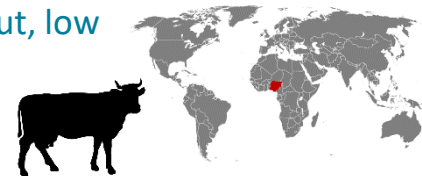


# Improving dairy production in northern Nigeria

Most milk in northern Nigeria is produced by cattle in low input, low yielding systems. Dairy productivity can be increased by feeding better quality diets.



This factsheet uses production systems from Katsina Province as an example of how milk yields and income from dairy production can be improved in northern Nigeria.

## Current production systems

Most milk is produced for home consumption by indigenous cattle kept by pastoralists. Cattle are kept in large herds and graze on natural pasture managed in a traditional pastoral system. In the dry season cattle are fed purchased crop residues. Excess milk is sold at local markets.



## Issues limiting milk production

### Animal genetics

Local cattle breeds have low milk yields

### Low quality feed

Diets are based on perennial grasses and crop residues

### High animal mortality & low reproduction rates

Largely caused by disease & inadequate nutrition

## Modelled baseline household

- 60 Bunaji cattle (local breed) + their offspring
- Calves weaned at 4 months, and cows milked for up to 9 months
- Cows graze pastures dominated by tropical tussock perennial grasses
- Baseline mortality is 17%

## Modelled intervention to increase production

Interventions are limited as nutrition and feed constraints in this region limit introduction of Friesian crossbreds or improved feeds such as concentrates

### Improved pasture

Cows fed improved pasture by oversowing natural pasture with a legume (e.g. *Stylosanthes* sp.)

## Using models to understand potential impacts

Bio-economic models can be used to simulate and understand the potential effects of changes to production systems. A baseline simulation is created to match current production systems, and different interventions are tested.

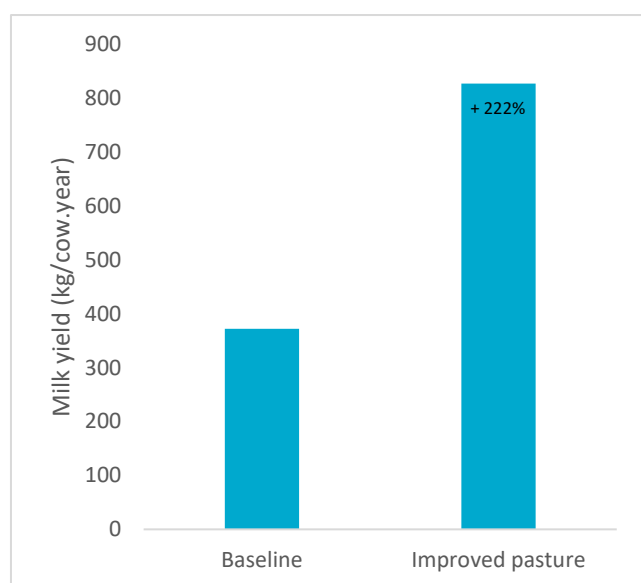
Models show what *could* happen, not what *will* happen, so results need to be interpreted with caution.

For more information: McDonald et al. (2019) *Agricultural Systems*. 176, 102659.

## An intervention can increase production

Modelled impacts of an intervention to dairy production systems in Katsina Province, north Nigeria.

	Herd size (head)	Number of births per year	Number animals sold per year	Adult mortality (%)	Inter-calving interval (m)	Milk yield (kg/cow.year)
Baseline	60	15	9	17	16	372
Improved pasture	70	23	13	13	15	827



Modelling of an intervention shows milk yield can be increased when cattle are fed higher quality diets.

### Key messages

There are limited opportunities to increase milk yields in these extensive grazing systems.

Improved breeds such as Friesian cattle and their crossbreeds are unsuitable due to the low availability and quality of local feed resources.

Milk yields can be increased by oversowing native pasture with a legume to increase diet quality.

This work was funded by the Bill and Melinda Gates Foundation (Project OPP1134229, Supporting Evidence-Based Interventions to Achieve Agricultural Development Goals [SEBI] LiveGAPS 2).

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