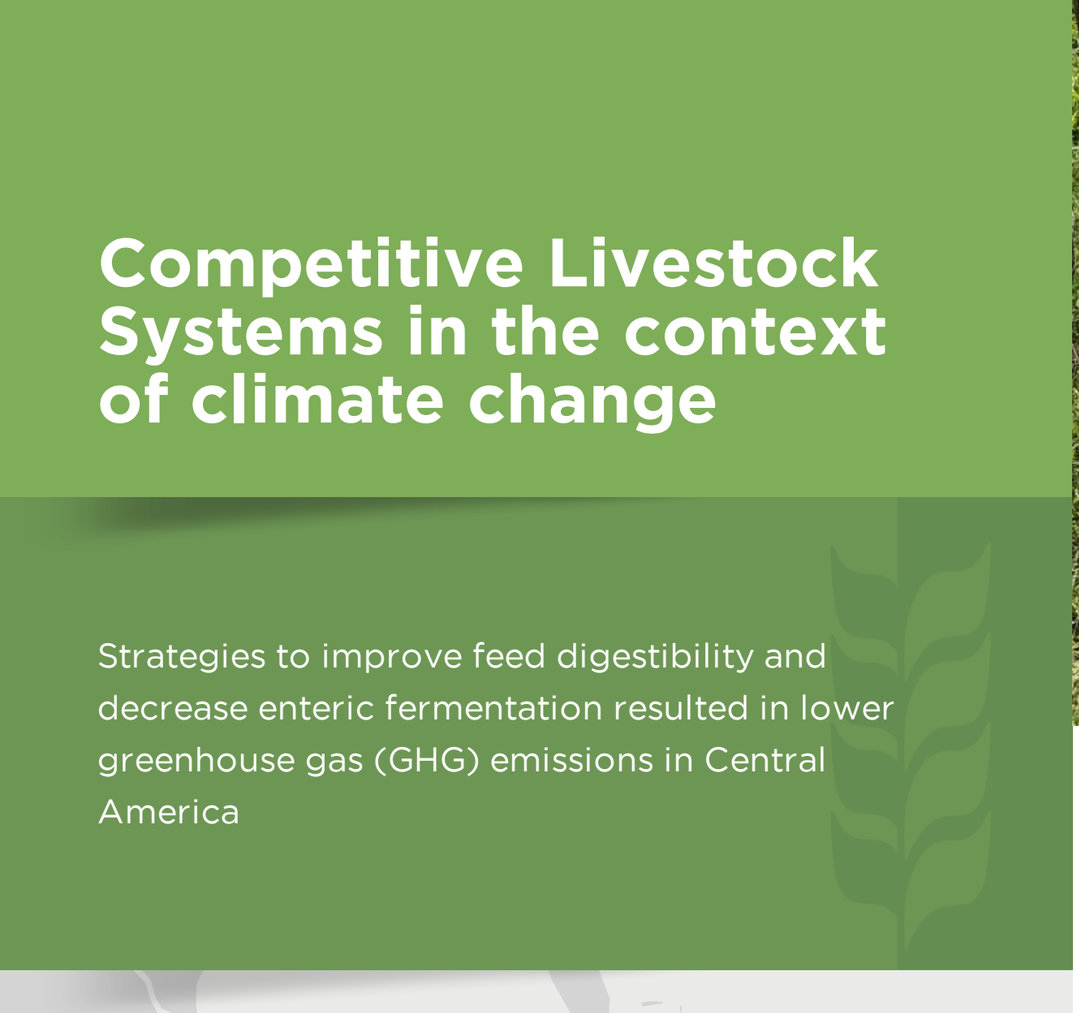
CATIE, CENTRO AGRONÓMICO TROPICAL DE INVESTIGACIÓN Y ENSEÑANZA, COSTA RICA

Competitive Livestock Systems in the context of climate change

Strategies to improve feed digestibility and decrease enteric fermentation resulted in lower greenhouse gas (GHG) emissions in Central America



Costa Rica / Honduras / Nicaragua / Panama

400
Farms for CO2 base line quantification

74
Professionals trained

7
Undergraduate and graduate level thesis

GHG sources

The implemented initiative

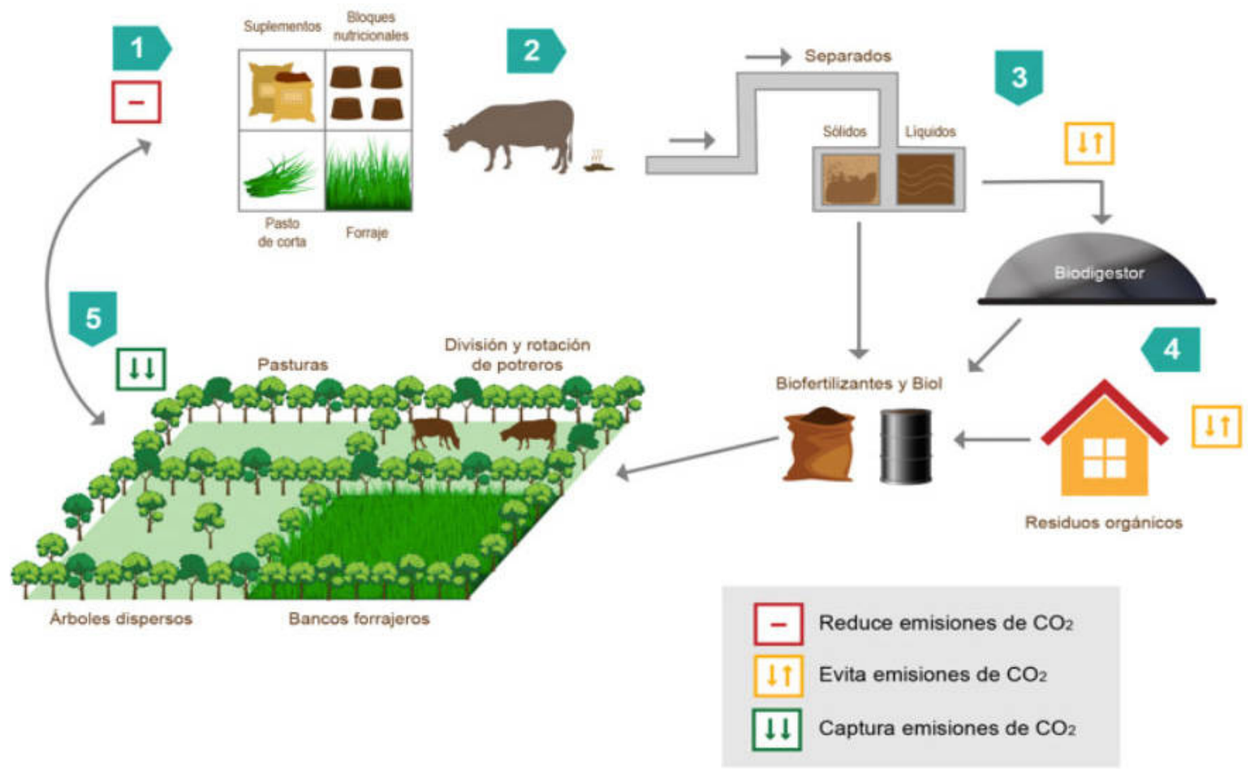
The first phase of the project consisted of the analysis of GHG emissions and livestock farms' profitability. Then, nitrous oxide (N_2O) and methane (CH_4) emissions were experimentally quantified. To estimate GHG, all emissions generated inside and outside of the farms were taken into consideration. For consistency, all GHG emissions were expressed as CO_2e.

Farm management as a tool to reduce GHG

The technological solution

Farms with lower intensification only have grazing systems and generate more CH_4 emissions than higher intensified farms. In contrast, farms with greater intensification systems have feeding strategies such as supplementing lactating cows with commercial concentrates, minerals, and silages. Furthermore, they tend to implement more management strategies such as pasture management plans, soil analysis, technical fertilization recommendations, rest periods, proper animal load and type of grasses and legumes usage. All these strategies result in greater milk production per cow and lower CH_4 emission per liter of milk produced.

Better management practices and silvopastoral systems



MÁS INFO

Results

Enteric fermentation is the main source of livestock emission. Farms less intensified only have grazed animals and generate 103% more methane emissions than more intensified farms that supplement with forage banks and concentrates. Furthermore, more intensified farms produce an average of 2.1 more liters of milk per cow.

Main donors

FONTAGRO · Ministry for Primary Industries Manatū Ahu Matua · BID Banco Interamericano de Desarrollo

Participating Organizations

CATIE · idiap · inta Costa Rica · INTA Instituto Nicaragüense de Tecnología Agropecuaria · FONTAGRO