

# Safe Food, Fair Food, Tanzania: Rapid assessment report 2014

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# Contents

1. Dairy value chain of Tanzania
2. Site selection & studies
3. Value chain map
4. Situational policy review
5. What hazards are present?
6. Big questions
7. Advice for Value Chain Managers

## Tanzania

- 46 million people: 80% depend on agriculture
- 40% of farm households keep livestock and 72% keep cattle
- Poverty: 89% extreme poor
- Health
- Global Gender Gap: 46 out of 135
- Transparency International: 102 out of 176
- Climate Change Vulnerability

## Dairy value chain in Tanzania

- 22 million cattle, 700,000 dairy cattle
- There is low acceptance of exotic dairy cattle crosses
- Total milk production estimated at 1.8 billion litres
- Milk projected to increase to 2.25 billion litres in 2015
- Per capita consumption – 45 litres/person/year (2011)

## Site selection

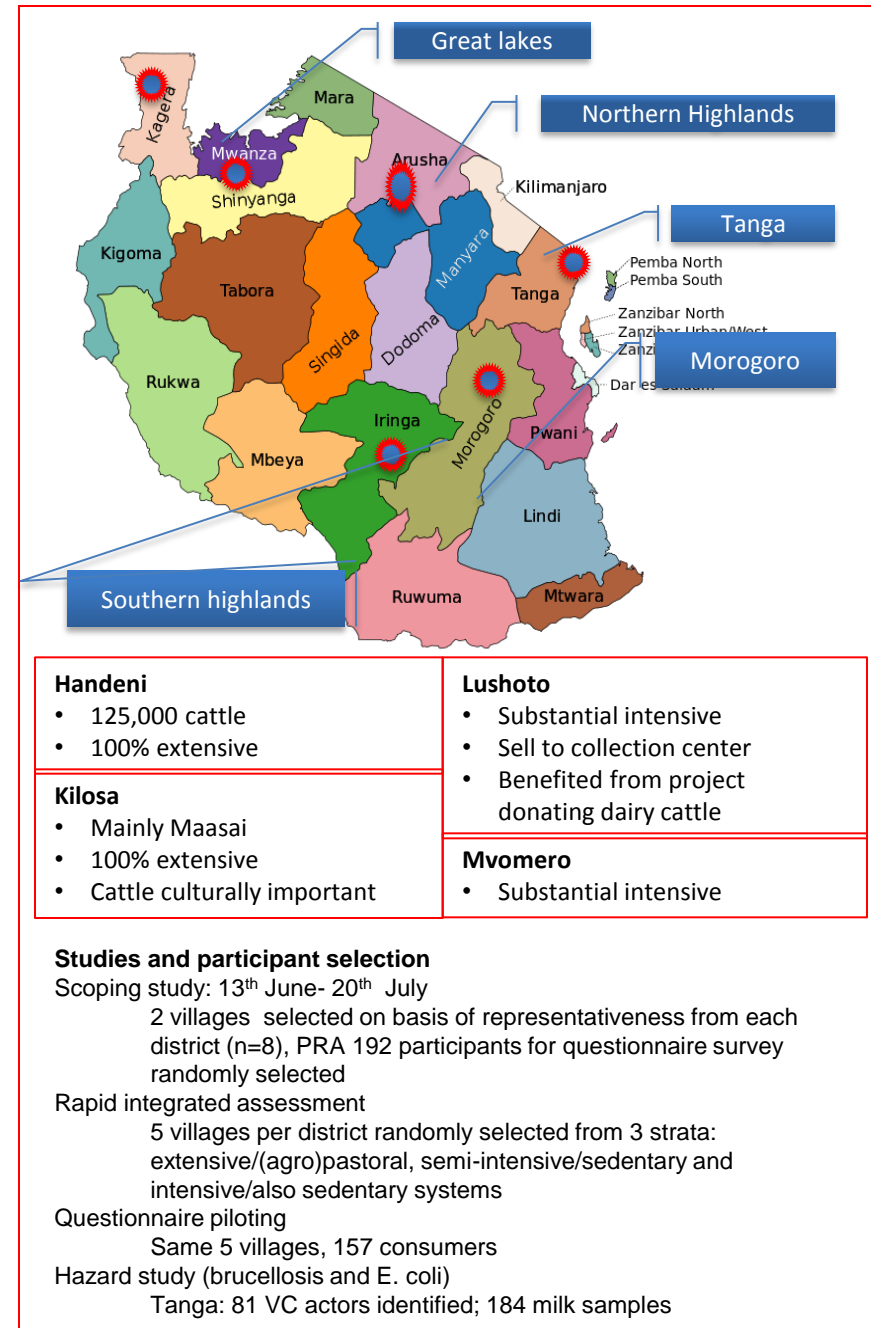
### Region selection

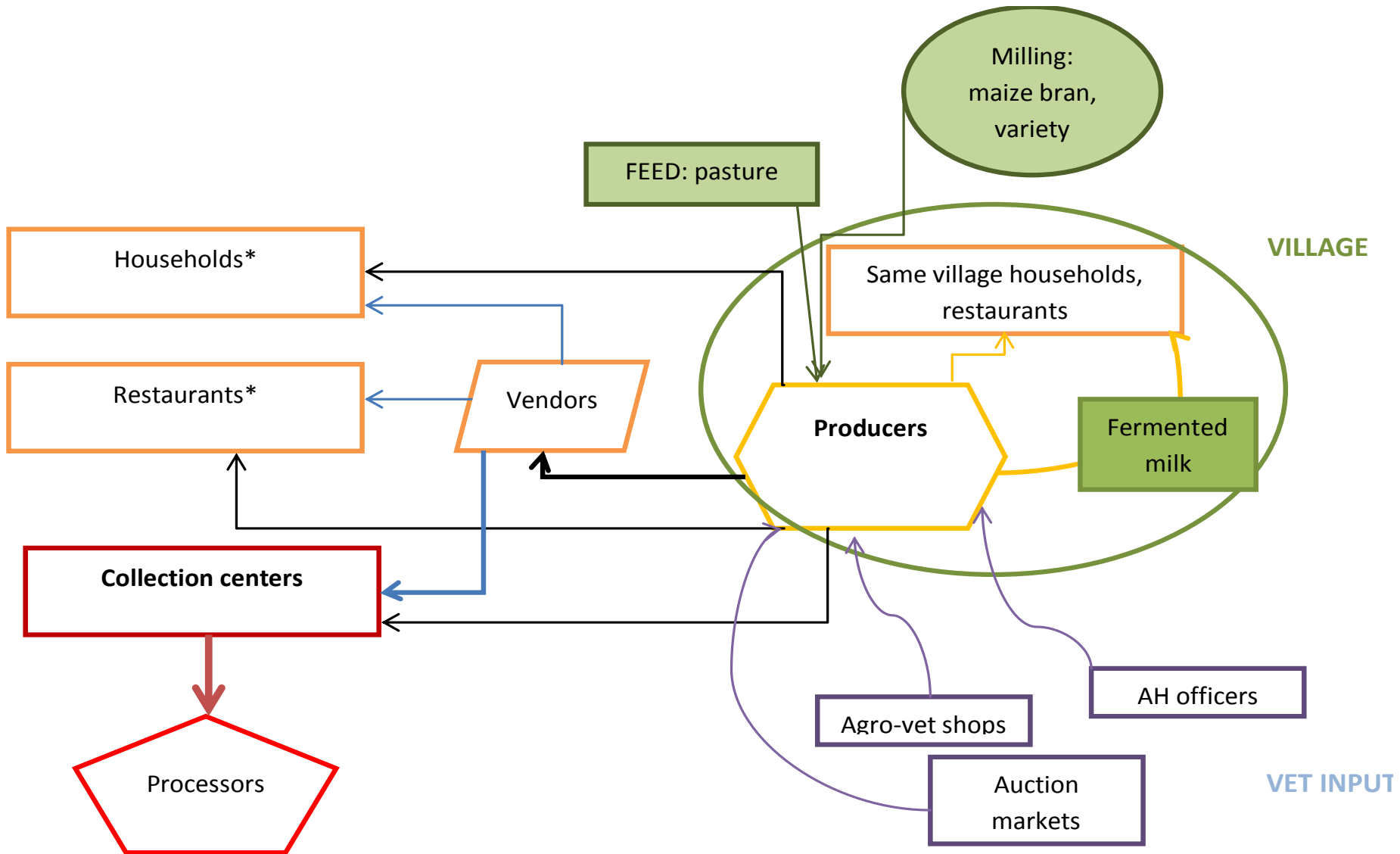
- 5 major milk-sheds identified (see map)
- After scoping visits and expert consultation, 2 study sites identified: Morogoro & Tanga

### District selection

Criteria: type of chain, dairy farming practices, milk collection centres, seasonality effects, and agro-ecosystems.

	Rural to Rural	Rural to Urban
Tanga	Handeni	Lushoto
Morogoro	Kilosa	Mvomero





## Situational Analysis Policy

### Importance of the informal sector

- 86% of milk consumed comes direct from the farm
- A few commercial milk processing plants;
- These operate 31% capacity

### Key stakeholders

- Tanzania Dairy Board formed 2006
- Industry groups: Tanzania milk Producers Associate (TAMPA); Tanzania Milk Producers Associate (TAMPRODA)

### Policy Framework

- Food safety control under TFDA
- Several other agencies involved, and some coordination problems
- LGAs responsible for enforcement
- No formal food safety surveillance system
  - TFDA conducting pilot in 17 districts of Dodoma, Singida & Manyara

### Lack effective control

- National inspectorate around 50 people; LGA AROUND 500
- Inspection focuses on formal and export sector
  - 100% formal milk collection plants inspected each year
  - 40% of informal eateries inspected each year
- Limited laboratory capacity and few samples done
- Little or no quality control in laboratories
- Traceability ratified by govt but still under development

### Need for capacity development

- Quantitative risk assessment methods not used

### Development and evolution

- Increasing public concern over food safety
- Media playing a more important role

## Systematic Literature Review

### (Preliminary findings)

201 papers/reports included in the review (129 full papers accessed) 21 hazards (foodborne and direct zoonoses) covered (incl. mastitis) Including literature from 1960's till present

Most literature focused on three main conditions:

- Trypanosomiasis (54 papers) – no milk-borne
- Tuberculosis (34 papers)
- Brucellosis (27 papers)

Other milk safety related literature:

- Mastitis – 8 papers
- Residues – 3 papers (2 antibiotic residues)
- Milk quality – 3 papers

### Preliminary findings:

#### ❖ **Brucellosis**

Most studies conducted <1990; also 2000  
Animal prevalence ranging 5-15%  
One study found 30% of milk samples (various herds) positive for *Brucella*

#### ❖ **Tuberculosis**

Most studies conducted in the 2000's  
Herd prevalence ranging 10-20%

#### ❖ **Milk quality**

Most studies conducted in the 2000's  
Coliform tests in bulk milk – 70-80% positive  
Milk adulteration – 20%

## Key questions and best answers

What is the role of dairy products in diets?

- Until 1995 one major parastatal – Tanzania Dairies LTD (7 processing plants)
- After privatisation commercial milk processing plants established
- These operate at 20-75% capacity – processing 31.3% of milk
- Milk consumption: Increased by 130% over the last decade
- Main form of dairy consumed – raw milk

### Food safety

What are the main hazards likely to be present in the ASF food value chain?

What risks do these hazards pose to value chain actors?

### Food and nutrition security

What is the role of the ASF food in question in diets of poor farmers and consumers?

What is the relationship between livestock keeping and livestock eating?

### Combined food safety and nutritional issues

How does nutritional quality and food safety change along the value chain?

What are trade-offs (e.g. boiling, fermenting may increase safety but decrease nutrition)?

Are there trade-offs, synergies, between feeds and foods (especially fishmeal but also fodder, dual purpose crops, sweet potato for pigs and people etc)?

How do the different ASF VC compare in meeting nutrition and safety needs?

How is VC development (lengthening, complexity, adding value, processing, etc) likely to affect nutrition and food safety?

### Social and gender determinants of health and nutrition

Who gets the nutritional benefits and bears the health risks of ASF? How do gender roles and poverty influence health and nutrition risks?

How do cultural practices affecting health and nutrition risks (consumption raw food, withholding food during illness)

### Trends and possible interventions

How could investments enhance consumption of nutrients and decrease risks?

## FOOD SAFETY

### • Main hazards

- Diarrhoea cases (contributed by E. Coli)
- Tuberculosis, Brucellosis, Anthrax,
- Antimicrobial residues and resistance, Salmonellosis, and
- Campylobacteriosis

### • Risks to VC actors

#### – Occupational hazards (farm level)

#### – Food consumption related hazards

True possibility of foodborne pathogens present in milk

Boiling very common / Pasteurization uncommon

Milk storage at household can increase risk - no cold chain

Fermented milk frequent consumption (but some knowledge of associated risks)

## FOOD AND NUTRITION SECURITY

### • Role of milk in diets of poor farmers and consumers?

- Sub-Saharan Africa: ASF 5-10% of diet
- Availability dependent on:
  - ✓ Season (impact on productivity)
  - ✓ Income (affordability)
- Possible exclusion of poorer consumers certain times of year
- Substitutes not available

### • Relationship between livestock keeping and livestock eating?

- Livestock is one of the banking form
- Symbol of wealth and security
- **Hard for the pastoralists to slaughter for home consumption.**
- Main eating – staple (maize, rice, wheat, barley, potato, + others)
- Protein: Milk, eggs, fish, beans/pulses

## COMBINED FOOD SAFETY AND NUTRITION

### Nutritional quality / food safety changes along VC

No nutritional enhancement - limited milk processing

Foodborne hazards likely present:

Potential contamination during production/processing

No cold chain and long distance (production to consumption)

No treatment available to control chemical hazards.

Foodborne risk only reduced through boiling

### • Trade-offs, synergies, between feeds and milk

- Addition of water can happen at any level along the food chain
- Clean water and contaminated milk, the **pathogen load** is diluted and **nutritional content** decreased
- Clean water and non-contaminated milk, the nutritional content decreases and there is no food safety issue.
- Contaminated water added to non-contaminated milk – contamination occurs and nutritional content decreases. If dirty water is added to milk already contaminated – Increase in contamination, while the nutritional content decreases
- Biological sampling to confirm 1) milk adulteration, and 2) whether the adulteration causes (further) contamination of the product and would therefore constitute a potential food safety hazard for consumers.

### Impact of VC development on nutrition and safety

**Increased productivity** → **enhanced nutrition**  
(change milk composition; increased income of farmers so access to more diversified diet)

**Increased efficiency in production** → increase supply but unlikely decreased of price (growing demand) = no improved access by the poorer

**Improved management at farm** → improved food safety

**More processing** → little demand – need to encourage demand to increase access to more nutritional and stable food products

**Improved quality** → consumers appreciate quality and willing to pay for quality

**More collection centres and processor** → potential to ensure constant and quality demand

## SOCIAL AND GENDER DETERMINANTS OF HEALTH AND NUTRITION

### • **Who gets nutritional benefit and bears the health risks**

- Only preferential feeding of milk to pregnant women
- Limited access to milk by poorer people (mainly dry season).
- Poorer people engage in more risky practices (storing milk under inadequate conditions for long periods)

## CULTURAL PRACTICES AND IMPACT ON HEALTH AND NUTRITION

- Women more involved in selling/processing – greater benefits to this group from increased production

## TRENDS AND POSSIBLE INTERVENTIONS

### FARM

- Improved husbandry and feed management
- Improved disease management
- Awareness raising, training
- Land use management, diversification
- Incentives/disincentives for production of safe milk
  
- Microfinance
  - Heat-resistant breeds
  - Drought resistance crops

### SERVICES

- Improve access to extension services

### MARKETS

- Quality assurance systems suitable for local markets (potential for innovation)
- Improve market access
- Facilitate contracts between suppliers and buyers