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“Solidarity in a competing world —  
fair use of resources”

## Sustainable Milk and Beef Production in Nicaragua: Actions and Opportunities for an Inclusive Value Chain

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### Abstract

In Nicaragua the cattle sector accounts for 36 % of agricultural exports and presents an important opportunity for smallholder farmer livelihoods. Current extensive dual-purpose (milk and beef) cattle production leads to soil degradation, deforestation, high levels of greenhouse gas (GHG) emissions per unit of product, and a shift of the agricultural frontier towards the vulnerable Caribbean region. The CGIAR Research Program on Livestock and Fish is implementing activities to make the dual-purpose cattle value chain more efficient, competitive and inclusive, with a specific focus on gender equality. Feed and forages work has improved the productivity of forage-based livestock production (up to 100 % in terms of kg milk/ha), increased carbon accumulation and at the same time reduced its ecological footprint (by over 50 % in terms of GHG emissions per unit of product) as part of LivestockPlus. This concept addresses sustainable intensification in three ways: socioeconomic – market opportunities and policy application; ecological – improved farm and natural resource management practices; and genetic – improved forage cultivars. Work on genetic improvement of cattle has included establishing an information, input, and service data platform linked to breed improvement in a wider farm-household context. It involves continuous monitoring and assessment of the performance of the predominant breed-types reared by 155 farmers in central Nicaragua as an initial step towards informing development of breeding strategies for dual purpose cattle in mixed farming systems. In collaboration with a farmers cooperative, capacity development in Farmer Field Schools and on-farm research involving 1000 farmers has resulted in increased productivity (milk by 40 %, liveweight by 70 %), income (by 20 %) and natural resource integrity (establishment of 4,000 ha of silvopastoral systems). Strategic alliances have been developed between value chain actors (farmers’ organisations, NGOs, research, private sector with a focus on value addition to livestock products while increasing gender equity. In general, however, adoption of improved technologies and practices is still low. There is therefore a strong need for an increased policy incidence on sustainable livestock development and incentive mechanisms for farmers and other value chain actors, including certification of sustainable livestock products.

**Keywords:** Dual-purpose cattle, genetic improvement, Nicaragua, value chain

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