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“Towards multi-functional agro-ecosystems
promoting climate resilient futures”

Assessing the multifunctionality of pastoralism: A holistic framework for resilient rangelands

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Abstract

Pastoral systems are frequently evaluated solely on economic yield or caloric output, a narrow scope that systematically underestimates their systemic value in arid and semi-arid regions. Addressing this gap, this presentation outlines the multidimensional framework developed under the Global Agenda for Sustainable Livestock (GASL) to capture the true multifunctionality of pastoralism.

The framework evaluates pastoral systems across four core, interdependent pillars:

- **Production:** Beyond standard economic output, it measures the tangible provision of meat, milk, and hides, alongside the conservation of livestock genetic diversity via specialised local breeds.
- **Environmental Stewardship:** It assesses critical ecosystem services, including landscape management, biodiversity maintenance, soil fertility enhancement, nutrient fluxes, carbon sequestration, and greenhouse gas mitigation.
- **Social Cohesion:** It quantifies broader socio-cultural outcomes, including local employment generation, social inclusion, community networks, and the preservation of cultural heritage.
- **Local Economic Development:** It tracks territorial economic impacts through local income generation, market integration, value-chain creation, and micro-business viability.

Aligned with the UN International Year of Rangelands and Pastoralists (IYRP 2026) and UNCCD COP17, this assessment highlights that pastoralism extends far beyond livestock production – it is a vital mechanism for climate adaptation, ecosystem restoration, and rural livelihood stability. Recognizing and safeguarding these multifunctional foundations is essential for maintaining rangeland resilience against accelerating environmental and socio-economic pressures.