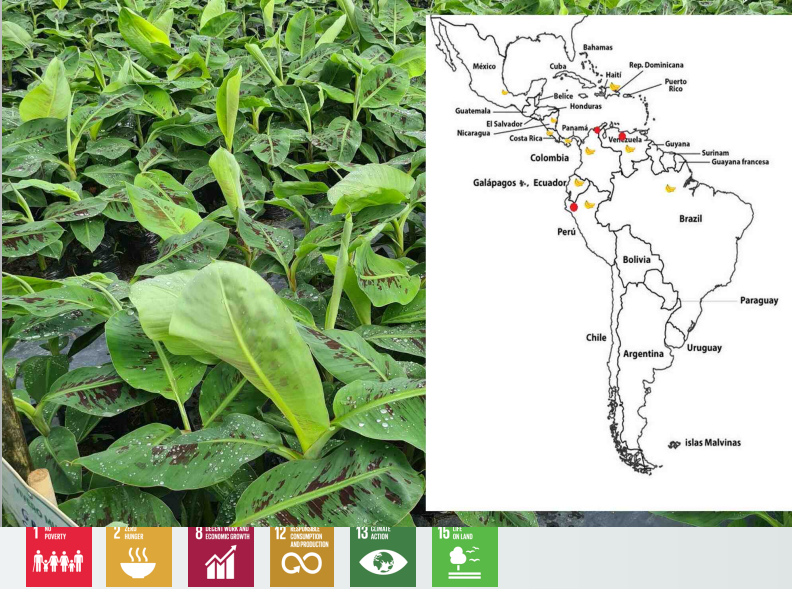


The Evolution of a Regional Response: Technologies for Musaceae Resilience Against Fusarium TR4

ESTADOS UNIDOS, COLOMBIA, COSTA RICA, ECUADOR, NICARAGUA, PANAMÁ, REPÚBLICA DOMINICANA, BOLIVIA, PARAGUAY Y, PERÚ



 Webstory



Technological solution

The technological solution consisted of generating and validating scientific tools, technical protocols, and management criteria to improve the prevention, early detection, and risk management of *Fusarium oxysporum* f. sp. cubense Tropical Race 4 (Foc TR4) across Latin America and the Caribbean. The detection of the pathogen in Colombia in 2019 enabled the transformation of the experience gained by the first affected country into applied knowledge, methodologies, and recommendations that were timely transferred to the other project partners, facilitating better preparedness before new outbreaks emerged across the region. The strategy contributed to harmonizing procedures, supporting evidence-based decision-making, and reducing the vulnerability of Musaceae production systems, thereby enhancing their resilience against one of the most significant phytosanitary threats to regional agriculture.



Technological description

The initiative developed a regional innovation platform for the prevention and management of *Fusarium oxysporum* f. sp. cubense Tropical Race 4 (Foc TR4), based on four technological components: (i) standardization and validation of molecular diagnostic protocols using PCR and digital PCR; (ii) characterization of biosecurity practices and soil-related factors associated with disease suppressiveness; (iii) evaluation of beneficial microorganisms, disinfectants, and promising banana and plantain germplasm; and (iv) knowledge transfer through a regional training network. The technology integrates advanced diagnostic tools, soil analysis, biological control, and genetic resistance assessment across six countries in Latin America and the Caribbean.



Impacts and results

The implementation of the initiative enabled the consolidation of a regional knowledge and innovation platform to address Foc TR4. Key outcomes included the identification of five promising *Musa* spp. materials with resistance to the disease, the publication of 9 scientific articles, 11 technical notes and bulletins, 6 technical videos, 6 conference presentations, 3 regional workshop proceedings, and more than 20 press releases, significantly enhancing the availability and dissemination of evidence-based information. In addition, the project delivered 6 regional workshops, 4 international internships, and 245 training events, reaching 14,325 participants from more than 21 countries. These achievements improved phytosanitary surveillance, promoted the adoption of preventive measures, and enhanced the preparedness of institutions and producers to respond to the disease. The initiative also established a regional scientific and technical cooperation network that continues to support the pr



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