Traditional livestock systems in Tanzania

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Study setup
Objective

• Assess traditional livestock systems in Tanzania using the TEEB AgriFood Framework
  1. Systems as they are today
  2. Technical improvements
  3. Livestock policy
Scope: focus on three systems as they are now and potential technical improvements

Smallholder dairy in the Southern Highlands
- 97% of national milk supply

Backyard poultry in rural Tanzania
- 70% of rural supply, 20% of urban supply

Pastoralist livestock systems Maasai steppe
- 90% of country’s cattle herds
Methods

- Qualitative assessment
- Monetary assessment
  - Value chain model
  - Household economy model
  - Biophysical herd model
  - Ecosystem services model (pastoralism)
- Literature review
- Economic
- Environmental
- Social and Human
System descriptions
Smallholder dairy system

- Traditional smallholder dairy farms are the backbone of the dairy industry.
  - Commercial dairy activities in the country are at an infancy stage with 3% of the milk to the formal markets
  - Artificial Insemination (AI) is practiced by only by few farmers
  - Use of inputs is minimal
- The Zebu is the most widespread cattle breed in the nation and dominates milk production.
- Diary is mainly located in the highlands
- Milk is sold raw in local market via middlemen
- Crop production is an integral part in the dairy system as animals feed on crop residues
Backyard poultry system

- Most common poultry system in the country
- Generally kept by the rural poor and managed by women and children
  - Average 30 birds per household
- Important for the rural household economy, supplying high quality nutrition, and financial income
  - Eggs are usually hatched or sometimes eaten
  - Meat is sold via middlemen to markets in rural centres
- Feed exclusively on food scraps
  - No costs
  - No environmental impacts for feed production
- Contribution to woman empowerment
- Chicken consumption is lower than other African countries.
- Risks for human health are not well understood
Pastoralist cattle system

- Tanzania has the third largest cattle population in Africa
- Located in North of the country
- Cattle is dominant, also goats, sheep
- Livestock are mainly kept for subsistence, storage of wealth and cash earnings.
- Fed almost exclusively on grassland grazing
- Traditional roles and labour division
- Potential to improve animal health to increase yield and climate impact
- Practiced in areas characterized by poor soils and insufficient rainfall
- Competing for space with sedentary farming
  - Land degradation
  - Closure of wildlife corridors
Short value chains

- Few and local inputs
- Final markets are local
- Low natural capital impacts in chains, besides GHG
- Relatively high margin for households
Potential technical improvements
Improvements choice: feasibility and sustainability

• Same scale
• Higher yield
• Increased use of inputs
• Improved breeds
• Improved access to knowledge
Smallholder dairy: Transition to commercial system promises high positive impact on climate and income

- The same herd of 5 cows can potentially increase yield 10-fold
- Increased feed and water rations and medicines
- Artificial insemination
**Backyard poultry: Potential impact of technical improvements is small but positive**

- Small addition of purchased feed improves slaughter weight
- Fences to improve health conditions

![Climate Impact of Flock](chart1)

![Contributions to Climate Impact of product](chart2)

![Household income from backyard poultry: baseline and improved ($/year)](chart3)
**Pastoralist cattle system:** Technical improvements can improve both climate impact and income

- Less feed of better quality
- Improved animal health through use of medicine
- More animals slaughtered with the same herd size
Policy implications
Policy focus areas for improvement of traditional livestock systems

• Make inputs and infrastructures available
  • Feed quality
  • Artificial insemination
  • Animal health
  • Fodder for dry season
  • Milk processing and distribution
  • Cooperatives

• Strengthen knowledge services
  • Increase resources for extension services
  • Create awareness of good practices related to input use
  • Prevent intensification beyond carrying capacity of ecosystems
The framework allows to identify the potential pitfalls of livestock development policy

- Risk of losing local side-benefits with commercial scale only
  - Income of the poor, women empowerment, waste, tourism
- Overuse of inputs
  - Increase both access and knowledge
  - Link agri-subsidies to environmental requirements
- Overgrazing
  - If it becomes profitable everybody starts doing it
  - Sustainable intensification to protect water and ecosystem quality
- Incentives: Short- vs long-term, local vs global
  - Yields vs Local benefits for poor households, ecosystem services
  - Local chains for agri-inputs
  - Payments for Ecosystem Service
- Institutional barriers to pastoralism development
  - Link livestock policy with land policy
  - Link livestock policy and education policy
Thank you

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