

5 th International Seminar on Cultural Integrated Landscape Management – Apheleia
Resilience and Transformation in the territories of low demographic density: integrated methodologies of human and social sciences

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Latin American Rangeland Dilemma

Nature Conservation VS Agribusiness Intensification



Livestock Farming and Local Development

Projeto NEXUS-Pampa



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General Aspects

- **Ecosystems**
- **Prairies:** Pampa, Llanos, Pantanal, Low Amazon River, Patagonia
- **Forests:** Cerrado, Caatinga, Atlantic Forest, Amazon Forest, Chaco

General Aspects

- **Livestock**

- 300 millions bovine heads
- Beef international market share around 40%
- Increasing dairy production



- **Social Challenges**

- heterogeneous access to animal products, migration, poverty zones and others

- **Environmental Challenges**

- Soil erosion, pastures degradation, climate change and others

Livestock in the Colonization Process of Eastern South America



1st Phase: 1600-1850

Atlantic border: Mata Atlantica & Pampa

Colonization by agriculture & livestock 'mining' systems (sugar cane, dairy, cattle breeding)

2nd Phase: 1850-1950

-Atlantic Forest & Pampa

Extensive farming systems (sugar, coffee, cocoa, cattle, sheep, dairy production)
-Progressive expansion to the centre of SA

3rd Phase: 1950-1970

-Cerrado and Chaco colonization by semi-intensive farming systems
-Progressive intensification in Atlantic border

4th Phase: 1970-2000

-South & Eastern Amazon colonization
-Intensification in Atlantic border & Cerrado

5th Phase: 2000 ...

-Intensification in Chaco & S-E Amazon
-Crops commodities in all biomes
-Increasing international demand for food and animal products



Main Drivers of Livestock Expansion in South America

- Great natural context for livestock: clima, natural ressources, ...
- Human resources: incentives for migrants, public policies implementation, ...
- Efficiency of farming systems: investment in research, opportunities, ...
- *Market opportunities: at local, regional, national and international scales*
 - (3 million tonnes beef 8 million tonnes at the global total)*
 - first supplier of beef and chicken meat in the international market*

Our research in 3 contrasted situations in South America

- They have been occupied by european settlers
 - by establishing livestock ,
 - displacing native inhabitants and
 - disrupting the ecological situations
- What are the differences ?
 - Different moment of colonisation
 - Different initial situations
 - Different ecological dynamics



Uruguayan pampas

Livestock was introduced before the settlement of Europeans 400 years ago.

Natural grasslands (ie. Campos) are among the highest productive

Campos have proven to be extremely resilient

Campos are being substituted by soybeans and eucaliptus



Argentinian Patagonia

Livestock was introduced with the settlement of Europeans 100-120 years ago.

Natural grasslands are among the less productive and vulnerable because of aridity.

Abandonment has been important in the last 30 years, because of exhaustion of grasslands.

Brazilian Amazonia

**Livestock was introduced with the settlement of
Brasilians in the last 50 years.**

**Natural grasslands are not present. Grasslands are
introduced after deforestation**

Social, environmental and politics stakes are huge.

The socio ecological stakes

Amazonia: Deforestation and associated prejudices:

hidrological changes, loss of biodiversity....

Pampas: substitution by annual or perennial crops, overstocking, loss of biodiversity, erosion, water pollution....

Patagonia: desertification, abandonment,

The societal responses

Amazonia: Enforcement respect of law

Pampas: New administrative arrangements:
National Board of Livestock Production on
Natural Pastures

Patagonia: New development model, respectful
of natural constraints.

Conclusions

Livestock production on pasture is one of the most important Human Nature Interaction in the East of South America

Learning has occurred and is providing new more friendly relationships

Stakes are local and global, uncertainty remains high, and actions are probably not sufficient.

May be facing the global change, the practices of rangeland management will continue to adopt a more sustainable way....