

# CHAPTER 1

## Plant Health Clinics

### 1.1 Introduction

Agricultural research and development are changing globally, and so education, training and research need to become more relevant to the needs of farmers and the extension staff who work closely with them. This means that the usual practice of experts generating and transferring agricultural information to farmers has to change to be more participatory, with farmers as part of a learning process.

In Pacific island countries, historically, technical support services for farmers with pest and disease problems have often been ineffective, with farmers often left without advice and having to tackle pests and diseases as best they can. This may result in nothing being done and the problems spreading, or inappropriate control measures being used. It has also been challenging to create effective collaboration between research, extension, biosecurity, and regulatory organisations, education and the private sector. This is now changing. There is now more emphasis in Pacific island countries on traded commodities, with value chain analyses pulling together different aspects of production and sale. Control of pests – insects, pathogens and weeds in particular - is an important aspect of this production and increasingly so due to climate change.

Plant health clinics (PHCs), initially developed in South America<sup>1</sup>, are a practical approach to providing the information that farmers need to protect their crops. This manual forms part of a PHC program that trains Extension staff (and others) to identify pests and diseases and to give advice to the farmers in a local context. Once trained, the staff are recognised as plant health doctors who hold PHCs regularly at farmer-friendly places, especially markets, with the farmers bringing samples to assist problem identification. During these clinics, the plant health doctors are helped by links to research and biosecurity organisations, both within and outside their country. Their role is to identify so-called unknowns, which may be unusual or new pests, as well as to give more advanced technical information. This collaboration is deemed necessary if an effective PHC program is to be established and flourish.

---

<sup>1</sup> For example, see Boa, E. (2009). How the Global Plant Clinic began. *Outlooks on Pest Management* 20(3):112-116.

## 1.2 A plant health system approach to pests and diseases

Plant health clinics form an important part of an integrated plant health system (PHS) approach to protect crops from pests and diseases.

Researchers of plant health clinics in Africa have developed a definition of a PHS that is based on the World Health Organization's concept of a health system for human beings:



---

*A [plant] health system consists of all organizations, people and actions whose primary intent is to promote, restore or maintain plant health<sup>2</sup>*

---

To develop the collaboration that is required for an effective PHS, different models have been considered, and the one used by medical services is an obvious candidate. After all, such services contain practices that are just as appropriate to plant health as they are to human health, such as stressing improvement of health through prevention, diagnosis and treatment of illness (Fig. 1.1).

In agriculture, good practice means the production of healthy crops with minimal negative impact to the environment and the farming community, and tailoring solutions to individual farmers' situations. We want to build a PHS that is underpinned by plant health clinics, supported by farmers, extension services, regulatory bodies, education and research institutions, and agricultural input and information suppliers. We want to be able to monitor pest outbreaks and forecast any threats to come, and we want to do this in partnership with relevant organisations.

---

<sup>2</sup> See [https://www.who.int/healthsystems/strategy/everybodys\\_business.pdf](https://www.who.int/healthsystems/strategy/everybodys_business.pdf)

## A medical model applied to a plant health system:



**Prevention** – building a healthy agricultural ecosystem with good hygiene and healthy plants instead of depleted soil, monocultures and pesticides



**Personal** – precise, personalised advice to suit a farmer's situation, instead of the same solution for everyone



**Predictive** – using monitoring to predict likelihood of pest and disease outbreaks – weather, biosecurity breaches etc.



**Participatory** – the farmer as an active participant in preventing and dealing with the problem, not just waiting for and relying on the advice of an expert



**Partnerships** – working with all relevant organisations to optimise the building of a PHS



**Treatment** – from less intervention to more intervention

Fig. 1.1 A medical model applied to plant health systems.

## 1.3 Plant health clinics in the Pacific islands

The plant health clinic (PHC) program in Pacific island countries began as a pilot phase in Solomon Islands in 2012, with the support of Phase I of the ACIAR ICM/IPM project (PC/2010/090)<sup>3</sup>. A former member of the CABI Global Plant Clinic conducted the initial training, bringing experience in establishing PHCs in South and Central America, Asia, and across Africa. Subsequently, more than 20 clinics were held in Solomon Islands on the islands of Guadalcanal and Malaita, followed by an evaluation after 16 months.

The pilot phase showed that farmers and extension workers face challenges in managing plant health problems. Biotic (pests and diseases) and abiotic (non-biological) causes lead to regular and often significant losses in crop production and quality. Diagnosis is difficult because of the diversity of symptoms and possible causes, meaning that choosing the best management options needs skill and careful consideration. The pilot phase also showed that there was high farmer satisfaction with the PHCs, and the plant health doctors' knowledge and confidence improved substantially over the period.

Recommendations from the evaluation suggested that there should be pilot phases in other project countries for 18 to 24 months before widespread establishment of a PHC program. Importantly, a 'champion' with enthusiasm and commitment to the clinics should be selected within each country, and more pest and disease fact sheets should be written. Further, the sustainability of PHCs beyond the funding period should be a consideration at the outset, with clinics incorporated into department policies and work plans, as well as being part of Extension staff terms of reference.

Overall, the pilot phase was considered a success. Clinics continued in Solomon Islands, and Fiji and Samoa, both of which had sent representatives to the first workshop in 2012, began PHC programs in 2015 and 2016, respectively, and in Tonga a start was made in 2018.

---

<sup>3</sup>Strengthening integrated crop management research in the Pacific islands in support of sustainable intensification of high-value crop production, implemented by the University of Queensland and the Pacific Community.