Webinar: Assessing resilience in the livestock sector - of what, to what and for whom?

Resilience in silvopastoral systems

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Sustainability: ability of a system to maintain expected results now and in the long term

Ecological Resilience: is the capacity of a system to tolerate external pressures or impacts while maintaining its key processes and functions, i.e. ecosystem services such as food or water supply.

The COVID-19 pandemic has demonstrated livestock’s significant capacity for resilience in times of crisis. This webinar aims at initiating the discussion of resilience within the GASL focusing on the relationship between animal health and production, livelihoods, climate change and COVID-19.

Agricultural Systems

Ecological System  Social System

Socio – Ecological Systems

Context specific – local – regional – national – global
The challenge: To maintain the productive capacity of ecosystems in the context of current land use changes
The provision of multiple ecosystem services in different land uses

Foley et al. 2005
Approach to establish sustainable livestock system

- Biodiversity and ecosystem services
- Ecological Restoration
- Sustainable Intensification
- Knowledge dialogue
- Family welfare
- Farm
- Landscape
Sustainable intensification: agro-silvopastoral systems

Integrated management of agricultural, forestry and livestock components in an area unit, to improve the productive system and the well-being of the family.

Ecological Intensification: means for intensive and intelligent use of the natural functions of the ecosystem to produce food, fiber, energy and environmental services sustainably.

(Tittonell, 2014)
Silvopastoral systems and livestock resilience

1. Preserve biodiversity and connectivity in the productive landscape
2. Maintain and promote soil fertility
3. Conserve and use water efficiently
4. Capture more CO$_2$ in the biomass of trees and shrubs.
5. Lower GHG emissions.
6. Contributes to the adaptation to climate change (AbE) of livestock farming.
7. Contribute to a better animal nutrition and welfare (shade - heat stress).
8. Diversification and food security: timber, firewood, fruits, fodder and non-timber forest products.
9. Generate employment opportunities
10. Reduces costs in the long run.

Source: Chará et.al 2018
Alternatives at landscape scale

- Fodder banks
- Strips of trees
- Wetlands and water sources protection
- Forest conservation and restoration
- Agrosilvopastoral strips
- Improved pastures
- Natural regeneration
Principles for establishing agrosilvopastoral systems

- Preserve and restore natural capital and agrobiodiversity
- Biomass production taking advantage of solar energy for the human and animal food security.
- Integrate crops and animal production as complementary activities
Key messages for silvopastoral systems and livestock resilience

• Livestock systems should be analyzed as socio-ecological systems where there are interactions between society and nature at various scales.

• Changes in land use generate changes in the provision of ecosystem services, but production systems can be designed to enhance resilience.

• To develop resilient livestock systems, conservation of biodiversity and ecosystem services, restoration of degraded areas and sustainable intensification must be considered.

• Silvopastoral systems offer environmental, productive, economic and social advantages in the development of resilient livestock systems.

• There are agroecological principles that can contribute to develop resilient livestock systems.
Global Agenda for Sustainable Livestock

Gracias / Thanks
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