

Bringing Phytosanitary Capacity to the Field: The Bahamas' Mobile Plant Health Diagnostic and Inspection Laboratory as an Innovation for Rapid Phytosanitary Diagnostics

Description of the success, challenge or issue encountered

As a Small Island Developing State (SIDS) with a widely dispersed archipelago, The Bahamas faces persistent challenges in implementing International Standards for Phytosanitary Measures (ISPMs). Phytosanitary inspection, surveillance, sampling, diagnostics, and quarantine activities are constrained by the absence of plant health laboratory infrastructure, high inter-island travel costs, and the need for rapid, on-site phytosanitary decision-making at ports, farms, and border locations. These constraints have historically limited the National Plant Protection Organization's (NPPO) ability to conduct timely pest detection, enforce quarantine measures, and support import and domestic movement controls in line with ISPM requirements.

Actions taken to address it

To address these challenges, the Bahamas Agricultural Health and Food Safety Authority (BAHFSA), through its Plant Protection Unit, established the country's first plant health laboratory as a field-deployable extension of the NPPO. Establishing the facility as a mobile diagnostic and inspection unit was a strategic choice, enabling laboratory-supported inspection of consignments and regulated articles, surveillance and targeted pest detection, secure sampling and sample handling, preliminary diagnostics, and quarantine enforcement to be conducted directly at points of entry, production areas, and quarantine sites.

Equipped with advanced laboratory and diagnostic equipment, ultra-low temperature storage, biosafety cabinet, and digital data-collection systems, the van allows inspectors and technical staff to make timely, science-based phytosanitary decisions in the field. This directly supports implementation of ISPM 6 (Surveillance), ISPM 23 (Inspection), ISPM 27 (Diagnostic Protocols), and ISPM 31 (Sampling of Consignments).



Photo: Ezra Bartholomew, PhD (BAHFSA)

Results achieved or anticipated outcomes

The deployment of the mobile van has strengthened national phytosanitary capacity by reducing response times for inspections and surveillance, improving sample integrity, and expanding NPPO operational reach across multiple islands. It has enhanced early detection and response to pests and diseases of regulatory concern, strengthened quarantine enforcement, and improved coordination with ports, farmers, and other border agencies.

Through the integration of molecular and microbiological workflow into field operations, the initiative supports improved compliance with IPPC obligations, enables more effective implementation of ISPMs under resource-limited conditions, and reinforces stakeholder confidence in national phytosanitary systems.

Key lessons learned and how the experience may inspire or support others

The BAHFSA PPU mobile diagnostic and inspection van demonstrates that effective phytosanitary capacity does not depend solely on permanent infrastructure, but on adaptable, field-centered solutions tailored to national contexts. For SIDS and other resource-constrained NPPOs, mobile phytosanitary units offer a scalable, cost-effective approach to operationalizing ISPMs, strengthening surveillance and quarantine systems, and bridging geographic gaps in plant health protection.



Photo: Ezra Bartholomew, PhD (BAHFSA)