICI Kenya is working with communities to establish a community-based animal health monitoring system that enables them to collect, access, use, and share data on livestock and wildlife health.

Given gaps in animal health surveillance in the Mid-Ewaso Ng'iro, data collected through this system will provide county government and other animal health actors with vital information to help prevent and manage disease.

It can also be used by communities to advocate for timely and culturally-appropriate responses and interventions from county governments and other relevant actors in response to outbreaks.



Depending on their age, gender, and position in society, people experience different vulnerabilities to disease. Accordingly, they may have unique knowledge of how diseases spread between wildlife, livestock, and people. Here, a woman milks a cow alongside a suckling calf.





# BIOCULTURAL INDICATORS

**Pastoralists often have unique indicators for assessing the condition of rangeland and other ecosystems. These indicators can support Indigenous-led ecological monitoring in the joint pursuit of socio-cultural and biodiversity conservation outcomes.**

## Justification

The success of biodiversity conservation interventions in the Mid-Ewaso Ng'iro River Basin is often defined by external conservation authorities (e.g. government and international organisations). These authorities use their own indicators to define and measure conservation success in ways that differ from 'local' or 'traditional' approaches to evaluating conservation success, such as single species counts or species richness in isolation of human values (Austin et al. 2019).

Yet, pastoralists have their own ways of understanding and assessing ecological integrity. Based on unique daily interactions with nature, they have developed biophysical and socio-cultural indicators that provide valuable information on ecosystem health. This research focuses on documenting these indicators.

## Methods

This research will involve interviews and indicator development workshops with knowledge holders from 22 Maasai, Samburu, Turkana, and Borana communities in the Mid-Ewaso Ng'iro.

The research will be undertaken between 2025 and 2026 with ethical approval from the University of Birmingham and research clearance from NACOSTI (NS474374).

## Outputs (in progress)

ICI published outputs

- Community Biocultural Reference Books
- A Guide for Co-Developing Biocultural Indicators with Pastoralist Communities

Peer-reviewed academic article

- Co-developing biocultural indicators to measure ecosystem condition with Indigenous Peoples and Local Communities. To be submitted to *Ecology and Society*.

## Next Steps

We will work with communities to establish their own community-based monitoring systems using the biocultural indicators documented and co-developed through this research.

Once implemented, this system will enable communities to monitor and report on ecological conditions within their territories using their own indicators.

Communities may also choose to collect information on events of environmental significance, such as when water sources (e.g. rivers or springs) run dry or invasive species overtake a landscape. Such reports can be compiled and shared with relevant authorities to mobilise resources and support for environmental issues in pastoralists' territories as they arise.



Bees are a culturally significant species across the Mid-Ewaso Ng'iro River Basin, serving as a source of food, medicine, and nutrition – especially for hunter-gather groups. Bees are also vital indicators of ecological health.





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