

Optimizing the use of nitrogen, higher production and lower impact (N4Rs)

Sustaining and developing food production depends on adaptation and mitigation strategies in response to the climate crisis, as well as on nutrient use efficiency in production systems with high nitrogen demands.



Higher nitrogen use efficiency to increase food production and mitigate greenhouse gas emissions from agricultural soils.

Initiative

The measurement of greenhouse gases (GHGs) is essential for determining emission factors based on nitrogen sources. One of the objectives of this project is to train human resources in GHG measurement techniques in each participating country. A common protocol will be developed to assess GHG emissions and emission factors

using fertilizer doses commonly applied by farmers. This baseline information is crucial for defining and evaluating mitigation strategies while ensuring food production. The results of the evaluated strategies will be shared with farmers, technicians, researchers, and the public sector.

Recommendations for best practices in nitrogen fertilizer use to increase nitrogen use efficiency and reduce environmental losses.

Tech solution

From the evaluation of nitrogen sources, application rates, and potential greenhouse gas mitigation strategies, recommendations for best practices in nitrogen fertilizer use will be developed. These practices will enhance nitrogen use efficiency (NUE) and reduce environmental losses. The

emission factors obtained from high-nitrogen-demand crops and pastures will contribute to the creation of robust GHG inventories, supporting the development of public policies aligned with the participating countries' international commitments to reducing greenhouse gas emissions.

Best practices for nitrogen fertilizer use, N4Rs

Right Source
Matches fertilizer formulation to crop needs

Right Rate
Matches amount of fertilizer type crop needs

Right Time
Makes nutrients available when crops need them

Right Place
Keep nutrients where crops can use them

MORE INFO



Impacts and Results

Understanding emission factors and greenhouse gas mitigation strategies related to fertilizer use offers multiple benefits that facilitate their adoption by farmers in the project's participating countries and across Latin America.

Most mitigation strategies involve optimizing fertilizer use, which generates direct economic benefits for farmers. This, in turn, drives the adoption of these technologies and

helps reduce the environmental impacts of excessive fertilizer use and greenhouse gas emissions from production systems. Strengthening farmers' resilience to climate change and variability through increased productivity and the implementation of mitigation strategies not only enhances their economic development but also supports national growth and food security.



-5 %
Projected direct fertilization cost reduction

20
Tier 2 emission factors determined

10 %
Nitrogen fertilizer dosage optimization

6
Experimental pilot sites established

20
Scientific and technical personnel trained

10
Participatory workshops held

Main Donors



Organizations

