



Better lives through livestock

# Adapting Climate-Smart Breeding Practices for Small Ruminants in Pastoral Communities of Kenya

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INITIATIVE ON  
Climate Resilience

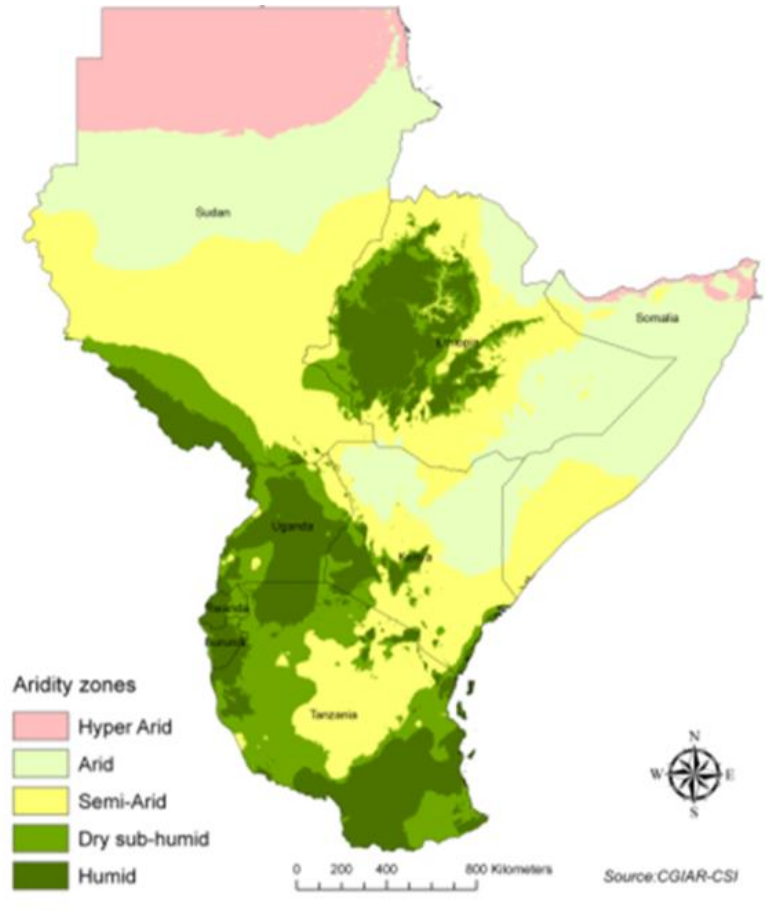


# The challenge

- Changing climatic conditions have resulted in an increased frequency and severity of droughts in ASAL. Drought of 2020-2023 was devastating (Kenya 2.6 million animals died)
- Pastoralists are in a constant state of "recovery from previous drought"
- Sheep and goats are valued by all pastoral communities



# Extent of Arid and Semi-Arid lands in the horn of Africa



Spatial distribution of drylands



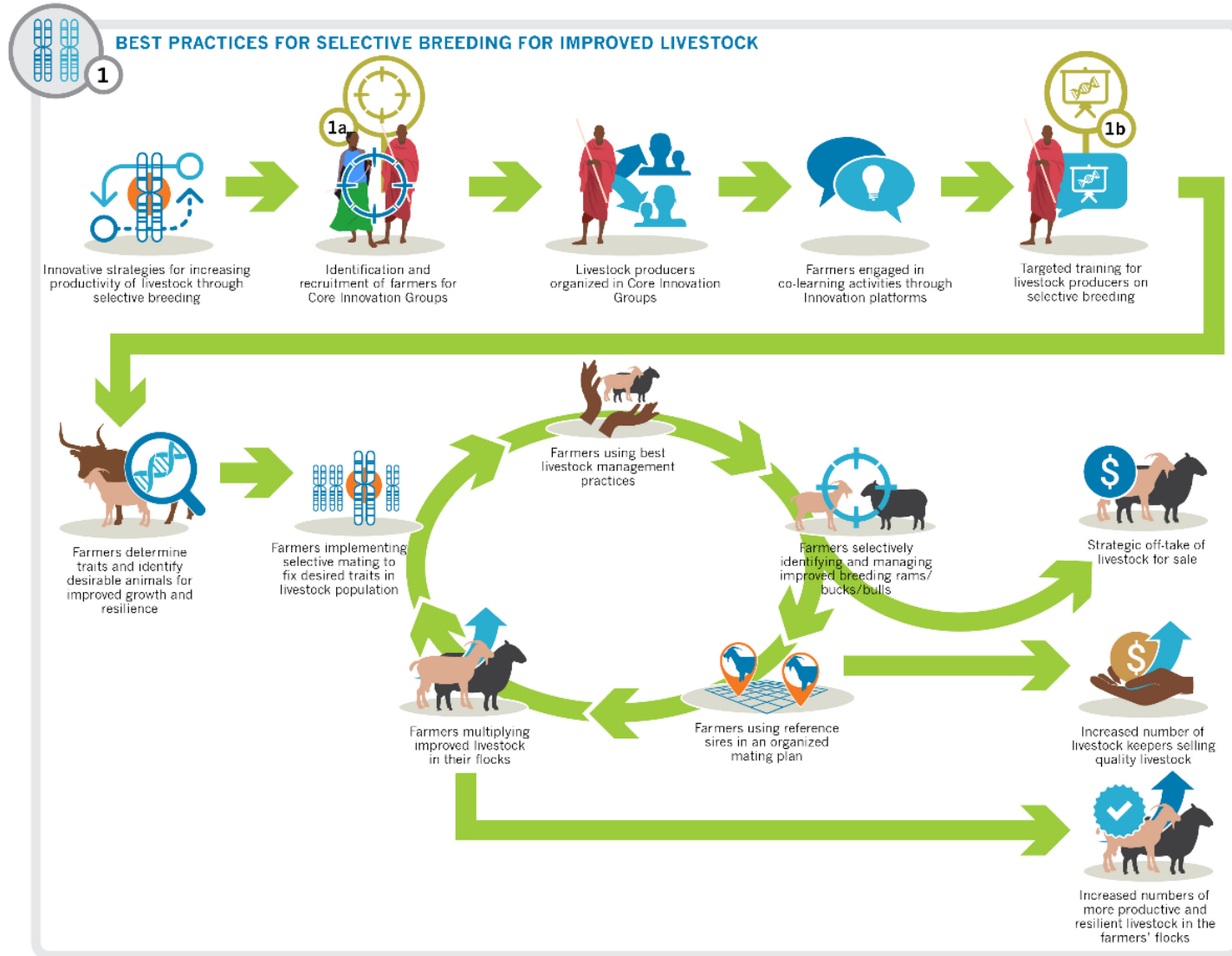




## How can genetics impact livelihoods under changing climatic conditions?

- ❖ **Understand** Characteristics of existing diversity, losses and needs related to different livestock across communities
- ❖ **Introduce** and promote improved and adapted indigenous breeds
- ❖ Build and develop **capacity in communities** to maintain **diversity** in indigenous livestock while **improving productivity**
- ❖ **Promote behavior change** and reorient producer mindsets to more commercial animal production

# Impact pathway





# Small-Ruminant Community Innovation Groups

- Focus on the most valuable assets in communities- their livestock
- Integrate indigenous knowledge and values in planned interventions
- Expand networks for services and market opportunities for animal offtake
- Ensure Farmer to farmer learning, and introduce options for stratification in livestock production systems



## Developing community-based breeding programs to improve productivity of sheep and goats in Turkana, Isiolo and Marsabit counties Kenya

### Background

In 2019, the Government of Kenya through the Ministry of Agriculture, Livestock and Fisheries and Irrigation (MALFI) selected the International Livestock Research Institute (ILRI) to contribute to the World Bank-aided Regional Pastoral Livelihoods Resilience Project (RPLRP) in Kenya. The project intervention aims to enhance the livelihoods and resilience of pastoral and agro-pastoral communities in cross-border drought-prone arid to semi-arid areas of the northern counties of Turkana, Isiolo and Marsabit through:

Building capacity within the pastoral communities to maintain genetic diversity of their indigenous livestock while improving productivity.

Promoting behaviour change towards more commercial livestock production

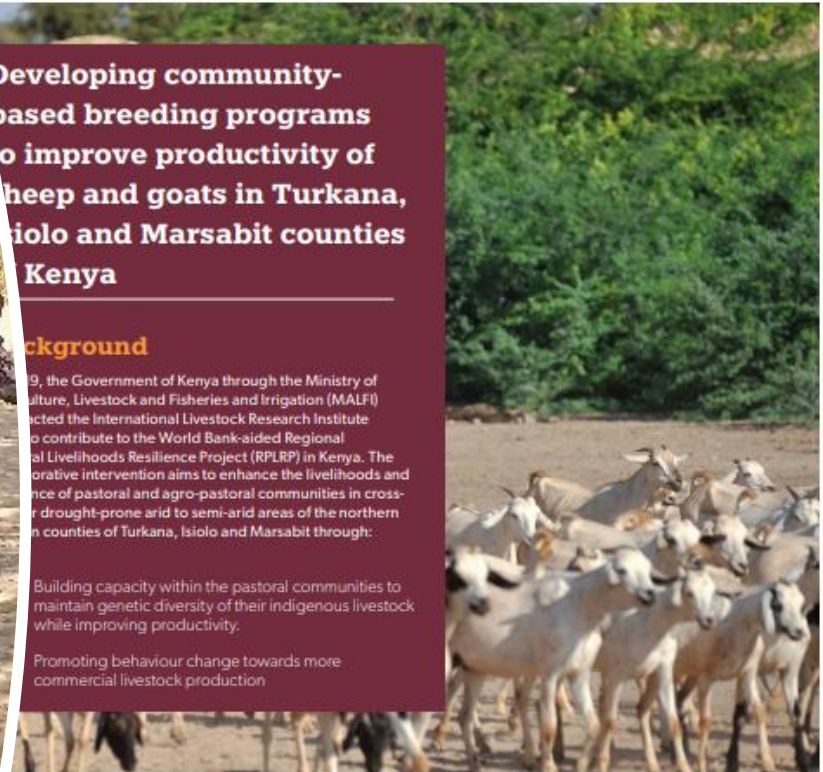
### General characteristics of the counties

**Turkana County**  
Turkana County has an area of 70,586 km<sup>2</sup>. The county is hot and dry with annual rainfall ranging from 52 mm to 480 mm (mean 200 mm). The mean annual temperature is 30.5°C. The county experiences cyclical prolonged dry periods followed by short

periods of very intense rainfall, which result in loss of livestock assets and livelihoods. Turkana County has 6 sub-counties, 30 wards, 56 locations and 156 sub-locations, with an estimated human population of 926,967<sup>1</sup>.

Figure 1: Map of Kenya indicating the location of the counties involved in the project.

<sup>1</sup> KNBS (Kenya National Bureau of Statistics). 2019. 2019 Kenya housing and population survey volume 1: Population by county and sub-county. [Available from <https://www.knbs.or.ke/?wpdmdl=2019-kenya-population-and-housing-census-volume-1-population-by-county-and-sub-county>].





# Adapt technologies and practices to accelerate genetic gains

## Breeding management practices

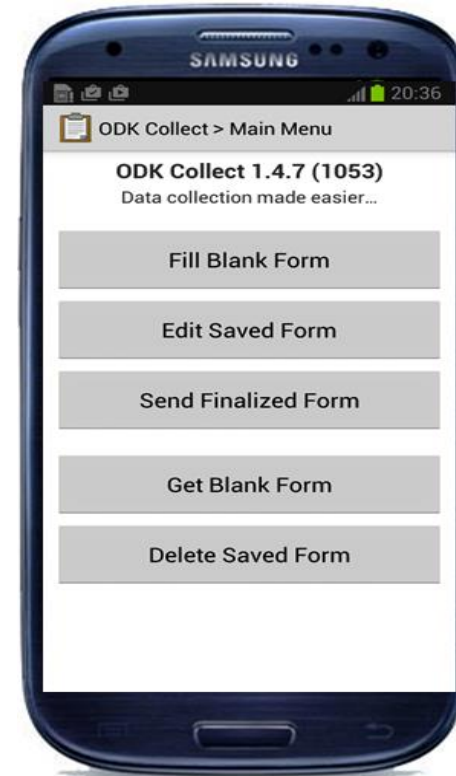
- ✓ Mating management in flocks
- ✓ Feeding practices
- ✓ Disease control measures

## Data capture using ICT tools

- ✓ Develop breeding platforms to systematically improve and deliver desired genetics
- ✓ promote innovative phenotyping systems/ technologies

## SNP technologies to determine Breed composition

- ✓ promote best genotypes for the different production systems



# Develop Capacity in SR-CIG

- Practical training of community groups on best practices for selective breeding
- Provide Equipment for continuity of measures introduced
- Establish networks with key service providers
- Farmer to farmer learning engagements





# Core Innovation Groups for Livestock Improvement

START COURSE

DETAILS



9

## Develop E-Learning modules

**Module 1:** Core Innovation Groups for Livestock Improvement -Digital module

<https://hdl.handle.net/10568/108904> , <https://srm.ilri.org>

**Module 2:** Best practices for selective breeding for improved livestock productivity

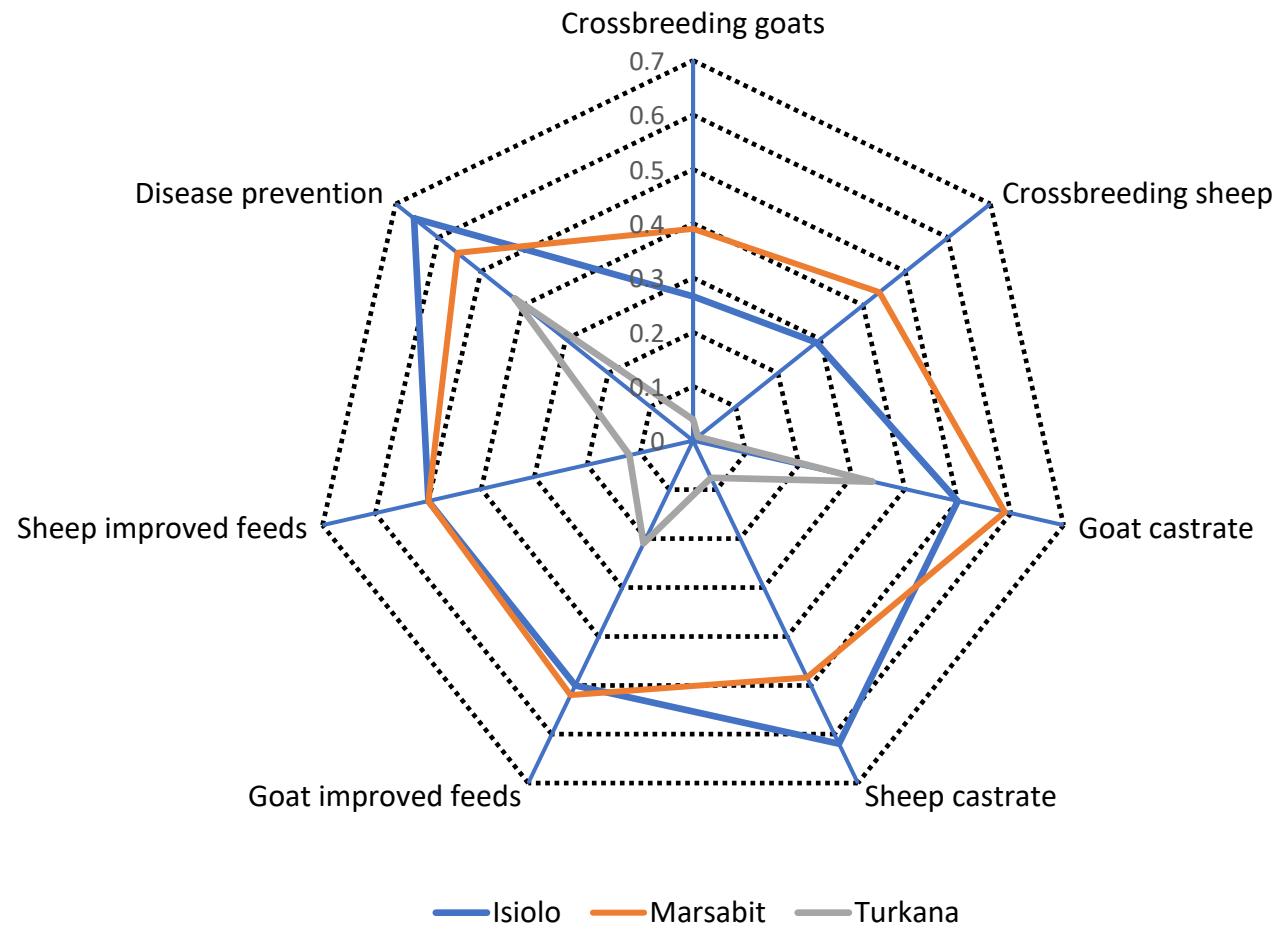
<http://hdl.handle.net/10568/97176>

**Module 3:** Best practices for selective breeding for improved livestock productivity, module 3: Act. Nairobi, Kenya: ILRI.

<https://hdl.handle.net/10568/118190>

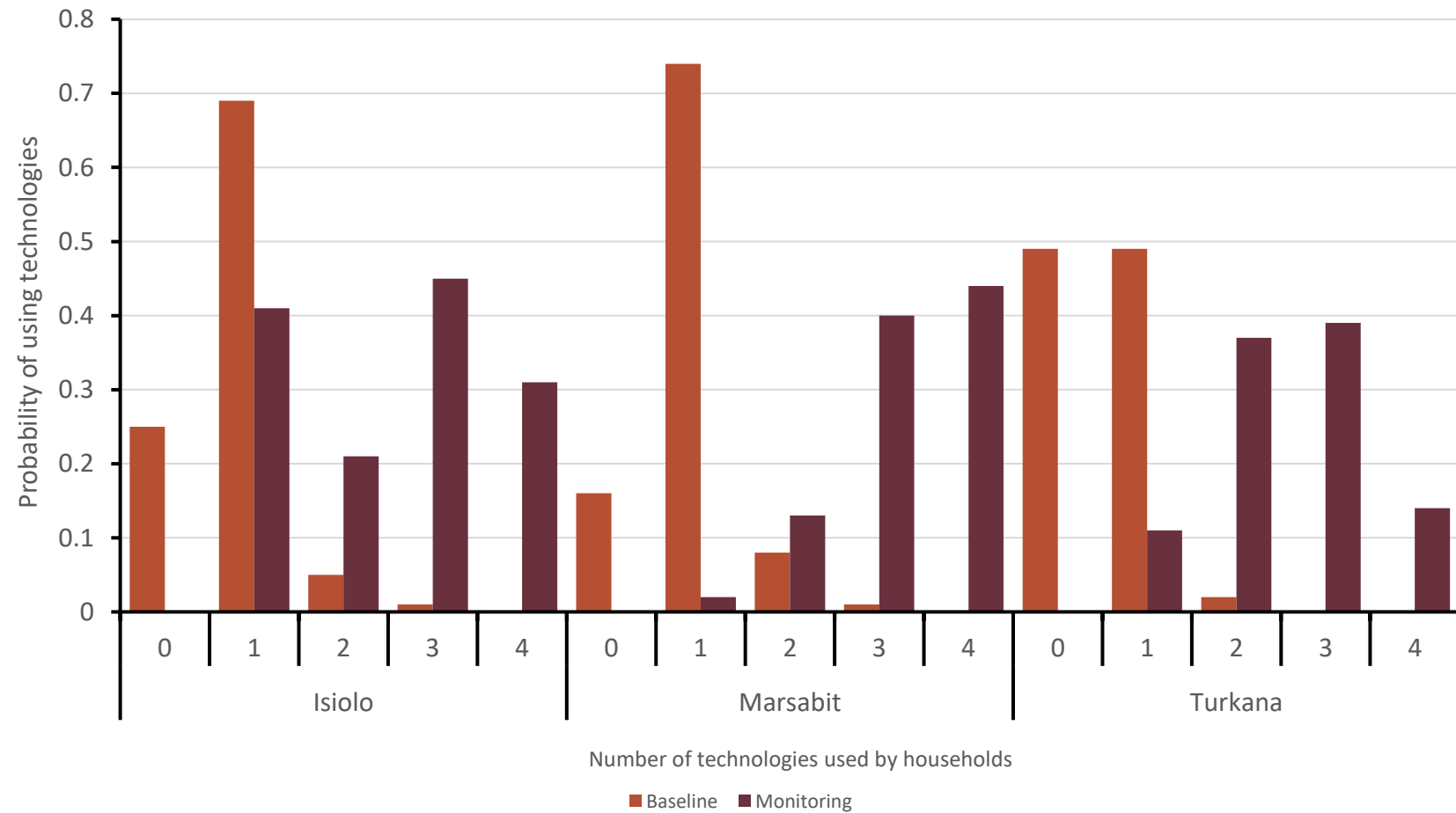


## Proportionate adoption of technologies in the different communities





## Some results: Adoption of different numbers of technologies in the communities



# Conclusions

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Engaging pastoralists through gender-inclusive groups enables faster acceptance and adoption of new practices

Regular capacity development and community engagement is critical for sustained change in behaviour and practices

New technologies need to be adapted and contextualized to help accelerate change in pastoral systems





# Acknowledgement


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