Traditional livestock systems in Tanzania

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Content

• Study setup
• Some findings
• Lessons learnt
Study setup
Objective

• Use the TEEB AgriFood Framework to assess traditional livestock systems in Tanzania
  
  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
- Literature review

Monetary assessment
- Value chain model
- Household economy model
- Biophysical herd model
- Ecosystem services model (pastoralism)

Economic

Environmental

Social and Human
Economic modelling

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

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Environmental modelling

- Qualitative assessment
- Monetary assessment
- Value chain model
- Household economy model
- Biophysical herd model
- Ecosystem services model (pastoralism)
- Economic
- Environmental
- Social and Human
- Literature review
Assessment of technical improvement based on literature, economic and biophysical herd models

- Qualitative assessment
- Monetary assessment
- Value chain model
- Household economy model
- Literature review
- Biophysical herd model
- Ecosystem services model (pastoralism)
- Economic
- Environmental
- Social and Human
Ecosystem services model brings natural capital valuation in value chain perspective

- Qualitative assessment
- Monetary assessment
- Literature review

- Value chain model
- Household economy model
- GLEAM herd model
- Ecosystem services model (pastoralism)

- Economic
- Environmental
- Social and Human

Pastoralism's contribution to ES as a positive externality of food production

Ecosystem services of pastoralism in the Serengeti Plains
- Annual income (2014-2016)
Pastoralism’s contribution to ES as a positive externality of food production.

Ecosystem services of pastoralism in the Maasai Steppe per kg of produced meat ($/kg beef)

- Carbon storage (high, medium, low)
  - High: $7.73
  - Medium: $4.00
  - Low: $2.03

- Land degradation prevention: $0.52

- Contribution to tourism: $0.35

Retail price ($/kg beef): $2.93
Some findings
Key problems in the systems analysed are in produced capital but all link to others

- **Low productivity**
  - Low access to inputs and insufficient income

- **Low animal health**
  - Low yields and potential impacts on human health

- **Little infrastructure**
  - Insufficient extension service, underdeveloped milk value chain

- **Relatively high impact on climate change**
  - External cost of GHG up to 3 times retail price

- **Pastoralism and development trends**
  - Expansion of sedentary farming, land tenure issues and low schooling rates
Benefits beyond food are identified across the four capitals

- **Household income**: Income and savings value for poor households
- **Use of agricultural and food waste**: Manure as an important reason to keep livestock
- **Woman empowerment**: Backyard poultry is usually managed by women
- **Short value chains = low natural capital impacts**: Land use and biodiversity, water pollution
- **Ecosystem services of pastoralism**: Carbon storage, land degradation prevention and a contribution to tourism
Lessons learnt
Lessons learnt in using the framework

**Benefits**
- Clear view on technical improvements
  - Win-win for climate & income in cattle systems
  - Forces you to identify side-effects
- Trade-offs and potential pitfalls of livestock development policy become visible
  - Risk of losing local benefits
  - Overuse of inputs
  - Overgrazing
  - Incentives: Short- vs long-term, local vs global
  - Institutional barriers to pastoralism development

**Challenges**
- Data
  - Too much & Too little
  - Too early?
- Synthesis
  - Mediate between perspectives (agronomist, sociologist, environmentalist...)
  - Framing the question
  - Messaging of results

Thank you

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