



Silvopastoral system experiment at Alliance Bioersivity-CIAT Campus in Palmira.
Photo: M. Sotelo

Context

- The Environmental flagship of the Livestock CRP seeks to apply the concept of sustainable intensification of livestock systems in Latin America and the Caribbean.
- This work aims to provide technical support, generate critical information and guidelines necessary for identifying GHG mitigation options while contributing to planning and policies for scaling up of NAMAs.

Our innovative approach

- To evaluate productive and environmental parameters associated with the integration of forage tree and herbaceous legumes with grasses in tropical livestock systems.

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ENVIRONMENTAL HEALTH & BIODIVERSITY

Integral assessment of productive and environmental parameters of a forage-based silvopastoral system

- Diversification of pastures generally improve nutrient cycling and lead to increased carbon sequestration in the soil.
- Inclusion of trees in the pastures improve soil properties while creating a microclimate more suitable for cattle.
- Improved pastures have vast potential to support region and country-level strategies to address relevant challenges.



RESEARCH
PROGRAM ON
Livestock

LIVESTOCK & ENVIRONMENT

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Outcomes

- Legumes in pastures favored animal productivity by **increasing live weight gain up to 3.4 times**.
- Treatments including legumes showed **33.8% less CH₄ emissions** compared to grass alone.
- Inclusion of legumes likely stimulated plant biomass production, serving as **shelter and direct food storage to soil macrofauna**.

Future steps

- The development of mix arrangements of grasses and forage legumes at different strata provided multiple benefits at the productive and environmental level.
- The project generated critical information for the achievement of low emission development by identifying and evaluating best-fit mitigation options for the tropics. These strategies can be scaled up using NAMAS and other policies.

Partners

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