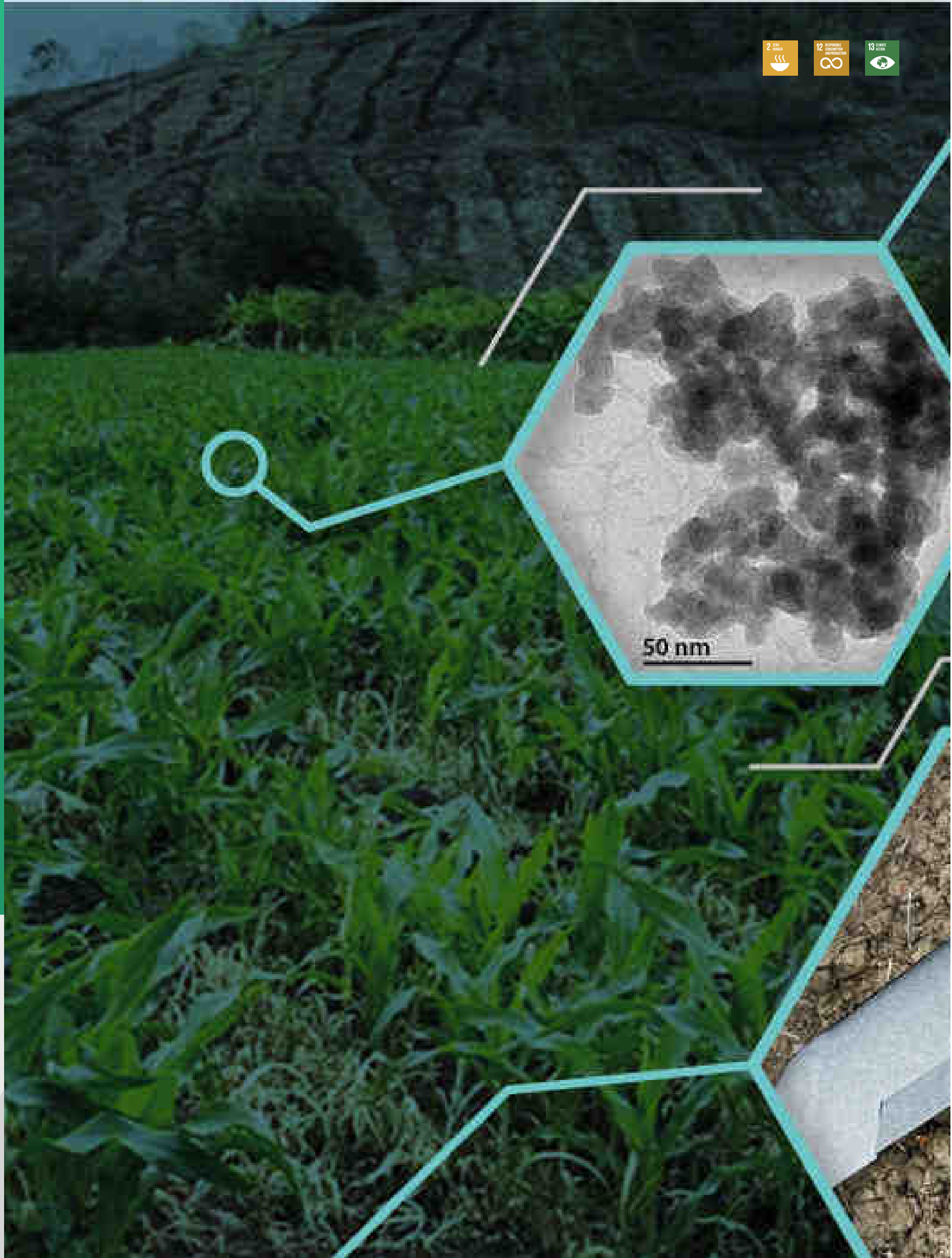
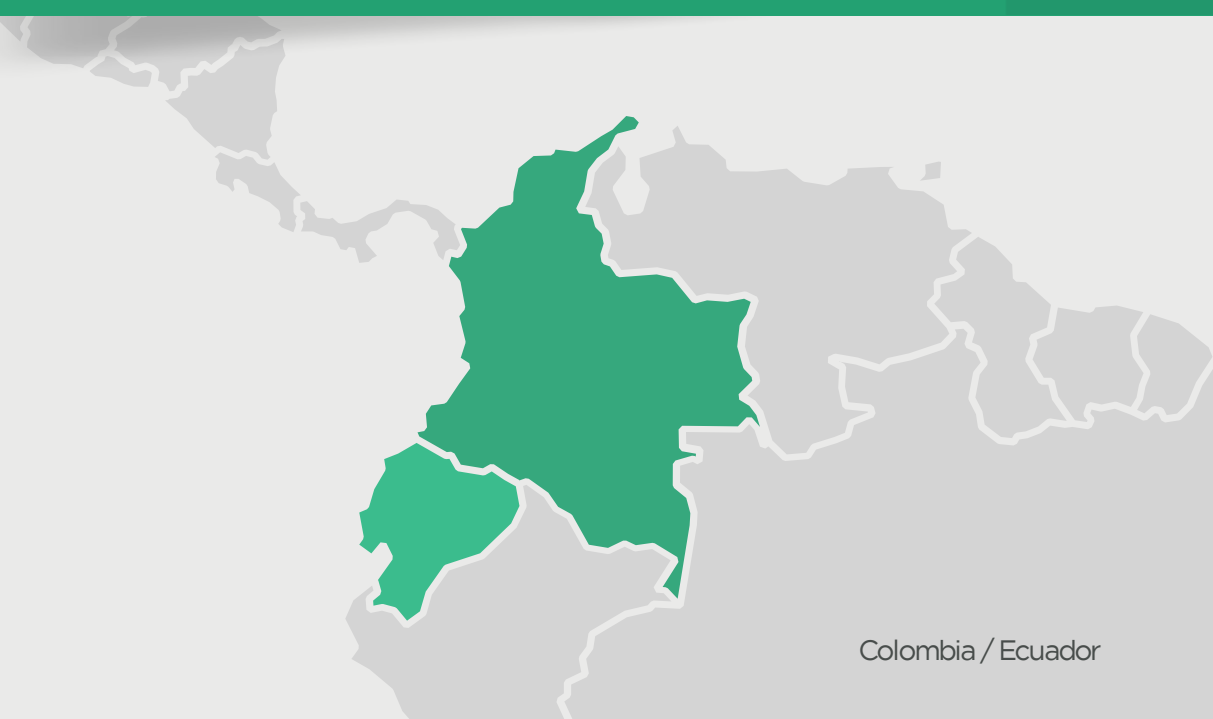


Nanofertilizers: An innovative solution for reducing nitrous oxide emissions

Nanofertilizers improve fertilization efficiency and help mitigate the effects of climate change



1 To publish a scientific article



17 research work



1 Technical note on the financial feasibility analysis of the Spin-Off.



1 Technical note on the type of intellectual property for the creation of the Spin-Off



1 Proposal for the creation of the Spin-Off project



7 presentation at academic events



1 Research document on nanofertilizer production



10 technical support



3 Photogrammetric flights

The implemented initiative

Assess the effect of applying blends of fertilizers and nanofertilizers (zeolite, titanium dioxide, and zinc oxide)

on the intensive production of crops.

Using balanced fertilizers and nanofertilizers in greenhouse crops increases biomass production and nitrogen absorption.

The technological solution

- TiO₂, ZnO and zeolite nanofertilizers were manufactured in a high-energy mill by varying the mill's time, speed and filling factor. Nanofertilizers with sizes less than 100nm were selected.
- Ray grass, oats, and alfalfa crops were established.
- Balanced fertilizers were formulated for crops.

- The effect of adding fertilizers with nanofertilizers on crops was evaluated.
- A financial viability analysis was carried out.
- A business model was proposed.
- A draft Spin-Off proposal was formulated.

Results

- Data with particle sizes of nanofertilizers synthesized by high energy grinding varying manufacturing parameters.
- Publication of scientific article.
- Evaluation of nutrient absorption and nitrogen use efficiency for Ray grass, alfalfa and oats.
- Evaluation of biomass production in greenhouse crops.
- Technical note defining the type of intellectual

- property most appropriate for creating the Spin-Off.
- Technical note presenting the support for the financial viability analysis of the Spin-Off
- Spin-Off creation project proposal.
- Eleven undergraduate theses completed and four in development.
- A completed master's thesis and one in development.

MÁS INFO

