QUELLE UTILITY POUR UN MODÈLE D'ÉVALUATION DES MULTIPLES FONCTIONS ET VALEURS DU PASTORALISME ?


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Colloque P2CG, Dakar, 23 Novembre 2017
Plan

1. Introduction
2. Why looking for a diversity of functions and values of Pastoralism?
3. Methodology
4. Result: A Conceptual Model on Multifunctionality (MCM) of Pastoralism
5. Usefullness and relevance of the MCM
6. Next steps
1. Introduction

- *Pastoralism*: Traditional and static system, Poor productivity, negative environmental impact, Poor people (1980-1990s)
- High resilience (2000s)
- Agroecological transition of agriculture (2010s)
- Not only productive function: Ecosystem services
- Multifunctionality of Pastoralism (Hervieu 2002) >>> GASL
GASL Action Network: Restoring values to grassland

“*To maintain, restore and enhance environmental and economic value of grasslands, while promoting their social and cultural functions globally*."

9 SDGs

7th Multi-Stakeholder Partnership (MSP) meeting, Addis Ababa, May 9th 2017
2. Why looking for Multifunctionality of Pastoralism?

- Individual functions of pastoralism:
2. Why looking for Multifunctionality of Pastoralism?

- Individual functions of pastoralism:

  - Increase income and Food Security

  - (Vigne 2013)
  - (Wane et al. 2016)
2. Why looking for Multifunctionality of Pastoralism?

**Opportunity for intensification**

![Graph showing variation in KG DM intake per TLU per day over different seasons]

(Lecomte et al. 2016)
2. Why looking for Multifunctionality of Pastoralism?

Derived Tier3 CH$_4$ emissions

\[ \sum_{i=1}^{365} (CH_4) g \ day^{-1} = 26.6 \ kg \ yr^{-1} \]

Tier 1 default EF = 46 kg yr$^{-1}$

SEM = Herd = 0.002; Seasons <0.000; HS <0.000

(Lecomte et al. 2016)

ILRI Seminar, Nairobi, 26th April 2017
2. Why looking for Multifunctionality of Pastoralism?

Global balance of GHG Emissions in Pastoral semi-arid Systems

<table>
<thead>
<tr>
<th>Source</th>
<th>Emissions (kt eq.CO2/an)</th>
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</thead>
<tbody>
<tr>
<td>Carbon stocks in pastoral ecosystems</td>
<td>62%</td>
</tr>
<tr>
<td>Fermentations entériques rumt CH4</td>
<td>37%</td>
</tr>
<tr>
<td>Fécès ruminants N2O</td>
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<tr>
<td>Fécès ruminants CH4</td>
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<tr>
<td>Fécès non ruminants N2O</td>
<td></td>
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<tr>
<td>Fécès non ruminants CH4</td>
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<tr>
<td>Motopompes</td>
<td></td>
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</tbody>
</table>

A Sink : Slight negative global balance of - 0.09 t eq.CO2/ha/an

(Assouma et al. 2016)
Design an integrated methodological framework for assessing the contribution of grassland systems to multiple functions and values in relation to the SDGs and test on ground

- Literature review : 2016
- Conceptual model : Participative approach (Montpellier May 2016, IRC Canada July 2016)
- Participative films : mid 2016 - 2017
- Test and develop with partners on the field (WS and pilot sites)
4. Result

A Conceptual Model to describe Multifunctionality of Pastoralism

4 dimensions

- Social point of view
- Production point of view
- Local development point of view
- Ecosystem services point of view
Conceptual Model with 4 dimensions: Detailed components and processes for each value set.
Conceptual Model: Contribution of livestock to the values

Social
Synergies and trade-offs?

Local development

Production

Ecosystem services

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Assess Social values

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Assess Production values
Assess local development values

Income

Competence

Activity

Role

Processor
Consumer
Producer
Distributor
Supplier
Breeder

Breed

Income

competences

requiredCompetences

nbLivestock

employee

employment

Operation

duration : double

cost : double

labourForce : double

Storage
Transportation
Purchase

Breeding
Transformation
Marketing

GDP

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Assess ecosystem values

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5. Usefullness and relevance of the MCM

Multifunctionality Conceptual Model

- Project Guidelines
- Simulation Model

Analysis framework
Simulation Model: Contribution of livestock to the values
6. Next steps

Next steps

• Improve the conceptual model: workshop, film, forum theatre

• Apply on pilot sites: surveys, modelling, interview......>>> interactions, synergies, trade-offs, indicators

• Finalise a generic conceptual model

• Develop applications: guidelines; analysis framework; simulation models

• Synthesis and communicate on multiple functions and values of grassland

• Document and website
Thank you