The International Livestock Research Institute in Tanzania

Better lives through livestock

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INTERNATIONAL LIVESTOCK RESEARCH INSTITUTE

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The International Livestock Research Institute (ILRI) is CGIAR'S only center dedicated entirely to animal agriculture research for the developing world. ILRI is co-hosted by Kenya and Ethiopia and has 14 offices across Asia and Africa. Drawn from some 40 nationalities, ILRI has a work force of over 600 staff globally and operates on an annual budget of about US$100M. The institute works through extensive partnership arrangements with research and development institutions in both the developed and developing parts of the world.

The livestock challenge in Tanzania

The livestock sector in Tanzania contributes about seven percent to the national GDP. This is considered low given the large numbers of livestock in the country – the second largest in Africa. Unlocking the productivity potential of this livestock could enhance its benefits to food and nutritional security and livelihoods.

The productivity challenge stems primarily from the decline in the natural resource base, characterized by limited availability of high-quality feeds and the seasonality of rainfall. Furthermore, there is limited access to essential inputs and services for breeding, disease management, credit and working capital and extension services. The absence of reliable markets for livestock and livestock products also discourages investments that could improve productivity.

The situation is further aggravated by the ongoing climate emergency, which is resulting in frequent and more severe droughts and unpredictable weather patterns. The increasing natural resource degradation and competition for land resources between farmers and livestock keepers require immediate attention. The climate crisis requires targeted innovations that leverage the socio-economic and market drivers while also addressing growing environmental and health effects associated with livestock agri-food systems.

Addressing the climate crisis requires targeted innovations that harness socio-economic and market drivers, all while addressing the mounting environmental and health impacts associated with livestock agri-food systems.

How is ILRI addressing these challenges

All areas of ILRI's holistic livestock research for development programs are well covered in Tanzania including animal genetics, herd health, animal feeding, markets and inclusive value chain development, gender, nutrition, and sustainable livestock systems. In addition, ILRI is increasingly engaged in projects that are designed to scale out proven technologies and innovations, and advocate for more investments into the livestock sector. Highlights of ILRI-led research for development and advocacy include:

Livestock genetics including herd recording, molecular characterization and delivery of superior local genetics comprising genomically evaluated top local dairy bulls and genetics approaches to address climate change challenges.

Feed resource development with a focus on feed associated low carbon footprint such as improved climate smart Brachiaria forage with low greenhouse gas (GHG) emissions.

Herd health approaches such as delivery mechanisms for productivity enhancing inputs and services, vaccine delivery and diagnostics.

Value chain development including market and food safety research that ensures poor consumers can access quality, safe, and nutritious dairy products at affordable prices, and smallholder farmers have reliable and consistent access to quality inputs and services, reliable, well-coordinated, and efficient dairy products marketing arrangements.

Catalysing digital extension for bundled provision of interdependent technologies comprising reproductive services herd-health management and animal nutrition with embedded advisories to small-scale producers to ensure inclusive and sustainable development smallholder livestock value chains.

Advocacy to add impetus for investments to enhance the livestock sector's contribution to economic growth.

These priority areas are closely aligned to the government's agricultural development priorities in the main strategy for the agricultural sector – the Agricultural Sector Development Program Phase II (ASDP II). The objective of this plan is to transform the agricultural sector–including livestock–towards higher productivity, commercialization, farm income and improved livelihoods, food security and nutrition.

The ILRI-led African Dairy Genetic Gains program works with farmers to identify and make accessible the most productive and adaptive bulls and cows. Photo ILRI/Kabir Dhanji

> *'Our national policy for engaging with international organizations and civil societies is very good. As a government, we have also prioritized our partnership with the private sector, working together in livestock production to achieve the goals we set for ourselves.'*
>
> **Abdallah Ulega**
> Minister, Livestock & Fisheries Ministry in Tanzania

Current ILRI programs in Tanzania

- **The CGIAR Initiative on Sustainable Animal Productivity** – also known as SAPLING (sustainable animal productivity for livelihoods, income, nutrition and gender inclusion) aims to transform the livestock sector to make it more productive, resilient, equitable and sustainable. The initiative is dedicated to enhancing and expanding the dairy and chicken value chains in Tanzania. It places a strong emphasis on adopting an agri-business approach, working collaboratively with private sector partners. Building upon the accomplishments of the **Women in Business project**, SAPLING continues to work with communities to empower women and challenge social norms that discourage their involvement in poultry businesses. The project focuses on providing improved breeds, animal health support, and other essential inputs. SAPLING is also building on previous work under *Maziwa Zaidi* project by catalyzing digital extension approaches through agripreneurs in dairy and other livestock value chains targeting over 60,000 households.
- **The CGIAR Initiative on Gender Equity** is addressing gender issues and contributes to collective global targets for Gender Equality, Youth, and Social Inclusion through (a) closing the gender gap in rights to economic resources, access to ownership, and control over land and natural resources and (b) offer rewarding opportunities young people who are not in employment, education, or training. The Initiative contributes to the Gender Equality, Youth, and Social Inclusion Impact Area. This initiative also builds on the success of the Women in Business project to expand the benefits that women can enjoy following closure of the gender gap on the listed impact areas.
- **The CGIAR Initiative on Livestock and Climate** aims to address the "double burden" that climate change poses for livestock production by identifying existing solutions and co-creating and delivering innovations that help producers, businesses and governments adapt livestock agrifood systems to climate change and reduce their greenhouse gas emissions. Similar to the Sustainable Animal Productivity Initiative, Livestock and Climate is promoting resilient and low emission technologies and practices. The initiative builds on work previously conducted under the Sustainable Rangeland Management Project (SRMP), which has developed participatory tools and processes to secure land tenure rights for for pastoralists. This includes the village land use planning tool that has secured about 159,500 hectares in Kiteto district, which aligns with the government notice of **The grazing land and animal feed resources act, 2010**.

Milk processing in Tanzania. Photo ILRI/Elphas Ngugi

- **The African Dairy Genetic Gains (ADGG)** aims to improve the productivity and profitability of smallholder dairy farmers in Tanzania through the identification of high-yielding adaptive dairy cattle and ensuring these can be accessed by smallholder farmers. The program utilizes genomic technologies to identify and select dairy cattle for breeding to achieve greater milk yields, fertility and tolerance to heat, humidity and diseases. It also focuses on capacity building and knowledge sharing to empower farmers to make informed decisions on the health and management of their animals and to take advantage of the latest breeding technologies. More than 40 bulls and cows have been ranked according to their productive and adaptive capabilities and are being made available to smallholder farmers across the country.
- **Tropical Poultry Genetic Solutions** focuses on identifying and selecting chicken breeds that are adapted to the challenging environments of the tropics, are more productive, utilize feed efficiently and align with farmer preferences and production capacities. TPGS works closely with smallholder farmers, especially women, to identify and promote the adoption of improved breeding practices and the use of appropriate feed and vaccines. The program works with private sector partners to ensure farmer access to their preferred breeds as well as health and feed inputs.
- **The Enviro-Cow Project** project is helping African countries develop climate mitigation strategies by examining the emissions of dairy cows and their ability to adapt to climate change impacts. Results will be integrated into ADGG's certification system to rank bulls and cows. The animals assessed for their productivity and adaptive potential will also include assessments on their climate-resilience and potential to produce less methane emissions through better feed utilization. These breeds will be available to communities through the national artificial insemination centres. As part of the project, handheld laser methane detectors (LMDs) were handed over to the Ministry of Livestock and Fisheries. The devices are used on-farm to measure the amount of methane emitted by cattle through their nostrils while they are eating.

Previous ILRI work

The **ILRI Impact Book** (2021) provides a review of the previous 46 years of the major achievements, lessons and impacts by ILRI and its predecessors (ILRAD and ILCA) in Tanzania and elsewhere. It includes science, capacity building and development impacts on productivity, vaccines, value chain upgrading, income, employment, nutrition, environment and One Health. https://www.ilri.org/ILRI-research-impact

> *'The government and private sector must finance extension service delivery, especially those located in wards and villages, because they are the sector's delivery points.'*
>
> **Angello Mwilawa**
> Director, Research, training and extension
> Ministry of Livestock and Fisheries in Tanzania

What ILRI does

ILRI's mission is to improve food and nutritional security and to reduce poverty in developing countries through research for efficient, safe, and sustainable use of livestock – ensuring better lives through livestock.

The institute's research for development agenda addresses the complex mix of challenges and opportunities faced by small- and medium-scale livestock operators who are currently providing most of the meat, milk, eggs as well as staple cereals across the diverse mixed and pastoral husbandry systems of Africa and Asia.

Such enterprises present multiple and synergistic opportunities to meet the rising demand for milk, meat and eggs; while simultaneously improving incomes, livelihoods and nutrition for poor households, strengthening adaptive capacity and resilience (especially to climate change) and alleviating the threats posted by livestock farming to human and environmental health.

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Partners

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