



Australian Government

Australian Centre for  
International Agricultural Research

Livestock

## Profitable feeding strategies for smallholder cattle in Indonesia

### Overview

The Indonesian Government has placed a high priority on self-sufficiency in beef production where domestic beef supply is unable to meet consumer demand.

Most cattle are raised by 4.2 million smallholder farmers and landless producers, with an increasing number of small- to medium-scale feedlots. The priority is to increase this number and improve the reproductive efficiency of breeding cows and improve the growth and fattening of cattle.

Although there is substantial trade in cattle feed, cattle growth rates are low (about 0.2-0.5 kg per day). Diets are based on the cheapest available feed rather than a combination of the most cost-effective and feed efficient diets. This is mainly due to a poor understanding of the benefits of improved diets (for increased growth rates and decreased cost per weight gain), aversion to risk and a lack of tools to formulate a simple diet based on nutritional principles.

There is a need to customise diets for different regions in Indonesia as each has a different range of feed resources, both on-farm and purchased feeds.



### KEY FACTS

**ACIAR Project No.** LPS/2013/021

**Duration:** January 2017 to December 2020 (4 years)

**Target areas:** Indonesia

**Budget:** A\$1,800,088

#### Project Leader

Dr Karen Harper, University of Queensland

#### Key partners

- NTDPIF
- University of Gadjah Mada, Indonesia
- Balai Pengkajian Teknologi Pertanian (BPTP)
- University of Brawijaya, Indonesia
- Extension Division at BPTP, Malang East Java
- University of Jember, Indonesia
- Tadulako University, Indonesia
- University of Mataram, Indonesia

#### ACIAR Research Program Manager

Dr Anna Okello

## Objective

**The project's overall aim is to improve the profitability of beef cattle production of small-scale beef producers through the development of simple cost-effective feed rations.**

### **The project's specific objectives are to:**

- Develop robust treatment processes for removal of hydrogen cyanide from under-utilised by-products of cassava, and preparation as a tradeable feed source for cattle.
- Devise simple, cost-effective feed rations with a higher feed conversion efficiency than those currently used for reproduction and fattening of cattle.
- Conduct participatory on-farm and small- to medium-scale feedlot best bet interventions of feed mixes.
- Analyse the costs and benefits of the interventions and their adoption by small-scale producers and document the economic and social impacts on households and household members.
- Strengthen capacity of local scientists including postgraduate students to conduct farmer-relevant research, and of farmers and feed companies to make sound business decisions.

## Expected scientific results

- Generation of knowledge on simple diets for each region.
- Development of response curves to cassava and its by-products.
- Development of response curves to ingredient combinations and/or direct comparisons of different types of supplements, to provide the nutritional basis for least cost ration formulation and simple rations.
- Assessment of local cattle breeds fed diets based on local ingredients to provide a large data set for use in the development of the least cost ration formulator.

## Expected outcomes

- Improved reproduction and growth of cattle – potential for growth rates to double and for cattle production to increase by 53%.
- Economic and other benefits to smallholders, landless cattle producers and small- to medium-scale feedlots.
- Increased household incomes.
- Increased availability of quality cattle to meet domestic supply.
- Increased capacity for a new generation of ruminant nutritionists to continue the development of local cattle production systems.
- Potential for off-farm employment opportunities through implementation of commercial feed enterprises.

