Dairy sustainability assessment tool

Sustainability assessment of East African dairy

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Background and aim

Understanding sustainability of dairy in East Africa - the story of the blind men and the elephant

Focusing on one area is not enough, different aspects contribute to sustainability

Outline

- Aim and methodology
- Description of tool
- Results Uganda workshop (Asaah Ndambi)
- Next steps

Aim

Develop and test a tool that facilitates constructive discussions on the people-planet-profit sustainability of dairy development in East Africa, helping stakeholders to:

1. **Identify the main threats to sustainability**
2. **Score the current performance of the dairy system(s)**
3. **Generate further discussions on pathways and actions on how dairy can generate *healthy diets, income & livelihoods, and a sustainable resource base***

How the sustainable dairy scorecard was developed

a. Overview of potential threats to dairy sustainability (DPSIR method)
b. Selected key sustainability aspects, with people, profit and planet angles
c. Defined relevant system scales: farm, region/cluster and sector/national level
d. Multiple rounds steering committee input (LNV, DGIS, PLB, NFP, WU)
e. Selected indicators for sustainability aspects, across system scales, based on previous studies: RISE, SAFA, PG, IDEA and TAPE tools (Ndambi et al., 2020; Mottet et al., 2020).
e. Developed four score levels per indicator
f. Finalized the draft scorecard and a short user manual
g. Pilots to test the tool in Uganda and Ethiopia (ongoing)
h. Present results in a stakeholder discussion in the Netherlands (Dec ‘21)
i. Revision and publication (Jan ’22)

Key sustainability aspects

Aspect	Dimensions		
Soil health	●		
Water management	●	●	●
Biodiversity	●		●
Resource use and environmental impact	●	●	
Animal welfare		●	●
One health & human nutrition impact		●	●
Livelihood opportunities and working conditions in dairy sector		●	●
Dairy farmers “Voice” in decision making		●	●
Enabling environment / institutional support	●	●	●
Access to production factors		●	●
Access to markets			●
Productivity/ contribution to livelihood		●	●
Self-sufficiency		●	
Feed-food competition	●	●	

Use of the tool in stakeholder workshop

1. Define scope

a. Agree on assessment **level: farm, regional, or national**

b. Define **geographic and agricultural boundaries**

General information:

User's name:	xxx
Country of assessment:	xxx
Region of assessment:	xxx
Date & time of assessment:	30/11/2021 12:21

Level of assessment:

- ☐ Farm level
- ☐ Regional level
- ☐ National level

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2. Small groups to preselect aspects and indicators

3. Plenary discussion to select 6-10 aspects & indicators

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Aspects	Indicators			
Soil health	☐ >> Soil organic matter << What is the trend in soil organic matter, as evidenced by one or more of the following paramers: test results, soil colour, soil aggregation, water retention (run-off), etc.?	•		
	☐ >> Soil acidification << Increment in soil acidity (higher acidity means lower pH).	•		
	☐ >> Soil erosion << How serious is evidence of soil erosion?	•		
	☐ >> Soil compaction << How serious is soil compaction? (in-situ soil density)?	•		
Water management	☐ >> Agricultural water availability << (quantity: ground water, surface water (rivers, streams, irrigation ditches), rainwater storage...)	•		
	☐ >> Water quality << How severe are issues with quality of water given to the cattle? Salinity (EC >8 dS/m), contamination	•		•
	☐ >> Social conflicts over water << Does water scarcity result in conflicts between (dairy and other) farmers or between farmers and other parties)?	•	•	•
Biodiversity	☐ >> Agro-biodiversity << How many species and varieties of livestock, crops, and trees are held on farm, and how much genetic diversity do these have?	•		•
	☐ >> Biodiversity loss in the landscape << Is there decrease of natural habitat/grazing lands/natural forest due to use of agro-chemicals and/or deforestation?	•		

4. Individual scoring of indicators

5. Plenary discussion on scores

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Deselect

Aspects	Indicators	Scoring level
Soil health	>> Soil organic matter << What is the trend in soil organic matter, as evidenced by one opr more of the following paramers: test results, soil colour, soil aggregation, water retention (run-off), etc.?	☑ High soil organic matter loss per year
		☐ Medium soil organic matter loss per year
		☐ Low soil organic matter loss per year
		☐ Increase in SOM per year
	>> Soil acidification << Increment in soil acidity (higher acidity means lower pH).	☐ High rate of acidification (pH dropping quickly)
		☑ Medium rate of acidification
		☐ Low or no acidification
		☐ pH is improving
	>> Soil erosion << How serious is evidence of soil erosion?	☐ Severe erosion, increase of gullies, loss of topsoil
		☐ Moderate erosion, signs of erosion, high risk of erosion
		☑ Low erosion, few signs of erosion, low risk of erosion
		☐ No visible signs of erosion
	>> Soil compaction << How serious is soil compaction? (in-situ soil density)?	☐ Heavily compacted soil - Topsoil and Subsoil compaction
		☐ Compacted soil - Subsoil compaction
		☐ Compacted soil - Topsoil compaction
		☑ No compaction - flagpole test: flagpole can penetrate all the way into the soil
Water management	>> Agricultural water availability << (quantity: ground water, surface water (rivers, streams, irrigation ditches), rainwater storage...)	☐ Agricultural water shortages or flooding are increasing severely or are severely hampering farming
		☐ Significant issues with water availability during some parts of the year
		☑ Some issues with water availability - during some parts of the year
		☐ No water availability issues affecting farming
	>> Water quality << How severe are issues with quality of water given to the cattle? Salinity (EC >8 dS/m), contamination	☐ Heavy issues with water quality
		☑ Some issues with water quality
		☐ Few issues with agricultural water quality
		☐ No issues with agricultural water quality
	>> Social conflicts over water << Does water scarcity result in conflects between (dairy and other) farmers or between farmers and other parties)?	☑ Severe water-related conflicts
		☐ Some water-related conflicts
		☐ Minor water-related conflicts
		☐ No water-related conflicts

6. Discuss results

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Aspect	Scores at Regional level - Country: xxx - Region: :
Soil health	50
Water management	33
Livelihood opportunities and working	78
Enabling environment / institutional	67
Access to production factors	50
Access to markets	67

Dimensions	Number of selected indicators	Average Score
->Planet (environmental dimension)<-	7	43
->People (social dimension)<-	10	63
->Profit (economic dimension)<-	14	57

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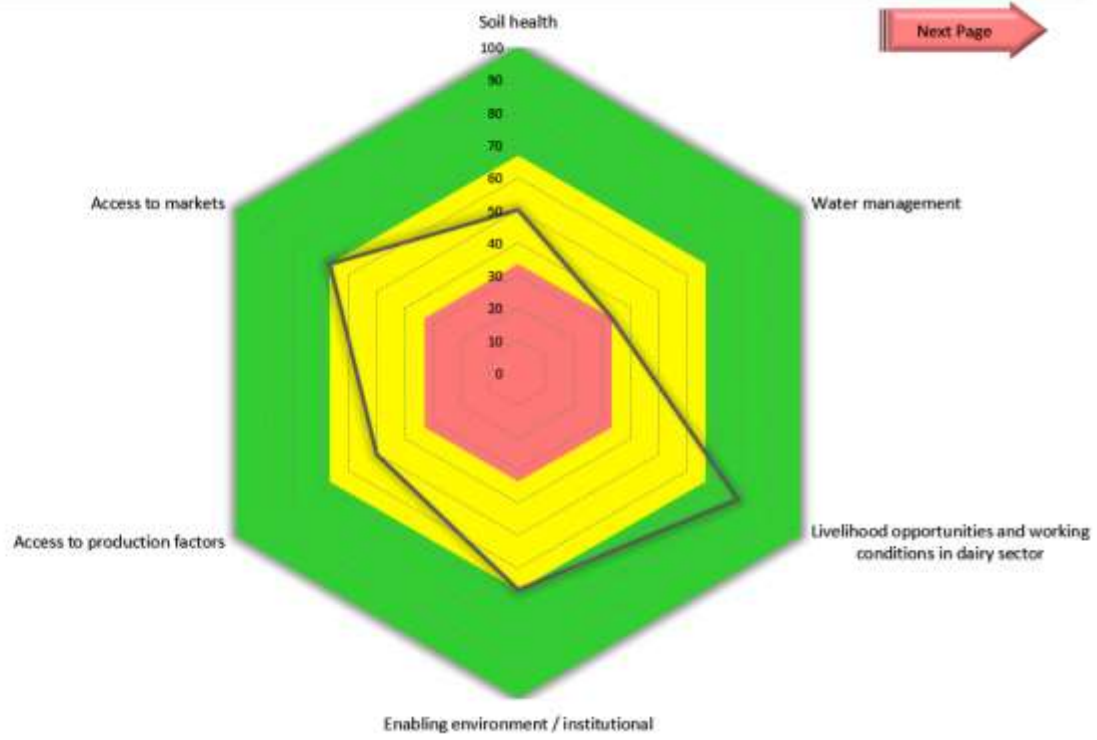

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Dairy sustainabity assessment tool

Sustainability assessment of East African dairy

Tool testing experience in Uganda

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OUTLINE

- Workshop approach
- Test results
- Recommendations for future development and application of the tool

Workshop approach

In order to test the sustainability scorecard, a four-step workshop approach was designed:

1 – Introduction and purpose of the workshop

2 – Selection of level, system boundaries, aspects and indicators

3 – Scoring of indicators

4 – Presentation of results and discussions

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Selection of aspects and indicators

a. Plenary: Agreed to focus on work on
   - Dairy in Southwestern Uganda
   - Farming system of the typical grazing dairy farm with minimal feed supplementation

b. Groups of 2-3 persons: discussing and prioritizing the aspects - selecting the top 10 from 14 aspects.

c. Summing up: An excel support tool was used to record the selections from all groups. Sums were calculated and the top 10 areas were retained.

d. Timing: Due to time restriction, it was challenging to select (and agree on) the indicators to work on from selected aspects. It was agreed that all indicators for selected aspects be considered.

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Scoring of indicators

Scoring was done individually on a printed scorecard

Results of individual scores were entered into an Excel aggregation tool which generated the average (rounded) score per indicator.

Entries were made into the scorecard to display the results.

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Results

Selected aspects

Aspect	Scores at Regional level - Country: Uganda - Regi
Soil health	50
Water management	22
Resource use & environmental impact	33
One health and human nutrition impact	33
Livelihood opportunities and working	0
Voice in decision making at different	33
Enabling environment / institutional	59
Access to production factors	42
Access to markets	50
Productivity/contribution to livelihood	33

Dimensions	Number of selected indicators	Average Score
->Planet (environmental dimension)<-	13	38
->People (social dimension)<-	22	32
->Profit (economic dimension)<-	25	33

Total selected

- 10 aspects
- 34 indicators

Dropped aspects:

- Biodiversity
- Animal welfare
- Self sufficiency
- Food-feed competition

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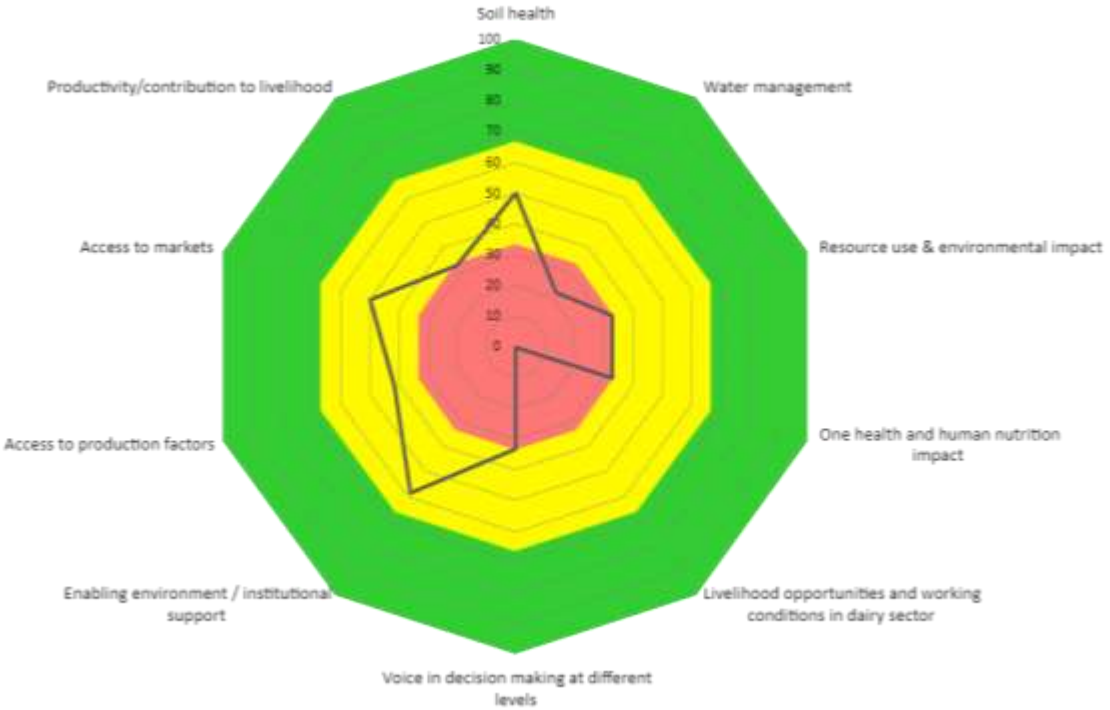
Summary: average scores from 14 participants



- None of the 10 aspects was scored as extremely good
- Top 3 scores were: enabling environment/ institutional support, access to markets and soil health
- Bottom 2 scores were: Livelihood opportunities & working conditions, and water management

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Observations and recommendations

- Very good stimulant for discussion on 3P sustainability
- Tool for high-level discussions vs. expectations from practitioners
- The process of choosing #aspects & #indicators could be very time consuming, especially for groups of diverse background – there is a tendency of 'everything being important'
- Trade-off between customization to local situation and international comparability
- Good suggestions for improvements

How participants would like to use the tool

- Credit institutions: A fantastic tool for prioritizing and developing loan packages for farmers
- Cooperatives: An on-the-ground approach for supporting farmers by addressing their most limiting needs
- Extension workers: Prioritizing in selecting training and extension material for farmers
- Universities: Good material to expose students to having a more practical approach in sustainability thinking

Next steps (Jan)

Potential next steps

How could such a tool help you, in your context?

1. Perfecting the tool - for general audience use

- Streamlining the number of indicators
- Giving space for additional aspect(s) and indicators
- Reviewing terminology to improve comprehension/tutorials
- Review scoring levels for number of indicators
- More tests
- From one-day workshop to format with more discussion time
- Develop tool as first-step in vision building, ambition setting
- Web-based version (with offline option)

Potential next steps (2)

2. Using tool to feed discussions on sustainability in region (various levels & stakeholder types): vision building, programming, intervention design, impact monitoring

- Processors – more emphasis on supply chain issues
- Financial service providers – design financial products
- Research & extension – as agenda setting tool
- NGOs/development agencies and international organizations – strategy development / design dairy interventions
- Dairy policy trajectories – e.g. with national governments, regions in Ethiopia, counties in Kenya

Thank you very much for your attention !!!

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