WHAT MAKES ORGANIC LIVESTOCK PRODUCTION SUSTAINABLE

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AGENDA

1. To know what makes organic livestock production sustainable we need a way to assess sustainability.

2. General problems with assessment

3. Development of a methodology including a tool.
TO BE ABLE TO ASSESS WHAT IS SUSTAINABLE, THE FOLLOWING QUESTIONS HAVE TO BE ADDRESSED

A. We need to know and agree on what we understand by sustainability
B. We need to know and agree on the goal of the assessment, who is the user?
C. We need to know and agree on what to measure and how precise (this is dependent of the objective, B)
D. We need to know and agree on how to validate or score (dependent on B and C)

We need to identify and be in constant dialogue with the stakeholders.
WHAT IS SUSTAINABLE (LIVESTOCK) PRODUCTION

SAFA, sustainability assessment of food and agricultural systems. FAO took initiative to evaluate and suggest a framework and describe this as a protocol.
Confusion on wordings (dimensions (issues), themes (subthemes)).

Dimensions (issues):
Environment .......................................................... Integrity
Economy ......................................................................... Resilience
Society ........................................................................... Social well being
Governance ................................................................. Good
H élèves... confusion,

Many use sustainable, only mean one dimension or two combined

Environmental sustainability: climate impact, pollution, nature, landscape, biodiversity

Economic sustainability: profit, robustness to calamity, low cost

Social sustainability: equity, fairness, animal welfare, human health, ethics, risks
WHO ARE THE USERS, WHAT IS THE GOAL, ?

Policy makers
- Environmental laws, regional planning
Consumers
- Quality, branding
Scientists
- Research based estimations
Industry
- Benchmarking, sales
Sector
- Advisory, development, lobby
Farmers
- Production, comparison
WHAT DOES THIS MEAN FOR MEASUREMENTS

Which indicators do we value highest (animal welfare, economy, social well being)
Weighting of parameters included in calculations (soil organic matter in climate impact )
Precision of measuring parameters (exact on-farm measurements, estimation, modelling)
Time span (real-time, average, one year, 3 years)

Dialogue

It is really confusing!!!
STATE OF THE ART

General demand for sustainable products by society,

Industry is starting up, focusing on certain disciplines like climate, animal welfare, using commercial scientific service centers. Paying for life cycle assessments, quality programs etc. Slowly addressing the total spectrum of sustainability

Government is asking (university, applied research) for impartial detailed documentation, until now only disciplinary. E.g. climate impact or eutrophication. Trade-offs is left for politicians

Farmers would like to know how to implement these criteria. How do they score?
IN RESPONSE, RESEARCH, ADVISORY AND INDUSTRY DECIDE TO DEVELOP A METHODOLOGY, STARTING WITH ORGANIC FARMING

Prerequisites
- Including all dimensions
- Overview and focus on details
- Documented
- Understandable, no black boxes
- International
- Adaptable (not top down)
- Reliable
- Online
RESPONSE INDUCING SUSTAINABILITY EVALUATION (RISE)

Farm tool, based on farm interviews and farm data has been annotated by FAO as one of the best tools available. Tested and under continuous development. 3 Dimensions, 10 indicators, parameters, calculations. Although governance is not explicitly mentioned, it is integrated. Web based, interface, benchmarking is possible. International, scientific, cooperation with CH, D, DK. Adaptable, uses regional data. Light, basic, detailed.
Each Indicator is quantified by measuring parameters.

FX_Nutrient flows
Nitrogen (N) balance
Phosphorous (P) balance
N and P self sufficiency
Ammonia volatilization
Disposal of wastes
## Nitrogen Balance

<table>
<thead>
<tr>
<th>Text</th>
<th>Unit</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nitrogen balance</td>
<td>Points</td>
<td>77</td>
</tr>
<tr>
<td>N-supply (fertilization)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N-supply: Animal husbandry</td>
<td>kg</td>
<td>30,217.1</td>
</tr>
<tr>
<td>N-supply: Animal husbandry (before storage and application losses)</td>
<td>kg</td>
<td>11,636.1</td>
</tr>
<tr>
<td>Region typical N-loss in bams and storage</td>
<td>%</td>
<td>20.0</td>
</tr>
<tr>
<td>Region typical N-loss in the distribution of organic manure</td>
<td>%</td>
<td>30.0</td>
</tr>
<tr>
<td>N-supply: Mineral fertilizers</td>
<td>kg</td>
<td>0.0</td>
</tr>
<tr>
<td>N-supply: Imported organic fertilizers</td>
<td>kg</td>
<td>2,526.0</td>
</tr>
<tr>
<td>N-supply: Fixation of legumes</td>
<td>kg</td>
<td>12,904.4</td>
</tr>
<tr>
<td>N-supply from the air</td>
<td>kg</td>
<td>3,095.8</td>
</tr>
<tr>
<td>N-demand crop production and export of organic fertilizers</td>
<td>kg</td>
<td>23,915.1</td>
</tr>
<tr>
<td>N-demand: Crop production</td>
<td>kg</td>
<td>23,915.1</td>
</tr>
<tr>
<td>N-demand: Export of organic fertilizers</td>
<td>kg</td>
<td>0.0</td>
</tr>
</tbody>
</table>

Detailed results of each crop can be found under the node "Crop production".

Detailed results of each animal category can be found under the node "Animal husbandry".

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Oudshoorn, assessing sustainable production

26 August 2014
RESULTS

Results are not yet presentable because there are some disturbing mistakes.

4 organic sectors are being analysed; dairy, pig, poultry, arable. 50 reports. Group of educated advisors is doing the data gathering on-farm, in active dialogue.

Industry (dairy, pork, egg, vegetables) would like to use results for customer (retail/consumer) information and for product quality check

Research would like to find correct ways of weighting, calculating and data gathering.

Projects presently involved:

- KØB, Kompetence Udvikling Økologis Bæredygtighed
- Autograinmilk (EU, FP 7). Økologi i Spor (GUDP)
ORGANIC DAIRY FARM, EXAMPLE

Soil use
Farm management
Animal husbandry
Economic viability
Nutrient flows
Quality of life
Water use
Working conditions
Energy & Climate
Biodiversity & Plant protection

Positive: Good performance
Critical: Further scrutiny recommended
Problematic: Need for action
Degree of sustainability

Oudshoorn, assessing sustainable production
SOME CHALLENGES, PARTLY BECAUSE OF INTERNATIONAL REFERENCE VALUES

Animal health, mutilations with seduction count high

Economy, debts, % of household expenses earned by the farm

Energy, biofuel not available in DK

How to value biodiversity (even though it is nationally adjusted)
WHAT MAKES ORGANIC LIVESTOCK SUSTAINABLE?

Active use of RISE, would provide

Documentation of sustainability indicators of all dimensions
Evaluation of strengths and weaknesses

Guidelines for production development and follow up.

Integrated communication of results to farmer and industry (retailer/consumer)
Thank you for your interest