Livestock, Climate and Natural Resources Use

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Large interface

- Biomass appropriation
- Use of land, water and nutrients
- Diverse species and systems
- Complexity of interactions
- Growing Demand (LMICs)
- Trade and natural resource transfers
- Climate commitments
Extensive Systems

• Ruminants and grazing
• Role of methane
• Grazing in natural grasslands
• Pastures as a carbon sink
• Expansion of grazing into forests
• Biological diversity
Smallholders

- Importance of crop-livestock integration
- Nutrient cycling and energy
- Low productivity, small scales
- High potential areas
- Pastoralists
Intensive Systems

• Rapidly growing in LMIC
• Geographical separation
• Disruption of nutrient cycles, leading to depletion and pollution
• Optimization in modified environments
• Feed requirements and soy
Trade-offs and synergies

• Within domain:
  • C and N emissions change with intensification
  • Land sparing vs land sharing

• Between domains:
  • Increased supply (food security) vs higher environmental costs
  • Increasing scales promote efficiency but reduce employment
Innovations

• Efficiency – emission intensities
• Circular – better use of nutrients, water and energy
• Offsets – environmental benefits
• Alternatives – feed and food
Policy perspectives

• Recognize diversity of livestock systems
• Large scope for improvement
• Healthy diets
• Mix of regulations and incentives
• Large interface with local and global public goods
• Central role of innovation at all levels
• Quick climate gains