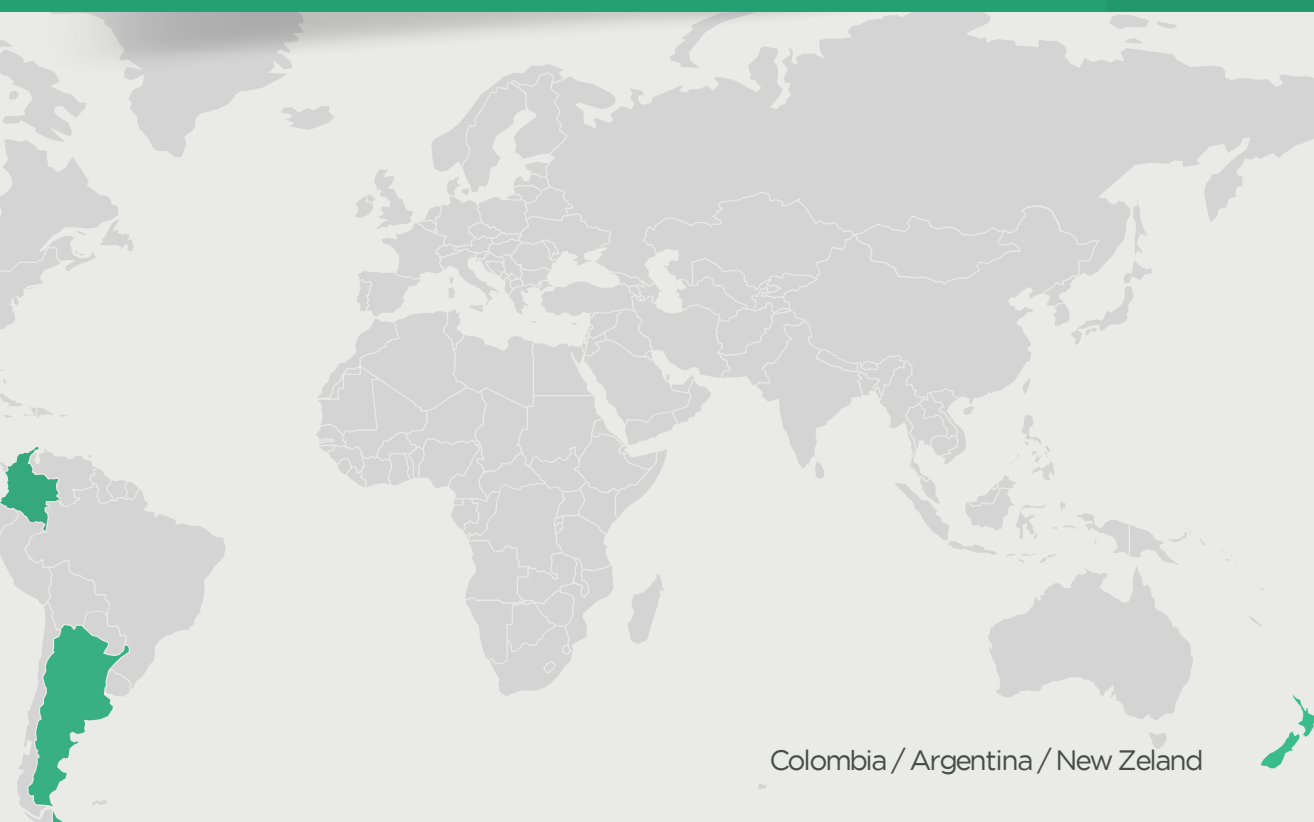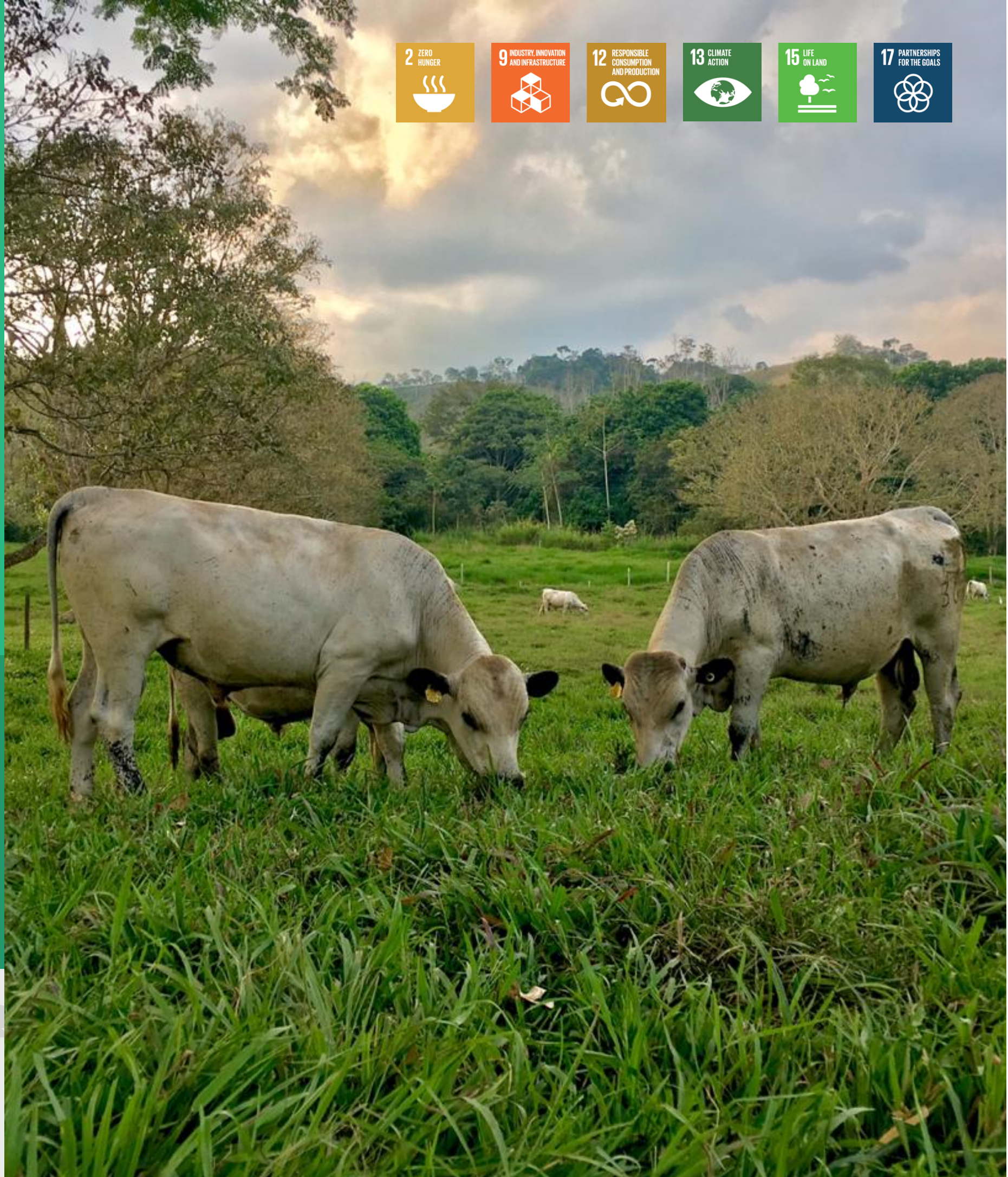# Local Technological Innovations for Quantification and Mitigation of Greenhouse Gas Emissions in Grazing Ruminants in ALC

The three local technological innovations will allow for a reduction in the cost and time required to assess forage intake and digestibility, enteric methane emissions, and ingestive behavior in cattle in pastoral livestock systems in ALC

Colombia / Argentina / New Zeland

2
It is expected to generate 2 databases.

12
It is expected to develop 12 workshops with beneficiaries.

20
Students, teachers, and researchers are expected to be trained.

1
The expectation is to validate a laboratory methodology

2
The expectation is to develop two guides for producers

6
The expectation is to generate six scientific documents

-10%
The expectation is to reduce emission intensity (g de CO2 Eq/kg meat).

3
Local technologies implemented

Obtaining accurate and adequate information on forage consumption and digestibility, enteric methane emissions and ingestive behavior in grazing will allow agile decision-making to increase feed efficiency.

The implemented initiative

The main objective of this proposal is to reduce the emission intensity of greenhouse gases by 10% in bovine production systems through the implementation of local technological innovations for the quantification and mitigation of greenhouse gas emissions. A system based on remote sensors will be implemented to monitor ingestive behavior and quantify enteric methane emissions in grazing cattle. The mitigating effect of a functional additive under different feeding conditions will be validated, and local NIRS fecal equations will be adjusted for predicting intake and digestibility in grazing cattle. Additionally, activities will be conducted to manage, communicate, and transfer the generated knowledge.

The use of additives that manipulate enteric fermentation of the diet has the potential to improve nutrient use efficiency, reduce CH4 emission and increase productivity

The technological solution

Implementing three local technological innovations to generate positive impacts on the socio-economic and environmental components of the meat chain actors population based on pastoral livestock systems in LAC. From an economic perspective, the proposal aims to reduce the cost and time required to obtain information on forage intake and digestibility, enteric methane emissions, and ingestive behavior in grazing cattle, which are key variables for the sustainability of any livestock system. This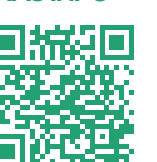 information will enable decision-making to increase the efficiency of forage and animal resource utilization, thereby promoting a 10% increase in weight gain (kg/day). Environmentally, the proposal aims to reduce per-animal CO2 equivalent emissions by at least 10% through the optimization of ruminal fermentation using a local additive. This initiative will contribute to the training of undergraduate and graduate students, and to strengthening the technical-scientific capabilities of 20 researchers (60% women).

MÁS INFO

Results

Expected Outcome 1: Implementation of a system based on remote sensors for monitoring ingestive behavior and quantifying enteric methane emissions in grazing cattle.

Expected Outcome 2: Recommendations for the use of a feed additive to reduce enteric methane emissions in pastoral bovine husbandry.

Expected Outcome 3: Validation of Fecal NIRS Technology for quantifying intake and digestibility in grazing cattle.

Expected Outcome 4: Strengthened and/or trained direct beneficiaries in the three technological innovations to reduce methane emissions in ruminants.

Main donors

Ministry for Primary Industries

Participating Organizations

AGROSAVIA · INTA · Universidad de los Andes Colombia · UNC Universidad Nacional de Córdoba · GLOBAL RESEARCH ALLIANCE

FONTAGRO