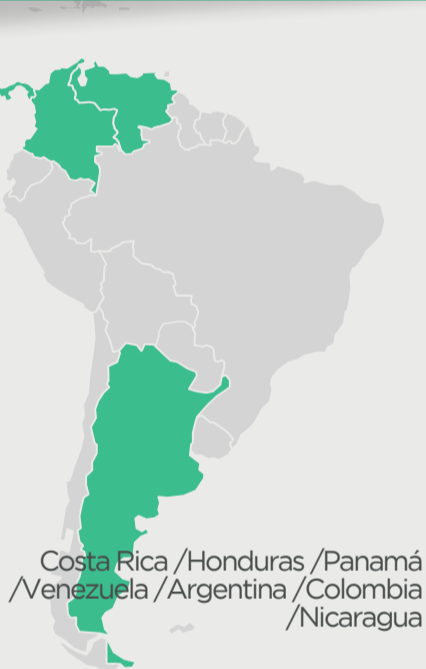




## Development and use of biologicals for sustainable agriculture in Latin America

A regional effort to develop, validate and disseminate biologicals that raise productivity and reduce dependence on agrochemicals in strategic crops across Costa Rica, Honduras, Panamá and Venezuela.



Regional research to take biologicals from the laboratory to the field.

### Initiative

The project aims to increase the availability of biological technologies that improve the sustainability of agricultural production in the region. It is built around four objectives: standardizing quality by harmonizing quality-control protocols; developing biologicals to commercial application level by accompanying the experimentation process; integrating

these technologies into management schemes for strategic crops such as maize, sweet pepper, bean and citrus; and promoting their efficient use through knowledge management and a regional cooperative virtual space. The work is carried out jointly across Costa Rica, Honduras, Panamá and Venezuela.

Biofertilizers, biopesticides and botanical extracts validated with scientific evidence.

### Tech solution

Biologicals are products derived from living organisms, microorganisms, macroorganisms, botanical extracts and their derivatives, applied in agricultural production. The project works with three broad groups: biofertilizers based on nitrogen-fixing and phosphorus-solubilizing bacteria; biopesticides derived from entomopathogenic fungi such as Beauveria and Metarhizium and from the bacterium Bacillus thuringiensis; and botanical extracts for weed

control, alongside agents such as Trichoderma for fungal diseases. Each option advances through successive validation stages, from the laboratory to controlled greenhouse conditions and, finally, field trials, according to its level of technological maturity. The goal is to offer efficient, affordable solutions that improve crop nutrition and health, reduce dependence on agrochemicals and can be adopted by small and medium-scale producers.



**-25 %**  
Expected reduction in chemical fertilizer use



**+30 %**  
Expected increase in phosphorus availability in treated soils



**-70 %**  
Expected reduction in fungal disease severity



**-60 %**  
Expected reduction in weed density



**+60**  
Technicians and researchers expected to be trained



**+4**  
Knowledge-exchange workshops expected

MORE INFO



### Impacts and Results

The project aims to increase the availability of validated bio-inputs for the region. Expected results include cutting chemical fertilizer use by at least 25% through nitrogen-fixing and phosphorus-solubilizing microorganisms, with gains above 30% in phosphorus availability and above 20% in biological nitrogen fixation. For pest control, it anticipates a 50 to 70% reduction in the incidence of

Spodoptera frugiperda in maize and Anthonomus eugenii in sweet pepper, and up to 70% lower severity of diseases such as Fusarium and Cercospora through Trichoderma. Botanical extracts seek to reduce weed density by up to 60%. The project also plans to integrate at least five bio-inputs per crop and to achieve effective pest and disease control in at least 70% of monitored cases.

#### Main Donors



#### Organizations

