



# Livestock

## a pathway out of poverty

ILRI's strategy to 2010

# Livestock—a pathway out of poverty

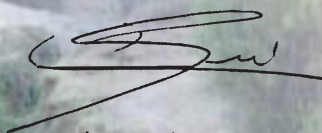
## ILRI'S RESEARCH STRATEGY TO 2010

**ILRI's goal:** By positioning itself at the crossroads of livestock and poverty, and by bringing to bear high-quality science and capacity building, ILRI and its partners will reduce poverty and make sustainable development possible for poor livestock keepers, their families and the communities in which they live.

ILRI has a vision of a world that is made better for poor people in developing countries by improving agricultural systems in which livestock are important. Humankind since the beginning of time has kept livestock, and ILRI believes that livestock systems, if managed properly, play their part in alleviating hunger and counteracting environmental degradation. Well-managed domestic animals can make agricultural systems in the developing world more productive and more sustainable.

The present strategy modifies the 10-year plan first published in 2000. Its main focus has become to ensure that ILRI's research is directed towards reducing poverty. Both the research and the evaluation of it have become more complex. To clarify its direction, ILRI has identified three pathways in which livestock can help the poor move out of poverty, and it has constructed five broad themes by which its research projects and activities will be guided.

The strategy outlined on the following pages reflects the new focus.



Carlos Seré  
Director General







# Understanding poverty and the role of livestock in reducing poverty

If poverty is to be reduced in a sustainable way, first we must understand what poverty is.

Poverty not only covers deprivations in income and consumption but also disadvantages encompassing a wide array of human development and well-being. It affects education, health and nutrition; it results in lack of empowerment; it increases vulnerability to shocks.

Emphasising poverty's multidimensional nature, ILRI uses the following definition:

Poverty is pronounced deprivation in human well-being encompassing not only material deprivation but also poor health, literacy and nutrition, vulnerability to shocks and changes, and having little or no control over key decisions.

A simple and widely used gauge of poverty is having to live on an income of less than the equivalent of US\$1 per day, a situation endured by an estimated 1.3 billion people or one-fifth of the world's population. A disproportionately large number of the poor are women, and it is therefore important that poor women receive a major share of ILRI's attention.

## Women, poverty, farming and research

For research on poverty reduction to be successful, it must include gender analysis to determine how best to improve conditions for rural women. And poor women, who are primary clients of ILRI, need to be involved as genuine participants in research affecting them.

Women constitute 60% of the world's poor, and 70% of the poorest of the poor. Women provide more than half the labour force required to produce food in the developing world. In Africa, close to 70% of the staple foods are produced by women farmers. But for a number of reasons yields on crops that women cultivate are generally low.

Men usually control the major earnings from the farm, women the lesser earnings. Men use a higher proportion of their income for large household expenditures and for personal expenditure; women typically spend a higher proportion of their income on food and health care for children.

Information drawn on Jacqueline A. Ashby, Poverty and gender: a proposal for action research, a paper prepared for the CGIAR Conference on Poverty, Costa Rica, September 1999

We are focusing primarily on the poor rural livestock keepers of sub-Saharan Africa and South Asia. The rural poor are particularly vulnerable to environmental degradation, and livestock can affect the natural resource base on which their livelihoods depend both positively and negatively. Many peri-urban poor in these regions also rely on livestock for their livelihoods.



All consumers, and particularly the rural and urban poor, can be at risk from food-borne diseases and zoonoses (diseases that can be transmitted from animals to people), even if they do not themselves keep livestock.

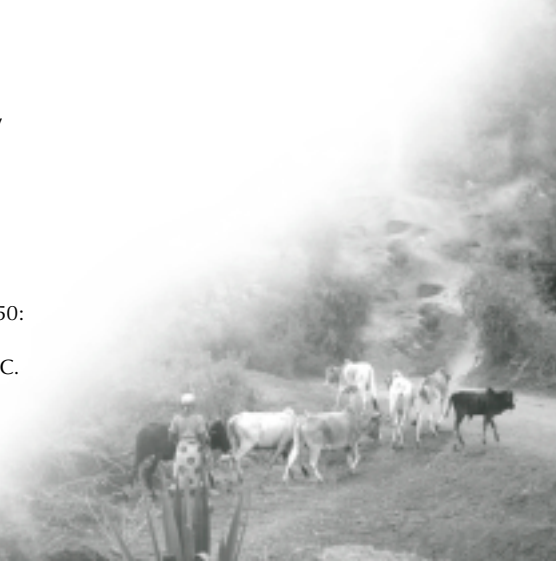
The potential of livestock to reduce poverty is enormous. Livestock contribute to the livelihoods of more than two-thirds of the world's rural poor and to a significant minority of the peri-urban poor. The poorest of the poor often do not have livestock, but if they can acquire animals, their livestock can help start them along a pathway out of poverty. Livestock also play many other important roles in people's lives. They contribute to food and nutritional security; they generate income and are an important, mobile means of storing wealth; they provide transport and on-farm power; their manure helps maintain soil fertility; and they fulfil a wide range of socio-cultural roles. A predicted increase in demand for animal food products in developing countries—called the Livestock Revolution<sup>1</sup>—offers the poor, including the landless, a rare opportunity to benefit from a rapidly growing market.

Animal food products such as meat and milk are concentrated sources of high-quality protein and certain vitamins and minerals. When children consume even modest amounts, these products help alleviate poor growth, poor mental development and general ill health.

Livestock have a positive effect on diets, health, incomes, financial security, sustainable crops yields, employment prospects and social status. Livestock can, however, impoverish people, for instance by degrading land and water resources.

Although livestock keeping is not a universal panacea, if animals are managed properly, they can be an important lever for reducing poverty and boosting the economy in developing countries.

<sup>1</sup> Delgado C., Rosegrant M., Steinfeld H., Ehui S. and Courbois C. 1999. Livestock to 2050: the next food revolution. Food, Agriculture and the Environment Discussion Paper 228. IFPRI (International Food Policy Research Institute), FAO and ILRI. IFPRI, Washington, DC.



# Pathways out of poverty

Before determining possible pathways out of poverty in which livestock can play an important role, ILRI examined the innovation process, which it divided into three interrelated components that are dynamic and overlap. These components never develop in a linear fashion but are characterised by dialogue and interaction among all those involved:

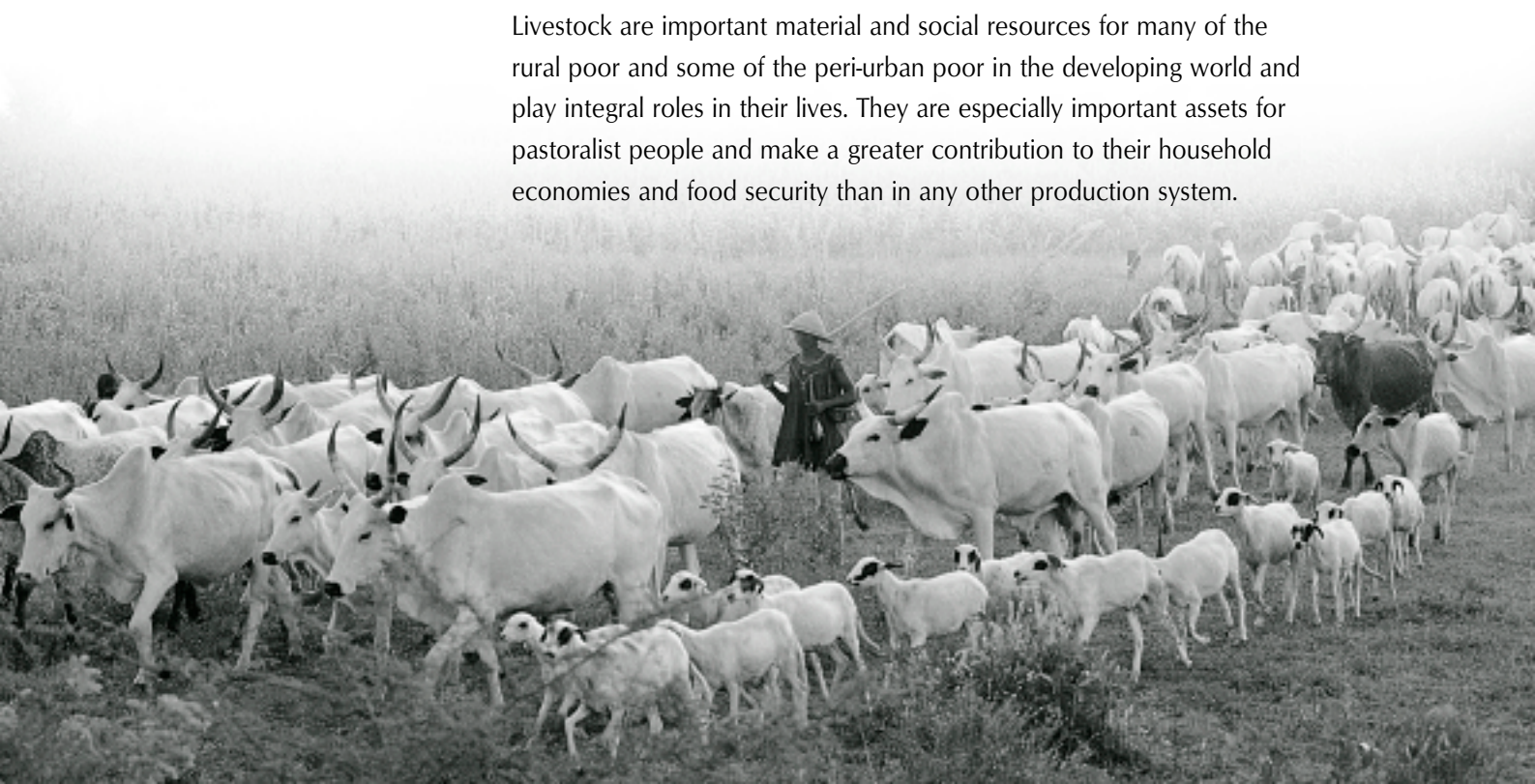
- 1 adoption of research products, including new and existing knowledge, technologies and policies
- 1 improvement or adaptation of existing tools, methods and approaches to make them better or more applicable to particular situations
- 1 Strategic research, involving the development of new tools and new approaches

These components interplay with what ILRI has identified as three pathways out of poverty that it can act upon:

- 1) securing the current and future assets of the poor
- 2) sustainably improving the productivity of agricultural systems of the poor
- 3) encouraging participation of the poor in livestock-related markets

## Pathway 1– Securing the current and future assets of the poor

Livestock are important material and social resources for many of the rural poor and some of the peri-urban poor in the developing world and play integral roles in their lives. They are especially important assets for pastoralist people and make a greater contribution to their household economies and food security than in any other production system.





In some cases livestock are the only material asset that the poor can accumulate, and even the landless can do so by using communal feed resources, waste products and purchased feeds. For the poorest of the poor, livestock can, in some situations, be the first step along the pathway out of poverty.



Roles of livestock keeping revolve around storing wealth, contributing to food and nutritional security, providing draught power, transport and manure, and serving traditional social functions. But the productivity of the animals of the very poor is often low in yield of marketable outputs. However, although their productivity may be limited, these animals may possess other valuable traits such as disease resistance. Threats to the security of these vital assets include disease, theft and predation, drought, floods, earthquakes, seasonal feed deficits and site-specific nutritional deficiencies. Poor livestock keepers often reduce risk by keeping more than one species of animal. For example, pastoralists might keep cattle, or camels in arid regions, together with sheep and goats while mixed crop-livestock farmers might keep buffaloes, pigs and poultry.

In some situations, the 'livestock ladder' may allow the poor to progress from modest livestock holdings, such as a few poultry, to acquiring sheep and goats or pigs, or even cattle or buffaloes. The livestock holdings of the poor are dynamic, with the number and mix of livestock increasing during times of surplus and decreasing when shocks such as drought, war or outbreaks of epidemic disease occur.

Security of future assets of poor livestock keepers is equally important. It requires access to land and to natural resources and sustainable management of them. Factors such as HIV/AIDS and urban drift reduce the availability of family labour, which threatens current, labour-intensive, farming practices.

The combination of the factors that limit sustainable farming systems and the risk of devastating shocks reduce the capacity of the poor to either maintain or accumulate assets, thus limiting their ability to move out of poverty.

## Pathway 2– Sustainably improving the productivity of agricultural systems of the poor

Better livestock production efficiency (such as better use of land, labour and water) and greater use of inputs can improve productivity—of both indigenous and improved breeds. For example, productivity of local





poultry breeds can be improved by vaccinating against Newcastle disease, protecting chicks from predators, and perhaps adding dietary supplements. Introducing improved breeds can increase productivity significantly, such as by replacing low-yielding zebu cattle with much higher-yielding crossbred or purebred dairy cattle in suitable smallholder dairy systems.

Improved breeds, however, are likely to be less disease resistant and require more inputs in feeds and in preventive treatments than indigenous breeds. Without them, the level of risk can increase significantly. Livestock keepers also need to practise a higher level of management, like stall-feeding units for cattle and balanced feeds for





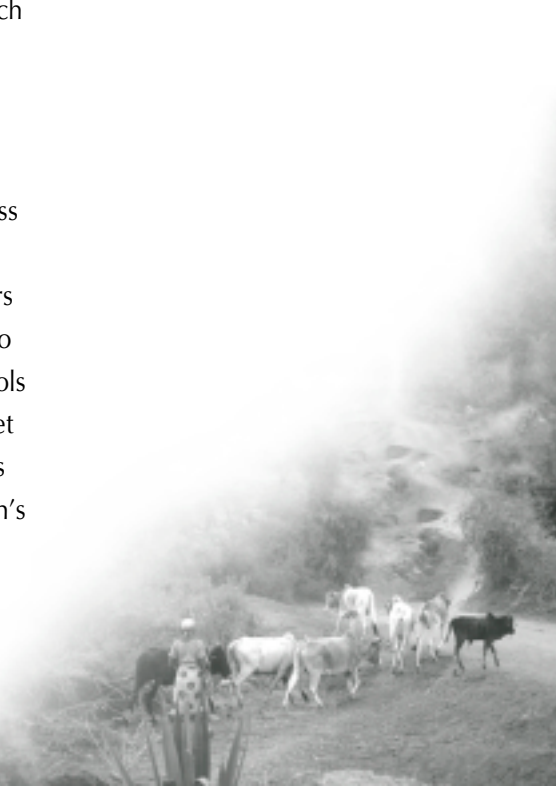
poultry. They also need reliable access to feeds and to animal health and breeding services. They must be able to handle seasonal feed shortages and any nutritional deficiencies. To do this means additional labour and capital, and lack of access to capital or credit is a critical constraint to this pathway out of poverty.

### Pathway 3– Encouraging participation of the poor in livestock-related markets

Participating in livestock-related markets offers the poor, and especially women, a possible route to better livelihoods. This presents them with an opportunity to benefit from the increase in demand for meat and other livestock products predicted as part of the Livestock Revolution. Better market access can secure better income and welfare for smallholder livestock producers. By creating demand, markets promote economic growth. Markets also help accumulate material assets. They provide a means towards improved nutrition and balanced diets—and thus help reduce poverty. It is also important to keep in mind the wide range of other roles that livestock play in many societies. The challenge is to strike a balance between market opportunities and the non-financial roles that livestock play in the lives of the poor.

A wide range of livestock-related goods and services can be marketed: traditional products—live animals, milk, meat, offal, hides and skins, wool, eggs, feathers, bone, horn, manure—and services such as transportation and tillage. Value can be added for some of these products, for instance, by transporting animals or produce to distant markets where prices are higher; by processing milk to make products such as yoghurt; and by turning raw materials such as horn, bone and hides into craft items. Markets for non-traditional products and services are also emerging, such as payment for stewardship of biodiversity, eco-tourism, and perhaps in the future, carbon credits.

The ability of the poor to exploit these diverse marketing opportunities will in many cases be limited. They will not have the know-how, business contacts, capital or credit facilities. Roads to markets will be poor and communication systems lacking. Competition from large-scale producers may be overwhelming. And the small-scale producer may not be able to comply with animal disease control measures such as movement controls and quarantines or with public health legislation. Such barriers to market access limit opportunities for employment in livestock-based enterprises for the poor or for them to create enterprises. In many societies women's access to markets is even more restricted.



# How ILRI and its partners can help reduce poverty

To reduce poverty levels around the globe is a goal that many share. ILRI is just one of a multitude in this complex process, so if it is to be effective, it must focus on contributions in which it can play a valuable role and in which through effective partnerships it can have significant impact. Presently, based on researchers' estimates, ILRI expends approximately half of its resources on mixed crop–livestock systems, 19% on rangelands, 13% on peri-urban and the landless, and 19% on research cutting across all systems. In terms of the poverty reduction pathways, it estimates that some 42% goes towards securing assets, 45% towards enhancing productivity, and 13% towards improving market opportunities. With regard to type of research, some 20% of funds is estimated to be expended on promoting adoption of new technologies, 41% on improvement of tools and strategies for their delivery and adoption, and 39% on new research. From a regional perspective, it is estimated that 72% of funds have been directed at sub-Saharan Africa, 24% at Asia and 4% at other regions. As far as livestock species are concerned, about 82% of ILRI's research is directed at cattle and 18% at other species.

Given recent and continuing changes in the external environment, increases in our understanding of poverty, the need to respond to new partnership and funding opportunities, as well as new developments in science, ILRI envisages various shifts in the current research profile over the next decade, which will influence its agenda:

- 1 The increasing demand for livestock products in developing countries projected to 2020 and beyond and the shifts of human populations to urban centres suggest that more attention should be paid to involving the poor more in all levels of markets. A shift in ILRI's portfolio of research is therefore proposed to increase market-oriented activities.
- 1 Similarly, a shift in types of research is proposed that will significantly increase the proportion of ILRI's activities that promote innovations directly affecting the lives of poor people. ILRI will work with appropriate partners to demonstrate real and lasting impact at all levels, including household, institutional and policy.
- 1 ILRI and its partners need to maintain strength in the mixed crop–livestock systems, in which the majority of poor livestock keepers engage, and in generic research to develop international



## Geographical focus of ILRI's research

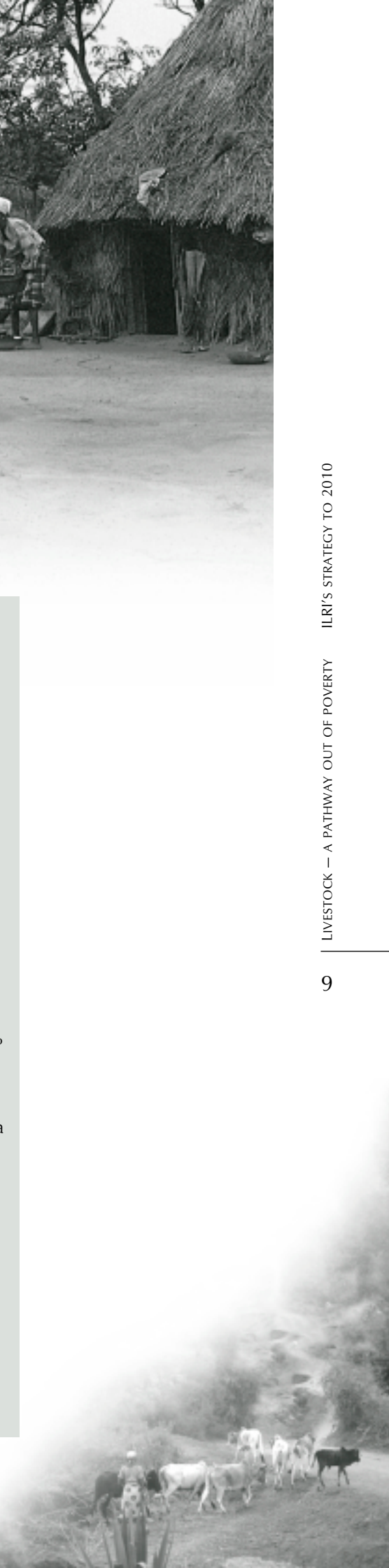
Issues that reduce poverty by using livestock and their products, not geography, drive ILRI's research. Where the weight of poverty bears most heavily will influence ILRI's geographical focus. Few may dispute this simple statement. But two key questions arise: How is the distribution of poverty being measured? And, should we be measuring the distribution of poverty, or rather the distribution of research opportunities to reduce it, or the effects of research products? While the first question has been the subject of recent studies by ILRI, we do not currently hold the answers to the second, but this will become an important component of future ILRI research.

Recently ILRI mapped poverty,<sup>1</sup> by region and production system. South Asia emerged as the most important region of the world, with 57% of the world's poor that are associated with livestock living there (compared with 37% in sub-Saharan Africa). However, with the rate of growth of poverty as an indicator, sub-Saharan Africa emerges as the most important region, with a 3% growth rate, compared with 1% in South Asia.<sup>2</sup> ILRI currently directs 72% of its effort towards sub-Saharan Africa and just 24% at Asia, the majority of which is currently in South East Asia.

But what about other regions of the world, such as Central America, East Asia and Central Asia, where poverty is also important? While ILRI is making its geographical focus on sub-Saharan Africa, South Asia and South East Asia quite clear, the international public goods it is developing with its partners will have wider application, and with appropriate resources and partners, these should be put to the test in other regions of the developing world.

<sup>1</sup> Thornton P.K., Kruska R.L., Henninger N., Kristjanson P.M., Reid R.S., Atieno F., Odero A. and Ndegwa T. 2002. Mapping poverty and livestock in developing countries. ILRI, Nairobi. 132 pp.; also CD-ROM.

<sup>2</sup> World Bank. 2001. World development report 2000/2001: attacking poverty. Oxford University Press, New York. 135 pp.





public goods, since this is one of ILRI's collaborative advantages. For the future, a shift to greater work with peri-urban and landless systems is proposed, in view of predicted increases in demand for livestock products. At the same time, given the almost complete dependence on livestock of pastoralist peoples, their tendency to be marginalised, their vulnerability, and the dearth of alternative research institutes working in this sector, efforts will continue on rangeland systems, particularly those in Africa.

- 1 Given sub-Saharan Africa's high, increasing rate of poverty, ILRI proposes to maintain more than two-thirds of its research effort there. Much of ILRI's current research in Asia is in South East Asia. An increasing focus on activities in South Asia is proposed, where there are large numbers of poor livestock keepers (more than a third of all poor livestock keepers are located in South Asia), and where there are potential niches for ILRI's research activities.
- 1 As many of the poor do not keep cattle, research is therefore proposed to cover a wider range of appropriate species.

### Livestock species in poverty-focused research

Research on ruminants, in particular cattle, is ILRI's historical strength. Cattle are vitally important to the livelihoods of the poor in many regions of the developing world, and constraints to their feeding, management, health and breeding have been the focus of much effort by ILRI and its partners in the past. However, many other species of livestock are also important to the poor. The importance of different species varies by region and production system. Many of the poor have no livestock at all. Those who own livestock usually keep more than one species, taking advantage of the different, often complementary roles each species can play, as well as spreading their risk. Furthermore, each species serves multiple roles. ILRI currently expends over 80% of its resources at research targeted at cattle and less than 20% at other species. With a greater focus on poverty reduction, this proportion will almost certainly change.



# Guiding principles for strategic planning

For ILRI to achieve its overarching goal of reducing poverty via the three major pathways it has identified, it must shift its research portfolio. A set of ‘guiding principles’ arise from carefully considering external influences on its research agenda:

- 1 Give high priority to research on *securing the assets* of the poor and particularly on enhancing participation of the poor in *markets at all levels* for livestock and livestock products.
- 1 Take advantage of ILRI’s capacity to use *new and applied science* to address the problems of developing country agriculture, and increase efforts to improve the *adoption and use* of innovative research products.
- 1 Maintain research focus on reducing poverty in *sub-Saharan Africa* and increase research partnerships aimed towards impact in *South Asia*.
- 1 Maintain research focus targeting *mixed crop–livestock systems*, in which the vast majority of poor livestock keepers are found, and increase research aimed at *landless and peri-urban* systems.
- 1 Increase research emphasis on animal species kept by poor livestock keepers, increasing the emphasis on *sheep, goats, pigs and poultry*.
- 1 Incorporate *gender analysis* in research activities, identifying the needs of *poor women* and addressing their marginalised status in view of the vital role they play in agriculture in the developing world and their effectiveness in channelling benefits to families.
- 1 Strengthen the *capacity* of ILRI and its partners to contribute to the identified research themes. This will extend beyond running courses and training students to *innovative training activities and research partnerships*.
- 1 Increase awareness of both the role and the potential of livestock to reduce poverty and of ILRI’s goal, activities and contributions through more effective *communication*, disseminating research results to wider, more diverse audiences.
- 1 Adopt a *facilitative, catalytic and brokering role* that empowers, equips and encourages a wide range of diverse partners to work together with ILRI to reduce poverty through livestock-related research and development.





- 1 Strengthen *participatory approaches* to research activities, listening to, learning from and responding to the needs of clients and others involved.

## Strategic research themes

These guiding principles help identify a number of priority problems with demonstrable links to poverty. From them, a set of five 'strategic research' themes emerge.

A strategic research theme is a focused cluster of multidisciplinary research projects and activities that together contribute towards achieving a common problem-oriented objective. All the themes will enable ILRI, in partnership with others, to achieve its overall goal via the three pathways out of poverty.

In selecting its set of strategic research themes as its key areas of focus to the year 2010, ILRI considered the major influences in the external environment, the current research portfolio, its goal of reducing poverty

### Capacity building

Partners in national agricultural research and extension systems have consistently stressed the value they place on ILRI's capacity-building services. The strength of these national systems depends on their ability to recruit, develop and retain staff capable of fully exploiting new developments in science and extension. In poorer countries, however, they must contend with many limitations to building capacity. A major disincentive is that scientists are isolated from international developments in their professions and areas of responsibility.

In the arena of livestock-related sciences, ILRI is well placed to provide opportunities:

- 1 Graduate students do field and bench work with internationally recruited colleagues and mentors.
- 1 Developing country scientists work alongside ILRI colleagues in applying cutting-edge science in research for development.
- 1 ILRI builds professional connections between scientists in national systems and international research centres.
- 1 ILRI produces much-needed information and learning materials that are relevant for tertiary agricultural education institutions in developing countries.
- 1 ILRI facilitates international networking that is essential, especially for researchers in small countries.





## What is 'strategic research' for ILRI?

For ILRI, as an international agricultural research centre, strategic research is characterised by the following features:

It responds to problems that have local relevance with national, regional and global application. It is primarily geared towards finding principles, processes, methods and technologies that can be applied to other locations and regions. The ultimate product of strategic research is not site specific but an evaluation of the processes, principles and technological elements required for successful adaptation and use in a variety of situations.

It integrates different levels and phases of research. It is rarely limited to one level or phase but requires systemic approaches. It needs to be conducted at all stages in the research and development continuum and at local, national, regional and global levels.

It is collaborative in nature. One participant working alone cannot provide the complex set of research methods, processes and sources of innovation the research requires.

through sustainable development, the needs and priorities of national agricultural research systems, the poverty reduction pathways, and its own guiding principles. It thus identified the following complementary and interrelated strategic research themes.

## Theme 1– Supporting policy-making and priority-setting for livestock research and development: current and future roles of livestock in poverty reduction

By what means can the livestock sector affect poverty? What broad changes in the role of livestock, such as globalisation of markets, climate change and urbanisation, affect poverty? Donors and governments realise the value of addressing these issues from both a developing country and a research perspective.

Research will aim to gain further understanding of how livestock can help reduce poverty. Predictive studies will use systems analysis and geographical information systems. Appreciation of what drives change, such as increase in human population, economic growth, urbanisation, HIV/AIDS and climate change, will help assess the evolving role and the dynamics of livestock in reducing poverty. Such understanding can help shape appropriate farming systems for the future. Systems modelling will be an important component within this theme. Better monitoring and evaluation methods will be applied to measure effect.





#### EXAMPLES OF OUTPUTS

- 1 mapping of poverty and livestock, moving beyond identifying clusters of poor livestock keepers to mapping better opportunities for different types of livestock research
- 1 modelling of households of poor livestock keepers, for better understanding of how livestock contributes to the diverse facets of reducing poverty, and to improve the effect of livestock-related interventions on poverty
- 1 impact assessment of key steps such as the development of vaccines, improved food and feed crops, and better management of trypanosomosis

## Theme 2– Enabling access to innovation: adapting and delivering technology and information

Settings where both the biophysical and the social context of the farming systems are highly variable require a decentralised participatory approach in which farmers learn jointly with researchers how to use specific technologies to improve farmer welfare. The direction of future research and development is clear: to experiment with diverse approaches and build a set of contrasting case studies from which to extract broad lessons for developing participatory processes in the livestock production settings of the poor. These process lessons, if successful, will then be disseminated.

An integrated approach towards natural resource management will emphasise 'research for development' within innovation systems. This

theme represents a largely new departure for ILRI. It will require strengthening its social science capacity, developing a wider range of partnerships, emphasising participatory approaches and making greater use of interdisciplinary teams.

The focus on livestock will have three facets: 1) understanding innovation processes, 2) developing and testing participatory processes to improve adoption, and 3) facilitating institutional arrangements for instigating innovation.

Factors hampering women from using newly acquired knowledge, technologies and other innovations will receive special attention. The benefits that can accrue from modern scientific methods will be linked to traditional knowledge bases, and effective ways of building the farmer's capacity to innovate and integrate both knowledge systems will be developed.

Facilitating institutional arrangements for livestock innovation involves creating 'platforms' where the main participants in livestock research and development will regularly come together to develop a shared vision and to clarify their functions, roles, contributions and the interactions among themselves. These platforms will also involve identifying more effective ways to influence policy-makers to ensure that research findings are incorporated into new, improved policies intended to lessen poverty.

#### EXAMPLES OF OUTPUTS

- 1 widespread dissemination of the 'infection and treatment' method for control of East Coast fever in eastern Africa, involving government agencies, private sector veterinary drug companies, extension services, private animal health services, research institutes
- 1 participatory development of best-bet forage, food and feed crops as a means for their rapid adoption by the poor
- 1 adaptation of the farmer field-school concept to improve livestock systems of the poor, starting with smallholder dairy enterprises





## Theme 3– Improving market access: opportunities and threats from globalisation and the Livestock Revolution

Growing livestock markets in the developing world offer a real opportunity for poor livestock keepers to work their way out of poverty. The feasibility for smallholders to get access to these markets will depend on public investments that address such constraints as food safety issues, sanitary trade barriers in international trade and distortions caused by lack of consideration of environmental externalities frequently associated with large-scale industrial livestock production.

Research will identify opportunities for the poor, especially for women and other marginalized peoples, to exploit more effectively market opportunities at all levels. Research will concentrate on policy issues related to improving the marketing of livestock and livestock products. A major focus of this theme will be the rapidly increasing demand for dairy and meat products and the important role that smallholder farmers play in supplying rural and urban markets. ILRI will transfer the principles of smallholder dairy production it has successfully developed in East Africa to other species and to other regions of the developing world. It will also exploit new and emerging markets for non-traditional products such as carbon credits and stewardship or sustainable utilisation of biodiversity.

### EXAMPLES OF OUTPUTS

- 1 analysis of implications of WTO negotiations on international and domestic markets for livestock products and on the participation of the poor in these markets



- 1 identification of sanitary trade barriers affecting the participation of the poor in livestock markets
- 1 development of innovations (technical, institutional and policy) to improve the competitiveness of poor livestock producers
- 1 comparative analysis of smallholder dairy systems leading to the identification of policy, technology and institutional interventions that maximise the opportunities for reducing poverty along the dairy value-chain

## Theme 4– Securing assets: better livelihoods through the application of biotechnology

ILRI is committed to applying science to develop technologies that will allow poor livestock keepers to secure their assets—for example, developing vaccines and mapping genetic traits. Applying these technologies reduces the high risk that these livestock keepers run of losing their assets or not realizing their full value. The institute sees a vitally important role for itself in using biotechnology—a cutting-edge science—to identify solutions that will have impact on reducing poverty.

Developing countries face a substantial challenge as they attempt to participate in the dynamic growth in biotechnology. They have difficulty in influencing the agenda in a field strongly driven by the private sector and developed countries. Demands are for training and collaborative research to address problems specific to developing countries. Given their nature, these problems will be addressed only by international or regional public

### Biotechnology—opportunities to secure the assets of poor farmers

Biotechnology offers a variety of options for improving animal agriculture of the poor. Genes may be used as markers in disease diagnosis and epidemiology, biodiversity studies and genetic selection programmes, or as key determinants of biological processes that can be modified by vaccines, drugs or other interventions.

The products of biotechnology research can have long-lasting impact on all three of the poverty reduction pathways. ILRI will focus on using biotechnology to secure the livestock assets of the poor. A prime example is to use genetic markers to identify and conserve indigenous livestock genetic resources that have adapted to tropical environmental and disease conditions over the millennia. Another example is to develop a vaccine to prevent African swine fever.





research. Some research issues that ILRI and partners will tackle using biotechnology will likely not even appear on the agendas of most research institutes in the North. ILRI therefore has a responsibility to ensure that these issues are considered for public investment.

#### EXAMPLES OF OUTPUTS

- 1 capacity building for partners in national agricultural research systems in the field of livestock-related biosafety
- 1 development of improved food and feed crops, initially cowpeas, millets and sorghum, for mixed livestock-crop systems
- 1 pen-side diagnostics that can help farmers control tick-borne diseases

### Theme 5– Sustaining lands and livelihoods: improved human and environmental health

Governments, development agencies and NGOs are increasingly realising that to address the needs of the rural poor, more holistic approaches are needed that encompass agriculture, nutrition and health. Livestock frequently provide an important entry point to

#### Livestock and human health

Poor health, characterised by harmful infectious and respiratory diseases, nutritional deficiencies, and maternal and peri-natal conditions, is a key aspect of poverty. The determinants of these conditions are largely rooted in the agro-ecosystems that sustain the population. Better agricultural practices can improve individual and community health. Livestock contribute to improved health through

- 1 providing meat and milk, which improve nutrition and have some mitigating effect on HIV/AIDS and related opportunistic diseases
- 1 selling animal products, which makes more affordable the health care, education and housing that are conducive to better health
- 1 supplying manure, which increases soil fertility and thereby food security

When mismanaged, however, livestock expose people to health risks such as zoonotic diseases including tuberculosis, brucellosis and sleeping sickness; water contaminated by manure and urine; poor indoor air quality, caused by burning manure.

An investment in health is an investment in economic growth, including expanded agricultural production. Poor health holds back agricultural production because of enfeebled or lost labour—now particularly affected by HIV/AIDS—that limits agricultural activity, and because cash is diverted for health care, again, often for care of HIV/AIDS sufferers.



enhanced stewardship of these systems. The broad need is to integrate environmental and human health concerns into livestock development initiatives.

Livestock can serve as an important entry point for addressing environmental as well as human health issues. This theme will follow an integrated approach to natural resource management—fundamentally about the need to balance individuals’ and society’s competing interests in multiple uses for any natural resource. It is strongly concerned with the way people use natural resources to support livelihoods, and institutional and ecological requirements for long-term sustainability.

This research theme will also consider both positive and negative effects of livestock and their products on the health of livestock keepers, the wider community in which livestock keepers live and consumers of animal food products. Considerations will include ecological determinants of health and human nutrition, food safety issues and the risks posed by zoonoses.



## EXAMPLES OF OUTPUTS

- 1 identification of entry points for reducing poverty in crop–livestock systems
- 1 assessment of the importance of bovine tuberculosis among poor livestock owners and identification of methods to address it
- 1 valuation of environmental services (biodiversity conservation, water catchment, CO<sub>2</sub> fixation) as a basis for reducing rural poverty in pastoralist regions
- 1 innovative holistic approaches to primary health care that address human and animal health jointly in smallholder mixed systems

## Linking the strategic research themes

Some of these five research themes introduce novel directions for the institute; others involve a change in focus of current work. For example:

- 1 The effective adoption of the products of livestock research is largely a new area that ILRI has not explicitly addressed in the past.
- 1 Improving livelihood opportunities for the poor through greater access to market opportunities builds on the existing, successful work ILRI and its partners have done on research on smallholder dairy policy. New work will expand its geographical, species and product focus.
- 1 Improving livelihoods of the poor by using biotechnology to develop products and tools that help to secure assets builds on ILRI's existing collaborative advantage in the biosciences, but it changes the emphasis from enhancing productivity to promoting the security of assets of the poor.

The five themes are areas on which ILRI will focus to ensure it has impact on poverty reduction. They represent focus, not scale, of operation.

# Implications of the strategic research themes

To adopt these strategic research themes, ILRI will need to integrate research both within a theme and between themes, and it must integrate and communicate more closely with partners and the wider global community. The direction proposed is not a strategy for 'business as usual' but rather a formula to develop 'the ILRI the world wants'.

ILRI will continue to have its administrative headquarters in Nairobi and its principal research facilities in Kenya and Ethiopia. Currently it also has research activities in West Africa, South Asia, South East Asia and Latin America. The global research programme will continue, implemented in different regions of the world for the benefit of the developing world. According to the issues involved, scientists and resources located in these different regions will contribute to the five research themes.

Organising and managing an interdisciplinary, multipartner, multilocal and multicultural institution with a global mandate presents many challenges. ILRI sees itself as a medium-size institute with a large mandate. It must put mechanisms in place that promote institutional flexibility, enabling it and its partners to respond to new opportunities. Above all, scientific excellence linked to the goal of reducing poverty must be at the heart of the institute and must drive its management policies. The following principles will guide implementing the revised strategy:

- 1 Promote high-quality science, with outputs from research that have a demonstrable impact on reducing poverty.
- 1 Build upon the expertise and strengths that ILRI has developed in the past, incorporating a capacity to respond flexibly to new challenges and opportunities.
- 1 Recruit quality staff that will collaborate and be integrated across disciplines, projects and research themes.
- 1 Build strong partnerships with institutions in developing and developed countries.
- 1 Carry out research in a cost-effective manner.

ILRI will seek to establish a balance in its research staff that matches the need for flexibility with stability, maintains a critically sufficient amount of core disciplinary competencies, and combines enthusiasm and willingness to take risks with solid experience and knowledge.





# ILRI's path ahead

This strategy to 2010 reflects change. It focuses ILRI, ensuring that the work has impact on reducing poverty. It will fundamentally affect ILRI's research agenda. Its five themes are problem driven, multidisciplinary and output oriented. The change also implies increased demands on ILRI. Internal systems, structures, procedures, human resources and regional strategies will have to be reviewed and reoriented to implement this new strategy effectively.

ILRI recognises that the agenda is large. It must, therefore, work with many and diverse partners to accomplish its goal. Through participatory research with poor farmers, ILRI will learn from their traditional skills and knowledge and incorporate this information into its recommended technologies, innovations and policies.

With this strategy, ILRI positions itself to use the best science for livestock research to ensure that poor people have a pathway out of poverty.



[www.ilri.org](http://www.ilri.org)

*headquarters*

box 30709, Nairobi 00100, Kenya

phone +254 2 630 743

fax +254 2 631 499

email [ilri-kenya@cgiar.org](mailto:ilri-kenya@cgiar.org)

*principal site*

box 5689, Addis Ababa, Ethiopia

phone +251 1 463 215

fax +251 1 461 252

email [ilri-ethiopia@cgiar.org](mailto:ilri-ethiopia@cgiar.org)

*ILRI via USA direct*

phone +1 650 833 6660

fax +1 650 833 6661



# About ILRI

The International Livestock Research Institute (ILRI) ([www.ilri.org](http://www.ilri.org)) has a mandate to enhance the well-being of present and future generations in developing countries through research to improve sustainable livestock production. It works in partnerships and alliances with other organisations, national and international, in the fields of livestock research, training and information exchange. ILRI was formed in 1994. Its headquarters are in Nairobi, Kenya, with offices in seven more countries around the world.

ILRI is one of 16 Future Harvest centres ([www.futureharvest.org](http://www.futureharvest.org)), which conduct food and environmental research to help alleviate poverty and increase food security while protecting the natural resource base. The centres are funded through countries, private foundations, regional and international organizations, and are supported by the Consultative Group on International Agricultural Research (CGIAR).

The CGIAR ([www.cgiar.org](http://www.cgiar.org)) is an informal association of public- and private-sector members. The CGIAR's mission is to contribute to food security and poverty eradication in developing countries through research, partnership, capacity building and policy support. It promotes sustainable agricultural development based on the environmentally sound management of natural resources. The CGIAR is co-sponsored by the Food and Agriculture Organization of the United Nations (FAO), the International Fund for Agricultural Development (IFAD), the United Nations Development Programme (UNDP) and the World Bank.

