INTEGRATING SCIENCE-BASED EVIDENCE FOR THE FORMULATION OF POLICIES TO SCALE UP THE USE OF BIO-INPUTS IN TROPICAL AGRICULTURAL SYSTEMS

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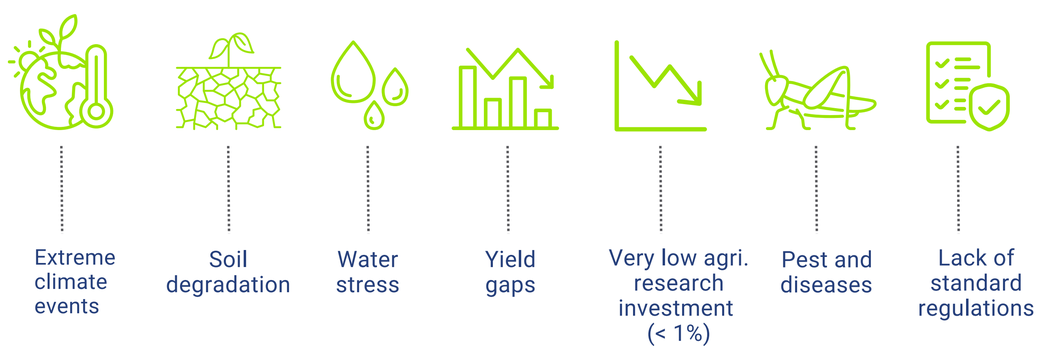
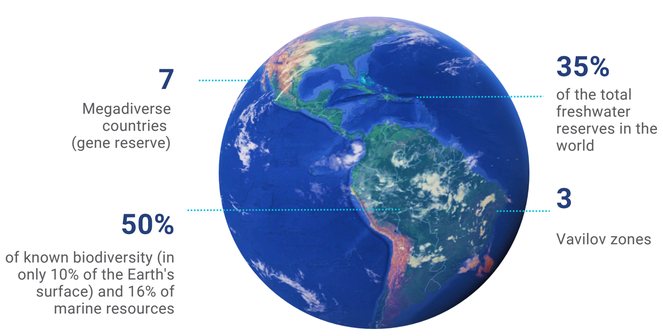
Introduction

Tropical agricultural systems tend to have lower productivity compared to temperate regions, partly due to the degradation of natural resources, such as water pollution and soil nutrient depletion. This is exacerbated by the lack of investment in science and innovation in many countries, combined with socioeconomic challenges.

Challenges faced by food systems in tropical countries in the Americas



The Americas have several opportunities



In Latin America and the Caribbean (LAC), there is growing interest in biological-based agricultural inputs as an alternative to the excessive use of chemical inputs.

New advances in science and technology increase the possibilities of transforming tropical agriculture.

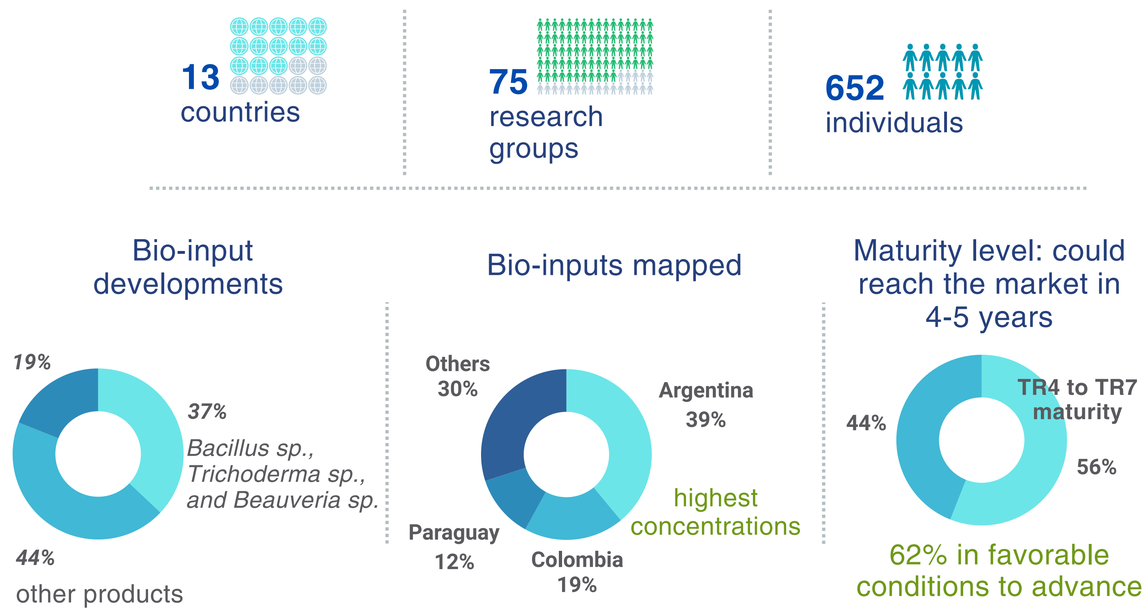
Bio-inputs (bio-fertilizers and biopesticides) help reduce productivity gaps of tropical systems while responding to food security and nutrition, GHG emissions reduction, and promotion of ecosystem services.

Methods

- Systematic analysis of scientific studies and public policies on bio-inputs at the international level
- Review of official governmental documents
- Management and categorization of information using Covidence software and qualitative analysis of regulations and standards.
- Preliminary conclusions validated with key stakeholders.

Results

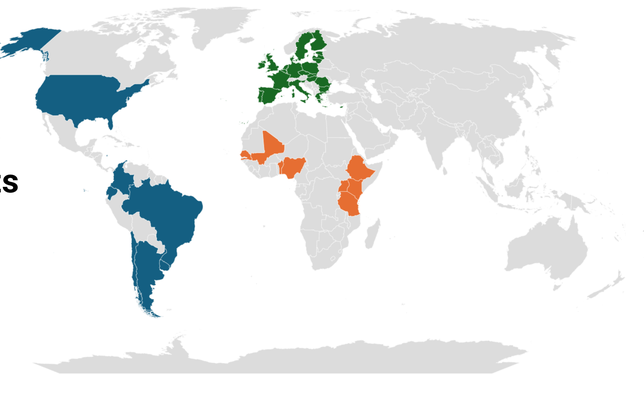
LAC region faces gaps in scientific and technological development in bio-inputs according to a diagnostic conducted in:



The self-production of bio-inputs in LAC is steadily increasing: 63% comes from self-production, mainly bio-stimulants and bio-fertilizers.

LAC countries are adapting regulatory frameworks for bio-inputs, though they face challenges: lack of personnel, laboratories, and bureaucracy. Argentina and Colombia already have specific legislation. Regulatory and infrastructure barriers to advance in Central America and the Southern Cone, while the market poses no significant obstacles.
This evidence led to the creation of a public policy initiative in Honduras in 2023, aimed at defining the national roadmap for the production of biological and organic inputs in agriculture.

International Policy Context for Bio-inputs



Integrating science evidence and public policy

Scientific evidence in LAC has been essential for adapting regulatory frameworks in Argentina and Colombia, aligning regulations with the technical realities of bio-inputs and ensuring their quality and efficacy. Additionally, it has contributed to strengthening incentive and financing schemes, promoting sector development and facilitating investment in new technologies.

National innovation systems

Conclusion and call to action

- Regional consensus on bio-input regulations.
- Promote R&D+i in bio-inputs for the development of infrastructure and commercial production to meet demands.
- Link bio-input strategies with agricultural, environmental, productive, sustainable, science and technology goals.
- Promote regional collaboration to share best practices and research resources.

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