Plantwise 2011-2018 Impact Summary

This publication is a summary of the Plantwise Impact Report, setting out the programme's outcomes, impacts and lessons learned from its inception in 2011 up to 2018. The full report is available at https://plantwi.se/2lx88G5

Acknowledgement

CABI gratefully acknowledges the financial support of the UK Department for International Development (DFID), the Swiss Agency for Development and Cooperation (SDC), the Directorate General for International Cooperation (DGIS, Netherlands), the International Fund for Agricultural Development (IFAD), the Australian Centre for International Agricultural Research (ACIAR), and the Ministry of Agriculture of the People's Republic of China for the Plantwise programme.

Reach

CABI has been implementing the global Plantwise programme since 2011. Now operating in over 30 countries in Africa, Asia and the Americas, the Plantwise vision is to ensure increased food security and improved livelihoods by enabling farmers to lose less of what they grow to plant health problems.

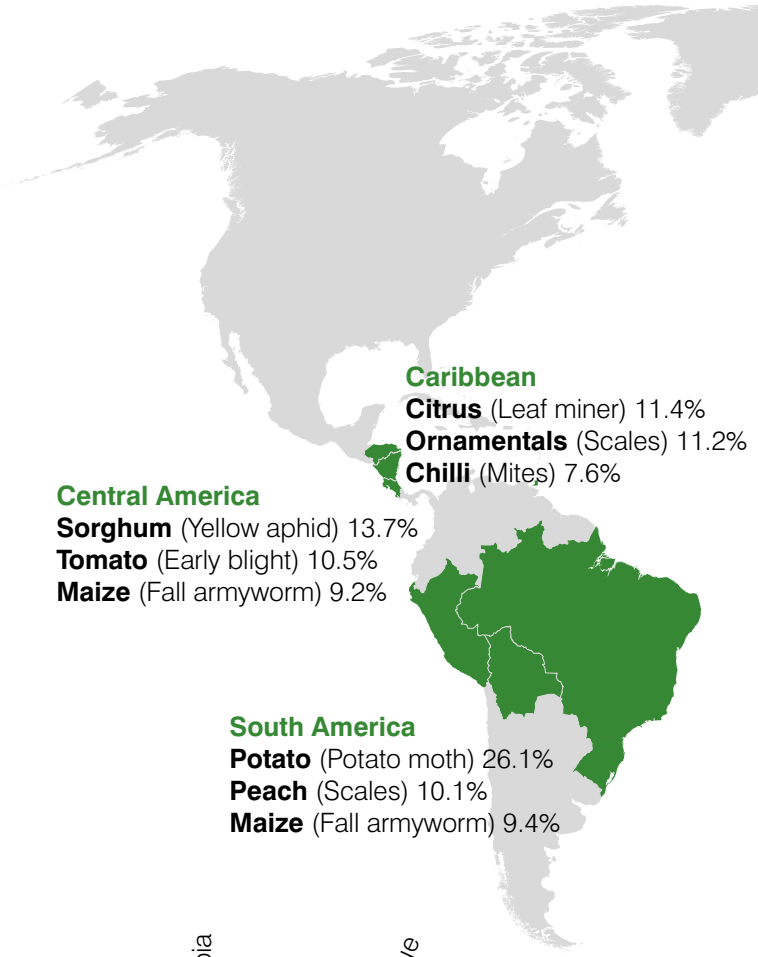
Plant clinics are Plantwise's primary entry point to engaging with farmers but the programme also provides plant health advice through plant health rallies, mass extension campaigns, and other means.

Globally, women were responsible for 32% of queries presented at plant clinics from 2012 to 2018. Plantwise addresses this gender gap through a number of strategies: holding clinics in areas accessible to women, and preferred by them, and at a time that suits their schedules; targeting clinics' publicity specifically to women; and recruiting more female plant doctors.

A key component of Plantwise is providing information via the open-access Plantwise Knowledge Bank, a searchable online and app-based repository containing factsheets, management advice and other information on problems of plant health. Over 1.9 million people have used the online Knowledge Bank since its launch in 2011. More than half of users are women, and 59% are under the age of 35.

Between 2012 and 2017, the annual direct reach of Plantwise has increased 25-fold from 70,000 to 1.7 million, using innovative extension and advisory approaches to deliver plant health messages to over 31 million farmers.

Figure 1: Highest percentage crops (and their main pests) presented at plant clinics by sub-region



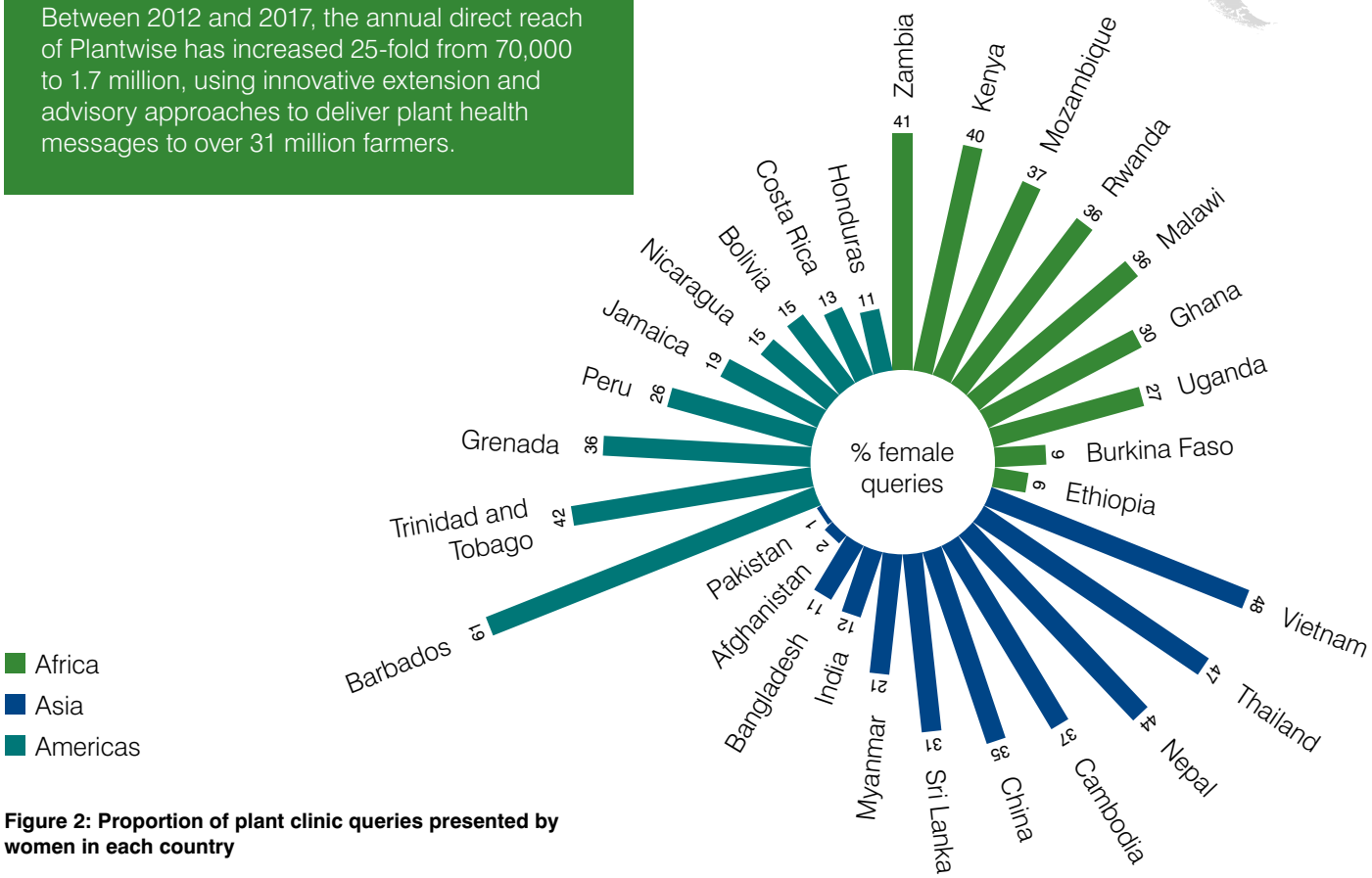
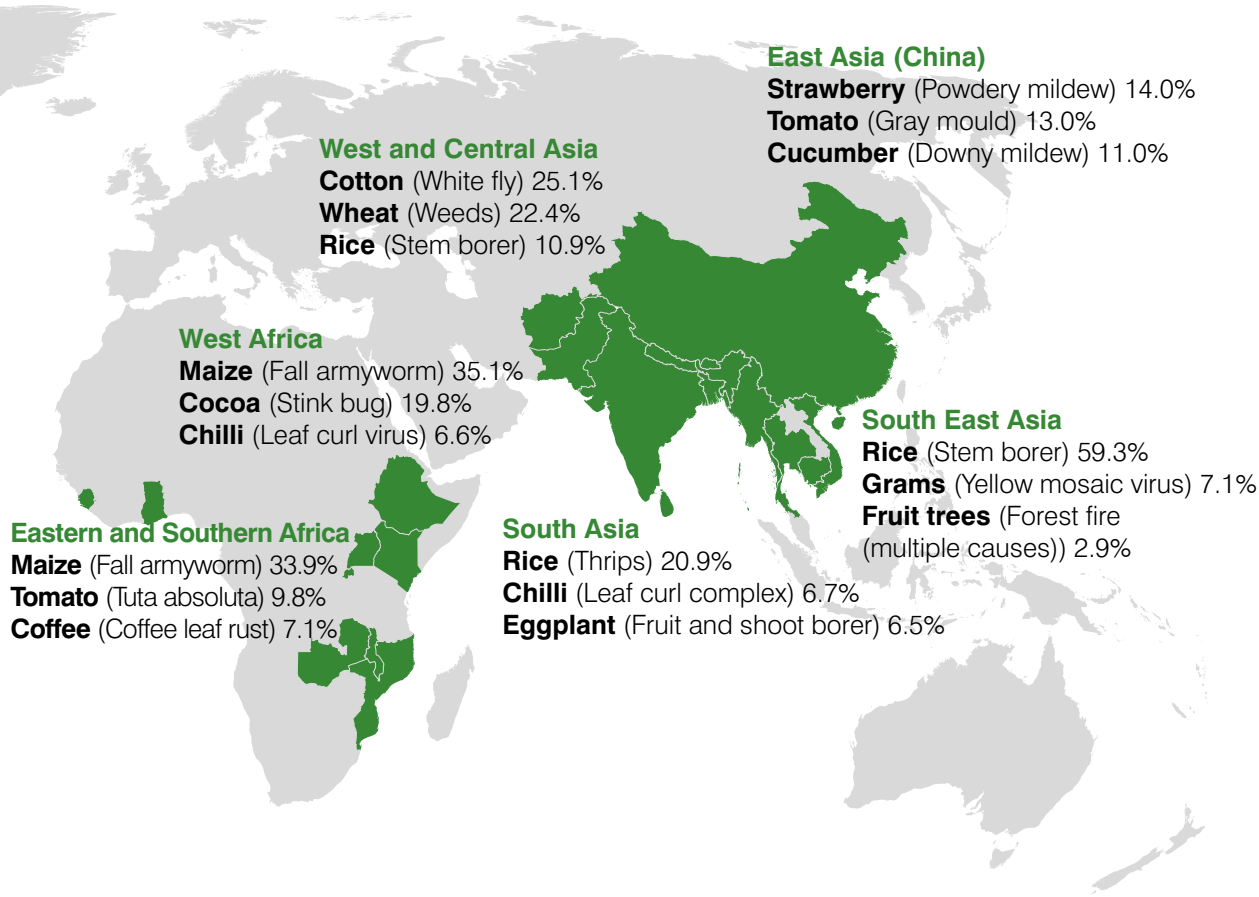
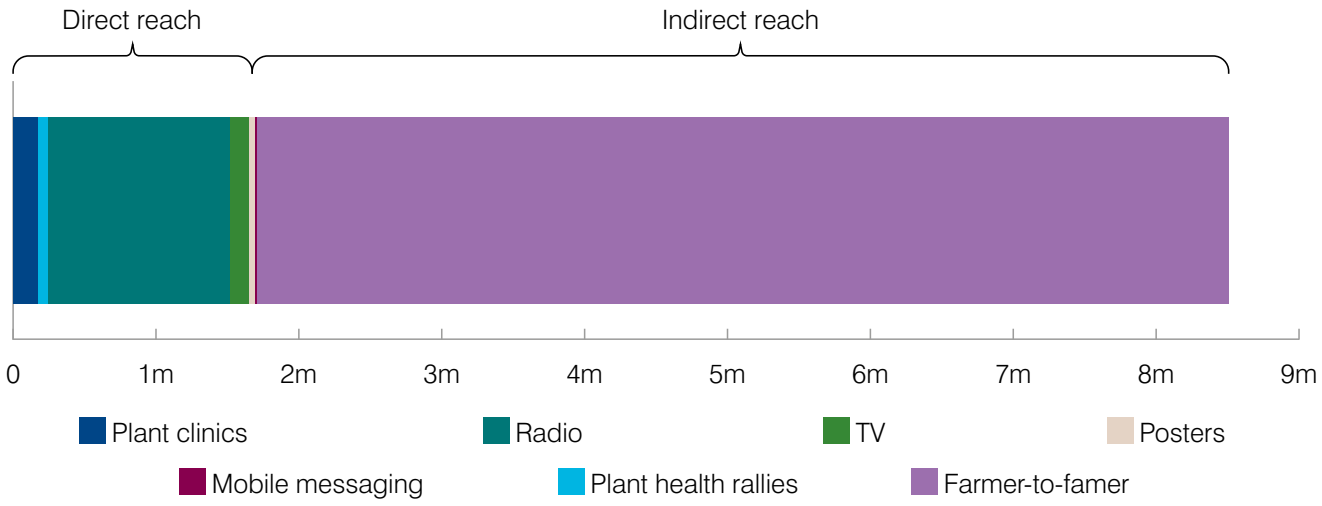


Figure 2: Proportion of plant clinic queries presented by women in each country



Source: POMS data from 21 June 2016 to 21 June 2018, approximately 250,000 queries

Figure 3: 2017 reach broken down by method and direct vs. indirect reach



Adoption and impact

Plantwise assesses programme impact at farmer and farm level in four areas:

1. on farmer knowledge about plant health issues
2. on the adoption of practices recommended by plant doctors;
3. on changes in pesticide use; and
4. impact at the farm and household level (productivity and income gains).

Knowledge

Studies of plant clinic users in Ghana, Honduras Malawi, Rwanda, Sri Lanka, Uganda, Vietnam and Zambia show that users tend to have better and more detailed knowledge about pests and diseases, and are better able to identify symptoms, compared to non-plant clinic users. This indicates that plant clinics play an important role in advising farmers about plant health problems.

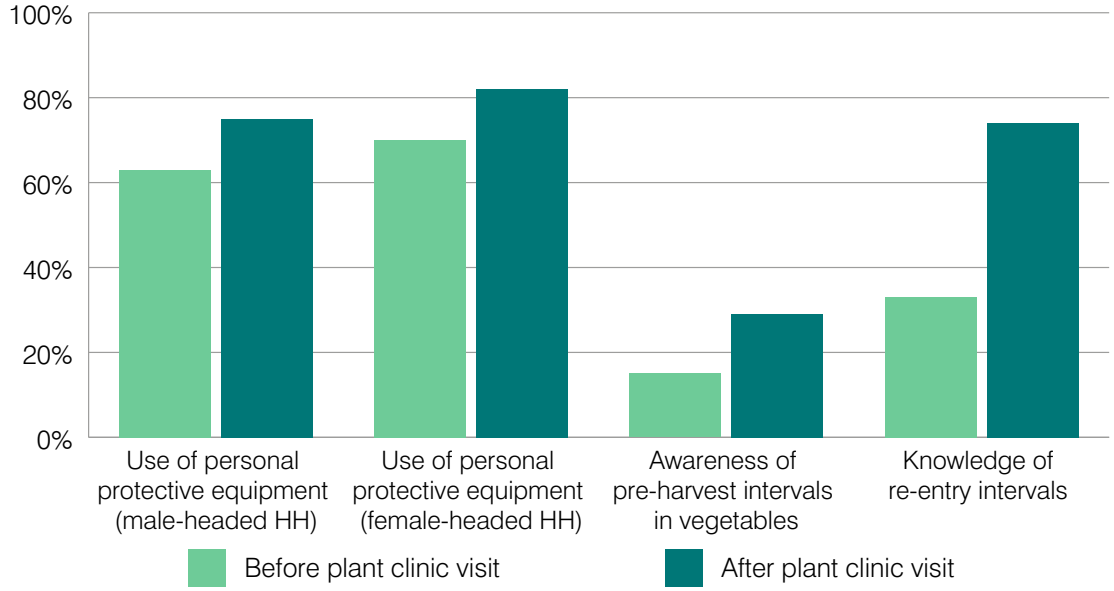
Adoption

Studies in, China, Ghana, Kenya, Malawi, Rwanda and Zambia show that Plantwise plant clinic users have a higher adoption rate for most recommended practices investigated, compared to non-users.

Pesticide use

The use of chemical pesticides is deep-rooted in many farmers' minds, making the practice difficult to change. Nonetheless, there is promising evidence that plant clinics influence farmers adoption of more sustainable pesticide practices. Studies in Cambodia, Kenya, Malawi, Myanmar, Rwanda, Thailand, Uganda and Vietnam showed that plant clinic users were less likely to prefer chemical pest control, less likely to use the most toxic chemicals, more likely to use pesticides less frequently, more likely to combine chemical control with various agronomic practices, more likely to avoid chemical drift when spraying and more likely to use safer alternatives.

Figure 4: Increased awareness after plant clinic visit, Kenya



Productivity and income

The adoption of recommended practices by plant clinic users often contributes to productivity and income gains. Studies in Ghana, Kenya, Malawi and Rwanda show positive impact of plant clinics in terms of yield and net income for most of the studied crops. The evidence from Kenya also shows that the impact can reach beyond the plant clinics: both farmers visiting clinics and farmers in the vicinity saw improved yields.

Plantwise has helped to improve farmers' plant health knowledge, contributing to the adoption of good agricultural practices, safer pesticide use, and increased crop productivity and income.

Table 1: Impact of plant clinics on maize production, Kenya

	Impact difference
Production	12%*
Value of production	13%*
Costs of production	
Inorganic fertilizer	-11%
Pesticide	-18%
Labour	-3%

*Significance level: * p<.10*

Table 2: Impact of plant clinic participation on farm-level outcomes, Rwanda

Indicator	Difference (%)
Adoption of pest control practices	8***
Maize yield	24***
Net maize income	30***
Extreme poverty likelihood	-5**

*Significance level: ** p<.05 *** p<.01*

Strengthening capacity

Individual

Evidence suggests that plant doctors' capacity to provide good recommendations improves with the training they receive from Plantwise. An assessment of Kenyan plant doctors before and after Plantwise training, and a comparison of their knowledge with extension agents of the same level but who did not receive Plantwise training, showed that plant doctors scored consistently higher than extension agents who did not train as plant doctors.

An analysis of Plantwise Online Management System (POMS) data, which holds data about farmers' visits, indicates that plant doctor performance in Ghana improves with experience, especially during the first year after receiving plant doctor training. A recent analysis of POMS data from 15 countries also shows that plant doctors are largely providing the right kind of advice, with 90% giving recommendations aligned to the Plantwise Pest Management Decision Guide.

Evidence from most Plantwise countries with tablet-equipped plant clinics shows that the use of social network and messaging services, such as Telegram and WhatsApp by plant doctors to send pictures of disease symptoms to data validators helps with diagnosis.

National

There is growing evidence of positive effect of Plantwise on stakeholder linkages. In Kenya and Myanmar, Plantwise National Steering Committees have served as an entry point for developing national plant health system strategies; in Jamaica, the committee has been a crucial platform for ensuring the integration of plant clinics and rallies in the existing agricultural advisory and crop protection system.

Plant clinic data are a unique source of continuous and almost real-time pest and disease intelligence from the field that no other extension method currently offers. The data help map and monitor pest occurrence; this information is then used to design responsive actions. In Kenya, the clinic data informed relevant bodies about the spread of fall armyworm and in Sri Lanka, a plant doctor's query about an unidentified pest triggered a system-wide awareness-raising and management response to the arrival of the Banana Skipper (Erionota sp).

Plantwise is improving individual extension officers' plant health knowledge and their confidence regarding being able to provide good advice to farmers as well as improving institutional co-ordination in national plant health systems, generating knowledge and skills to detect and respond to pest outbreaks.

Figure 5: Plant health test scores among Kenyan extension workers with and without plant doctor training

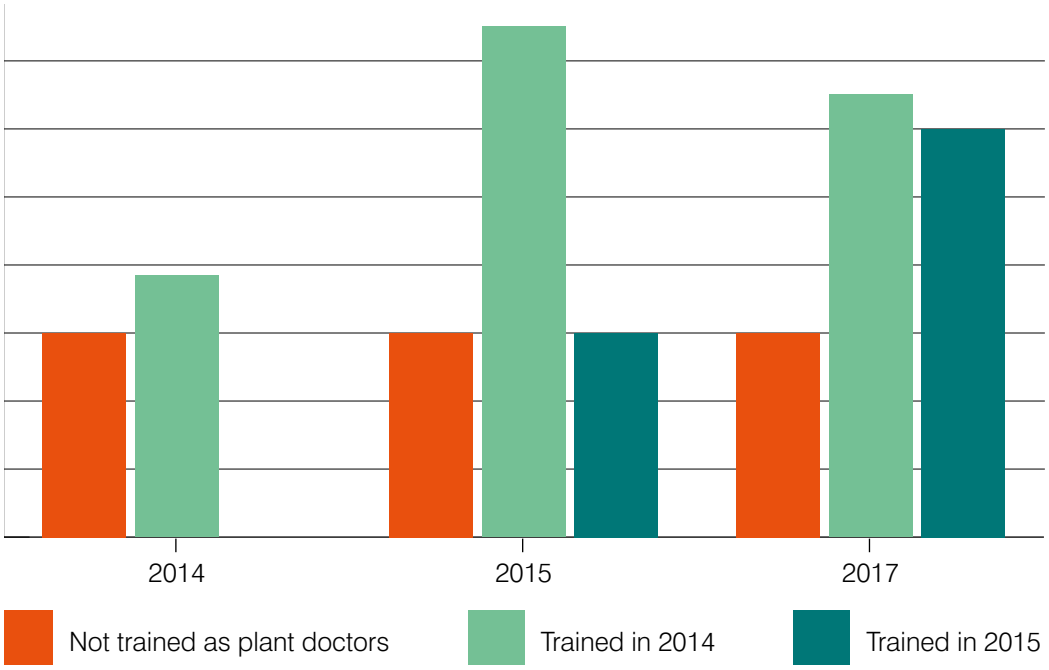
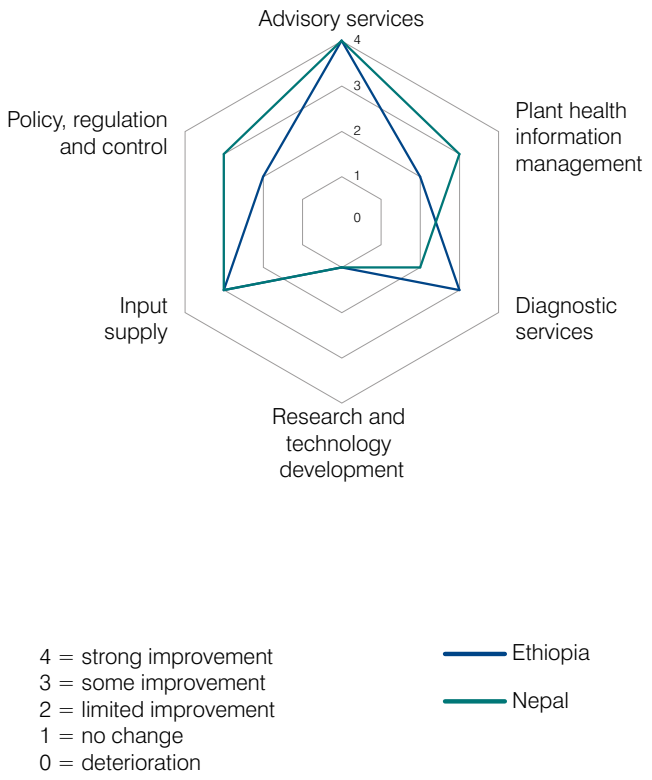


Figure 6: Relative changes in plant health system functions in Nepal (2011–2017) and Ethiopia (2014–2017)



Sustainability

Plantwise promotes national ownership of the programme activities. One way of doing this is through the national co-ordination unit (steering committee), composed of public and private sector stakeholders from extension, plant health regulatory institutions and research organizations, among others. Plantwise seeks to ensure that, as programme implementation progresses, national stakeholders take on greater ownership of financing and implementation.

Key factors contributing to progress towards sustainability include the perceived value of plant clinics in providing plant health advice to farmers, alignment of programmatic elements with national policies, and institutional commitment. Factors that impede progress towards sustainability include instability cause by civil strife, natural disasters and health crises; excessive government bureaucracy; low funding for agricultural extension services; staff shortages and low staff motivation.

There is growing evidence that countries are institutionalizing Plantwise elements, such as plant doctor training, plant clinic operations and the use of ICT platforms, and taking the approach to scale.

Conclusions

Plantwise has had a positive impact on the lives of smallholder farmers in Asia, Africa and the Americas, by contributing to improved plant health management, leading to increased yields and income. The programme has achieved this by strengthening the capacity of extension staff to deliver quality plant health advice through plant clinics and complementary extension approaches, and by strengthening the linkages between plant health system stakeholders, leading to better targeting and coordination of farmer support. Plantwise has also contributed to the detection of at least eight new pests, such as the fall armyworm and tomato leaf miner, in several countries around the world. In addition, Plantwise Knowledge Bank resources are highly valued by thousands of individuals. Regarding sustainability, there are promising signs of the institutionalization and scaling up of Plantwise-supported approaches in a number of countries, by both public and private sector agencies.

Plantwise is supported by:

UKaid from the British people

Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Swiss Agency for Development and Cooperation SDC

Ministry of Foreign Affairs of the Netherlands

Irish Aid
Rialtas na hÉireann
Government of Ireland

IFAD
Investing in rural people

Australian Government
Australian Centre for International Agricultural Research

Ministry of Agriculture
People's Republic of China

To find out more contact:

Washington Otieno, Plantwise Programme Executive
T: +254 (0)20 2271022
E: w.otieno@cabi.org

www.cabi.org

CABI