Sustainability of Beef Cattle Systems in Uruguay.
What type of sustainable system that we need to make focus?

Plan Agropecuario, Uruguay
Population: 3.4 millions
National area: 17.6 m ha
Agriculture area: 16.4 m ha
Cattle population: 12.3 m
Natural grasslands: 70%
Uruguayan context of beef production

• Uruguay has increased their beef production more than 45% since 1980.

• In the last decade, the expansion of agriculture (mainly soybean production) has reduced the area of grasslands to 70% of the country area.

• Livestock production in some way has been pushed to marginal lands, as well as providing opportunities for intensification of livestock systems based on higher inputs and grains.

• Therefore, climate change mitigation and adaptation, soil erosion control, grasslands biodiversity conservation, and water quality are major environmental priorities for the National Policy Maker.
Breeding System

Calving (75%)

Male and female calf (born with 25-40 kilos LW)

Feeding: natural grasslands
- Dig: 55.4%
- CP: 9.5%
- MEne: 2.08 Mcal/kg DM

Bulls, 3 - 4% of cows

Weaning (4-6 month)

Male and female calf with 140-160 kg LW

Heifers 1-2 years replacement cows (20%), with 280-320 kg LW

Female after weaning. 80% sale for finishing or breeding

Male after weaning. 100% sale for finishing, as steers

Male and female calf (born with 25-40 kilos LW)

Breeding Cows

Female after weaning. 80% sale for finishing or breeding
Male and female calf weaning going to finishing (140-160 kg LW)

Feeding: natural grasslands, improvement forage, low amount supplements (150-350 Kg LW)

Feeding:
- natural grasslands and oversown pasture with legume
  - Daily gain_ 0.3 -0.4 kg LW

Male and female calf weaning going to finishing (40-48 months age, 480-500 kg LW (50 %))

Feeding:
- improvement forage, supplements
  - Daily gain_ 0.7-0.9 kg LW

Slaughter: 30-36 months age, 480-500 kg LW (40 %)

Slaughter: Less 30 months age, 500-520 kg LW (10%)

Male and female calf weaning going to finishing (30-36 months age)

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Slaughter: Less 30 months age, 500-520 kg LW (10%)

Feedlot: 120 days before slaughter

Daily gain_ 1.2LW
In this context we have farmers… System 1

- Low feed, Low costs systems

Overview of the systems

- Systems without a clear productive scheme,
- Overstocking System, overgrazing,
- Strategy to graze route area,
- Low production system between 40-60 kg LW/ha
- Incomes outside Farm (employees) (low scale)
In this context we have farmers… System 2

• Low feed and High costs systems

Overview of the systems

• Systems with productive scheme, without feed budget
• Overstocking System, overgrazing some periods of the year
• Strategy to use external feed,
• High dependence weather,
• Med-Low production system between 70-90 kg LW/ha
• Some cases received incomes outside Farm (employees)
In this context we have farmers... System 3

- High feed and high costs systems

Overview of the systems

- Clear productive scheme,
- Clear feed budget during year,
- High incidence of inputs technologies
- Strategy to achieve high performance production,
- High Sensibility to external drivers
- High production system between 300-600 kg LW/ha
- Large enterprises (mainly)
In this context we have farmers... System 4 «Sustainable value system for our conditions»

• High feed and Low costs systems

Overview of the systems

• Clear productive scheme,
• Clear feed budget during year, according with the resource
• High uses of Process technologies, than Inputs technologies
• Strategy to achieve good performance production,
• Production system between 150-300 kg LW/ha
• Family Farms
International context

✓ Rapidly increasing global population, predicted to peak at 9.2 billion by 2075
✓ World agriculture is currently faced with the challenge of feeding an increased demand for animal proteins
✓ Beef cattle production has increased in the last three decades almost 40% worldwide, being the Americas one of the regions that led this development (FAO, 2013)
✓ Livestock production has been challenged as a large contributor to climate change, and carbon footprint has become a widely used measure of cattle environmental impact
Environment value ?

GHG emissions (GWP) per kg

Impact Biodiversity

Energy Consumption

Sustainability of meat production beyond carbon footprint: a synthesis of case studies from grazing systems in Uruguay

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In summary, farmers need a clear message and how to achieve the goals.

- HF - LC_ System 4
- HF – HC_ System 3

Balance!

- LF - HC_ System 2
- LF - LC_ System 1

- Technology Transfer
- Capacity building
- Practical Tools
- Confidence
Social value

• We have doubts in the long term?

  - Migration (especially women and young people)
  - Succession
  - Reduce labor from family and employed
  - Infrastructure
  - Community engagement
In summary – Final message

• We need to have a clear and discussed idea, how we want to address sustainable production especially in environmental issues.

• Different regions, with different resources, has different idea what a sustainable system means.

• It is necessary a special approach for social aspects, thinking in the maintenance of the family farms.

• For the future challenges, capacity building to farmers are the pathways for better decision making.

Solve the hunger in the world ≠ High level of Intensification
Thank you!!

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