



Centre for
Tropical Livestock
Genetics and Health

**DELIVERING GENETIC GAINS FOR
TROPICAL LIVESTOCK DEVELOPMENT**

**VISION
2030**



OUR VISION: More resilient, productive, efficient, and environmentally sustainable tropical livestock production systems.



OUR MISSION: To develop tools, technologies and innovations to enhance resilience, productivity, efficiency and environmental sustainability of tropical livestock production systems particularly for small holder farmers in low- and middle-income countries (LMICs).

WHO WE ARE: The Centre for Tropical Livestock Genetics and Health (CTLGH) is a strategic livestock genetics research and development alliance established in 2014 by the University of Edinburgh (through The Roslin Institute), Scotland's Rural College (SRUC) and the International Livestock Research Institute (ILRI).

CTLGH's work is about upstream discovery research guided by downstream challenges and opportunities to develop relevant solutions to improve tropical livestock production systems.

We currently have research nodes in the UK, Kenya and Ethiopia.





“ Strategically CTLGH research is positioned for discovery. However, by establishing strong collaborations with industry and farmer facing programmes and institutions, the research generated by CTLGH can be translated, adopted and applied in the field for the direct benefit of livestock producers. ”

Dr Jimmy Smith *Principal, CTLGH*
Director General, International Livestock Research Institute



THE UNIVERSITY
of EDINBURGH



“ CTLGH is uniquely positioned to develop and combine tools and resources in genetics, genomics, animal breeding, reproductive technologies, and data science, to drive genetic gains in support of tropical livestock development in low- and middle-income countries. ”

Professor Bruce Whitelaw *Principal, CTLGH*
Interim Director, The Roslin Institute, The University of Edinburgh





“ CTLGH has made significant progress since it was established in 2014. We are determined to ensure that the Centre will continue to leverage innovations which our respective institutions and partners have developed, to help strengthen livestock development globally. ”

Professor Wayne Powell *Principal, CTLGH
Principal and Chief Executive, Scotland's Rural College*



“ We have leveraged our strength and focus on tropical livestock genetic improvement to set ambitious, bold and relevant goals for the next ten years. We therefore look to the 2030 horizon with optimism, building on previous CTLGH achievements. ”

Professor Appolinaire Djikeng *Director, CTLGH*



OUR PURPOSE

CTLGH develops novel and adapts existing scientific advances, for application through partnership with a global network of farmer facing organisations, to tropical livestock production systems in LMICs (with a particular focus on Africa, South, South East and East Asia).



OUR STRATEGIC OBJECTIVES

CTLGH has three key strategic objectives:



Research:

Lead and support tropical livestock genetic research and development for innovations to underpin genetic improvement in tropical production systems.



Partnerships and collaborations:

Mobilise CTLGH partners and engage collaborators to deliver and sustain genetic gains in tropical livestock production systems.



Capacity building and knowledge exchange:

Develop and deliver research and technical training programmes to support key actors contributing to science underpinning tropical livestock genetic improvement.

OUR KEY ACHIEVEMENTS IN OUR FIRST FIVE YEARS (2014 - 2019)

CTLGH has **developed important tools** to support genetic improvement in livestock, including:

- Tests to determine breed composition of local cattle breeds and describe the genetic contribution of exotic bulls to African crossbred dairy cows.
- New stem-cell technology which has been used to preserve the genetic diversity of several hundred local African chicken breeds.
- Within-species genome-editing pipelines to improve the productivity, adaptation or resilience of tropical chicken breeds.
- Multiple data portals which provide open-access to a wide range of information and resources on tropical livestock.



CTLGH researchers have established the basis of **breeding for tolerance** to East Coast fever (ECF), by:

- Identifying unique genomic determinants of indigenous cattle with heritable tolerance to this disease.

CTLGH has **enhanced scientific capacity of researchers in sub-Saharan Africa** by:

- Training several scientists from LMICs in animal breeding, genome technologies, bioinformatics, mathematical modelling and data science in agriculture.
- Hosting several research placements at its three nodes in Addis Ababa, Edinburgh and Nairobi.
- Catalysing efforts to establish the African Animal Breeding Academy (AABA) to drive long term and sustainable genetic improvement of livestock in Africa.





OUR FOCUS

Working with partners and collaborators worldwide, our work focuses on:

- Identifying and using markers associated with resilience, productivity, efficiency and environmental sustainability of tropical livestock.
- Developing advanced reproductive technologies.
- Supporting breeding programme design, information management and decision support.
- Contributing to identifying and matching suitable breeds to defined environmental and production systems.
- Building research and other technical capacities, knowledge exchange and mobilisation of multiple stakeholders to support tropical livestock genetic improvement.

HOW WE WILL MEASURE OUR SUCCESS

CTLGH's vision and strategy will contribute to deliver the global agenda of the United Nations Sustainable Development Goals – In particular those involved with economic growth, equitable livelihoods, nutrition and health, sustainable ecosystems and partnerships for impact.

By 2030, we will be able to demonstrate the success of our key strategic objectives in the following ways:

- 1** Increasing **research** capacity and capabilities to address short, medium and long-term genetic improvement challenges in tropical livestock production systems.
 - CTLGH will be a leader in the discovery, innovation and application of tools to drive livestock genetic improvement.
 - CTLGH will contribute to developing low-carbon, efficient and sustainable tropical livestock production systems.

- 2** Creating **collaborations and partnerships** with key contributors to tropical livestock development, to identify and address genetic improvement-related challenges:
 - CTLGH will maintain active collaborations with **industry, academia and farmers organisations** to develop and deliver tropical livestock genetic solutions.

Some of CTLGH's researchers, partners, collaborators, funders and advisors at the Centre's annual meeting in Edinburgh in 2019.



- CTLGH will continuously demonstrate the value of active engagements through ILRI and the broader CGIAR system with **national agricultural research systems** for co-design and co-implementation of activities for mutual benefits.
- 3** Establishing a track record of **capacity building and knowledge exchange**
 - CTLGH will be a leader in delivering modern breeding tools to livestock scientists and particularly animal breeders to support national and regional **livestock genetic evaluation schemes**.
 - CTLGH will support the professional development of individual scientists across the globe to **increase scientific knowledge** and skill sets within collaborating research institutes.



CTLGH's work contributes to the **United Nation's Sustainable Development Goals**



Enhancing livestock adaptability for more equitable livelihoods and economic growth.



Harnessing genetic potential to improve livestock productivity for better human nutrition and health.



Tropically adapted and more productive livestock for sustainable agri-systems and ecosystems.



Catalysing partnerships and programmes for research and development.

CENTRE PARTNERS



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OUR NODES



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