CABI plantwise

Plantwise in Burundi Annual Report 2021

KNOWLEDGE FOR LIFE

Plantwise is a global programme, led by CABI, that aims to increase food security and improve rural livelihoods by reducing crop losses. Working in close partnership with relevant actors, Plantwise strengthens national plant health systems from within, enabling countries to provide farmers with the knowledge they need to lose less and feed more.

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Abbreviations

BPEAE	Bureau Provinciale de L'Environnement, de l'Agriculture et de l'Elevage
CC	Community Conversation
DCA	Plantwise Data Collection App
DGMAVAE	General Directorate of Mobilization for Self-Development & Agricultural Extension
DPV	Directorate of Plant Protection
EKN	Embassy of the Kingdom of the Netherlands
FABI	Faculty of Agriculture and Bioengineering
GAP	Good Agricultural Practices
ICT	Information and Communications Technology
IPM	Integrated Pest Management
ISABU	Institut des Sciences Agronomiques du Burundi
ISTEEBU	Institute of Statistics and Economic Studies in Burundi
LIO	Local Implementing Organisation
M&E	Monitoring and Evaluation
MEC	Mass Extension Campaign
MINEAGRIE	Ministry of Environment, Agriculture and Livestock
NRO	National Responsible Organisation
NSC	National Steering Committee
PHR	Plant Health Rally
PHS	Plant Health System
PMDG	Pest Management Decision Guide
PND	National Development Plan of Burundi
PNIA	National Plan of Agriculture Investment
POMS	Plantwise Online Management System
RCA	Rapid Care Analysis

Introduction

Plantwise is a global programme led by CABI, which helps farmers lose less of what they grow to plant health problems. Working closely with national agricultural advisory services and other partners, the programme establishes plant clinic networks, run by trained plant doctors, where farmers can find practical plant health advice. Plant clinics work just like clinics for human health: farmers visit with samples of their crops, and plant doctors diagnose the problem and make science-based recommendations on ways to manage it. The plant clinic networks are reinforced by the Plantwise knowledge bank, a gateway to practical online and offline plant health information, including diagnostic resources, best-practice pest management advice and plant clinic data analysis for targeted crop protection. Together, these resources contribute to strengthening national plant health systems by catalysing stakeholder linkages and information exchange. The stronger the national plant health system, the better equipped the country will be to help farmers provide a safe and sustainable food supply and improve their livelihoods. Since its inception in 2011, Plantwise has been introduced into 35 countries, working in partnership with over 175 partners, including; governments, NGOs, civil societies and farmers' associations. Since late 2020, Burundi has joined the list of countries where Plantwise interventions have been introduced.

Plantwise in Burundi

In Burundi, Plantwise will contribute towards tackling some of the major challenges in the agricultural sector (among other things, pests and diseases), identified in the country's policy documents, such as the National Plan of Agriculture Investment (PNIA 2017-2022) and the National Development Plan of Burundi (PND 2018-2027). Key strategies proposed for pest management include putting in place an early-warning system to communicate pest threats and strengthening the capacity of farmers' organizations in pest management.

Plantwise Burundi is being introduced by CABI and implemented jointly by various partners, led by *Institut des Sciences Agronomiques du Burundi* (ISABU). Funding for the project is provided by the Embassy of the Kingdom of the Netherlands (EKN) based in Bujumbura, Burundi (Nov 2020- Oct 2023), and Nuffic – the Dutch organisation for internationalisation in education (Jul 2020-Mar 2022). Implementation of activities in the country commenced in November 2020, and this report covers all project activities and achievements until the end 2021.

Plantwise activities are categorised into five broad work areas: (1) stakeholder linkages, (2) plant clinics and complementary activities, (3) data management and use, (4) information exchange and knowledge bank, and (5) monitoring and evaluation. The Plantwise Burundi programme supports capacity building and establishment of a network of plant clinics to improve farmers' access to information on sustainable management of plant health. In addition, the project is supporting the development of a data collection and management system that enables plant health stakeholders to more effectively monitor production constraints at the field level, and to coordinate higher-level responses to key plant health problems. Special attention is also given to (6) gender.

The Plantwise Burundi project aims to help achieve the following:

- i. Improved farmers' knowledge on effective and practical methods of managing plant health with measurable outcomes to be demonstrated through monitoring and evaluation
- ii. Developing the skills capacities of farmers' advisors through innovative training to serve as plant doctors, operate plant clinics and embed good practices in their advice to farmers
- iii. Develop skills of local experts to develop extension information material for the country.
- iv. Adopt the use of ICT-based processes to make advisory services more efficient, with data-driven decision making on prioritization of actions to manage plant health, to help farmers achieve household food security and crops-based income.

Project Highlights

Stakeholder linkages

- A national coordination unit was established comprising a national coordinator, an assistant national coordinator, a project officer, and a national data manager, with the Director General of ISABU providing overall accountability
- An in-country governance system was established, with a national steering committee (NSC) meeting at regular intervals. The NSC is made up of representatives from both state and non-state actors
- A stakeholder analysis was carried out to identify the key stakeholders in the plant health system (PHS) of Burundi.
- A needs assessment was conducted to identify strengths, weaknesses, and needs of the various functions of the PHS of Burundi.
- A delegation comprising six senior government officials (2 female) from Burundi visited Kenya to learn about the Plantwise implementation approach and adoption in Kenya.
- Critical players within the PHS of Burundi were brought together in a national forum that met to review project progress, and to collaboratively plan the following year's activities.

Plant clinics and complementary activities

- The programme trained 15 local experts (5 female) from partner organisations as master trainers for Plantwise module 1 and 2. Through the training, the knowledge and skills of those trained was assessed to have increased by 12%.
- Following the training of master trainers, 100 field extension workers (10 female) and 10 project supervisors from provinces (1 female) were trained as plant doctors
- A total of 32 plant doctors (3 female) and 10 master trainers (3 female) were trained on integrated pest management (IPM), and pest management methods that embrace the use of biological control agents as part of good agricultural practices (GAP).
- Plant clinics were officially launched in a ceremony presided over by the Director of Department of Plant Protection (DPV) and graced by other national and local leadership.
- A total of 231 plant health queries (22% from female farmers) were handled through the 16 pilot plant clinics; and 344 farmers (40% female) were reached through plant health rallies.

Data management and use

- A webpage for Burundi with tailor-made location-specific information was created on the Plantwise online management system (POMS). By the end of 2021, a total of 231 plant clinic records were available on the POMS page for Burundi.
- The project trained 24 officials (2 female) on key aspects central to Plantwise data management.

Information exchange and knowledge bank

- The project trained 26 content developers (6 female) on development of user-friendly information resources, useful for supporting delivery of practical advice to farmers.
- A total of 19 Plantwise-derived factsheets were written; and there were 459 visits to the online Plantwise Knowledge Bank by persons within Burundi.

Monitoring and evaluation

- A baseline survey was carried out to establish baseline conditions of the project stakeholders. The baseline survey collected data from 946 farm families randomly sampled across 8 provinces.
- The programme trained 20 plant clinic supervisors (3 female) on methods for monitoring and assessing the quality of plant clinic service.
- Technical backstopping was carried out by plant health experts in 13 out of the 16 pilot plant clinics.

Gender

- A gender rapid care analysis (RCA) was conducted. This was followed by community conversation sessions that were held in 10 communities where plant clinics are located.
- The project trained 100 plant doctors (10 female) and 10 project supervisors from provinces (1 female) on gender-sensitive advisory service provision to ensure adoption of good practices that help women access plant health advisory services.

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Stakeholder Linkages

A functional PHS is dependent on strong linkages between stakeholders in the national plant health system. Plantwise aims to strengthen these linkages, thus changing the ways they interact to deliver plant health services. In 2021, the project delivered: (i) a stakeholder analysis and a needs assessment; (ii) national platforms such as a national steering committee and a national stakeholder forum; and (iii) a study visit to Kenya by a delegation from Burundi to learn about the Plantwise implementation approach.

Progress in 2021

Partners

Various partners are relevant to the implementation of Plantwise in Burundi (Table 1).

The *Institut des Sciences Agronomiques du Burundi* (ISABU) is the NRO for Plantwise in Burundi, a role that entails day to day management support of the project including the handling of fiduciary functions: (i) in-country financial management – flow of funds to different stakeholders; (ii) procurement of goods and services to facilitate project operations; facilitating consultancy services for specialised project work; as well as oversight of safeguard provisions. The national coordination unit is composed of a national coordinator (responsible for overall coordination and building linkages for sustainability of Plantwise in Burundi), a project officer (responsible for overseeing day-to-day implementation of all project activities) and a Plantwise national data manager (responsible for overseeing the implementation of data management processes) – all assigned by ISABU.

Table 1: Partners supporting implementation of Plantwise in Burundi

Partner Name	Role
Institut des Sciences Agronomiques du Burundi (ISABU)	National responsible organisation (NRO), Member of national steering committee (NSC)
General Directorate of Agriculture, Ministry of Environment, Agriculture and Livestock (MINEAGRIE)	Member of NSC
General Directorate of Mobilization for Self-Development & Agricultural Extension (DGMAVAE), MINEAGRIE	Local implementation organisation (LIO), Member of NSC
Directorate of Plant Protection (DPV), MINEAGRIE	Member of NSC
Faculty of Agriculture of the University of Burundi (FABI)	Member of NSC

Partner Name	Role
University of Ngozi	Member of NSC
Forum of Agricultural Producers of Burundi (FOPABU)	Member of NSC
Burundi Seed Trade Association (COPROSEBU)	Member of NSC
FAO	Member of NSC
AUXFIN	Member of NSC
IFDC	Member of NSC
INADES	Member of NSC

In addition, the Ministry of Environment, Agriculture and Livestck of Burundi (MINEAGRIE) has assigned an assistant national coordinator (responsible for promoting learning and information sharing). The General Directorate of Mobilization for Self-Development & Agricultural Extension (DGMAVAE), and the Directorate of Plant Protection (DPV) – both directorates within MINEAGRIE – are also key partners in the implementation of Plantwise. The DGMAVAE, through the *Bureau Provinciale de L'Environnement, de l'Agriculture et de l'Elevage* (BPEAE) – the agency responsible for coordinating extension services in the provinces, is the local implementation organisation (LIO) for Plantwise in Burundi, meaning it is responsible for plant clinic operation. On the other hand, DPV is responsible for plant clinic data management.

Contribution by the other partners include: facilitating various project processes (partner NGOs), policy support (international organizations, developmen partners), and ensuring principles of ownership and participation are factored in the project implementation (beneficiaries). It is projected that the network of project partners will continue to grow as project needs and priorities expand. For instance, there is increasing interest among various groups (counting agro-dealers, cooperatives, NGOs) to have their personnel trained as plant doctors.

Stakeholder analysis

Across countries, those involved in the PHS functions differ, and the same applies in the way they operate and interact with each other, or in the mechanism of delivery of PHS functions. To be able to effectively design and plan in-country Plantwise interventions, there is need to understand who are the key stakeholders, and how the local context affects the way the key stakeholders act and interact. A 2-day stakeholder analysis workshop was held in March, and it was undertaken in two distinctive phases: identification of stakeholders; and assessment and mapping out the stakeholders' influence and interest in relation to PHS functions. Key findings from the overall stakeholder analysis include:

- The MINEAGRIE coordinates agriculture in Burundi, among other things, overseeing in-country agricultural development programmes. Within the ministry, extension is placed in the DGMAVAE. Furthermore, extension services have been decentralised to lower administrative levels in order to make the services more accessible to the local communities.
- Actors in the plant health system in Burundi include a variety of government agencies (mostly affiliated to MINEAGRIE), non-profit organisations, private organisations and farmers and farmer groups dedicated to programmes that are closely linked to plant health (component elements of plant health system): service delivery (extension), education, research, agri-inputs, and agri-policy.
- The number of PHS functions identified by stakeholders in Burundi are the following: farmer advisory services, plant health information management, diagnostic services, research and technology development, input supply, crop production, agricultural training, and policy, regulation and control.
- As a whole, at least 22 key actors were identified to be influential in the PHS functions of Burundi. Most actors were from government (50%), followed by development partners/international agencies (32%) and special interest groups NGOs and private sector (18%).
- The MINEAGRIE through DGMAVAE was identified as the most influential actor in the provision of farmer advisory services. There are at least 11 different actors with influence in diagnostic services, including field diagnostics. Five of the actors had the greatest influence: ISABU, DPV, farmers, extension, academia and agri-input dealers. Though relatively distant, international donors were identified to have the greatest influence in research and technology development. The cabinet of MINEAGRIE plays a critical role in the development of the government's policy in PHS. Outside government, international organisations also

play a role in leading, catalysing and supporting in-country policy formulation. The MINEAGRIE through its agencies (*Cellule de communication*, DSIA) and Institute of Statistics and Economic Studies in Burundi (ISTEEBU) are the primary influencers with respect to plant health information management. Finally, academic institutions including technical colleges were the primary influencers and interested parties as it relates to agricultural training.

Needs assessment

A 1-day needs assessment workshop was carried out in June. The purpose of the workshop, which was a follow through from the stakeholder analysis workshop conducted in March, was to explore the strengths, weaknesses, and needs of the various functions of the PHS of Burundi, as well as to identify opportunities for Plantwise intervention. Findings from the needs assessment include:

- Burundi has highly variable agro-ecological zones making it ideal for a wide variety of crops and cropping systems, therefore there is a need to produce food sustainably by leveraging ecological diversity.
- Ninety per cent (90%) of the population are small-scale subsistence farmers, therefore opportunities exist for helping smallholder farmers improve the quantity and quality of their crops.
- Women are significantly involved in crop production though they face greater constraints than their male counterparts. As such, there is need to reduce gender inequalities and to empower women in agriculture.
- Existence of an input subsidy programme and considerable progress made in the seed sector in the country should be harnessed to achieve higher agricultural yields and increased income among farm households.
- There is a heavy crop pest and disease pressure in the country. As a consequence, there is need to strengthen the capacity of farmers in pest identification and management.
- There is over-use and improper handling of pesticides. Consequently, there is need to promote ecofriendly practices that could minimise the reliance on pesticides. Additionally, farmers need to be sensitized on safe and correct use of pesticides.
- Limited availability of clean certified seeds/planting materials necessitates the need for good quality seeds of improved varieties to ensure higher yields.
- Limited knowledge by farmers on phytosanitary regulations necessitates the need to improve the country's phytosanitary capacity and regulatory system.
- Few youths are involved in farming. As such, in order to improve their involvement in agricultural production and processing, the constraints facing youth in agriculture should be examined and addressed.

In total, there are slightly over 3000 'monitors' (agronomy technicians in charge of extension at the Colline level, the lowest administrative unit in Burundi, and the one closest to farmers). The collines are in the 119 communes distributed across 18 provinces. To have significant impact, it was proposed that the project, using available funds (considered 'seed money'), and in the course of the 3-years of project implementation, should consider training 10% of the monitors (~300 extension workers) distributed across all the 18 provinces.

National steering committee

In order to improve in-country oversight and management of the project, as well as to increase ownership, an NSC was established and held its first two meetings – the inaugral one in June and another in November. The NSC is comprised of representatives from key organizations involved in the PHS (Table 2). These organizations double up as partners in the project, and/or have particular expertise to lend to the project, and/or whose clients are the intended users of the output of the project. Individual NSC members are not directly responsible for managing project activities, but provide support and guidance for the implementation team. The NSC is scheduled to meet at least 2 times every year with meetings being chaired by the Director General of ISABU. The Committee performs the following duties and strives to make all its decisions by consensus:

- Develop a strategy for sustainable delivery of plant health services based on plant clinics
- Review plant clinic implementation modalities and advice on their improvements
- Support the development and implementation of procedures for managing and using data on plant pests and diseases generated from clinics
- Contribute to the development and implementation of a monitoring and evaluation (M&E) system that is primarily capturing the contribution of Plantwise in enhancing the Burundian plant health system
- Ensure a smooth and timely transition from piloting stage to the full-scale implementation where national institutions are in full charge (in 2-3 years)

Table 2: Actors in the plant health system of Burundi and members of Plantwise national steering committee

Ministry of Environment, Agriculture and Livestock (MINEAGRIE)
ISABU
DPV
DGMAVAE – BPEAE
Institutions of higher learning
Faculty of Agronomy and Bioengineering (FABI), University of Burundi
University of Ngozi
Farmer associations and cooperatives
Forum des Organisations de Producteurs Agricoles du Burundi (FOPABU)
Agri-input supply and other private sector players
Le collectif des producteurs des semences du Burundi (COPROSEBU)
AUXFIN
NGOs, International Organizations, development partners
FAO
Embassy of the Kingdom of the Netherlands (EKN), Burundi
CABI

National stakeholder forum

Key stakeholders in the PHS were convened in a national forum that was held in November, and attended by 28 participants (5 female), representing various organisations. During the meeting, activities for 2021 were reviewed and the proposed activities for 2022 discussed. The national forum is also a crucial mechanism for exploring ways of embedding successful activities into organisational working practices.

Study visit

In November, CABI organised an exchange visit for a government delegation from Burundi that travelled to Kenya to learn about the Plantwise implementation approach in the country. The delegation included the Director General of ISABU; the Director General of the Directorate of Agriculture, MINEAGRIE; the Director of DPV; the Director of Research, ISABU; Programme Leader – Crops Production, ISABU (doubling as the Plantwise National Coordinator); and a Plant Pathologist, ISABU (doubling as the Plantwise national data manager). The study visit helped the delegation learn from their Kenyan counterparts' experience, especially in the areas of plant clinic operations, data management and processing, IPM, and application of ICT in agroadvisory work. The delegation met with their counterparts as well as users of Plantwise-based services. Besides the Kenyan Ministry of Agriculture, Livestock, Fisheries and Cooperatives (MoALFC) – the NRO for Plantwise in Kenya, the delegation visited Kenya Agricultural and Livestock Research Organization (KALRO), the Kenya Plant Health Inspectorate Service (KEPHIS), and the county government of Nakuru. The delegation also paid courtesy calls to the Principal Secretary of the State Department for Crop Development and Agricultural

Research, MoALFC; the Director General, KALRO; the General Manager – phytosanitary services, KEPHIS; the Deputy Governor Nakuru County and also visited a plant clinic in the County. In the spirit of "One Health", there was also an opportunity for the delegation to be taken for a guided tour, both for inspiration and learning, at the KALRO's Dairy Research Institute in Naivasha.

Lessons Learned

A key lesson gleaned from 2021 is that project ownership requires continuous engagement and trust building with partners. This is especially crucial in the initial stages where greater involvement is required of the project teams to support the necessary capacity building of national counterparts.

Arising from stakeholder engagement, to assure sustainability, there is need (and the project is accommodating this as much as possible) to work more closely with private sector and other interest groups (such as agrodealers, cooperatives, seed producers, NGOs, and local authorities). To raise awareness of the anticipated benefits of the plant clinic network in Burundi, high-ranking government officials have provided strong encouragement to develop a permanent plant clinic where policymakers and other senior decisionmakers as well as donors can go to experience the Plantwise approach in practice and understand why this innovation fits with the government strategy to support agricultural development. CABI will work with the NRO to develop a plan on where and how such a permanent clinic could be arranged and discuss with EKN on resourcing it as part of the project. The Project focuses on improving crop health through strengthening extension, in particular, and setting up of a two-way feedback system from which relevant institutions also learn about the field problems farmers are experiencing. However, to comprehensively address the overall plant health system in the country, more will be needed to address issues to do with, for example access by farmers to plant protection products, particularly biocontrol products; capacity of DPV to undertake its mandate - both personnel and infrastructure; and building capacity of ISABU to identify and and develop biocontrol solutions. Addressing these issues will not be possible within the scope of the current project but must be dealt with in future and will therefore inform follow-up proposals.

The Covid-19 pandemic, and the containment measures introduced at its onset, disrupted the commencement of several project activities in Burundi. Notwithstanding the aforementioned challenge, the time lost for project implementation was fully recovered over the course of 2021, mainly through (at least) monthly interaction between CABI and the NRO in particular on issues to do with:

- Stakeholder engagement, involvement, and management building support and enthusiasm among the stakeholders; including stakeholders in defining, designing and producing project deliverables; and proactively dealing with situations touching on stakeholders and their dynamics
- Comprehensive and detailed planning, and carefully planned implementation activities are planned and carefully implemented through back-to back activities
- Early risk analysis and ongoing risk management ability to predict risks and proactively working towards their resolution
- Monitoring and control project progress is regularly checked and results evaluated; development of an
 activity tracking tool to track tasks, meet deadlines, and track progress; and development of an M&E plan
 to track and assess results of the intervention throughout the life of the project

Next steps

Strengthening of linkages between national PHS stakeholders will receive increased attention through national platforms such as the NSC and the national forum. Another focus will be on linking plant doctors to information and support services they need to deliver effective support to farmers.

The project will reflect on the current implementation approach to examine opportunities for bringing on board new partners that can add value, increase reach and impact, and/or sustain the project's interventions. Existing and potential collaborations with private sector actors and other interest groups (including agro-dealers, cooperatives, seed producers, NGOs, and local authorities) will be assessed. This will involve a review of new private sector linkages. Additionally, the project will promote and test new plant clinic models, such as plant clinics owned and operated by private sector organisations and special interest groups as well as the establishment of one permanent plant clinic.

Plant Clinics and Complementary Activities

Establishing networks of plant clinics is preceded by various activities such as training of agricultural advisors on Plantwise Modules 1 and 2. Other interconnected activities include: developing open-access information resources to support the work of plant doctors and other intermediaries; building the capacity of plant doctors and other in-country experts in area such as IPM/biocontrol; and developing an access-controlled databank and associated tools that ease data capture, storage and retrieval by plant doctors and other plant health stakeholders. In 2021, the programme delivered: (i) plant doctor training for master trainers, (ii) plant doctor training by master trainers, (iii) training on IPM/biological control for plant doctors, (iv) the set up of pilot plant clinics, and (v) training on plant health rally and mass extension campaign for local experts.

Progress in 2021

Plant doctor training for master trainers

The development of skills for a group of national experts to serve as master trainers is an important Plantwise intervention. The master trainers are crucial for building national capacity on imparting skills required for subsequent trainings as well as for activities requisite for scaling out networks of plant clinics. The first ever plant doctor training in Burundi was for 15 master trainers (5 female) held in March. The 6-day training comprising Plantwise module 1 (Field diagnosis and plant clinic operations), Plantwise module 2 (Pest management and good farmer advice), and e-plant clinic (electronic capture of plant clinic data) was a learning process for lead experts from relevant institutions who will in turn provide training and capacity-building assistance to field extension staff. The master trainers came from different institutions, namely ISABU, DGMAVAE, DPV and FABI. All 15 participants passed the exam. The average score for module 1 was 68 ± 20 % while that for module 2 was 77 ± 11 %. Compared to a pre-course quiz, knowledge and skills were improved by 12%. Before the training course, all the Plantwise training material had been translated from English to French.

Plant doctor training by master trainers

Following the training of master trainers, and to respond to the demand for national coverage of the Plantwise operations, a total of 100 field extension staff (10 female) and 10 Plantwise Burundi supervisors of plant doctors from provinces (1 female) – all from BPEAE, were trained as plant doctors in five separate sittings (Table 3). In 2022, even more plant doctors will be trained to achieve the requested national coverage of plant clinics (having plant clinics in all the 18 provinces).

Table 3: Plant doctor training by master trainers

Month	Male	Female	Total
March*	22	3	25
September**	16	-	16
November* (3 groups)	61	8	69

*Training conducted by local trainers, backstopped by CABI

**Training done by local trainers

Training on integrated pest management/biocontrol

To further build capacity of the newly trained plant doctors, these extension agents were taken through an additional 3-day training on the importance of IPM, and pest management methods that embrace the use of biological control as part of good agricultural practices (GAP). The training further served to create awareness among the participants on judicious use of pesticides and pesticide risk reduction at farm level. The training had a strong focus on biodiversity conservation and the negative implications of indiscriminate use of pesticides. The participants, who came from DGMAVAE/BPEAE, ISABU, DPV, and FABI, were trained in two groups with the first group of plant doctors and a select number of master trainers (24) trained in June while the second group of 18 was trained in October 2021. Also provided alongside this training, was a "refresher" course on Plantwise modules 1 and 2 (1-day), and a training on diagnosis and management of the invasive fall armyworm pest (1-day).

Set up of pilot plant clinics

Another important Plantwise intervention is the running of plant clinics. Plant clinics, operating as a demanddriven extension tool, serve as focal points where farmers bring samples of affected crops and consult plant doctors on management. In August, the project launched 16 pilot plant clinics in 16 communes, distributed in 8 provinces (two plant clinics per province). The pilot plant clinics, operating weekly in sites that are easy to access by farmers, are operated by two plant doctors per clinic. The setting up and running of the pilot plant clinics followed the training of plant doctors (March) and included the procurement of basic plant clinic materials such as chairs, umbrellas for shade, banners for "visibility", simple hand lenses for magnification, small knives for plant dissection, bins for disposing of diseased plant samples, and tablet computers for data capture. The launch held in Bubanza province and presided over by the Director of DPV – who was representing the minister – was graced by, among others, the representative from the EKN, the Governor of Bubanza province, and officials from ISABU. Also, in attendance were plant doctors, farmers and other stakeholders in the PHS of Burundi. In the three months following the launch of the plant clinics, the 16 pilot plant clinics logged 231 plant health queries (22% from women farmers) (Table 4) related to among others maize, beans, tomato, potato and eggplant (Figure 1).

	Male	Female	Total
Plant clinics	181	50	231
Plant health rallies and similar methods	206	138	344
Total	387	188	575

Table 4: Farmer reach in Burundi in 2021

Training on plant health rally and mass extension campaign

In order to enhance farmer reach and to expand the reach of Plantwise, particularly once plant clinics and the associated data management processes become effectively used, the project will promote the use of complementary extension methods: plant health rally (PHR) and mass extension campaign (MEC). A PHR is an organised mass extension event focusing on raising awareness and management of specific plant health problems. Run by local extension workers, the rallies target farmers who have been specifically mobilised for the

event with tailored information on a selected plant health topic. The MECs have also been used to reach large numbers of farmers. Mass extension campaigns are deployed to communicate messaging around established technologies and solutions to achieve rapid, large-scale shifts in farmer practices and behaviour. To build capacity leading to the execution of MEC and PHR, 26 in-country experts (3 female), drawn from DGMAVAE/ BPEAE, DPV, MINEAGRIE, ISABU, and AUXFIN, were taken through a 5-day training in September. The training focused on planning and execution of PHRs, and the use of mass extension channels (such as posters, radio, videos screenings and mobile SMS). Also highlighted during the training, is the need for gender considerations during MECs, and the need to contextualise campaigns to fit the country's social context. As part of the training, 11 plant health rallies were implemented in Bubanza and Cibitoke provinces, the focus being management of the tomato leafminer, *Phthorimaea absoluta* (formerly Tuta absoluta) and fall armyworm (*Spodoptera frugiperda*) on maize. A total of 344 farmers (40% female) (Table 4) were reached through the rallies. During the rallies, it was observed/reported that:

- Farmers exhibited limited knowledge on the safe use of pesticides
- There are various counterfeit pest control products in the market
- Farmers seldomly use personal protective equipment (PPE) when applying pesticides
- For future campaigns, it will be important to take into consideration that:
 - The mobilisation unit under the department of agricultural extension, MINEAGRIE, currently airs agricultural radio shows
 - Ninde (loosely translated as 'what is happening') radio and television is popular when it comes to mass mobilisation
 - AUXFIN currently serves about 400,000 households representing 2.3 million people through a network of coaches equipped with tablets (have online/offline capability with one tablet serving approximately 50 households)
 - Churches have a good network of reach within Christian (Catholics) communities.
 - Opportunities could be sought for disseminating PHR messages during the government-sanctioned 'Saturday environmental clean-up' programme

Lessons Learned

Arising from project implementation, (i) there is immense demand from partners to expand plant clinic networks and associated activities – a mark of acceptance and ownership of the plant clinic concept; (ii) to increase awareness and ownership of Plantwise, sub-national levels of government (e.g. province, commune, colline) should be engaged more directly. The project has had much success in getting national level buy-in; however, the project should increasingly involve province, commune, and colline level partners; and (iii) there is need to prioritise integration of plant doctor training modules into the curricula of educational institutions.

Next steps

The project will scale up (more plant clinics) and scale out (more provinces) to not only reach its target of supporting 10,000 farmers by 2023 through the establishment of plant clinics but also to achieve national coverage.

On the basis of evidence gathered through M&E processes, development of a strong in-country PHS that is supported by national and sub-national levels of government, serves as a safeguard, and assures sustainability of the different elements of the project.

Crucial to the continued training of new plant doctors is the integration of plant doctor modules into the training curricula of higher education institutes. As a step towards this, and realising that the process of formal integration into the curriculum can be long, a situational analysis will be carried out to realistically evaluate the prospects, including engaging stakeholders on the same.

In 2022, Plantwise will promote the use of complementary extension methods to enhance reach and impact. Various PHRs and MECs will be supported, in some cases using plant clinic data to identify key crop problems or using Plantwise factsheets as source materials for broadcast messages. These events will be organised during the cropping seasons and will focus on various topics of local relevance, e.g. management of priority plant health problems.



Figure 1: POMS visualization of plant clinic data

Data Management and Use

Besides providing good pest management advice, plant clinics document cases (in the form of recorded query data) useful for building databases that serve as information resources by stakeholders in plant health. During a plant clinic session, plant doctors capture notes about farmer queries, recording information about the farmer (e.g. name, gender, contact details and location), crop, symptoms, diagnosis and management actions. This information is captured electronically using the Plantwise data collection app (DCA) installed in a mobile device. Through the DCA, the data is uploaded onto Plantwise online management system (POMS) where it is cleaned, stored and analysed. In 2021, the project: (i) set up a data management system for the project, and (ii) conducted training for plant clinic supervisors on data management

Progress in 2021

Set up of a data management system

A POMS page for Burundi was set up, with tailor-made location-specific information. The POMS, which provides data management support across Plantwise, including analytics, is a restricted access area of the online Plantwise Knowledge Bank useful for managing plant clinic data as well as programme monitoring.

Training on data management

The data management course aims at giving participants an overview of the entire Plantwise data management process. A 5-day training on data management was conducted in August. The training which involved 24 participants (2 female) drawn from DPV, BPEAE, ISTEEBU and ISABU, introduced the participants to data recording (collection), transfer, harmonization, validation, analysis and sharing (reporting). During the training, the participants had a chance to discuss how the roles of their various institutions fitted within the data management process, and any challenges they envisioned and support required. Additionally, the training provided an opportunity to introduce participants to POMS.

Lessons Learned

The process of registering plant doctor emails on the DCA Administration site is time consuming because majority of plant doctors do not have emails, hence the trainers have to start by creating email accounts before registration. The fact that majority of these plant doctors are using emails and smartphones for the first time also implies that trainers need to commit a significant amount of time familiarising them with use of these systems/ gadgets.

It would have been ideal to integrate the Plantwise data management processes into an existing in-country data management system (for sustainability). However, from discussions with stakeholders, there doesn't appear to be such a system in operation.

The sending of recommendations/advice to farmers in form of SMS after a clinic session may not be a feasible approach for Burundi since many farmers do not own/have access to mobile phones. This poses a challenge to plant doctors as they have to write the recommendation on a piece of paper, which is additional work. Moreover, illiteracy is a problem in particular in rural communities.

Poor network in some places may render it difficult for plant doctors to regularly submit completed forms. A system that does not require internet connection at the plant doctor level would be more ideal.

The set-up of the DCA does not allow plant doctors to view the data once they submit. As such, it would be good if they had access to POMS or shared summaries from the data. This will keep them motivated.

Next steps

During the period under review, useful strides were made in developing a data management system. In 2022, there will be a bigger focus on plant clinic data management meaning more attention to the processes of recording data at plant clinics; submission of data into the POMS; harmonisation, validation, analysis of data; and sharing the results with all interested stakeholders. Additionally, through DPV, considerable effort will go towards the signing of a data sharing agreement, and the training of plant clinic supervisors from the additional eight provinces on data management.

Information Exchange and Knowledge Bank

Integral to the successful management of plant health problems, is the provision of access to a wide array of information, from simple extension materials in local language to international science-based information. Plantwise is supported by the open-access, web-based Plantwise knowledge bank that acts as an essential information source and provides a searchable database containing pest management decision guides (PMDGs), factsheets, and other information sources on diverse aspects of plant health. Users of the knowledge bank have access to locally relevant, comprehensive, and actionable information on plant health. The other section within the knowledge bank is the access-controlled POMS, already mentioned above. In 2021, the project delivered training on development of extension materials.

Progress in 2021

Training on development of extension materials

To support delivery of science-based and practical advice to farmers, a 5-day training course was held in September for 25 participants on developing country-specific, user-friendly information resources (PMDGs and factsheets). The training, focussing on plant health problems identified in Burundi, involved participants from BPEAE, DPV, ISABU, FABI and AUXFIN. During the training, seven PMDGs and 12 factsheets were developed (Table 5).

No	Crop	Plant health problem
Pest r	nanagement decis	sion guides
1	Banana	Xanthomonas campestris pv. musacearum (banana xanthomonas wilt (BXW))
2	Oranges	Aphis spp (Puceron des agrumes, citrus aphids)
3	Bean	Ophiomyia spp. (bean fly en anglais, mouche mineuse de le haricot en francais
4	Tomato	<i>Phytophthora infestans</i> (Phytophtora blight, late blight, mildiou de la pomme de terre; mildiou de la tomate)
5	Rice	Magnaporthe oryzae (syn. Pyricularia) (rice blast disease, brunissure du riz ; pyriculariose du riz)
6	Coffee	Colletotrichum kahawae (coffee berry disease, anthracnose de baies du cafeier d'arabie)
7	Mango	Bactrocera dorsalis (syn. B. invadens) or fruit fly

Table 5: Extension material developed in Burundi in 2021

Factsh	neet for farmers	
1	Maize	Pulvérisation contre la chenille légionnaire d'automne
2	Coffee	Surveiller les punaises de caféier
3	Cassava, beans	Ramassage des criquets puants ravageurs
4	Rice	Traitement des semences de riz par la chaleur
5	Banana	Dessouchage des bananiers atteints de BXW
6	Maize	Usage des insecticides contre le grand capucin dans le maïs stocké
7	Citrus	Usage de l'eau savonneuse contre les pucerons des agrumes
8	Mango	Conservation des agents de lutte biologique contre la cochenille farineuse du manguier
9	Potato	Gestion des maladies post récolte de la pomme de terre
10	Potato	Pulvérisation de la pomme de terre avec le métalaxyl
11	Maize	Fertilisation de la culture du maïs

Signing of a memorandum of understanding between CABI and AUXFIN

Within Plantwise, CABI builds partnerships with those who can effectively support dissemination of key plant health messages to a broader audience of farmers. In June, an MoU was signed between CABI and AUXFIN to facilitate content sharing between the Plantwise Knowledge Bank and AUXFIN's Agri-Coach platform. Agri-Coach is a digital service platform that contain financial and digital extension services as well as linkages to input and out markets. Additionally, the Agri-Coach provides pest and weather information to farmers in the local language. In order to assess added value of this collaboration, AUXFIN agreed to share use data and any feedback that could improve the content of Plantwise extension materials for Burundi.

Use of social media

Social networks play a crucial role in building social capital, facilitating information flows and supporting learning thus increasing awareness and adoption of new technologies. The Plantwise social networking groups on cross-messaging platforms (Telegram and WhatsApp) remain a highly effective channel for strengthening connections among plant health system players. The groups, originally established to provide technical support to plant doctors when tablets were first introduced in Kenya for electronic capture of plant clinic data, have evolved to provide a number of benefits to plant doctors across Plantwise countries. The first Plant doctors' Telegram group for Burundi was established in March during the plant doctor training for master trainers. The aim was to provide a forum for the trainers and the plant doctors to provide support in diagnoses, and to interact with each other. The forum currently has a total membership of 32 persons, comprising mainly the plant doctors who occasionally post pictures of diseased plant samples to seek help in identifying the problems. The group has not been very active due to a preference for WhatsApp. As a result, a WhatsApp group for plant doctors and plant clinic supervisors was formed.

Lessons Learned

There is potential for social media to be a peer-support mechanism for plant doctors in Burundi, with WhatsApp being the most commonly used platform. Besides linking plant doctors to in-country support, social media networks could also provide an avenue for communication between plant doctors and CABI, allowing for the monitoring of queries posted and provision of support where needed.

Next steps

Increasing use of the Plantwise knowledge bank content will require continued production of country-specific, user-friendly information resources (factsheet for farmers and pest management decision guides).

Monitoring and Evaluation

Monitoring and evaluation (M&E) is being carried out at local and national level. At the local level, the focus is on plant clinic operations to improve their performance in terms of quality of advice, geographic coverage and farmer satisfaction. This is being achieved through monitoring of plant clinic performance by plant clinic supervisors. At the national level, M&E involves assessment of the contribution of Plantwise to the national strategy in supporting agriculture and food security through specific studies, and using indicators such as improving farmer livelihoods and incomes. Monitoring and evaluation outputs include: information on good practices, lessons learned, successes and challenges. In 2021, the project delivered: (i) a baseline survey, (ii) a training on monitoring plant clinic performance, and (iii) monitoring and technical backstopping visits to plant clinics.

Progress in 2021

Baseline survey

A major project activity in 2021 was to conduct a baseline survey to provide a benchmark against which progress and outcomes will be evaluated for the 'before' and 'after' intervention scenarios.

The key socio-economic aspects covered by the baseline, and which were disaggregated by male and female gender, and which were in alignment with the project results framework, included:

- Demographic characteristics of households: age, gender, education, household size, land holdings and utilisation, key sources of household livelihood
- Knowledge test questions on key pests in the country that are likely to be presented at the plant clinics and general knowledge of farmers on IPM
- Practices of farmers that tackle crop pest problems leading to reducing crop losses from the pests, including practices of farmers in handling and use of pesticides to manage crop pests
- Farmer level approaches to climate-smart crop production
- Household food security situation through the average number of months households have access to sufficient food, and food insecurity experience scale (FIES).

The baseline survey collected data from 946 farm families randomly sampled across 8 provinces in which Plantwise project will be introduced: Bubanza, Bujumbura-Rural, Cibitoke, Gitega, Kayanza, Muramvya, Mwaro, and Ngozi. The data collection exercise also included a document review (project document, theory of change and project *results framework*), and discussions with key informants in agriculture relevant sectors to

complement the farm families survey. Once finalised, a report will be available for sharing with our partners on request, expected in April 2022. Among the findings gleaned from the survey include:

- Crop farming accounts for 71% (80% Female; 70% Male) of the farming enterprise with mixed farming (crops and livestock), and pure livestock accounting for 28% and 1%, respectively. More men than women are engaged in crop production
- The most important challenges to crop production include pests and diseases (74%) and the high cost of inputs (67%)
- Women's participation in crop production and processing is more focused on food crops with less decision making opportunity in commercial or cash crops
- On pest management, the majority of farmers (52%) indicated that they used chemical pesticides. Only a few applied other methods related to IPM
- · Sources of agricultural-related advisory are few and accessed by a very small proportion of farmers
- With regards to food insecurity, an estimated 60% of the households experienced moderate to severe food insecurity. About 65% of female-headed households experienced hunger compared to 50% of male-headed households.

Training on monitoring plant clinics performance

The Monitoring of Plant Clinic Performance (MPCP) course aims at strengthening the capacity of organizations implementing plant clinics to monitor and document the performance of plant clinics. A key component of the MPCP ensures that implementing organizations put in place a simple and practical plan, allowing them to qualitatively and quantitatively assess the progress and performance of plant clinics on an on-going basis.

A three and a half-day training on MPCP for Plantwise Burundi supervisors of plant doctors from provinces (BPEAE), DPV and the local coordination team was conducted in October, and involved 20 participants (5 female). These participants were targeted to enable them acquire knowledge and skills on how to implement the monitoring of the performance of plant clinics, conducting on-site assessment of the quality of diagnoses and advice, conducting some simple plant clinic data analysis, and drafting reports from such plant clinic visits. The training covered the key aspects of plant clinic performance monitoring that included: defining the general concept of monitoring, defining the plant clinic monitoring performance criteria, articulating the monitoring methods, assessing quality of plant doctor diagnoses and advice, plant clinic data analysis using Excel tools such as filter and pivot tables, preparing for and conducting a plant clinic monitoring visit, writing a report from the visit, and establishing a plant clinic performance monitoring plan.

Technical backstopping of pilot plant clinics

Backstopping is used as a technical mechanism that supports the development and transfer of new evidences and innovations. As a result of research and practice, backstopping provides critical technical advisory support for process development, testing and implementation as well as their documentation and evaluation. In September, during plant clinic sessions, technical backstopping was carried out by plant health experts in 13 out of the 16 pilot plant clinics. During these visits, it was observed that:

- All the pilot plant clinics were operational, running once a week
- A majority of the plant clinics are situated in or near markets. Other places where plant clinics are located include agricultural offices, in-front of agro-input shops
- Challenges appeared around filling and uploading of electronic prescription forms, faulty mobile devices, and plant clinic publicity and visibility not being broad enough to achieve significant awareness.

Lessons Learned

The implementation of the baseline survey took longer than anticipated to complete because of the weak reporting skills of the service provider. In future, this will be overcome by engaging a technically competent local service provider to carry out similar work.

On MPCP, the minor challenge was language barrier where the CABI trainers train in English and local resource person translates to French and Kirundi. This takes longer to implement, and some content is lost through translations. This can be overcome by sufficient before hand discussions on the training content so that the local person can make smooth translations during training.

Arising from extensive stakeholder engagement and through project implementation, to assure quality of the service rendered at the plant clinics, there is a clear need (and the project is accommodating this as much as possible) to undertake more monitoring and technical backstopping visits to plant clinics by experts from CABI and partnering institutions.

Next steps

The MPCP training will be extended to plant clinic supervisors from the additional eight provinces. An important element of this training is the development of uncomplicated plans for monitoring plant clinic performance using diverse methods (e.g. review of plant clinic data to assess quality of diagnoses and advice, visits to plant clinics, feedback from farmers, etc.).

The main opportunity for the project to support the quality of diagnoses and advice to farmers by plant doctors is through field-level interventions. Plant clinic data will be reviewed to identify where plant doctors struggle the most (types of plant health problems) when making diagnoses and giving advice. The project will introduce the concept of plant clinic cluster meetings, where plant doctors learn from one another and share field experiences.

Gender-focused Activities

Women in Burundi play a significant role in crop production, especially in the production of subsistence crops that are important for household food security. However, they are not targeted in agricultural extension advisory services and they have limited decision making role on production, outputs and income. Unfair distribution of Unpaid Care and Domestic Work and gender based social norms underpin this inequality in access to extension services and decision-making power in the household. The existing gender relations can have negative implications on women's participation in Plantwise activities, mainly their ability to access plant clinics, implement plant doctors' advice, and participate in plant health rallies and other extension outreach activities. This in turn can reduce the efficiency of plant health advisory services, due to non-targeting of women farmers who play a significant role in crop production. It can also negatively affect food security and household nutrition, as women are mainly responsible for subsistence crops important for household food security and female headed households tend to be the most food insecure.

The Plantwise project in Burundi aims to integrate gender considerations in the program and address these challenges, through the following strategies:

- Recognition, reduction and redistribution of unpaid care work that affects women's access to agriculture advisory services
- Shift social norms that influence women's access to agriculture advisory services and their decisionmaking role in agriculture production and income
- · Build the capacity of plant doctors on gender sensitive advisory service provision
- Promote learning on good practices for gender sensitive agriculture advisory services among plant health stakeholders

Progress in 2021

Training of Plant doctors on gender sensitive agricultural advisory service provision

A total of 110 persons (11 female), including field extension staff (100) and master trainers (10), were trained on gender sensitive agricultural advisory service provision. The objective of the training, offered alongside plant doctor training, was to develop participants awareness on how gender relations affect men and women's access to agricultural advisory services in their operational areas. In addition, the training helped participants develop capacity to recognize unmet gender specific needs for advisory services, and to identify change in advisory practices in order to effectively meet these needs. The training topics covered included: basic gender concepts; the link between gender, agriculture and agricultural advisory services; gender analysis tools; gender division of labour and social norms and how they impact women's access to advisory services.

Conducting Rapid Care Analysis

The rapid care analysis (RCA) is a participatory community level assessment that helps, (i) to understand the distribution of unpaid care and domestic work, and its impact on women's time and ability to participate in development interventions; and (ii) to come up with community level solutions to address this. Two (2) RCA workshops were conducted in September in two communes where plant clinics are set up, and involving 40 community members (20 female). The aim of the RCA exercise was to improve recognition and valuing of care work and to promote more equitable distribution of care responsibility within the household, ultimately helping the participation of women in Plantwise project activities. Results of the RCA showed women, on average, work 13 hours per day spending 6 hours on unpaid care work, while 7 hours are spent on productive work including crop production. Men, on the other hand, on average, work 7 hours per day, almost all of it on productive work, with no hours spent on unpaid care work. The exercise also showed the role of social norms in influencing distribution of unpaid care work. The exercise helped participants to appreciate the long hours women worked and its impact on their ability to participate in development interventions, including Plantwise project activities.

Development of a community conversation manual and training community conversation facilitators

Community conversation (CC) is a behavioural change communication tool. It brings together a cross-section of community members to reflect on specific challenges and take steps towards their resolution, eventually leading to change in attitudes, values, beliefs and practices in a community. The CC tool was introduced to shift attitudes, beliefs and practices that discourage women's access to agriculture extension services (including plant clinics and other plant health services provided by the Plantwise project), and their decision-making role in agriculture. A manual that provides a step by step guide on how to facilitate the CC on these topics was developed. The topics covered in the manual include: understanding the status of women and girls in Burundi; culture and it's role in gendered relationships; norms and values; gender stereotypes and prejudices; taking stock of change in gender relationships in the community and analysing change; gender division of labour and women's economic contribution and women's access to agriculture advisory services and challenges. In all the topics, discussions involve: identifying problems, reflecting on underlying causes of the problems and developing binding resolutions and action plans at the community level to address the problems.

A 4-day training on the manual was given in December to 20 CC facilitators (10 female) selected from 10 communes where plant clinics are set up. The facilitators are expected to facilitate the CC discussions with community members on bi-weekly basis, over a period of 9 months, in 2022.

Lessons learned

As the actual implementation of the CC approach starts in 2022, increased monitoring and follow up support of the gender activities is needed from ISABU. This will require stronger coordination and joint planning between CABI and ISABU team on gender activities. It will also require the assignment of a regular focal person who will take responsibility to lead implementation of the gender activities from ISABU's side. The assigned gender focal person also needs to be more involved in the overall Plantwise program planning and coordination in Burundi.

Next steps

Community conversation dialogue process will be carried out in 10 communes. In addition, as part of training plant doctors, the extension workers will also be trained on gender-sensitive advisory service provision.

Visibility

The programme was featured in a number of online publications including blogs and news articles. Participation in high-level impact events also helped to increase the visibility of Plantwise in Burundi.

Burundi prepares to join Plantwise (CABI News)

Plant doctor training under Plantwise piloted in Burundi (Plantwise Blog)

Plantwise Burundi: building extension skills and resources (Plantwise Blog)

AUXFIN and CABI in Burundi (AUXFIN News and Events)

Bientôt, le Burundi sera doté d'un programme Plantwise dans 8 provinces pilotes (Radio Télévision Nationale du Burundi)

Loss of farm produce due to pests and diseases reduced, says DG Korir (County Government of Nakuru)

Des cliniques des plantes pour booster la production agricole (Burundi Eco - Hebdomadaire socioéconomique)

Plantwise training to improve the agricultural advisory system for integrated pest and disease management in Burundi (Akvo RSR)

Watch: Plantwise Burundi / CABI-ISABU (MINEAGRIE BURUNDI TV, YouTube)

Annex 1: Report on progress against 2021 milestones

UMUCO

Key milestone	Status	Comments/progress
Plantwise partnerships and in-country coordination mechanism established	Q1 (on track)	A stakeholder analysis and a needs assessment carried out; a national forum and a national steering committee constituted; a partnership agreement with ISABU (NRO) signed; a national coordination team comprising a national coordinator, an assistant national coordinator, a project officer, and a national data manager constituted;
Plantwise national steering committee meetings and the national stakeholder forum convened	Q4 (on track)	2 national steering committee meetings, and a national stakeholder forum held
15 master trainers trained in Plantwise Modules 1 and 2	Q1 (on track)	15 local experts from partner organisations trained as master trainers for Plantwise module 1 and 2
25 extension workers trained in Plantwise Modules 1 and 2 (plant doctor training), through the master trainers	Q1 (on track)	100 field extension workers from BPEAE trained as plant doctors to operate networks of plant clinics; 10 project supervisors of plant doctors from provinces trained as plant doctors to supervise plant clinic operations
25 plant doctors trained on IPM (including on the use of biological control agents as part of good agricultural practices)	Q2 (on track)	32 plant doctors and 10 master trainers trained on IPM
10 Plant clinics piloted – to provide farmers with information on sustainable practices for management of plant health	Q3 (on track)	16 pilot plant clinics launched in 8 provinces (two plant clinics per province); monitoring and technical backstopping visits carried out by experts to 13 out of the 16 pilot plant clinics
Burundi-specific webpage and a system for managing plant clinic data established	Q2 (on track)	A POMS page with location-specific information for Burundi established
20 local experts trained on access to online information resources and on use of ICT tools and applications for data management	Q3 (on track)	24 local experts trained on Plantwise data management, and introduced to POMS
10 local experts trained on methods for monitoring plant clinic performance	Q4 (on track)	20 local experts (mostly plant clinic supervisors) trained on monitoring plant clinic performance
20 local experts trained on how to harmonize, validate, analyse and use plant clinic data in POMS for specified country needs	Q4 (minor delay)	Deferred to the first quarter of 2022 in order to allow the Burundi plant clinic data set reach a critical mass that is conducive for meaningful analysis
25 local experts trained on development of simplified country- specific, user-friendly information resources (factsheets and pest management decision guides)	Q3 (on track)	25 local experts trained on developing pest management decision guides (PMDGs) and factsheets for farmers (FFFs); seven (7) PMDGs and 12 FFFs developed
25 local experts trained on complementary extension methods to enhance farmer reach with targeted messages on high priority pest problems	Q3 (on track)	26 local experts trained on how to plan and execute PHRs and MECs; 11 PHRs implemented where a total of 344 farmers were reached

Key milestone	Status	Comments/progress
5 delegates from Burundi visited Kenya to learn about the Plantwise	Q4	6 delegates from Burundi visited Kenya to learn about the Plantwise implementation
implementation approach	(on track)	approach
Baseline survey carried out to provide a benchmark against which	Q4	A baseline survey carried out involving 946 farm families randomly sampled across
progress and outcomes will be evaluated	(on track)	8 provinces
100 plant doctors trained on gender sensitive agricultural advisory	Q4	100 plant doctors and 10 master trainers trained on gender sensitive agricultural
service provision; RCA workshop carried out; and community	(on track)	advisory service provision; Two RCA workshops involving 40 community members
conversation manual developed, and facilitators trained	()	held; community conversation manual developed; 20 community conversation
		facilitators trained

Annex 2: 2022 Milestones

Polo

Specific (2022)	
Key milestone	Timing
Partnership statements signed with 5 key national partners (cumulative); national coordination unit (steering committee and national forum) operational; Publicity of Plantwise concept in Burundi enhanced to ensure national and local commitment and ownership	Q4
Capacity of 15 new master trainers (30 cumulative) enahnced to deliver plant doctor training	Q1
130 new plant doctors (230 cumulative) trained in Plantwise Modules 1 and 2, increasingly through the master trainers	Q2
Plant clinic consolidated and expanded with an additional 99 new plant clinics established (115 cumulative), including piloting private sector-linked plant clinics	Q4
20 plant health rallies and 2 mass extension campaigns held to enhance farmer reach with targeted messages on high priority pest problem	Q4
210,000 farmers (as measured through direct and indirect reach including plant clinics, plant health rallies and other extension campaigns) received plant health information	Q4
Training provided to allow greater autonomy in data processing and analysis;.Data agreement signed with Burundi; 5,000 plant clinic records for Burundi stored on POMS; 80% of plant clinic records on POMS harmonized; 1000 plant clinic records validated	Q4
11 Factsheets/Pest Management Decision Guides developed and locally validated; Plant doctors and other relevant stakeholders using ICTs (e.g. tablets, POMS, Factsheets Library app).	Q4
Integration of Plantwise training materials into the training curricula of higher education institutes initiated	Q4
Baseline survey report finalised; 16 cluster meetings held; farmer survey conducted	Q4
Community conversation dialogue process carried out in 10 communes; 130 newly trained plant doctors trained on gender-sensitive advisory service provision	Q4
General (2022)	
2022 activity plan and budget in place	Q1
2021 annual report finalised	Q1
2021 annual report submitted to EKN	Q1
IATI narrative report submitted indicating the progress on result indicators and accompanied by an analytical narrative	Q1
Financial report submitted to EKN	Q2
Audit report of annual accounts submitted to EKN	Q2
End of project report submitted to Nuffic	Q2
Work and funding contract for 2022 signed with ISABU	Q1
3 publications submitted/published	Q4







Plantwise is a global programme, led by **CABI**, to increase food security and improve rural livelhoods by reducing crop losses

Plantwise Burundi is supported by:



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Contact

To find out more and discuss how you can get involved in this exciting new initiative, contact either of the following:

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