



**Australian Government**  
**Australian Centre for  
International Agricultural Research**

# Livestock Production Systems Research Program Strategy

## Global context/trends

Smallholder farmers traditionally keep livestock for livelihood security, selling for income in the event of crop failures or to meet specific costs. Typically livestock numbers in these systems are constrained by feed quality and quantity, land availability and disease impacts. Economic development in many emerging economies, globalisation of agrifood chains and rapidly urbanising populations is increasing demand for animal protein, creating opportunities for these livestock keepers to become market-oriented livestock producers.

## International fit

Over the next 40 years, world food production will need to increase by at least 70%, but less than 10% of this will come from bringing new land into production. Livestock production is increasingly being pushed onto over-exploited marginal lands or into intensive-cropping systems, with associated impacts (both positive and negative). Rising demand for animal protein will likely accelerate this trend.

With increasing urbanisation comes longer food chains. Concerns about food safety (e.g. bacterial contamination and zoonotic diseases) and quality in these relatively long chains for animal-sourced foods are increasing. For smallholders to participate in and benefit from these chains, they will need to meet quality expectations to take advantage of market opportunities.



**ACIAR**  
[aciarc.gov.au](http://aciarc.gov.au)



## Research themes

The goal of the program is to create new opportunities for rural communities through research that makes their smallholder livestock systems more productive, profitable and sustainable.

The research themes of the program are:

Research themes	Priority research areas
Livestock for livelihood security and home consumption:	» Addressing feeding, management and causes of animal mortality.
Livestock for markets:	» Addressing supply-chain management, food safety and quality and policy development.
Livestock and environment:	» Addressing issues such as minimising grassland degradation.
Sustainable intensification of crop–livestock systems:	» Addressing issues such as food–feed interactions and nutrient cycling.

## Countries

Country	% of budget: active projects
Timor–Leste (East Timor)	12
Indonesia	23
Vietnam	22
Pakistan	11
Botswana	13
South Africa	4
China	13
Iraq	2

## Delivery on corporate goals

ACIAR goal, to improve:	Contributions of projects in the Livestock Production Systems program (examples)
Food and nutrition security.	<ul style="list-style-type: none"> <li>» Adaptive cattle research in Timor–Leste (East Timor).</li> <li>» Integrating forage legumes into the maize–cropping systems of West Timor.</li> </ul>
Productivity and resilience of crop, livestock, forestry and fisheries systems.	<ul style="list-style-type: none"> <li>» Improving smallholder cattle–fattening systems based on forage–tree–legume diets in eastern Indonesia.</li> <li>» Strengthening dairy value chains in Pakistan through improved farm management.</li> </ul>
Smallholder and community livelihoods.	<ul style="list-style-type: none"> <li>» Forage and feed management for smallholder sheep producers in Iraq and Afghanistan.</li> <li>» Overcoming technical constraints to the emergence of profitable beef enterprises in Vietnam.</li> </ul>
Sustainable interactions between agricultural and ecosystem services.	<ul style="list-style-type: none"> <li>» Sustainable livestock grazing systems on Chinese temperate grasslands.</li> </ul>
Individual and institutional R&D capacity.	<ul style="list-style-type: none"> <li>» Individual capacity building is a component of all projects. The program has 25 postgraduate students associated with projects.</li> </ul>

## Future focus

While the program will continue research focussing on production constraints, especially in countries where these constraints are the main barriers to market participation for smallholders, it will increasingly focus on:

- » Helping smallholders transition from animal keepers to market-oriented producers, to allow these farmers to take up opportunities for greater market participation
- » Addressing concerns relating to quality and safety of animal-sourced foods in value chains that are increasingly longer in terms of distance, handling and time, and
- » Ensuring environmental sustainability in the scale-out of production systems.

The program will also explore opportunities to increase the availability of animal-sourced protein in remote areas, as a means of overcoming nutritional disorders that impact on human health.

## Research Program Manager

**Dr Peter Horne**

**P:** + 61 2 6217 0522 **F:** + 61 2 6217 0501

**E:** peter.horne@aciarc.gov.au

### Further information

Australian Centre for International  
Agricultural Research (ACIAR)

38 Thynne Street, Fern Hill Park  
Bruce ACT Australia  
GPO Box 1571 Canberra ACT 2601  
Australia

**P:** +61 2 6217 0500 **F:** +61 2 6217 0501

**E:** [aciar@aciar.gov.au](mailto:aciar@aciar.gov.au)

[aciar.gov.au](http://aciar.gov.au)



**ACIAR**  
[aciar.gov.au](http://aciar.gov.au)

