A woman wearing a bright pink sari with a gold border stands next to a young water buffalo. She is smiling and gesturing with her right hand. The buffalo is looking towards the camera. They are in a dark, rustic setting, possibly a barn or a stable, with a wooden post visible on the right.

ILRI strategy 2013–2022 Livestock research for food security and poverty reduction

better lives through livestock

International Livestock Research Institute

Livestock research for food security and
poverty reduction

ILRI strategy 2013–2022

The International Livestock Research Institute (ILRI) works with partners worldwide to enhance the roles that livestock play in food security and poverty alleviation, principally in Africa and Asia. The outcomes of these research partnerships help people in developing countries keep their farm animals alive and productive, increase and sustain their livestock and farm productivity, find profitable markets for their animal products, and reduce the risk of livestock-related diseases.

ILRI is a not-for-profit institution with a staff of about 600 and, in 2012, an operating budget of about USD 60 million. A member of the CGIAR Consortium working for a food-secure future, ILRI has its headquarters in Nairobi, Kenya, a principal campus in Addis Ababa, Ethiopia, and offices in other countries in East, West and Southern Africa and in South, Southeast and East Asia.

ILRI leads the CGIAR Research Program on Livestock and Fish, leads a component of a CGIAR Research Program on Agriculture for Nutrition and Health on the prevention and control of agriculture-associated diseases, and contributes to seven other CGIAR research programs. Staff members work in integrated sciences and biosciences programs that develop and deliver science-based practices, provide scientific evidence for decision-making and develop capacities of livestock-sector stakeholders. With the African Union/New Partnership for Africa's Development Planning and Coordination Agency, ILRI also hosts and manages the Biosciences eastern and central Africa (BeCA)-ILRI Hub.

CGIAR is a global partnership that unites organizations engaged in research for a food-secure future. CGIAR research is dedicated to reducing rural poverty, increasing food security, improving human health and nutrition, and ensuring more sustainable management of natural resources. It is carried out by 15 centres that are members of the CGIAR Consortium in close collaboration with hundreds of partner organizations, including national and regional research institutes, civil society organizations, academia and the private sector.

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ilri.org
better lives through livestock
ILRI is a member of the CGIAR Consortium

Box 30709, Nairobi 00100, Kenya
Phone: + 254 20 422 3000
Fax: +254 20 422 3001
Email: ILRI-Kenya@cgiar.org

Box 5689, Addis Ababa, Ethiopia
Phone: +251 11 617 2000
Fax: +251 11 617 2001
Email: ILRI-Ethiopia@cgiar.org

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Foreword

Demand for animal-source foods is rapidly growing in the developing world. A key question is, can this demand be met in environmentally, socially and economically equitable ways?

Our proposition is that this can be done if ways are found, through research, to have small and medium producers respond and, do so in such a way that such foods are accessible to both rural and urban consumers—better lives are supported through livestock.

The International Livestock Research Institute (ILRI) has a global mandate for livestock research for development that intersects with actors from farmers to global investors, spans several continents and interacts with research and development communities.

This is ILRI's second ten-year strategy. It incorporates a number of changes, many based on learning from the previous strategy (2000–2010, initially produced in 2000 and modified in 2002), an interim strategy (2011–2012) and an assessment of the external and internal environments in which the institute operates.

It moves from a focus on livestock as a pathway out of poverty to a broader agenda addressing poverty and food security in ways that are environmentally sustainable, good for human health and nutrition, and equitable.

Three strategic objectives define measurable goals that the institute will work towards over the coming decade through high performance in five critical success factors.

It differs from other strategy documents in that it provides overall institutional direction without all the operation details. It recognizes that the details of research operations and how the organization works may change within these broad parameters. It provides the boundaries for ILRI over the 10-year period. It provides a framework for choosing activities to pursue and not to pursue, for guiding operational and functional planning, for allocating resources and for monitoring progress.

We would like to thank all members of the task force who worked to make this strategy possible, as well as all the many partners and individuals inside and outside ILRI who provided ideas, feedback, and other inputs that helped sharpen our analysis.



Lindiwe Majele Sibanda
Chair, ILRI Board of Trustees



Jimmy Smith
Director General, ILRI



Introduction

The International Livestock Research Institute (ILRI) is a complex organization with a global mandate for livestock research for development that intersects with actors from farmers to global investors, spans several continents and interacts with research and development communities. This strategy provides overall institutional direction. It recognizes that the details of research operations and how the organization works may change within these broad parameters. It provides the boundaries for ILRI over the 10-year period. It provides a framework for choosing activities to pursue and not to pursue, for guiding operational and functional planning, for allocating resources and for monitoring progress. It is not a functional or operational plan, but rather provides the framework under which these are developed for key performance areas.

This strategy has three key elements: an analysis of the internal and external context within which ILRI operates; three strategic objectives that respond to this context; and a set of key performance areas, termed critical success factors, that are vital to the achievement of the strategic objectives.

The global context in which ILRI operates

This ILRI strategy covers a period when the world faces major challenges in feeding its growing population and when there is high uncertainty about how global forces affect agriculture and food production.¹ Some estimates anticipate that a 50–70% increase in food productivity will be needed to ensure the world is not hungry by 2050, and this needs to be achieved without detriment to the environment (Ingram et al. 2010). This is especially true for developing countries, where the problems of feeding poor people have been highlighted by recent food price shocks, with the expectation of more and sustained rises in food prices.

At the same time, poverty remains a major development challenge, with only a handful of countries meeting the first Millennium Development Goal, to eradicate extreme poverty and hunger by 2015 (Montpellier Panel 2012). Food security is high on the agenda, with almost one billion people malnourished today and a population expected to continue to rise through the year 2050, meaning an additional 2.5 billion people to feed by mid-century—many of whom will be in developing countries and among the world's poorest people. Poverty and malnutrition are inextricably linked, with the majority of the world's poor being found in rural populations, highly dependent on agriculture, including livestock (FAO 2012).

There is significant potential for livestock research to address these problems. Globally, livestock products comprise four of the five highest value agricultural commodities. Livestock in many developing countries contribute up to 40% of total agricultural GDP (see for example Thornton 2010, Behnke and Metaferia 2011) and this share is growing in many countries at twice the rate of the crop sector. The yield gaps between current and potential productivity in developing countries—an area where research can make a big impact—are up to 130% for beef and 430% for milk.

1. <http://www.ifpri.org/publication/2012-global-hunger-index>

These yield gaps in livestock systems are generally considerably greater than those in crop-based farming systems. Feed deficits in these countries, for example, mean that many animals only reach 50–70% of their genetic potential. Similarly, animal diseases regularly lower productivity and kill animals outright, with up to 20% of mortality in young animals attributed to diseases. Thus, significant opportunities exist to increase livestock productivity in developing countries by developing and applying science-based improvements in animal feeding, breeding and health.

Where incomes rise, people often over-consume fatty red meat and other animal-source foods, which can result in major health problems. Many of the world's poor, however, do not have enough animal-source foods in their diets for their adequate nutrition and the optimal cognitive development of their children (Randolph et al. 2007).

Although half the world's population will soon live in urban areas, there remain considerable numbers in rural areas in developing countries who depend for food on small-scale farming, with livestock an integral part of such systems (IFAD 2011). Such so-called 'mixed' crop-and-livestock systems provide over half the world's food. Nonetheless, global policy continues to place highest priority on large-scale food production from crops. Moreover, an under-appreciation of the different roles of livestock worldwide, coupled with negative perceptions of livestock farming driven largely by concerns in rich countries about global warming, environmental damage and the health of those over-consuming meat and other livestock foods, have led to a squandering of opportunities for the livestock sector to play a significant role in addressing global development issues.

Vision and mission

ILRI envisions a world where all people have access to enough food and livelihood options to fulfil their potential.

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***.

ILRI's roles and realities

This assessment of ILRI's internal environment considers the science and lessons the institute has to build on, its current priorities and competencies and its roles in CGIAR.

Process leading to this strategy

In 2002, after internal and external consultations, ILRI modified its strategy to 2010, *Livestock—A pathway out of poverty* (ILRI 2002). Since late 2011, ILRI has undertaken an extensive internal and external consultation process to review its past achievements and lessons and to learn from a wide and diverse group of stakeholders how to position itself for the future. The process began in late 2011, when ILRI hosted and facilitated a 'Livestock Exchange' event in which staff, partners and other stakeholders reviewed the achievements, challenges, changes and lessons learned in ILRI's research over the previous decade to help prepare ILRI for its future challenges and the strategy development process.² For much of 2012, a diversity of facilitated on-line and face-to-face consultations and commentaries has contributed to this strategy.

Lessons and achievements for ILRI, highlighted in various engagements with partners, include the institute's continued evolution from a 'livestock research centre of excellence' to a development-outcome-driven 'livestock research-for-development partner'. Also stressed by ILRI's stakeholders was the need for the institute to increase its partnership efforts even more in future, ensuring that they are productive, beneficial and cost-effective. Beyond its core 'research' mandate, other areas seen as integral to ILRI's work are capacity development, high-quality communications and knowledge sharing, and the empowerment of poor women. Many people commented on the need to better balance ILRI's livestock agenda to address both the harms and benefits derived from livestock. Some discussed the need to better integrate the whole of ILRI's agenda—from its 'hard' biosciences to its 'soft' applications—to ensure that the whole of the institute is greater than the sum of its parts. ILRI's strengths in agricultural systems approaches, smallholder participation in markets and mainstreaming gender issues were acknowledged. Recognition continued that there are 'no silver bullets' to solving the agricultural development challenges of the developing world.

ILRI's roles, priorities and competencies

ILRI works in partnerships and alliances with other national and international organizations in livestock research, training and information. ILRI currently works in tropical developing regions of Africa and Asia, with its headquarters in Nairobi, Kenya, a principal site in Addis Ababa, Ethiopia, and staff based elsewhere in sub-Saharan Africa and in South, Southeast and East Asia. The institute's key competencies span a range of biophysical, economic and social livestock-focused science, with communications, knowledge management, capacity development and partnership units integrated and supporting the research groups.

2. <http://mahider.ilri.org/handle/10568/10593>

The Biosciences east and central Africa (BecA)-ILRI Hub—a regional research platform³ managed and hosted by ILRI at its Nairobi campus—is a ground-breaking, timely initiative fostering and accelerating the contribution of bioscience to Africa’s agricultural development. Led by ILRI and the Africa Union/New Partnership for Africa’s Development Planning and Coordinating Agency, it supports research and capacity development partnerships among CGIAR and other African and global institutions working for Africa’s agricultural development, particularly the Comprehensive Africa Agriculture Development Program (CAADP). The Hub’s shared platform is leveraged to support implementation of ILRI’s biosciences research agenda and the CGIAR research programs more broadly. The BecA-ILRI Hub also has a significant role in capacity development activities of ILRI and CGIAR.

ILRI’s role is to help bring about change in livestock-related practice, policy and investment by generating scientific knowledge, exerting influence and developing capacity for more equitable, broad-based and sustainable livestock development. ILRI has a unique global mandate to do this and draws on the expertise and relationships it has developed over almost four decades of operation. In line with the CGIAR strategy and results framework, ILRI assumes responsibility for ensuring that its research outputs translate into outcomes that lead to development impacts in the form of significant benefits for poor communities, nations and regions.

Because ILRI’s business is livestock science for development, ILRI also needs to listen to and influence others to ensure that its research is both relevant and seen to be relevant by others.

ILRI’s core scientific competencies span the full breadth of livestock science, from the three traditional ‘pillars’ of livestock production—livestock health, genetics and feeds—which lie mostly in the biosciences, to social sciences (e.g. socio-economics and gender studies), economics (livestock markets, value chains, trade, policies), livestock food safety and nutrition, epidemiology and impacts of ‘zoonotic’ (animal-to-human) diseases, and environmental sciences (livestock and land degradation, water use, climate change, environmental services). With such diverse disciplines conducted under ‘one roof’, the opportunity and challenge for ILRI is to integrate (from within and outside the institute) the knowledge, expertise and paradigms in productive ‘systems-level’ thinking, approaches, options and solutions to improve food security and reduce poverty (box 1).

3. <http://hub.africabiosciences.org/>

Box 1. ILRI's scientific competencies and areas of investment

This strategy broadens ILRI's research portfolio to include greater attention to food security and human nutrition, influencing policy and tackling a wider range of environmental issues. The research portfolio includes, but is not limited to:

Biosciences

- *Vaccines*: Improving existing vaccines and developing new vaccines, with a focus on important developing-world diseases of ruminants and pigs.
- *Genomics*: Enhancing disease resistance, improving animal productivity, discovering and tracking pathogens and determining their diversity, delivering novel livestock genetics and reproductive technologies.
- *Breeding*: Matching appropriate breeds with diverse production systems, developing new systems for production and delivery of improved genetics to smallholders, identifying disease-resistance and performance traits in poultry breeds indigenous in the developing world.
- *Feeds*: Developing better adapted, more productive and more disease-resistant livestock forages and providing small-scale farmers with dual-purpose crops that better feed livestock as well as people.
- *ILRI-BecA Hub*: Building Africa's capacity to use and conduct biotechnology research for improved agriculture.

Integrated sciences

- *Gender and equity*: Ensuring livestock income and assets for women and other marginalized groups.
- *Value chains and innovation systems*: Identifying constraints and appropriate interventions to improve livestock value chain performance for the poor.
- *Policy, investment and trade*: Assessing policy and investment options for pro-poor livestock development and using evidence to raise awareness among decision-makers of important local and national roles of livestock.
- *Zoonotic diseases and food safety*: Mitigating human health risks from livestock and livestock products in value chains and production systems.
- *Feeding strategies*: Improving food-feed crops and making best use of existing and potential forages and crop residues available to the poor.
- *Livestock and environment*: Assessing impacts of climate on livestock systems and determining appropriate climate change adaptation and mitigation strategies, including natural resource management at the farm and landscape levels.
- *Resilience in vulnerable systems*: Developing new mechanisms and options for mitigating risks of livestock producers, paying livestock communities for their environmental services and restoring degraded rangelands.

ILRI strategy and the CGIAR Consortium

ILRI's strategy and its roles in the CGIAR research programs are synergistic, each adding value to each other. The strategy describes ILRI's vision, mission and strategic objectives; the research strategy to address the critical success factors articulates the coherent portfolio of livestock science ILRI delivers to the eight CGIAR research programs (see box 2 below) that it participates in or leads. ILRI's strategy also enables the institute to influence the further development and implementation of the livestock agenda through the prioritization of activities in the CGIAR research programs.

As a member of the CGIAR Consortium, ILRI contributes to further articulation of the CGIAR strategy and results framework⁴ using the institute's strategy to further the livestock agenda within this, as well as furthering overall CGIAR aspirations. ILRI's facilitation of cross-centre collaboration through engagement of multiple centres at its Nairobi and Addis Ababa campuses provides a prime example of this role.

Box 2. ILRI in the CGIAR research programs

CGIAR Research Program on Dryland Systems (led by ICARDA). ILRI conducts research on mitigating vulnerability (related to payments for ecosystem services, and options for livestock insurance among others); sustainable intensification of crop–livestock systems including trade-offs and system analyses and work on innovation systems and livestock–gender interactions.

CGIAR Research Program on the Humid Tropics (led by IITA). ILRI conducts research on sustainable intensification in crop–livestock systems, including trade off and systems analyses; livestock environment research using innovation approaches and integrating livestock–gender interactions.

CGIAR Research Program on Policy, Institutions and Markets (led by IFPRI). ILRI's research in this program covers value chains, systems and gender analyses.

CGIAR Research Program on Livestock and Fish (led by ILRI, together with the WorldFish Center, CIAT, and ICARDA). The program aims to increase the productivity of small-scale livestock and fish systems in sustainable ways, making meat, milk and fish more available and affordable across the developing world. In doing so, it will reduce poverty through greater participation by the poor along animal source food value chains. It focuses on nine livestock/aquaculture value chains: dairy in Tanzania and India; small ruminants in Mali and Ethiopia; pigs in Vietnam and Uganda; dual purpose cattle in Nicaragua and aquaculture in Uganda and Egypt. Research components cover animal feeds, breeding and genetics, health, value chain development, gender and learning, and targeting.

CGIAR Research Program on Agriculture, Nutrition and Health (led by IFPRI). ILRI leads a component of this research program on the prevention and control of agriculture associated diseases, which includes aspects of food borne diseases, zoonoses and emerging infectious diseases.

CGIAR Research Program Water, Land and Ecosystems (led by IWMI). ILRI research in this program focuses largely on livestock water interactions in relation to crop–livestock systems in the Nile and Volta basins. Research on payments for ecosystem services and other aspects of dryland pastoral systems may also be addressed.

CGIAR Research Program on Climate Change, Agriculture and Food Security (led by CIAT). ILRI's research includes systems analyses, macro and household level modelling; climate change adaptation and mitigation strategies in livestock systems.

CGIAR Research Program for Managing and Sustaining Crop Collections. ILRI's forage genebank in Ethiopia is supported through this CGIAR partnership with the Global Crop Diversity Trust.

4. <http://www.cgiar.org/our-research>



Strategic directions, 2013–2022

The overall focus of ILRI's research in this strategy is articulated in the tagline better lives through livestock. This strategy incorporates a number of changes from the previous strategy, summarized in the table below.

Issue	ILRI strategy 2002–2012	ILRI strategy 2013–2022
What ILRI aims to achieve		
Overlap between strategy and operational plans	Former strategy included operational details, some of which became obsolete when the context changed.	Current strategy focuses on a long-term high-level agenda; additional detailed operational plans address how the strategy is delivered.
Impact target	Overall focus on poverty alleviation.	Current strategy goes beyond 'pathways out of poverty' to include global food supply, food and nutritional security, job creation and linking small-scale actors to large-scale enterprises.
How ILRI works		
Output–outcome–impact continuum	A growing recognition that research needs to deliver not just outputs but also outcomes. Considerable variation across the institute as to the extent to which this was utilized to frame high-priority activities.	More emphasis on purposefully ensuring that research leads to developmental outcomes and impacts.
	A few research-for-development projects that were invaluable learning experiences helped clarify the role and positioning of ILRI.	Embedding research in larger development projects in which research serves a small, albeit critical, role. Partnerships, communications, knowledge management, gender and capacity development are integral parts of the research-for-development agenda.
Accountability	Accountability for outputs and deliverables: Although outcomes were recognized as vital, the emphasis was on ensuring that the likelihood of outcomes was good.	ILRI holds itself accountable for the attainment of measurable outcomes and impacts.
Attribution	Increasing recognition of partners' roles vis-à-vis those of ILRI, at times in relation to outcome and impact pathway thinking.	Strategic objectives go beyond what ILRI as a research institute can achieve alone: to track progress towards desired impacts, ILRI has to know what is changing, not how ILRI is changing it—this can only be achieved with the concerted effort of a broader set of partners.
Alignment within the institute	The whole institute worked towards a single goal; however, articulation of relationships between the research, support and other operations was not specific.	Specific, measurable indicators that allow for alignment and monitoring of every part of the institute's business.

Issue	ILRI strategy 2002–2012	ILRI strategy 2013–2022
ILRI's research portfolio		
Balancing benefits and risks	Emphasis on the benefits of livestock, especially for poverty reduction.	Increased recognition that keeping livestock has benefits and risks, and that a balanced approach is required that takes account of livestock's impact on the environment, on human health and of potential inequities.
Diversity of livestock systems	Different research priorities for different systems, notably crop–livestock and pastoral systems.	Articulation and use of different livestock sector trajectories, which are dynamic, forward looking and based on more than biophysical conditions alone. No 'one size fits all'.
Diversity of strengths	Recognition of ILRI's strengths in systems, gender, resilience, biosciences.	Bringing ILRI's strengths together—from high-end biosciences to social, value chain and gender research—notably to contribute to CGIAR research program outcomes.
Research-for-development approach	Focus on practice—transforming livestock actions on the ground.	In addition to practice, focus on policy decision-making, investments at different levels—all of which are complementary but require different research approaches.
Research on human health and nutrition	An emerging recognition of the importance of the intersection of livestock and human health, mainly involving zoonoses and food safety work in markets and value chains.	Livestock and human health and nutrition intersection has much higher visibility as a high-priority research area, with the nutritional dimension potentially expanding.
Gender	Varied inclusion and attention to gender across the institute's portfolio.	Mainstreaming of ILRI gender strategy such that gender equity is at the heart of all the institute's work.
Species focus	Focus on ruminants—cattle and small ruminants in particular.	As the monogastric sector is the fastest growing livestock subsector in much of the world, smallholder pig value chains added to the portfolio. More robust analysis of opportunities for pro-poor research in relation to the livestock system trajectories including pig and poultry sectors.
With and for whom ILRI works		
Clientele	Main focus on poor livestock producers.	Includes all main actors in animal-source food value chains, diverse livestock community stakeholders and addresses needs of poor urban and rural consumers.
Partnerships	Increasing recognition of the role of a diversity of partners. Many partners with diverse roles, ranging from major strategic partners, with whom there is a multi-faceted engagement around priority topics, to 'collaborators' who deliver a particular result. Little recognition of this diversity.	Strategic partnerships with national agricultural research systems; a deeper engagement with development organizations and the private sector; and partners with expertise in communication, advocacy, policy change, catalysing coalitions and alliances, and facilitating multi-stakeholder networks and innovations systems.
Capacity development	Largely focused on individual engagement, principally (but not only) through graduate students.	More attention to helping individuals and institutions in developing countries further develop their capacities in the livestock sector; without this, people and institutions are not able to absorb and fully use the outputs generated by ILRI and many other organizations.

Strategic issues

Using broad external and internal consultations, ILRI has distilled an analysis of the environment it is likely to face in the next 10–15 years, summarized here as nine strategic issues that ILRI must address if it is to achieve its mission.

1. The twin challenges facing agriculture today are addressing the **growing levels of food and nutritional insecurity**, especially among the poor in developing countries. Almost one billion people were undernourished in 2010 (FAO 2012). The vital role of small-scale livestock production and marketing systems in meeting these food and nutrition challenges, and doing so sustainably and equitably, has not yet been a high priority for policymakers and investors.
2. ILRI and its partners need to demonstrate that livestock systems can help reduce food, nutrition, economic and environmental insecurity on a **significant scale** by reaching much larger numbers of people.
3. While there is growing recognition of the significant **role of women** in increasing food security and reducing poverty, this opportunity has not yet been realized, particularly in the livestock sector.
4. The rural poor in developing countries are not a homogeneous group. Challenges and **opportunities for the poor** engaged in livestock systems differ according to their circumstances and require different approaches according to potential growth trajectories (see below).
5. **Environmental and human health problems** associated with livestock production and products are causing increasing concern in industrialized nations. If the livestock sector is to fulfil its potential in alleviating food insecurity and poverty, such concerns must be addressed in a balanced way as livestock systems evolve in developing countries.
6. Recent developments in new science and technologies offer new ways to make rapid progress in tackling livestock challenges in the developing world.
7. Although **livestock represent as much as 40% of agricultural GDP** in many developing countries, the sector receives a much smaller proportion of funding for agricultural development and barely features in key policies.
8. The greater investment in livestock that is needed requires a **greater capacity** in developing countries and donor agencies to support livestock development and incorporate livestock development plans, respectively.
9. To take on these and other challenges, ILRI must ensure that it is **fit for purpose**—that every part of the institute is focused on achieving its mission and aligned in ways to accomplish that.

Livestock subsector trajectories

This strategy expands the previous focus to include livestock-based options that help people to meet their food and nutritional as well as economic needs while mitigating their livestock-associated environmental and health threats.

It recognizes three scenarios of livestock systems change, but focuses ILRI's efforts on the first two, in particular the first. These were chosen based on the likely transformations of major livestock systems of the poor in this decade and livestock-sector growth scenarios derived largely from a High-Level Consultation for a Global Livestock Agenda to 2020, co-convened by ILRI and the World Bank in early 2012.⁵

Strong growth systems: There is urgent need to develop sustainable food systems that deliver key animal-source nutrients to the poor while facilitating a structural transition in the livestock sector of developing countries. This entails a transition from most smallholders keeping livestock in low-productive systems to eventually fewer households raising more productive animals in more efficient, intensive and market-linked systems. These mostly mixed smallholder systems now provide significant animal and crop products in the developing world and are likely to grow the most in aggregate. In many parts of Africa and Asia, the transition is happening slowly, with smallholder marketing systems still largely informal, although there are pockets of more rapid change in higher potential systems with good market access.

ILRI and its partners are working to make this transition as broad-based as possible, helping those who can to continue on their path to sustainable, highly productive and resource-efficient smallholder systems, or to accumulate sufficient capital to exit from agriculture without falling back into poverty. This research aims to develop and up-scale practices, strategies and policies that support inclusive growth and maximize the wellbeing of people and the environment, now and in the future.

Fragile growth systems: It will not be possible to create the same level of opportunities for rapid, market focused growth for all poor livestock keepers, especially in areas where growth in productivity is severely limited by remoteness, harsh climates or environments, or by poor institutions, infrastructure and market access. In these livestock systems, what is urgently needed are nuanced approaches that, where appropriate, help achieve incremental growth in livestock production and market engagement that matches well with the natural resource base. In other situations, rather than productivity, the emphasis will need to be on enhancing the important role livestock play in increasing the resilience of people, communities and environments to variability in weather, markets or resource demands. Livestock research will help people make better use of their livestock-based livelihoods to feed their families and communities, protect their assets and conserve their natural resources.

High growth with externalities: In parts of some developing countries, particularly in Asia, where dynamic markets and increasingly skilled human resources are already driving strong growth in livestock production, fast-changing small-scale livestock systems may be damaging the environment, exposing their communities to increased public health risks, and furthermore excluding participation of those livestock keepers and sellers living in deepest poverty. In these circumstances, what is urgently needed is an understanding and anticipation of all possible negative impacts of small-scale livestock intensification. Research can help promote or generate the incentives, technologies, strategies and product and organizational innovations that will mitigate health and environment risks while supporting the poorest people to comply with increasingly stringent livestock market standards.

5. <http://mahider.ilri.org/handle/10568/16716>

Strategic objectives

ILRI's three strategic objectives, presented below, articulate the roles of the institute in its work with partners and indicate the metrics by which ILRI will measure its progress in achieving these goals.

Strategic objective 1

ILRI and its partners **develop, test, adapt and promote science-based practices** that—being sustainable and scalable—achieve *better lives through livestock*.

Metrics: Within a 5–10-year time period, livestock-related real income for 2.8 million people is increased by 30%, the supply of safe animal-source foods in ILRI's target sites/countries⁶ is increased 30%, and greenhouse gas emissions per unit of livestock product produced are reduced. Simultaneously, in partnership with others, these results are scaled to tens of millions more people.

Strategic objective 2

ILRI and its partners provide compelling scientific evidence in ways that persuade decision-makers—from farms to boardrooms and parliaments—that smarter policies and bigger livestock investments can deliver significant socio-economic, health and environmental dividends to both poor nations and households.

Metrics: Within a 10–15-year time frame, the share of agricultural budget investments in livestock in ILRI's target countries are brought at least 20% closer to livestock's contribution to agricultural GDP. Increased investor contributions to the livestock sector should drive greater representation of livestock commodities in development efforts. Metrics to assess underpinning changes in attitudes and behaviour are defined once ILRI has taken pilot studies to scale in target countries.

Strategic objective 3

ILRI and its partners work to increase capacity among ILRI's key stakeholders and the institute itself so that they can make better use of livestock science and investments for better lives through livestock.

Metrics: ILRI has not previously articulated capacity development at this level or covering such a diversity of engagement, spanning both institutions and individuals from farmers to local and global decision-makers. ILRI will conduct a baseline assessment before specifying the exact metrics for this third strategic objective; the baseline will

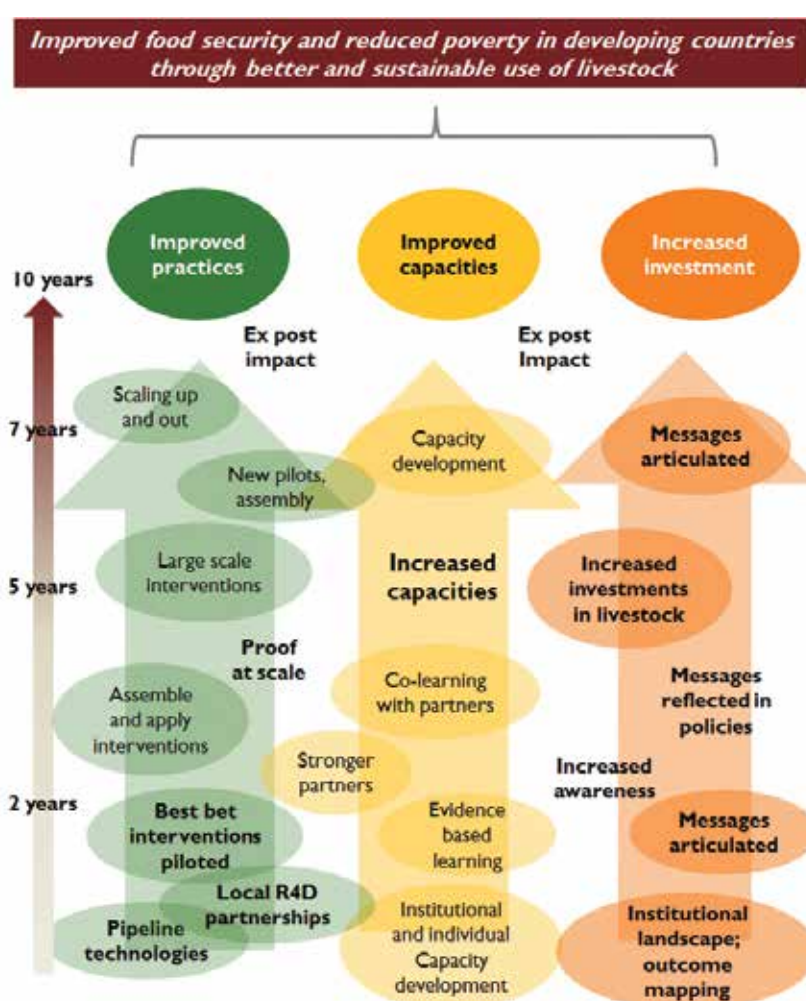
6. Target sites/countries refer to those where ILRI has significant activities, largely through its CGIAR research program portfolio as described in appendix 2. It is anticipated these will expand and evolve over the period of this strategy.

specify the number of individuals and key institutions to have developed greater capacity to make greater use of livestock research results—be it for better productivity on farms, improved environmental management or more strategic use of development resources.

The three strategic objectives interact, and the anticipated progress and milestones towards each contribute towards the others. Achieving changes in income and food security at a significant scale demands changes in practices by many actors—from farmers, development agents and NGOs to livestock researchers (including and importantly ILRI itself). This calls for increased capacities among this diversity of individuals and institutions to interact, to be informed by and use evidence. Investments in livestock—whether by smallholder farmers themselves or global decision-makers—requires that evidence is measured and articulated to provide a compelling case for behaviour change. Such evidence must also be translated into information that those making investment decisions use to enable further expansion and scaling-up of piloted approaches (see box 3 next page).

Figure 1 depicts and provides some examples of these interdependencies. It is important to stress that while there are internal milestones that enable ILRI to assess its progress, none of these can be achieved without considerable and very diverse partnerships in which ILRI itself is often a relatively small player.

Figure 1. Strategic objectives and indicative milestones



The figure shows ILRI's three mutually reinforcing strategic objectives, with examples of milestones that would be delivered through the successful application of science results. For clarity, details of the many interactions, forward and backward links, are not included in the figure; likewise, it does not attempt to indicate which science contributes

where, which is complex and multifaceted. For example, ILRI and partners' research on livestock productivity, arising through both high-end biosciences and field-level work in feeds, genomics and breeding, animal health, zoonoses and the environment would all contribute to pipeline technologies. As new technological solutions arise, these, too, would feed into the interventions assembled and applied at scale. Research on value chains, innovations and gender ensure that interventions are appropriate and relevant for farmers, producers and others making decisions at ground level. Foresight and scenario research using global assessments and the results of piloting best-bet interventions provide information important for informing those making investment decisions at national levels and beyond. The tools of monitoring, learning and impact assessment are important throughout and new research approaches to ensure such work in the sphere of complex interactions are required.

As currently designed, the multi-institutional research programs of CGIAR encompass some but not the entirety of the work required for ILRI to achieve its three strategic objectives. ILRI therefore conducts some research on issues that may lie outside the CGIAR research program agendas (although within the boundaries of the CGIAR strategy and results framework). Over time, it also works towards having an increasingly larger share of its global pro-poor livestock research agenda incorporated into relevant CGIAR research programs.

Box 3. What are the 'practices' and who are the 'decision-makers' ILRI aims to influence?

ILRI's use of the terms 'practice' and 'decision-makers' in this strategy encompasses a wide range of scales and groups. The following are examples of these wide ranges in livestock systems with high potential for growth and in those where increasing resilience rather than productivity is paramount.

Where there exists high potential for economic growth in mixed crop-and-livestock systems of developing countries, 'inclusive growth' for poverty reduction and food security can often be achieved through the development of pro-poor livestock value chains. Here, improving *practice* refers to the uptake of technologies and institutional innovations that (1) increase on-farm livestock productivity in smallholder production systems as well as (2) efficiencies in their associated market channels, (3) improve the equitable distribution of benefits generated through more livestock employment and income, and (4) minimize livestock threats to the environment and public health. The men and women *decision-makers* who adopt these practices include not only the livestock keepers and market agents who handle livestock and their products, but also the individuals, businesses and government agencies that support the value chain through the products and services they supply such as feed, veterinary care and public health regulation.

In dryland pastoral and agropastoral systems, where harsh and highly variable climates pose considerable risk of loss of livestock assets, both household income and food security can be protected against climate shocks by improved *practices*. In the case of drought, these might include making index-based livestock insurance available to livestock herders, conducting early de-stocking in conjunction with private traders, and making better use of functioning livestock markets. In the case of flooding, which can trigger outbreaks of economically important livestock and zoonotic diseases such as Rift Valley fever, better practice might entail more reliable predictive climate models used in conjunction with early livestock vaccination campaigns to prevent regional market closures able to devastate the livelihoods of livestock producers, traders and others. Changes in practice here would depend on choices made by *decision-makers* including local men and women livestock pastoralists and agro-pastoralists, market agents and slaughterhouse personnel as well as those at regional and global levels whose actions, policies and investment decisions impact small-scale dryland livestock systems and enterprises.

Changes in practice thus span a range of choices made by decision-makers at all levels, from livestock producers (men and women in both small-scale and extensive production systems), to market agents and others intimately engaged with raising, selling and consuming animals and their products, through to those at local, regional and global levels whose development actions, policy and investment decisions impact the livestock sector.



Strategic choices and principles

Developing-country livestock producers and their communities are diverse, a result not only of their dramatically different ecological settings (ranging from tropical drylands to temperate and humid tropics and highlands) but also of their very different livestock production systems. As described previously, some livestock sectors are growing strongly and provide continuing opportunities for smallholders to improve their lives and livelihoods. Other systems are accelerating so fast that they are raising concerns about the environmental and health costs of the livestock systems. Yet others, often in remote or marginal environments, are experiencing fragile growth at best, and in these circumstances, helping livestock people enhance their adaptive capacity and that of their animals and environments to climate change and other kinds of shocks should be a primary focus.

Going beyond the poverty-reduction focus of its past requires that ILRI does two things:

- Broaden its target beneficiaries to include other value chain and civil society actors, and poor urban as well as rural consumers.
- Pilot forward-looking interventions for the livestock farmers of the future and support more comprehensive food-system productivity and supply to consumers. ILRI works not only with the smallest scale farmers but also with more commercially oriented livestock producers and value chain actors.

In 2013, ILRI had offices in countries spanning sub-Saharan Africa, South, Southeast and East Asia. It implements, and partners with, livestock-research-for-development projects in many more countries within these key regions. The institute's geographic focus was determined mainly by a previous strategic assessment that identified the regions and countries with the most poor livestock keepers (Thornton et al. 2002); a more recent assessment (Robinson et al. 2011) indicates that these regions still dominate in this respect.

To prioritize the geographic and commodity focus for this strategy, new empirical assessments as part of the critical success factor on science (below) inform ILRI's choice of research locations and high-priority species. This includes identifying where (1) small-scale livestock production systems and commodities are likely to change most rapidly, thus providing research opportunities for transforming livestock value chains in transition for improved food security and poverty alleviation and (2) a focus on increasing resilience will have the greatest potential. It is not anticipated that ILRI will establish significant presence in new locations, but rather that these assessments inform the locations, livestock species and commodity focus of small, strategically located teams operating together with key partners.

ILRI's participation in CGIAR research programs with global reach influence the choices of the institute's research locations and priority commodities. The ILRI-led CGIAR Research Program on Livestock and Fish focuses on high-priority value chain development of small-scale dairy, small ruminant and pig production, and is based on several assessments of their potential (<http://livestockfish.cgiar.org>, Staal et al. 2009).

ILRI's previous long-term strategy (2002–2010) focused predominantly on the benefits of livestock for the poor, indeed, on livestock 'as a pathway out of poverty'. Now, ILRI more directly addresses the negative as well as positive impacts of livestock, especially with regard to the environment (e.g. land and water degradation and greenhouse gas emissions due to livestock), opportunities to reduce livestock's environmental footprint and human health problems (zoonotic diseases and livestock-food-borne illnesses) in a balanced way as an integral part of the research agenda.

ILRI is proactive in responding to the development agenda and, while not undertaking development actions itself, ensures that its research outputs lead to research outcomes that impact on development challenges. Using approaches such as impact pathways and outcome logic require that ILRI make better use of expertise in such areas as partnerships, capacity building, communication, knowledge management and gender.

As a relatively small institute with a large global mandate—to conduct livestock research for development—partnership remains the institute's fundamental *modus operandi*. ILRI's partners may be thought of as the institute's 'co-implementers'; these include farmers and others engaged in livestock raising and marketing, development agencies, non-governmental organizations, national research programs. ILRI itself is also often a partner in much larger initiatives. One helpful construct may be to think of partners and those who make decisions about changing practice in the categories of 'implementers' and 'enablers'.

Implementers are those who take, often co-creating, research results and use them on the ground—farmers and others engaged in livestock raising and marketing, development agencies, NGOs, national research programs, as well as those who implement research, alongside or in a complementary fashion to ILRI itself. Enablers include policymakers at all levels, from community to national, regional and international levels; this category also encompasses men and women's farmer groups, cooperatives and associations.

The role of women in agriculture is central, with recent results estimating that improving women's access to inputs and services has the potential to reduce the number of malnourished people in the world by 100–150 million (FAO 2012). This is particularly true in the livestock sector, where women often are responsible for raising animals and processing and selling their food products. ILRI's gender strategy, which provides a framework for implementing gender-balanced research,⁷ Incorporating a balanced gender portfolio is integral to the operational plans emanating from critical success factors, especially those addressing science and fit for purpose. Beyond specifically addressing gender, other issues of equity spanning opportunities for the youth and other potentially disadvantaged groups are also addressed.

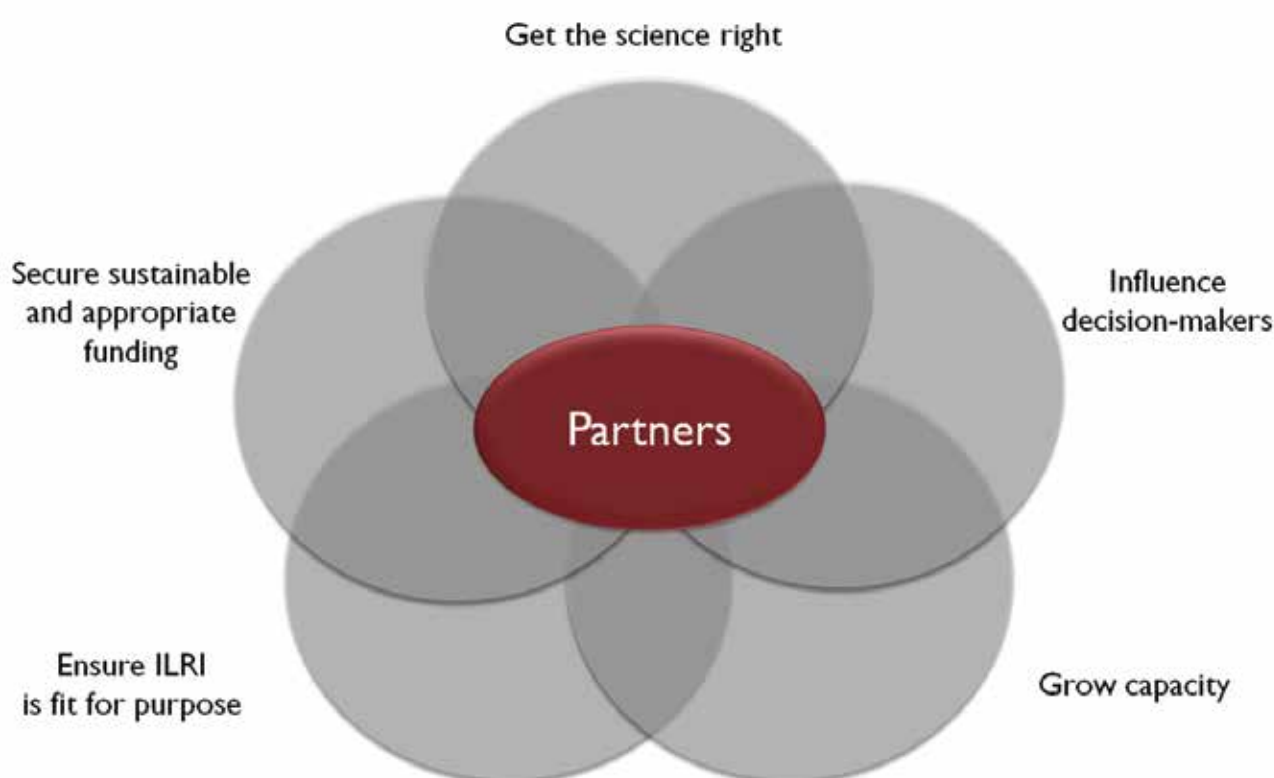
7. <http://mahider.ilri.org/handle/10568/16688>

Critical success factors

To achieve its three strategic objectives, ILRI must excel in five performance areas, referred to here as critical success factors. These were identified in a 2012 analysis of both the external environment and ILRI's then strengths and weaknesses. Our determination of these mutually supporting critical success factors recognizes the need for ILRI to act as one of many players in responding to the challenges to be addressed if the institute is to achieve its aspirational strategic objectives. They also provide the institute with a structured way of planning and subsequently monitoring these key areas. The critical success factors provide a bridge between the institute's three strategic objectives and the operational frameworks for each of these (figure 2).

Below, each of the five critical success factors is defined with a brief description of why it is essential, what it involves and how it is operationalized. The set of critical success factors provides the means for ILRI to focus every dimension of its operations on achieving the institute's strategic objectives, as well as to oversee and monitor the whole institute. Partnership is key to all of these. To develop meaningful as well as productive partnerships, more careful consideration is given to the identification and modalities of partnerships, including a plan to help identify strategic and other kinds of partners as well as guidelines and tools to operationalize and manage partnerships for impact and influence (see box 5).

Figure 2. Intersecting critical success factors



Get the science right

ILRI's ability to achieve its strategic objectives depends heavily on implementing excellent livestock science to provide high-quality empirical evidence and to address the most relevant science questions, spanning technology solutions and how and for whom research results are used, i.e. science-based solutions that enable ILRI to improve food security and reduce poverty on the scale specified in the first strategic objective.

This is delivered through a multi-year rolling research strategy and operational plan that determines:

- What ILRI's research agenda and focus should be, including:
 - ILRI's commitments to CGIAR research programs
 - end beneficiaries
 - research site locations
 - species targeted
 - high-level research questions to be addressed
 - how ILRI's research priorities are set, monitored and assessed, including specifying the balance between the generation of new knowledge and knowledge sharing and applications
- what individual skills and institutional capabilities ILRI needs to deliver on its research agenda
- the timetable of actions to implement the research strategy

The research strategy is used to develop rolling operational plans for 12–18 month periods.

Influence practice, policy and choices of key decision-makers to address the use of livestock in developing countries

To achieve its strategic objectives, ILRI needs to influence the choices of decision-makers and investors *and* catalyse changes in the strategies and practices of a large set of livestock system actors and livestock producers themselves. Outcomes involving changes in behaviour are essential for the institute to significantly increase food security and reduce poverty.

Success in the first critical success factor, on generating solid evidence and delivering high-quality and relevant science products, is certainly key but is clearly insufficient. ILRI also needs to ensure that its science products influence others and have impacts.

Being intentional about listening to and influencing decision-makers requires that the institute invests time in evaluating the issues and target groups before articulating its rolling operational plans that spell out the institute's specific research capacity in the areas of policy, investment and foresight (as part of the science operational plan), as well as generating the evidence needed to inform livestock-sector policies and investments. Approaches to advocacy, communications and partnerships are determined using outcome mapping and other pragmatic tools for planning outputs-to-outcomes-to-impacts.

Grow the capacity to support appropriate livestock development and investment in developing countries

To avoid the risk that ILRI's research and development activities could be isolated and one-time interventions, and to bring about sustained change and ensure impact at scale beyond conventional project lifespans, a critical mass of people and organizations has to be equipped with the skills to design, implement and maintain appropriate livestock research and development initiatives.

For ILRI, capacity development entails the development of attitudes, skills and institutional arrangements as well as knowledge. ILRI works not only with individuals, organizations and institutions engaged in research and development directly but also with those making agricultural investment decisions at all levels. ILRI views its capacity development work as integral to successful livestock research for development (see box 4). It refers to the intentional and purpose-driven efforts to increase the capability of researchers, implementers and enablers to undertake and to use research to deliver on the promise of impact at scale in a sustainable manner. In this respect, capacity development is an integral and essential part of successful livestock research for development that delivers outcomes and impacts.

ILRI's capacity development strategy identifies institutional and individual clients and prioritizes their needs with reference to the outcome and impact pathways defined in ILRI and CGIAR research programs. This is informed by a baseline assessment and benchmarks against which progress is measured.

Box 4. Some forms of capacity development at ILRI

- Short-term attachments and the hosting of young professionals from national academic and research institutions.
- Direct development of partner capacities undertaken on occasion to ensure that joint work by ILRI and the partner has maximum impact.
- Growing the capacities of livestock actors and end users, which are typically part of project deliverables, either directly, through partners or through training of trainers.
- Enhancing the livestock research and development capabilities of countries and institutions, typically through partnerships with international bodies and regional organizations.
- Combinations of 'intense' capacity building activities, which are clustered around specific interventions to maximize production of 'local public and private goods', and 'less intense' activities such as e-learning and training of trainers that serve a wider purpose.
- ILRI staff development and in-service training, including skills development, research management training and participation at conferences.

Secure sustainable and appropriate funding

The CGIAR reform process (2010–2012) changed the calculus to secure the resources needed for ILRI to achieve its strategic objectives, not only in terms of funding its research activities but also of maintaining its research capacity. To respond to this challenge, ILRI has an institutional business and resourcing plan contributing to a stronger resource mobilization strategy to:

- Identify and adapt to changing funding mechanisms and requirements in the context of the Consortium, the Fund Office and Fund Council.
- Promote more efficient and stable funding flows.
- Enhance its professional dedicated capacity for supporting and monitoring various funding opportunities.
- Improve the identification of objectives and assigning of responsibilities for funding targets.

The plan and strategy is regularly updated through diagnoses of the ‘funding market’ that map all potential funders, their interests and how ILRI could link its work to their interests. The plan also includes metrics to assess the match of funds with institute priorities, full-cost recovery and grant size. Ensure ILRI is fit for purpose

The strategy presents new challenges that require ILRI to build on its past and present excellent people, processes and infrastructure to design, carry out and deliver on its purpose. ILRI’s business and performance culture must ensure that every part of the institute is aligned and optimized to support effectively specific interventions (e.g. those related to science, capacity building, impact, resources).

Ensuring ILRI is fit for purpose means that the organization is more effective in what it does (that it achieves its aims), efficient in how it operates (at least cost), represents excellent value for money to investors (in terms of returns and being the ‘go to’ place for livestock research for development), is known for being a reliable partner (in terms of relevant, high-quality and timely deliverables) and is a stimulating and rewarding place to work.

Making ILRI fit for purpose

ILRI continuing to attract, motivate and empower high-quality professionals to deliver in a performance culture, achieved through incentives, rewards, promotions and career development that values people, and staff diversity, work conditions and a supportive environment that enables people to grow.

- Enhancing a global institutional culture and environment that enable staff and the organization to learn, respond quickly to demands and perform to their best ability.

The research operational plan focuses on the specific interventions necessary to make ILRI’s science and the processes that support this ‘fit for purpose’. The One Corporate System helps to streamline many of the systems and procedures around project, personnel and financial management, and other supporting services.⁸ Putting this together requires corresponding organization-wide actions to reinforce ILRI’s institutional culture—especially in areas such as communication, learning and decision-making. An institutional development plan brings this all together.

8. www.cgiar.org/cgiar-consortium/consortium-office/corporate-services/

Implementation

This overarching corporate strategy, which sets the overall direction for the institute over the current decade, is supported by a series of operational plans for each critical success factor. These set out objectives, targets and measurable indicators and are the basis for regular monitoring, priority-setting and assessment of outcomes.

Box 5. Partnerships

As a relatively small institute with a large global mandate, partnership remains the institute's fundamental modus operandi. The new strategic plan, however, requires that the range of partners that ILRI works with is increased.

Previously the focus was on generating research outputs, primarily through partnerships with national agricultural research systems, sub-regional organizations and advanced research institutions. This strategy, which takes more responsibility for translating research outputs into outcomes and impacts, demands that ILRI reaches out to and engages with a broader range of partners, especially development organizations and the private sector. Specifically, to achieve its objective of persuading decision-makers at all levels—from farmers to parliamentarians—of the value of livestock investments, ILRI needs to partner with public, civil society and private sector organizations with expertise in communication, advocacy and policy change processes. This includes more proactive engagement with national, regional and international print and electronic media.

The CGIAR research programs mean that ILRI has much closer partnerships than before with other CGIAR centres, both in the program it leads (Livestock and Fish) and those in which it participates.

To achieve many of its objectives, ILRI needs to partner with individuals and organizations from the public and private sectors that have skills and experience that enable them to catalyse coalitions and alliances, and facilitate multi-stakeholder networks and innovation platforms. To engage with these new types of partners, ILRI requires staff who develop and tap into new networks. Similarly, ILRI's new partners need to adapt to new ways of working with a type of partner that, in many cases, is different to those they usually work with. In both cases, capacity building and effective communication are important elements of effective partnership working.

ILRI's 2008 partnerships strategy (<http://mahider.ilri.org/handle/10568/566>) provides relevant principles to guide ILRI's partnerships, including:

- ILRI commits itself to engage with partners in an inclusive, transparent and trust-based manner where credit is shared with integrity and obligations are implemented in a mutually accountable way while being fully committed to the impacts and strategic goals.
- As partnership and collaboration is a means to an end, ILRI must carefully consider the quality of its partnerships and weigh the trade-offs in terms of transaction costs vs. outcomes and impacts.
- ILRI enters into a partnership with another institution if both ILRI and the potential partner can identify and articulate clearly their expected mutual benefits.
- Transparency promotes healthy partnerships. Making sure that roles and expectations are discussed and agreed, and then clearly stated and documented, avoids misunderstandings later.
- ILRI supports effective management of partnerships at all levels, through valuing and helping to develop the skills of ILRI staff in managing partnerships and defining and recognizing good performance, and by allocating the time and resources needed for effective partnership management.
- ILRI is committed to the supremacy of performance over politics, seniority and hierarchy in partnerships. It operates in the least bureaucratic and hierarchic way possible to ensure efficient, effective, accountable services and provide space for innovative and entrepreneurial high-performing staff while maintaining inclusiveness and equal opportunity.

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The International Livestock Research Institute (ILRI) works to improve food security and reduce poverty in developing countries through research for better and more sustainable use of livestock. ILRI is a member of the CGIAR Consortium, a global research partnership of 15 centres working with many partners for a food-secure future. ILRI has two main campuses in East Africa and other hubs in East, West and Southern Africa and South, Southeast and East Asia. ilri.org



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