ILRI | INTERNATIONAL LIVESTOCK RESEARCH INSTITUTE

Livestock futures, a new flagship series

Curating solutions, closing evidence gaps, and aligning investment for livestock systems in low- and middle-income countries



Turning evidence into aligned action for livestock transformation

Livestock Futures, a new multiyear flagship series led by ILRI, is part of a wider effort to help livestock systems in low- and middle-income countries (LMICs) realize their potential for people, animals, and the planet. The series curates solutions where they already exist and convenes partners to dig deeper where the evidence is thin. It contributes to a wider ILRI initiative, building an ecosystem of actors, improving visibility, and helping align investment across the sector.

Why this series and why now

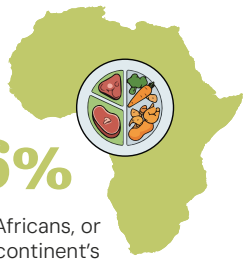
- **Urgency.** Improving the resilience, food security and nutrition, incomes, social protection, and livelihoods of most people in LMICs, and doing so at speed, requires transforming livestock systems as an essential element, not an afterthought.
- **A moral imperative.** Livestock affect the majority of the world's population and the whole planet. LMIC realities must therefore anchor how we respond. Better coordination means every dollar, from every stakeholder, is invested wisely and aligned to deliver change.
- **Evidence for credibility.** Prioritizing investments and action has to be grounded in evidence that is credible and trusted, not anecdotal, inviting new coalitions of actors, from the outset, to align and deploy existing and new solutions together.

1.7 billion

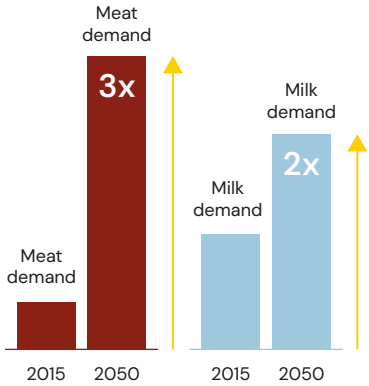
Livestock contributes to the livelihoods of about 1.7 billion people. (FAO 2023)



66.6%



Over 1 billion Africans, or 66.6% of the continent's population, were unable to afford a healthy diet in 2025, more than double the global average. (FAO 2026)



More than double

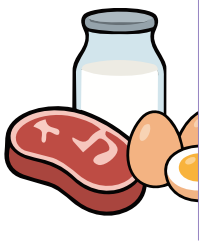
Between 2015 and 2050, meat and milk demand is expected to respectively triple and double in Africa. (Latino et al 2020)

40%

Livestock contributes an average of 40% of total agricultural GDP across LMICs. (FAO 2021)



Animal-source foods provide high-quality protein and important bioavailable micronutrients, including iron, calcium, zinc, and vitamin B12. (FAO 2023)



What this series is

Livestock systems in LMICs are central to food security, nutrition, livelihoods, and environmental sustainability, yet the evidence base on their multiple roles remains fragmented across disciplines and outcome areas. The series therefore opens with a science-based evidence and gap review, structured around four FAO Global Plan of Action for Sustainable Livestock priority outcomes[1], mapping where solutions already exist and can be scaled, and where evidence gaps need more work before realistic delivery is possible:

- Food and nutrition security
- Livelihoods and inclusive economic growth
- One Health and animal health
- Sustainable natural resource use, climate action, and biodiversity

Future flagship products will be informed by the gaps this review surfaces, and will each convene scientists from different disciplines and coalitions to co-create background papers, a synthesis of key messages for action, curated solutions, and collated LMIC data.

What the evidence tells us, and where we need to dig deeper

This umbrella review utilized a systematic evidence-mapping approach[2] to identify and characterize existing review-level evidence on the relationship between livestock systems and four broad outcomes in LMICs from 2006 onwards, exactly from the time FAO's iconic publication focusing on livestock's impact on environment and climate was published[3]. It is the first systematic look at the LMIC evidence base for livestock transformation.

- 263 systematic reviews and evidence syntheses (most published since 2023) analyzed in depth, drawn from 284 reviews after screening more than 4,000 records.

1 FAO. 2026. FAO's Global Plan of Action for Sustainable Livestock Transformation. https://www.fao.org/newsroom/detail/fao-s-global-plan-of-action-for-sustainable-livestock-transformation-is-approved/en.

2 Haddaway, N.R., Eales, J., Mukherji, A., Baltenweck, I., Crane, T., Vaidya, S. and Tarawali, S. 2026. Sustainable livestock transformation in low- and middle-income countries: An umbrella review protocol. Montpellier, France: CGIAR System Organization. https://hdl.handle.net/10568/183583.

3 FAO. 2006. Livestock's Long Shadow: Environmental Issues and Options. https://www.fao.org/4/a0701e/a0701e00.htm.

What we found

One Health dominates the evidence base landscape (52%), almost five times that for sustainable natural resource use, climate action, and biodiversity (14%).

Food safety dominates the nutrition evidence. Reviews focus much more on food safety than on diet quality, access, affordability, or food insecurity.

Productivity dominates the livelihoods evidence. Far more reviews examine productivity and efficiency than income, resilience, jobs, gender, youth, or inclusion.

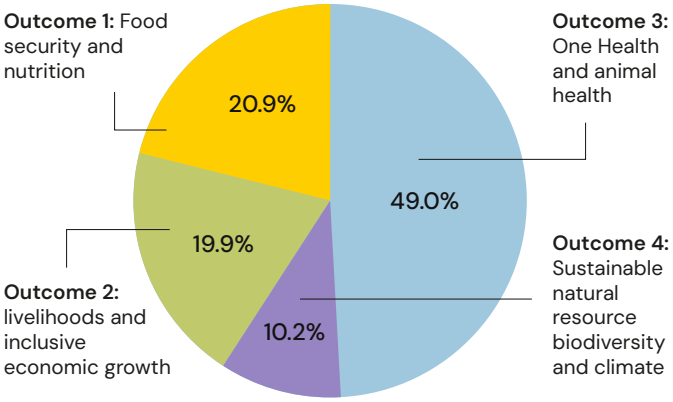
Geographic coverage is broad (about 50% from Africa), but production contexts are often unclear. Evidence spans LMIC regions, yet many reviews do not clearly identify whether they concern pastoral, smallholder, intensive, or other livestock systems.

Most evidence covers cattle and small ruminants, with far less on poultry, pigs, and other species.

The major gaps

- **Livestock evidence remains siloed.** Very few reviews integrate nutrition, livelihoods, One Health, and environmental outcomes together.
- **People-focused evidence is thin, particularly in relation to food security.** Gender, youth, jobs, resilience, and inclusion in relation to broader food security are largely absent.
- **Key climate dimensions have few reviews, which remain fragmented.** Evidence on livestock emissions, climate risks to livestock, adaptation, and mitigation, is scarce and does not relate to the other development outcomes.

Percentage of studies per outcome



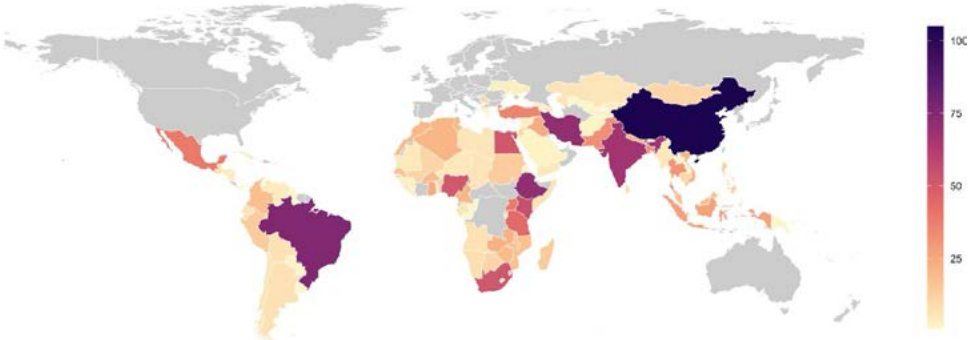
Where we dig deeper next

These gaps will shape the new series of annual Livestock Futures flagship products, starting in 2027. Each flagship will **convene** key stakeholders, from eminent livestock innovation scientists to agroecology and social coalitions, to **co-create commissioned background papers, a shared narrative, curated practical solutions for specific value chains and geographies, and collated LMIC data on that year's theme.**

Proposed themes include:

- **Livelihoods & food security:** transforming outcomes for women, young people, and marginalized groups.
- **Climate, natural resources & One Health:** climate and natural-resource action that strengthens One Health and animal health.
- **Climate action & food security:** aligning climate action with food and nutrition security.
- **Climate action & livelihoods:** climate action that strengthens livelihoods and inclusive economic growth.

Number of studies by country

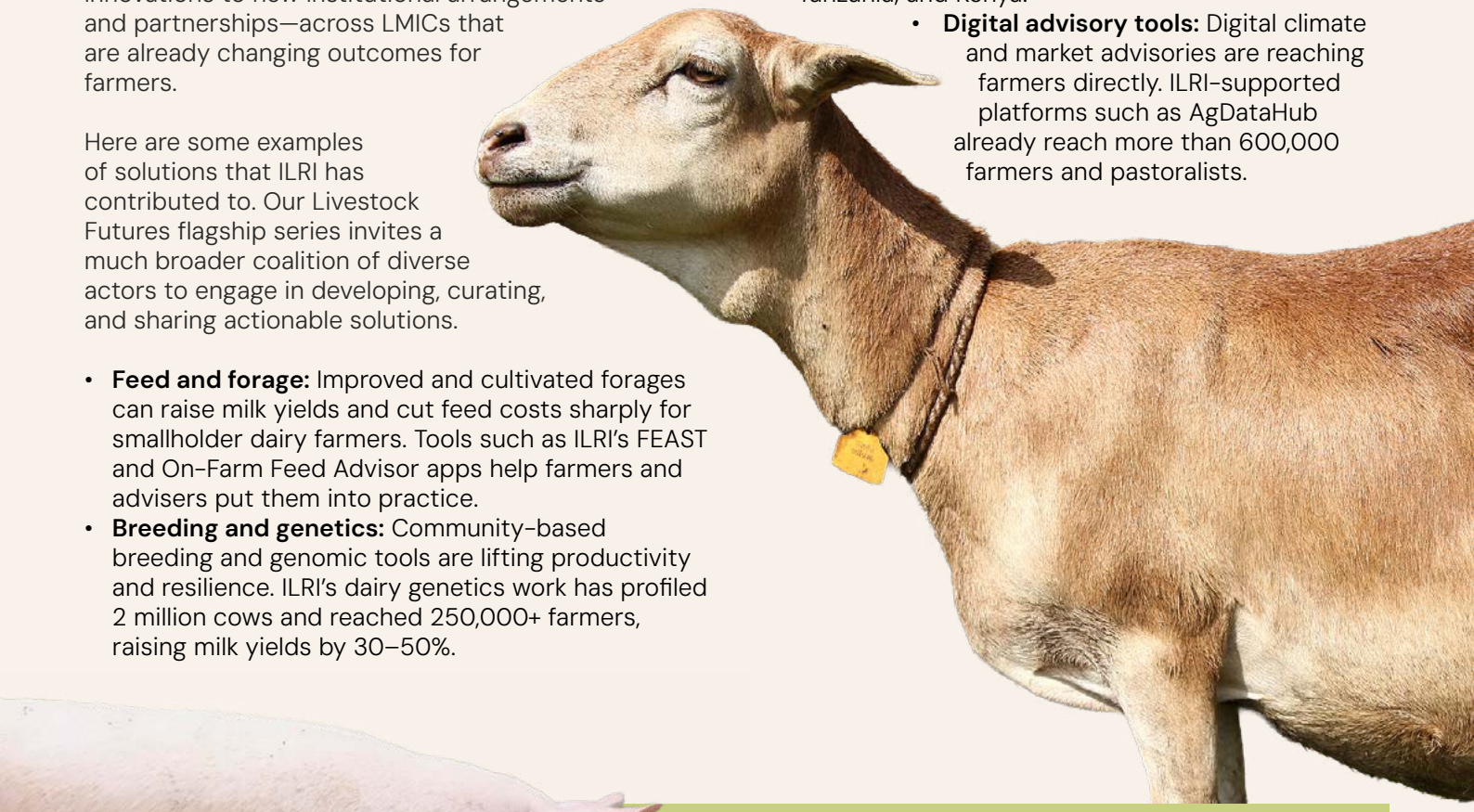


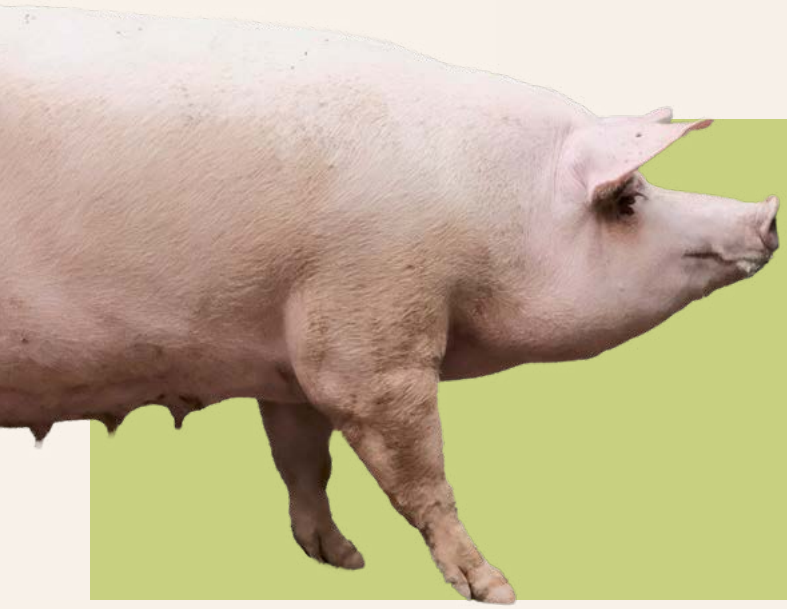
Evidence gaps shouldn't obscure what's already working

Alongside the umbrella review, Livestock Futures also seeks to curate a large and growing body of proven, scalable solutions—from scientific and technical innovations to new institutional arrangements and partnerships—across LMICs that are already changing outcomes for farmers.

Here are some examples of solutions that ILRI has contributed to. Our Livestock Futures flagship series invites a much broader coalition of diverse actors to engage in developing, curating, and sharing actionable solutions.

- **Feed and forage:** Improved and cultivated forages can raise milk yields and cut feed costs sharply for smallholder dairy farmers. Tools such as ILRI's FEAST and On-Farm Feed Advisor apps help farmers and advisers put them into practice.
- **Breeding and genetics:** Community-based breeding and genomic tools are lifting productivity and resilience. ILRI's dairy genetics work has profiled 2 million cows and reached 250,000+ farmers, raising milk yields by 30–50%.
- **Animal and human health:** Vaccines and diagnostics are cutting disease losses estimated at USD 300 billion a year across LMICs. ILRI's East Coast fever vaccine alone has protected 156,000 households, adding USD 74 million in farmer income.
- **Climate and natural resources:** Community-managed rangelands are sequestering carbon and building resilience. Over 2.7 million hectares are now under participatory management in Ethiopia, Tanzania, and Kenya.
- **Digital advisory tools:** Digital climate and market advisories are reaching farmers directly. ILRI-supported platforms such as AgDataHub already reach more than 600,000 farmers and pastoralists.





Be part of the ecosystem

Livestock Futures is building the partnerships needed to close these evidence gaps and to identify solutions for scaling across LMICs. Get in touch to add your voice, your evidence, your skills, or your investment.

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The International Livestock Research Institute (ILRI) works to improve peoples' lives in low- and middle-income countries through livestock science that contributes to equitable and resilient livestock systems in order to deliver food systems transformation with climate and environmental benefits. Co-hosted by Kenya and Ethiopia, it has regional or country offices in Africa and Asia. You are free to use and share this material under the Creative Commons Attribution 4.0 International Licence.