

Livestock Asia

A strategy and action plan
for research for poverty reduction



This strategy and action plan has been co-produced by over 50 organizations and individuals. We hope that it will be of value to all those interested in reducing poverty through livestock research and development in South and South-East Asia and China. In particular we hope that it will be used by researchers, policymakers, aid specialists and development practitioners to inform the development of their policies, programs and projects.

Livestock Asia: A strategy and action plan for research for poverty reduction



This document does not necessarily represent the views and opinions of the many organizations and individuals who have contributed to it. ILRI has facilitated the process of its production and takes full responsibility for the content.

Executive summary

Three hundred million poor people in Asia depend to some extent on livestock for their livelihoods, some 200 million in South Asia and another 100 million in South-East Asia and China. Rapidly growing economies and changing patterns of food consumption are driving increased demands for livestock products which in turn are creating real opportunities to reduce poverty through livestock production and marketing. These opportunities will only be realized if the poor can respond to these new opportunities by generating marketable surpluses and accessing the market. Research for poverty reduction through livestock can contribute to achieving this goal.

Over 50 organizations and individuals have co-created a strategy and action plan for research for poverty reduction through livestock in South and South-East Asia and China. This plan concentrates on how research for poverty reduction through livestock should be approached and conducted rather than what research should be conducted. The contention is that if the appropriate ways of working can be defined, if relevant partnerships can be developed and if the appropriate skills brought to bear, then the establishment of research priorities and topics should be a logical consequence of that process.

There are a number of key drivers changing the livestock landscape in Asia. These include a growing gap in income between urban and rural areas, rapidly growing demand and rising prices for livestock products and changes in the way food is retailed linked to changes in the supply chain. Trade liberalization is opening up new markets but endemic and emerging diseases such as Avian Influenza can threaten access to new and existing markets. Livestock production can have both positive and negative environmental impacts and production systems are changing with intensification and competition for crops for human and animal feed and biofuels. There are evolving policy needs and new roles for the public and private sectors are emerging. This is all taking place against a background of a revolution in communication technologies which are opening up new ways of sharing knowledge but at the same time creating major challenges on how to manage knowledge effectively.

Research specifically aimed at poverty reduction through livestock must take account of the inability of the poor to take risks due to their small asset base:

the poor are particularly vulnerable to external shocks. Research also needs to provide methods and policies to allow the poor to respond to opportunities without exposing them to risk and to build adaptive capacity to respond to external threats and shocks.

Research is only one small, but critical component in the process of improving pro-poor animal agriculture and market development. No single organization can ensure that the research that it carries out will reduce poverty. This requires the collaboration of many groups of stakeholders that extend way beyond the research community. It is an underlying assertion that if pro-poor livestock research is to be effective, and if research outputs are to be relevant and to result in outcome and impact, that research programs and projects need to identify and engage with the relevant stakeholders from the outset.

To achieve this requires adopting new ways of working with partners. In addition to maintaining an explicit pro-poor focus, there are a number of generic research tools that need to be applied by the partnerships to significantly improve the benefits of national as well as regional and international livestock research for poor beneficiaries including:

- applying systems thinking
- using a livelihoods framework
- using innovation systems approaches

To ensure that research is relevant to the needs of the poor and that research outputs result in action, new partnerships will need to be formed. National and international researchers, extension services, donors, development organizations, government at all levels, the private sector, regional organizations, representatives of local groups and farmers, producer organization and consumers need to work together to co-create the research agenda, ensure that research methodologies are appropriate and that research outputs make a real difference on the ground. Such new ways of working will need to be supported by appropriate education and training, especially in the 'soft skills' of multidisciplinary working, innovation systems thinking, problem identification and partnership management.

Five key actions have been identified for implementation in the short term to improve the effectiveness of pro-poor livestock research in South and South-East Asia and China:

1. *Raising awareness and promoting the need for livestock research for poverty reduction*
Researchers, research funders and policy makers need to be sensitized to the need for pro-poor livestock research.
2. *Developing a livestock knowledge resource for Asia*
A scoping study on the design of a system for effectively sharing knowledge between researchers, policy makers and development practitioners is planned for 2008
3. *Defining regional research issues*
There is potential to add value to many research initiatives by linking national and international programs at the regional or subregional level. Analysis of the key regional and subregional research issues is planned with a view to identifying priority areas for developing into specific regional research projects.
4. *Working in partnership*
Those responsible for the implementation of livestock research, livestock development or policy are encouraged to work together to ensure that livestock research actually has an impact on poverty reduction.
5. *Capacity strengthening*
Research and education managers, international research organizations and funders need to recognize the need for 'soft skills' and build training in these skills into education and training courses.

The International Livestock Research Institute is committed to working with partners in South and South-East Asia and China to implement this plan.

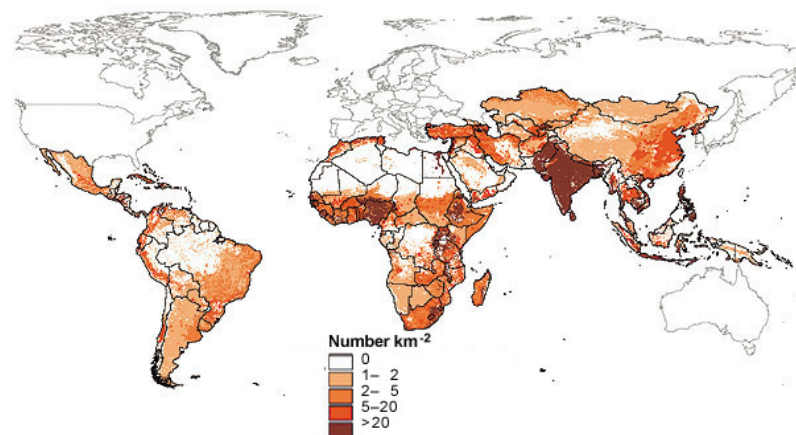
Livestock and the poor

Three hundred million poor people in Asia depend to some extent on livestock for their livelihoods, some 200 million in South Asia and another 100 million in South-East Asia and China¹ (Figure 1)². The livestock sector in

1. For convenience, further reference to South-East Asia includes China.

2. Poor is defined as living on less than USD 1 per day

Asia is undergoing unprecedented rapid and dynamic change which presents huge opportunities for improvement in livestock-related livelihoods and opportunities to reduce extreme poverty through livestock, as well as posing a number of challenges to poor livestock keepers. Livestock keeping is practised by millions of small-scale mixed crop and livestock farmers and 'landless farmers' (i.e. those who do not own or have any tenure over land, but who are engaged in agriculture through the keeping of livestock or the provision of their labour to other farmers). Many of those tending livestock are women, (in some countries they represent the majority of livestock keepers), on whose efforts the livelihoods and welfare of the rest of the family depends. Because farm animals tend to be more equitably distributed among the poor than land, with the landless and those with access to only tiny land holdings owning a higher share of livestock, growth in the livestock sector tends to benefit the poor more so than growth in the crop sector (BIRTHAL et al. 2006).



Source: Thornton et al. (2002).

Figure 1. The distribution of poor livestock keepers.

Many Asian countries are showing unprecedented economic growth. This coupled with increased urbanization and population growth is resulting in changes in food consumption patterns, including an increase in the demand for livestock products, including milk, meat and eggs (Joshi et al. 2007). This growing demand offers potential opportunities for the millions of small-scale

livestock producers and those who depend on livestock value chains for their livelihoods, provided that they can supply and access these markets. It is therefore timely to identify how livestock research can contribute more effectively to poverty alleviation on South and South-East Asia.

Developing the plan

This document does not provide a definitive list of research topics, nor does it attempt to prioritize research areas, which will vary by agro-ecological zone, production system and economic, political, social, cultural, institutional and environmental contexts. It concentrates on *how* research for poverty reduction through livestock should be approached and conducted rather than *what* research should be conducted. The contention is that if the appropriate ways of working can be defined, if relevant partnerships can be developed and if the appropriate skills brought to bear, then the establishment of research priorities and topics should be a logical consequence of that process.

This strategy and plan focuses on the tropical and semi-tropical agricultural regions of South and South-East Asia, a region dominated by smallholder, mixed crop–livestock systems with smaller populations of pastoralist, especially in South Asia. This plan has been co-produced by a wide range of stakeholders in a process facilitated by the International Livestock Research Institute (ILRI).³ The steps in the process were:

1. A Challenge Dialogue Paper was produced by a team from ILRI, following discussions with a small group of stakeholders in South and South-East Asia. The paper, which set out certain assumptions, assertions and questions, was sent electronically to over 150 individuals representing a wide group of stakeholders from the research and development communities in the public and private sectors with an invitation to respond and provide ideas and suggestions. The paper was also available on the ILRI website. Forty-eight responses were received.
2. The responses were summarized and synthesized in a Progress Report which was posted on the ILRI website and sent to all the recipients of the Challenge Dialogue Paper for further comment.
3. The list of organizations contributing to the Plan is given in Annex 1.

3. Two workshops were held in Bangkok and Kathmandu with a small group of stakeholders from South-East and South Asia respectively, to validate the responses to the Challenge Dialogue paper, to clarify and further develop some of the ideas received, to check for gaps in information and to identify specific activities that could be undertaken in pursuit of a pro-poor livestock research and development agenda.
4. This strategy and plan was drafted, synthesizing the information from the process.

Input and comments were received from representatives from 12 countries within the region as well as from individuals and organizations outside Asia with an interest in the region.

This strategy and plan outlines:

- A vision, scope and strategies needed for regional livestock research to yield pro-poor livestock policies, technologies and tools needed for effective pro-poor development in South and South-East Asia.
- The types of research approaches, working methods and partnerships required to ensure that outputs from livestock research have an impact on poverty reduction.
- Some of the barriers to ensuring that livestock research has an impact on poverty reduction.
- Some concrete actions that can be undertaken by different stakeholders.

Despite considerable heterogeneity in agro-ecology, livestock systems, socio-economic context and research institutions across South and South-East Asia, a remarkable feature of the consultations and discussions that have led to this Action Plan was the degree of agreement among stakeholder on the way forward, although there were some subregional differences.

The changing livestock landscape in Asia

Asia is changing. Economies are growing rapidly, incomes are rising, in at least a proportion of the population, and dietary patterns are changing. Climate change and other environmental challenges need to be tackled. These changes

have implications for the livestock sector and for the poor who depend upon livestock. Some of these changes and their implications are given below.

The urban–rural divide

In most countries in South and South-East Asia agriculture is no longer the driver of economic growth, unlike sub-Saharan Africa, where agriculture is still expected to be the main driver. Economic growth is driven mainly by the urban centres, but rural poverty remains a major problem and the disparity in per capita income between urban and rural areas has increased in the past 10 years (World Bank 2007). This poses governments difficult challenges in providing livelihood opportunities for rural populations, especially, but not restricted to, marginalized areas with poor infrastructure and access to markets.

Rapidly growing demand for livestock products

Increasing incomes and rising human populations in Asia, coupled with increased urbanization, are causing big rises in the demand for livestock foods in Asia. As peoples' incomes increase, they tend to consume less grain-based foods and greater amounts of milk, eggs and meat. These changes in dietary habits are not confined to urban areas but are also widespread among the rural population (Joshi et al. 2007). This 'Livestock Revolution' potentially opens up new pathways out of poverty for poor people to be able to help meet the rising demand for livestock and livestock products.

A food retail revolution

A food retail revolution is taking place in many countries in Asia and is beginning in others. In some countries in South-East Asia, such as Thailand, the supermarket revolution is well underway and it is starting to take off in China. Supermarkets are beginning to appear in the larger cities in India and while currently they represent only a tiny fraction of the food retail business there is little doubt that in the coming years they will drive big changes in India's produce-supply chains.

Supply chain adjustment

The changes in retailing are having impacts on the ways in which livestock products are sourced, processed and sold, changes which in turn are lengthening supply chains, separating food production from consumption, encouraging new models of food sourcing such as contract farming, and prompting consumer demands for higher food quality and safety. India's fragmented produce-supply chains, for example, are beginning to give way to modern efficient networks. Generally there is increased vertical integration and consolidation in the supply chain. This generates both threats and opportunities for small-scale livestock producers. There is a real risk that they will get squeezed out of the supply chain with economies of scale favouring larger producers. It is not entirely clear what opportunities might be created for employment generation and poverty reduction within these new chains or how policies might be developed to ensure that the poor can benefit.

Important traditional local markets

While integrated food supply chains serving urban areas are the fastest growing and most visible market phenomenon, small-scale market agents and chains operating through traditional markets supplying fresh meat, milk, eggs, live small stock and traditionally processed products still play a very large role in most Asian countries. They also generally provide the main outlet for smallholder livestock producers, and the main source of low cost products for resource-poor consumers. These market chains are increasingly being challenged by public demands for higher standards and safety, and by competition by large-scale regulated players. Policies, development strategies and business development services may be needed to allow these small players to adapt and comply with new market realities, so as to ensure their continued support to the resource poor. The fact that these markets are largely unrecorded and vary widely across countries poses obstacles to new systematic interventions.

Trade liberalization

Trade liberalization and the recent world market price rises are opening up new markets and opportunities for livestock products. While the majority of

livestock keepers may target local and domestic markets, new opportunities are emerging for the export of livestock products although these markets present new challenges for producers in relation to product quality and food safety and hygiene. Exporters to western markets face stringent quality control and SPS procedures which can be tough for small-scale livestock producers to comply with.

Emerging and re-emerging diseases

While market liberalization has increased Asian and global trade in livestock and livestock products and opened new markets for livestock producers, the threat of the spread of livestock and related human diseases has also increased, leading to increasingly stringent health and safety regulations, which serve to bar most small-scale livestock producers from entering those new markets. The recent outbreaks of Avian Influenza in many countries which has had devastating effects on trade in poultry is a case in point. Endemic foot-and-mouth disease, for example, prevents many countries from taking advantage of export opportunities as the import of meat from countries affected by foot-and-mouth disease is banned by many countries. There is, however, much illegal, cross-border trade which poses a significant threat to the health of both animals and humans.

Environmental concerns

The recent publication 'Livestock's long shadow' (Steinfeld et al. 2006) brought into sharp focus the environmental issues surrounding livestock production. The growing intensification of pig, poultry and other livestock systems in Asia, largely by raising animals in Western-style large-scale production units, is reducing the costs of production but often at high environmental costs. Inappropriate disposal of animal wastes is polluting air, water and soils in many areas. Growing livestock sectors also increase global warming (e.g. globally the sector already accounts for 35–40% of anthropogenic methane emissions) and biodiversity losses through the felling of forests to create grazing lands and the degradation of pastures through overgrazing. It is not only large-scale intensive livestock production that can cause environmental damage. Intensification of small-scale production such as that seen in pig

systems in some parts of South-East Asia with inappropriate disposal of waste into water courses can cause not only environmental problems but also concerns about human health. On the other hand, small-scale livestock production can provide environmental benefits and there is scope for development of innovative ways of rewarding producers for environmental goods (e.g. livestock are important in rangeland systems; not surprisingly, given the co-evolution of grasslands and herbivores). Furthermore, in any discussion on the environmental impacts of livestock production in Asia, it is crucial that the livelihood benefits of livestock production to millions of livestock producers and others in the livestock value chain, including 300 million of the poorest, are taken into account, including when policies are developed.

Changing production systems

Production systems are changing with less requirement for animal draught power but increased demand for feed crops as biofuel. The number of draught animals in India fell from 64.6 million to 60.2 million between 1991 and 2003. Several countries have set targets for renewable energy use from biofuels: India has set a target rate of 10% inclusion of bio-ethanol in petrol by 2008, while the Philippines has set a target of 5% by 2009 and 10% by 2011, which will mean changes in pattern of land use. While much publicity has been given to the potential competition between grain for human food and biofuel production, less attention has been paid to the potential competition with feedstuffs for animals. Increased demand for biofuel production from cereals is already forcing up cereal prices which in turn is affecting, for example, the costs of pig production in South-East Asia and China. This may create new opportunities for smallholder systems through shifting comparative advantage to fodder based systems, ruminants and small-scale pig production. There is a small but growing demand for organic products which in some cases could be met with relatively minor adjustments to existing production systems.

Increased donor interest in agriculture

Some aid and development agencies are paying more attention to agricultural development as an engine of growth and livestock have an important part to

play. The World Development Report 2008 focuses on agriculture (World Bank 2007). OECD (2006) recently called for policymakers to pay more attention to the central role agriculture plays in poverty reduction and to encourage new, more inclusive and participatory approaches in agricultural development. In addition, there is increasing appreciation in aid and development circles of the essential role that research plays in development, with some countries such as the United Kingdom significantly increasing its budget for agricultural research for development over the next few years. There is also a rise in the funding of agricultural research and development by philanthropic organizations which is beginning to change the way in which research and development projects are funded, the content of research and the way research outputs are delivered.

Changing roles of public and private sector

Once the preserve of public institutions, agricultural research and development in Asia is increasingly being influenced by the private sector. Private companies are investing in research in biotechnology and while this is greater in the crop than livestock sector, commercial research is important in the fields of vaccine development and disease diagnostics. New models of public-private partnerships are being experimented with.

Parts of the pig and poultry sectors are increasingly being dominated by large companies which are putting in place vertically integrated supply chains, with input services being provided by the private sector rather than the state. In the poultry sector this may involve everything from the supply of chicks, feed, animal health care and technical advice as well as short-term finance. The ultimate form of this is contract farming where a commercial company provides all inputs except labour and housing. This is especially attractive to companies whose customers require high standards of quality control and traceability. Nevertheless, there are still large numbers of small-scale pig and poultry producers in many countries with limited access to input services. In some regions NGO and civil society organizations are playing increasing roles in service provision to smallholder livestock producers, but that engagement differs greatly across countries.

Evolving policy needs

Traditionally livestock research focused on the technical aspects of livestock production as researchers sought to find ways of increasing production and productivity. Although research on increasing productivity is still required, research has an important role to play in the support of policy formulation and evaluation at a range of levels from national to local. Some of this policy-relevant research is technical but much of it is socio-economic and/or multidisciplinary. This requires different mechanisms for funding, managing and implementing research. Moreover, the effectiveness of communication between those involved in livestock research and decision makers is generally poor. Decision makers are often unaware of what research has to offer while researchers have a poor understanding of the information requirements of policymakers and implementers.

Changing methods for generating and sharing knowledge about complex issues

A key requirement for effective decision making is access to relevant knowledge and information. This is as true of decisions made by farmers about their production and marketing systems as it is about decisions by research managers on where to invest research funds. The potential for accessing and sharing information has never been greater, with the use of sophisticated information and communication technologies. This is seen in some exciting developments in knowledge management in, for example, the delivery of market information to farmers through mobile phones or the establishment of computerized information delivery mechanisms in villages in India. However, within the research community and between the research and development communities there is still much less information sharing than is desirable, partly due to limited capacity to manage knowledge and to share knowledge in a way that is meaningful.

Why we need pro-poor livestock research

Pro-poor livestock research

Pro-poor livestock research is defined as research that is planned and implemented with the specific objective of producing research outputs that are of value in the development and implementation of technologies, tools, processes or policies that result in reduction in poverty of people who depend to some extent on livestock for their livelihoods.

Livestock research in South and South-East Asia is conducted for a variety of reasons, not all of which are related to poverty reduction. Much of it is aimed at increasing production and productivity from livestock systems. As a consequence we cannot expect all livestock research to result directly in poverty reduction. Equally, it may not be possible to classify research as specifically 'pro-poor' but the outcome could be poverty reduction. An example might be research on animal diseases which results in a general reduction in the prevalence of disease, with a general increase in productivity or reduction in mortality which benefits all livestock keepers.

However, the poor have particular requirements. Their small asset base means that they tend to be particularly vulnerable to external shocks and are not able to take risks as the consequences of failure can be catastrophic for themselves and their families. This is often not appreciated by researchers who may advocate a change to the system of livestock keeping which might be acceptable to a larger-scale farmer but involves an unacceptable risk to the poor. Research needs to provide methods and policies to allow the poor to respond to opportunities without exposing them to risk and to build adaptive capacity to respond to external threats and shocks.

Despite some successes, much past livestock research is widely perceived to have had little impact on poverty reduction. This may be due to a) lack of understanding of the livestock systems and the needs of the poor, b) lack of ability of poor livestock keepers to articulate their needs, c) inappropriate research, d) inability to translate research learning into pragmatic interventions or e) lack of mechanisms such as extension services to scale out.

Analysis of some past research suggests that research programs and projects are more likely to have an impact on the poor if they are driven by the needs of the poor and undertaken in collaboration with other actors in livestock development, including those responsible for implementation of development activities or policies. This raises a number of challenges. Firstly, the poor usually have no means of collectively articulating their needs and so it may be difficult to distinguish their real needs from their perceived needs. Often it is left to NGOs to voice the needs of the poor and the effectiveness by which they can do this varies. Secondly, the poor, by necessity, tend to focus on short term problems and this may not be compatible with developing a research program that focuses on longer term problems which may not be perceived by the poor to be an immediate threat to their livelihoods.

Working together on pro-poor livestock research for development

Since research will only have impact if the outputs are translated into action, research is only one small, but critical component in the process of improving pro-poor animal agriculture and market development. No single organization can ensure that the research that it carries out will reduce poverty. This requires the collaboration of many groups of stakeholders that extend way beyond the research community. It is an underlying assertion that if pro-poor livestock research is to be effective, and if research outputs are to be relevant and to result in outcome and impact, research programs and projects need to identify and engage with the relevant stakeholders from the outset.

This requires a considerable change in mindset from the old models of research and development where researchers 'passed on' the research outputs for others to implement. Such linear models have been severely criticized for not producing relevant research outputs and for failing to make an impact on poverty reduction.

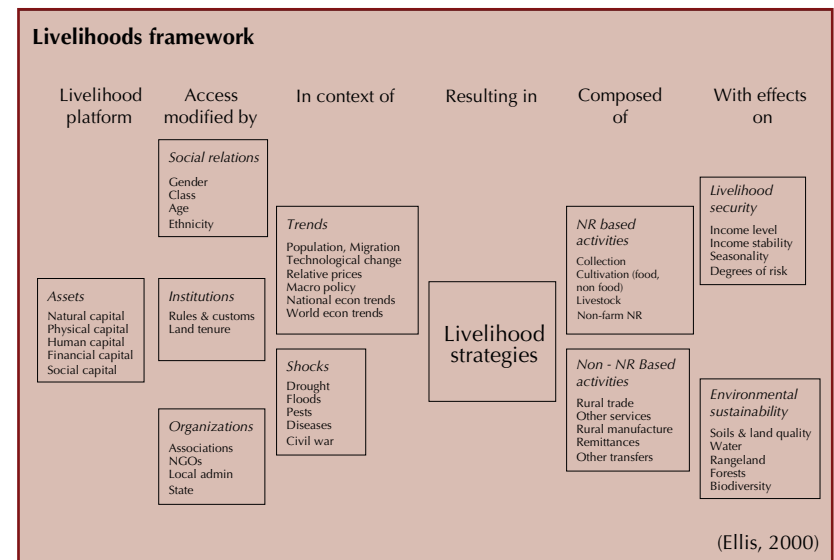
To achieve this requires adopting new ways of working with partners. In addition to maintaining an explicit pro-poor focus there are a number of generic research tools that need to be applied by the partnerships to significantly improve the benefits of national as well as regional and international livestock research for poor beneficiaries including:

- applying systems thinking
- using a livelihoods framework
- using innovation systems approaches

Systems approach

A system is a group of interacting components operating together for a common purpose, capable of reacting as a whole to external stimuli: it is unaffected by its own outputs and has a specified boundary based on the inclusion of all significant feedbacks.

[The systems approach implies that] one must understand a system before one can influence it in a predictable manner, ... recognizing a system, what it is and what it is not, and where its boundary lies (Spedding 1988).



Innovation systems

An innovation system can be defined as a network of organizations, enterprises and individuals focused on bringing new products, new processes, and new forms of organization into economic use, together with the institutions and policies that affect their behavior and performance. The innovation systems concept embraces not only the science suppliers but the totality and interaction of actors involved in innovation. It extends beyond the creation of knowledge to encompass the factors affecting demand for and use of knowledge in novel and useful ways.

The innovation systems concept is derived from direct observations of countries and sectors with strong records of innovation. The concept has been used predominantly to explain patterns of past economic performance in developed countries and has received far less attention as an operational tool. It has been applied to agriculture in developing countries only recently, but it appears to offer exciting opportunities for understanding how a country's agricultural sector can make better use of new knowledge and for designing alternative interventions that go beyond research system investments (World Bank 2006).

The relevant partnerships will vary depending on whether the focus is a research program or project, as will the level of engagement with partners. The relevant partnerships will also vary according to the objective and level (e.g. household, district, national, regional) of the research. Partnerships may need to include researchers from other disciplines, those responsible for livestock development, government and private companies. Some of the key partners might include:

1. National agricultural research systems (NARS)
2. Universities
3. International agricultural research centres (IARCs)
4. Extension services
5. Donors (governmental, philanthropic)
6. Development organizations
 - a. Non-governmental organizations (NGOs)

- b. Development banks
 - c. Private consulting companies
 - d. International organizations
7. Government – local to national
8. Private sector
 - a. Input suppliers (of feeds, veterinary products, breeding services etc.)
 - b. Processors, retailers
 - c. Banks, financial institutions
 - d. Service providers
 - e. Micro-enterprises
9. Regional organizations
10. Representatives of religious, ethical, tribal, indigenous groups
11. Representatives of farmers groups, producer groups, women's groups
12. Consumers (this is a diverse group ranging from poor to rich).

Partnerships must co-create the research agenda, ensure that research methodologies are appropriate and that research outputs make a real difference on the ground. In this way research groups become knowledge brokers and facilitators as well as knowledge producers and providers. The research questions are not pre-defined by the research group but are co-created by the partnership. This also gives the partnership co-ownership of the research and places the responsibility for ensuring implementation of the research outputs on the whole group, not just one partner.

The establishment of new partnerships, perhaps involving organizations and institutions that have not historically worked together, requires skills in partnership management. Some key points to consider when developing and managing partnerships are:

- Who needs to be included to ensure that the research is relevant to the needs of the poor and the research outputs will ultimately result in a reduction in poverty? This requires strategic decisions about what each partner can contribute and what they will get out of the partnerships.
- Different partners may need to be engaged to different extents, in different ways and at different times in the life of a project.

- Developing working relationships and trust between partners takes time, and it is important to understand the motivations and perspectives of different partners. Different partners will have different perspectives and motivations, but that does not mean that they cannot collaborate to achieve a common goal.
- It is crucial to set out the 'rules of the game' early on so that it is clear how the partnership will work and who has responsibility for carrying out different tasks and delivery of different outputs.

Knowledge flows and management

The need for information sharing

'The effective sharing of existing knowledge is as important as the generation of new knowledge' – a quote from a respondent to the Challenge Dialogue Paper.

Increasingly it is recognized that the traditional linear models of information dissemination in which research provided outputs that were then 'transferred' to the user is less effective in today's more complex world. Knowledge needs to flow in many directions, not just from researcher to users. For example, traditional knowledge needs to be interlinked with research outputs, development practices need to inform research agendas and so on.

Although we live in an age with ever more sophisticated means of communication and sharing of information, the sharing of knowledge among researchers and between researchers and those responsible for livestock development and policy remains a huge challenge. Livestock development practitioners complain that they cannot access the knowledge that they require when they need it. Decision-makers often do not have the time to search for information. The internet can provide a huge amount of information, finding specific pieces of information relevant to a particular set of circumstances and in forms that are useful and relevant to specific user needs is difficult.

Although there are success stories where research has had an impact on the lives of poor livestock keepers, often those successes are not well documented,

and in particular documentation of the long-term impacts after the project or program has ended is rare and so there is no systematic learning and scaling out. There are common features of livestock systems across national boundaries and across regions that are sometimes not appreciated by development practitioners and researchers leading to a lack of opportunity for sharing experiences and shared learning. International organizations have a particular role and responsibility in this regard.

Knowledge management and sharing is more than simply making information available. It involves not only accessing information but also tailoring that information to the specific circumstances of the user, which often requires person-to-person interaction. There is an urgent need to consider how knowledge can be better shared to be effectively utilized in the fight against poverty among those who depend on livestock in South and South-East Asia. This will require the collaboration of research providers, research users (including policy makers and development practitioners) as well as experts in knowledge management systems. An important component of this will be how to link people with common interests and complementary knowledge.

Barriers to developing a pro-poor livestock research agenda

There are a number of barriers to promoting and developing a pro-poor livestock research agenda in South and South-East Asia.

Institutional barriers

Perhaps the greatest barriers to developing a pro-poor research livestock research agenda are the institutional ones. These include the mind-set of researchers as well as the structure and procedures of the organizations within which they work.

Many national agricultural research institutes and universities are organized along disciplinary lines, which mitigate against the creation of interdisciplinary research teams, so crucial to the development of pro-poor research programs. In addition the reward systems for researchers tend to be focused on the need

to produce publications rather than on the ultimate impact of the research. Even if more appropriate reward systems could be developed, the attribution of the success of poverty reduction to any particular research project will always be problematic.

Research infrastructure

The quality and extent of research infrastructure (buildings, equipment, land, animals) in the countries of South and South-East Asia varies considerably. Some of the larger countries in the region have excellent research facilities, comparable to those in the West, but some smaller countries lack such infrastructure and given their size and population are unlikely ever to be able to provide the resources to undertake all their research requirements themselves. Consideration needs to be given on how research programs and facilities can be shared and coordinated between countries.

Historically there has been 'spill-over' of science from developed to developing countries and while this will still occur, it is becoming less likely in the future that developing countries will be able to make use of such spill-over effects to improve productivity to the same extent, as developed countries move the focus of their livestock research from increasing productivity to consider other research agendas including environmental protection, food quality and diet and health. Thus, countries in Asia may need to build up infrastructure to undertake the type of research that is required and that is relevant.

Human capacity and skills

Within South and South-East Asia there is a considerable variation among countries in the technical capacity in livestock research. Some of the larger countries and richer countries have highly skilled livestock scientists. ILRI has recently (in 2007) undertaken a regional assessment of human capacity strengthening needs as perceived by the NARS. Although there were some gaps in technical capacity such as molecular genetics and bioinformatics within the livestock research community, the overwhelming need is to increase the capacity in the 'soft' skills. These include:

- Developing skills in socio-economic sciences in livestock research, such as livestock economics.
- Shifting from a focus on laboratory to field-based research.
- Adoption of systems thinking and approaches and participatory research methodologies.
- Innovation systems thinking.
- Developing skills in interdisciplinary working and in particular (but not limited to) linkages between social and natural sciences.
- Partnership development and management skills.
- Improving skills in problem identification and prioritization.
- Monitoring and evaluation systems and implementation for learning.
- Advocacy skills.
- Building capacity in networking and knowledge brokering.

A five-point action plan

The process of consultation and the workshops identified some key action points that need to be undertaken to promote and implement pro-poor livestock research in South and South-East Asia.

Raising awareness and promoting the need for livestock research for poverty reduction

Awareness of the opportunities for poverty reduction through pro-poor livestock research for development needs to be raised at national and regional levels. This sensitization needs to be focused on researchers, research funders, policymakers and development agencies implementing livestock interventions. At the national level a number of co-creators of this strategy and plan have already undertaken to initiate activities in their own countries. The documentation of success stories and examples of best practices, highlighting where livestock research has had an impact on poverty reduction can be an important component of this activity.

At the regional level, creation of discussion platforms will be explored, particularly by linking to existing networks and regional and subregional initiatives. Some of these initiatives include the Asia Pacific Association of

Agricultural Research Institutes, the South Asia Pro-Poor Livestock Policy Programme, ASEAN Livestock Group and Greater Mekong Agriculture Working Group. The engagement of stakeholder groups that have not traditionally been involved in pro-poor livestock research, including the private sector and organizations that can give poor livestock keepers a voice will be important, although challenging.

Developing a livestock knowledge resource for Asia

There is a pressing need to ensure effective knowledge sharing between research suppliers, development organizations involved in livestock development and policy makers. A scoping study will be conducted in early 2008 to a) identify the requirements of users of a livestock knowledge resource for Asia, b) identify existing initiatives that can be built upon and c) identify relevant innovative methods of knowledge management. A steering committee has been established with representation from ILRI, CIAT, APAARI, APHCA and CAPLI and these organizations have already committed to providing resources to kick-start this initiative.

Defining regional research issues

A number of research topics which are important to ensuring livestock development can contribute to poverty reduction were identified during the process of developing this strategy and action plan. Many are already the subject of national and international research programs but could perhaps have a more pro-poor focus. There is considerable potential to develop regional, subregional and even national initiatives to add value to existing efforts. These need further analysis, discussion and elaboration to identify priority areas. During 2008 the wide network that has been developed during the co-creation of this plan will be used as a starting point to identify one or two key regional or subregional issues. These will then be developed into research proposals to be submitted to donors with the specific objective of supporting pilot regional or subregional efforts to initiate pro-poor livestock research and development activities.

Working in partnership

A key to the development of successful programs and projects for poverty alleviation through livestock research is to develop the appropriate partnerships, involve those responsible for the implementation of livestock development or development of policies in the research process and to recognize that research is only one component in the process of innovation—see Box on Innovation Systems. Research funders, managers and scientists are encouraged to join in partnership with a wide range of stakeholders to ensure that pro-poor livestock research actually has an impact on poverty reduction.

Capacity strengthening

A particular need has been identified for capacity strengthening and training in the 'soft skills'. Research and education managers, international research organizations and funders need to recognize the need and build training in these skills into education and training courses.

ILRI's role

ILRI has a global mandate to conduct livestock research to contribute to livestock development as a pathway out of poverty. Within this mandate ILRI is committed to working with partners in South and South-East Asia to:

- facilitate raising awareness of the importance of research for poverty reduction through livestock at regional and national levels;
- develop regional research programs and projects;
- facilitate the establishment of knowledge sharing arrangements;
- assist in strengthening the capacity within the region for conducting pro-poor livestock research.

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Annex 1. Organizations consulted and contributing to this plan

Animal Health and Production Commission for Asia
Asia Pacific Association of Agricultural Research Institutes
Asian Veterinary and Livestock Services (ASVELIS), Vietnam
Australian Centre for International Agricultural Research
BAIF, India
Basix, India
BRAC, Bangladesh
Bureau of Agricultural Research, Philippines
Centre for Chinese Agricultural Policy
Centre of Economic and Social Research, India
Centre for Livestock and Agricultural Research, Cambodia
China Agricultural University
Council of Renewable Natural Resources Research in Bhutan
CP Group, Thailand
Department of Animal Husbandry, Dairy and Fisheries, India
Department of Livestock, Nepal
FAO Pro Poor Livestock Policy Initiative
FAO Regional Office for Asia and Pacific
Federation of Free Farmers, Philippines
International Center for Tropical Agriculture (CIAT)
International Crop Research Institute for the Semi-Arid Tropics
International Livestock Research Institute
Indian Council for Agricultural Research
Indian Veterinary Research Institute
Institute of Strategic Planning and Policy Studies, Philippines
Intercooperation, India
International Federation of Agricultural Producers
International Food Policy Research Institute
International Fund for Agricultural Development
Kegg Farms, India
Khon Kaen University, Thailand
Livestock and Dairy Development Board, Pakistan

Lanzhou University, China
Mae Fah Luang Foundation, Thailand
Midas Agronomics, Thailand
Ministry of Agriculture, Cambodia
National Dairy Research Institute, India
National Zoonoses and Food Hygiene Research Centre, Nepal
Nepal Agricultural Research Council
Nimbkar Institute, India
Pakistan Agricultural Research Council
Philippines Council for Agriculture, Forestry and Natural Resources Research
and Development (PCARRD)
Punjab Agricultural University
South Asia Pro-Poor Livestock Policy Programme
Sir Ratan Tata Trust (Himmotthan Cell)
Thai Broiler Processing and Exporters Association
University of Peradeniya, Sri Lanka
Vredeseilanden (VECO), Belgium
World Organization for Animal Health (OIE)
Nine individuals not associated with any organization





International Livestock Research Institute