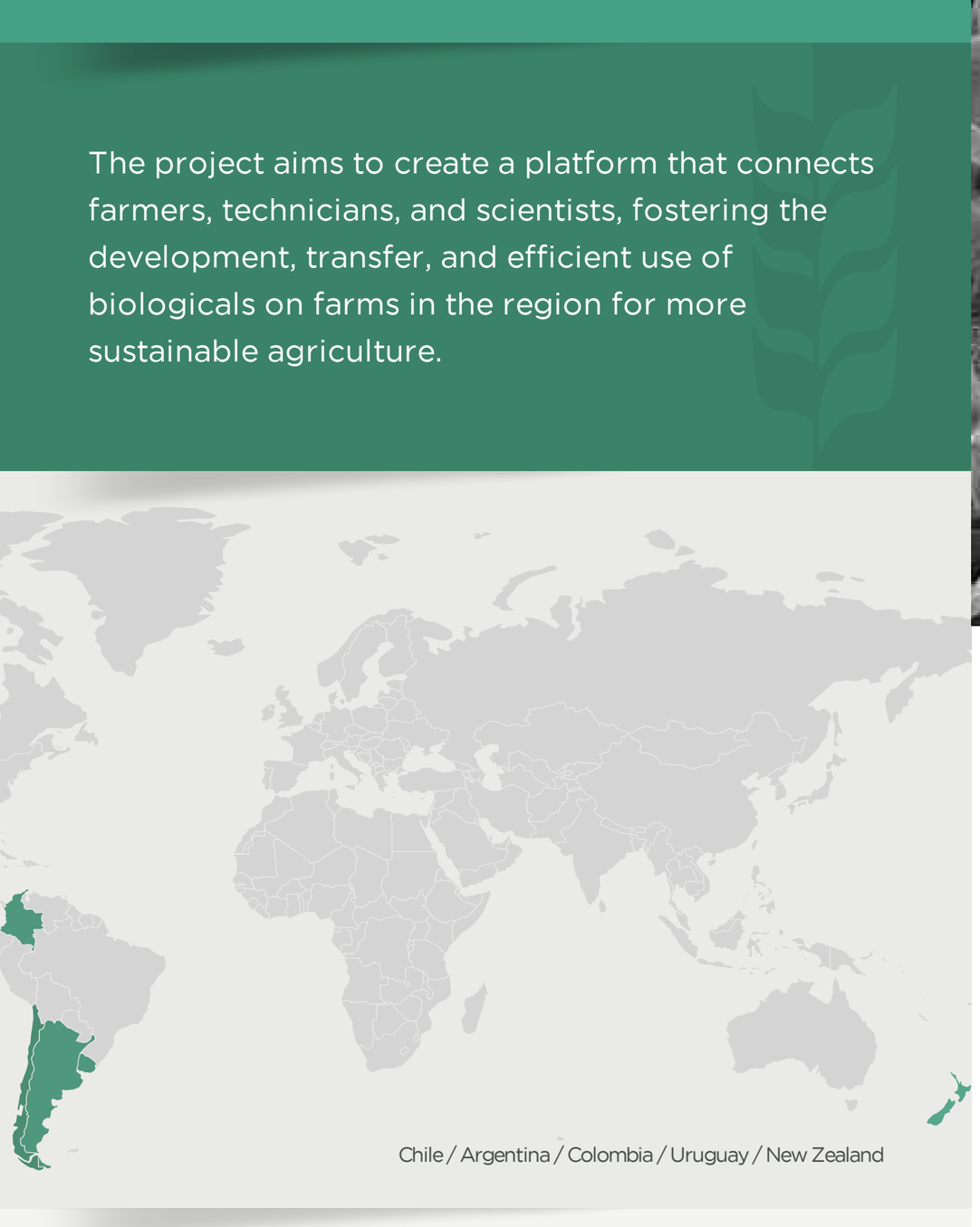
CEAZA, CENTRO DE ESTUDIOS AVANZADOS EN ZONAS ÁRIDAS, CHILE

Biologicals: a solution for more sustainable agriculture in LAC

The project aims to create a platform that connects farmers, technicians, and scientists, fostering the development, transfer, and efficient use of biologicals on farms in the region for more sustainable agriculture.



Chile / Argentina / Colombia / Uruguay / New Zealand

We develop sustainable technologies with microbial biologicals to reduce agrochemicals and mitigate abiotic stress.

The implemented initiative

This project aims to develop sustainable technologies by promoting the use of biologicals based on plant growth-promoting microorganisms to reduce the use of agrochemicals, mitigate abiotic stress, and preserve ecosystem services. The main objective is to develop a platform for linking farmers, technicians, and scientists to contribute to the development, transfer, and efficient use of biologicals in farms across Latin America.

Specifically, the project seeks to: 1) consolidate and standardize homogeneous methodological tools among network participants to evaluate the effectiveness of biologicals; 2) generate knowledge on the efficient use of biologicals; 3) transfer up-to-date knowledge on biologicals; and 4) manage and communicate knowledge.

We will build a platform to connect farmers, technicians, and scientists in Latin America, promoting the efficient use of biologicals.

The technological solution

The project consolidates homogeneous methodological tools among participants to evaluate biologicals on farms in Latin America, taking regulatory frameworks into account. Technological gaps are identified, and legal mechanisms and regulatory frameworks are gathered by country, to later align evaluation methodologies. The project conducts bioinformatics analysis of inoculants, develops traceability methodologies, and evaluates their persistence and effectiveness in the field, analyzing their impact on soil and plant microbiomes. Additionally, the experience of participating farmers is incorporated, and the applicability of the inoculants is extended to various crops and conditions. Knowledge transfer to key stakeholders is also promoted through the creation of a strategic network of laboratories and businesses, and participation in technological events. Human resource development is prioritized, involving university students and technicians in the activities, while an integrated platform will be established on the ALAR website to disseminate and train on biologicals.

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Results

The project offers significant improvements in agriculture by reducing the environmental impact through a decrease in the use of agrochemicals, reducing water pollution, greenhouse gas emissions, and biodiversity loss. Sustainable agricultural practices are promoted by mitigating abiotic stress and reducing pesticide resistance. Methodologies for evaluating biologicals are standardized, improving the consistency of results. Updated knowledge on the efficient use of biologicals is generated and transferred, facilitating their integration into agricultural practices. The project strengthens collaboration networks between laboratories, companies, and key stakeholders, and trains students and technicians in the development and use of biologicals. A web platform is implemented to enhance the visibility and accessibility of information. Finally, agricultural efficiency is optimized by increasing yields through the use of biologicals and advanced methodologies, while fostering innovation.

Main donors

Te Kāwanatanga o Aotearoa New Zealand Government

Global Research Alliance on Agricultural Greenhouse Gases

Participating Organizations

CEAZA · UNRC · AGROSAVIA · iibce · INIA Uruguay · INTA · Facultad de Agronomía Universidad de la República · Lincoln University · FONTAGRO