

# ICT mobile applications for pest surveillance in Nicaragua

Timeframe: 2013 to date

CASESTORY



## LED BY

### PRIVATE SECTOR

Association for the Promotion and Development of the North (Asociación de Promoción y Desarrollo del Norte)

Sectoral Associations

10+ farmers' cooperatives for coffee and cocoa

### PUBLIC SECTOR

Institute for Agricultural Protection and Health (IPSA)



## GOVERNANCE

The partnership began with a project-based governance mechanism, which established MOUs between IPSA and participating cooperatives for the development of the web platform and mobile application, as well as awareness-raising and dialogue. These agreements ensured that the ICT solutions developed under the partnership were institutionalized as part of IPSA activities, and that the data collected would be used for surveillance by national authorities.

## FUNDING

This partnership was facilitated by projects led by FAO (2013–2016) and IFAD (2016–2020), in cooperation with the public and private sector. IPSA currently finances the web platform and surveillance app, while the private sector (i.e. cooperatives and sectoral associations) supports covering the costs of capacity building as well as data entry by field technicians.



## PURPOSE

Coffee is a vital source of income for smallholder farmers and exporters in Nicaragua. Spread of the coffee rust disease, combined with limited capacity of the public and private sector to respond to the challenges faced, were affecting coffee production and exports. This PPP was established through FAO and IFAD projects, in close cooperation with the Institute for Agricultural Protection and Health and cooperatives benefitting small-scale farmers. It provides a web platform and mobile application to improve surveillance of plant pests.

## ROLES AND RESPONSIBILITIES

### PRIVATE SECTOR

- Recruit and manage technicians to collect phytosanitary data using the app.
- Share experiences among the private sector and with IPSA.
- Train and guide farmers and cooperative members on use of the new tools.

### PUBLIC SECTOR

- Manage the web platform and surveillance app, which are offered free of charge to farmers, cooperative members and companies.
- Organize field schools to train producers, and cooperative members and technicians on use of technological tools for pest surveillance.
- Oversee quality control of phytosanitary data collected via the web platform and surveillance apps.
- Deliver educational resources (phytosanitary education calendars, technical guides, brochures, posters, podcasts, etc.).

## LESSONS

- Use of ICTs has led to improvements in data quality and reporting, reduced operational costs for the NPP0, and improved the management of plant pests.
- Challenges included the capacity and willingness of producers to adopt new technologies and increase the number of ICT-empowered actors.

## UP-SCALING OPPORTUNITIES

- This PPP approach could be further replicated in other value chains and/or countries.

## RESULTS



**THIS PARTNERSHIP DEVELOPED A WEB PLATFORM THAT USES A MOBILE APP AS AN EARLY WARNING SYSTEM (SATCAFE) TO IDENTIFY AND MONITOR SEVEN PESTS AFFECTING COFFEE.**

### 80+ users

It equipped 80+ users (including farmers, cooperative members and companies) with ICT solutions to collect real-time information, enabling quick recognition of pests and timely decisions for pest management.

The SATCAFE approach was replicated to monitor three pests affecting cacao (using the SATCACAO app) and to cover surveillance of other pests, including fruit flies (with the SIVIFI app). Small-scale farmers and other users registered over 400 pest incidence records for coffee and 500 for cocoa on the apps.

These initiatives modernized and expanded coverage and sustainability of the official phytosanitary surveillance systems and improved compliance with the international phytosanitary standard for surveillance (ISPM 6). They also improved access to phytosanitary information and the response capacity of the NPP0. This has helped to control plant pests, cut production losses and reduce pesticide use while increasing coffee and cocoa productivity and exports.