



Livestock

# Developing profitable dairy and sheep meat production systems in the central Tibet Autonomous Region of China

## Overview

The agriculture and human population of the Tibet Autonomous Region are concentrated in the central and southern cropping and agro-pastoral zones. Intensive agriculture (cropping and dairy) usually occurs on the fertile valley floors and lower hill slopes, while marginal areas around river beds and at the edge of valleys are used for more extensive production systems such as sheep meat.

The main crops grown are winter wheat and spring barley. Grain is primarily used for human consumption and crop residues are kept as feed for livestock. Almost all households keep ruminant livestock, with dairy cattle tethered in the village and sheep grazing on communal grasslands.

There is often overlap between the dairy and meat production systems where sheep in lower areas compete with cattle for resources during winter.

Grain crop and livestock production are vital to the livelihoods of most farm households, but production and household incomes are low. Inadequate nutrition is the primary reason for poor livestock production.

Low energy and protein intakes cause low milk yields, extended calving intervals, low growth rates and high animal mortality. The challenge is to improve livestock nutrition without reducing grain production or compromising the condition of pastoral areas. Quality of existing feed resources must be increased through better agronomic management and investigation of opportunities to produce livestock feed from previously underutilised land is required.



## KEY FACTS

**ACIAR Project No.** LPS/2014/036

**Duration:** April 2016 to March 2020 (4 years)

**Target areas:** China

**Budget:** A\$1,535,620

### Project Leader

Dianne Mayberry, Commonwealth Scientific and Industrial Research Organisation (CSIRO)

### Key partners

- University of Queensland
- NSW Department of Primary Industries
- Tibet Academy of Agricultural and Animal Husbandry Sciences
- Lanzhou University

### ACIAR Research Program Manager

Dr Anna Okello

## Objective

**The project's overall aim is to improve the livelihoods of smallholder livestock farmers in the cropping and agro-pastoral areas of the central region by increasing dairy and sheep meat production.**

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

- Increase the quality and year-round availability of feed available for livestock.
- Produce recommendations on nutrition requirements and genetic suitability of local and improved livestock breeds for dairy and meat production.
- Evaluate the potential economic impacts and risks of proposed changes to farming systems.
- Identify potential pathways to adoption.

## Expected scientific results

- Provision of new knowledge on nutritional requirements and production potential of local and improved breeds of livestock, enabling the selection of animal genetics appropriate for their production system based on feed requirements/availability and production goals.
- Evaluation of new forage species in the Tibet Autonomous Region and Australia to increase knowledge base on several pasture species that are relatively unknown in international agriculture.
- Development of farming systems and management strategies to fill local and seasonal feed and nutrient gaps, creating benefits for livestock nutrition and productivity.
- Integrated data on forage, dairy and sheep meat production to enable evaluation of the whole production system, including trade-offs between different breeds, animal products (milk v meat), and potentially environmental factors and sustainability.

## Expected outcomes

- Increased forage production.
- Increased knowledge of nutritional requirements and genetic potential of available cattle and sheep breeds.
- Increased and more efficient production of dairy and meat products.
- Improved household food security and incomes.
- Increased quality and availability of livestock feed from underutilised land and existing forage production areas.

