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Investing in rural people

President's report on a proposed grant under the global/regional grants window to the Centre for Agriculture and Biosciences International (CABI) for Integrating ICT Tools into Plantwise to Support More Effective Data Capture and Use

Note to Executive Board representatives

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For: Approval

Recommendation for approval

The Executive Board is invited to approve the recommendation for the proposed grant as contained in paragraph 19.

President's report on a proposed grant under the global/regional grants window to the Centre for Agriculture and Biosciences International (CABI) for Integrating ICT Tools into Plantwise to Support More Effective Data Capture and Use

I. Background and compliance with IFAD Policy on Grant Financing

1. This report recommends the provision of an IFAD grant in the amount of US$1.7 million under the global/regional grants window to the Centre for Agriculture and Biosciences International (CABI), a member of the Association of International Research and Development Centers for Agriculture. In line with IFAD's Grant Policy, CABI is considered eligible for direct selection due to its normative mandate since the initiative involves elements of the broader Plantwise programme.

2. Plantwise is a global CABI-led programme to increase food security and improve rural livelihoods by reducing crop losses; the programme is active in 34 countries worldwide. Plantwise achieves its objectives by establishing sustainable networks of local plant clinics run by trained plant doctors where farmers can find practical plant health advice. Plant clinics are reinforced by the Plantwise Knowledge Bank, a gateway to plant health information including diagnostic resources, pest management advice and frontline pest data.

3. Plant doctors staffing the clinics provide prescriptions to farmers who diagnose plant health issues and provide recommendations for responding to these issues. In this process, information on pests and diseases are collected and maintained in the Plantwise Online Management System (POMS), with data accessible only by CABI and in-country staff. Data collected from clinic clients are used to monitor the quality of advice and – through a validation procedure – provide insights into areas where additional training for plant doctors could enhance their advice. Collected data can also be converted into messaging that triggers other activities with a broader potential for impact since it covers important issues such as early detection and response to new pests. These messages can be disseminated at scale to end users including rural smallholder farmers with the aim of improving crop yields.

4. At present, most of the data collection for Plantwise is paper-based. This system, which involves paper forms for plant health clinic data, onerous data entry requirements, infrequent validation and inadequate systems for data cleaning, is too slow to realize the full potential of the collected data and induce a rapid response to emerging challenges. To address these issues, Plantwise is experimenting with the use of mobile technology for plant doctors via E-plant clinics, which appear to improve the quality of plant doctors' diagnoses, reduce errors in data collection and ensure that national plant health systems receive data in a timely manner.

5. Continued efforts to improve the data collection for Plantwise have followed a logical approach, which has led to improvements over time. These efforts must be continued by embracing E-plant clinics and expanding their use. Improvements to

the POMS system should also continue. Finally, efforts must be made – and a system put in place – to ensure that the information collected through POMS is transmitted to key actors in the plant health system in order to ensure rapid response to emerging plant health issues.

6. A previous IFAD-funded initiative (grant number 1412-CABI, 2013-2015) supported the establishment of plant clinic networks in Mozambique, Rwanda and Uganda, along with the development of national plant health systems. The next step is to improve the efficiency and effectiveness of these clinics, particularly through the use of ICT to support data management and use, training, communication and diagnosis.

7. The proposed grant is in line with the goal and objectives of the 2015 IFAD Policy on Grant Financing.[1] Emphasizing engagement and capacity-building at all levels within plant health systems, the proposed initiative will contribute to all four of IFAD's objectives for grant financing:

   (i) Promote innovative, pro-poor approaches and technologies with the potential to be scaled up for greater impact;

   (ii) Strengthen partners' institutional and policy capacities;

   (iii) Enhance advocacy and policy engagement; and

   (iv) Generate and share knowledge for development impact.

II. The proposed programme

8. The overall goal of the programme is to reduce crop losses from pests and diseases, increasing productivity of important crops and improving returns from agriculture at the household level. The focus countries will be Kenya, Mozambique, Rwanda and Uganda. The project objectives are to: (i) build on existing technologies used in Plantwise to develop and deploy ICT-based data and information-management tools that capture data directly from the field to support quality agricultural services; (ii) support the effective use of data and develop protocols that enable quick response to emerging and chronic plant health problems; and (iii) establish a monitoring and evaluation (M&E) system for continuous learning, process improvement and documentation of outcomes and impacts. These objectives will serve to improve pest and plant health monitoring, and pest management responses.

9. The target group will consist of at least 300,000 smallholder farmers in Kenya, Mozambique, Rwanda and Uganda who will be reached through plant clinics, plant health rallies, mass extension services; many more will be reached through farmer-to-farmer exchange. The aim is to achieve greater reach using mass media and data as an early warning system to inform national stakeholder actions that reduce the impact of pests. This will be accomplished by organizations responsible for pest monitoring and response, and those that can disseminate messages to larger audiences using ICTs. The primary beneficiaries will be farmers targeted by these mass campaigns in the four countries.

10. The programme will be implemented over three years with the following components:

    (i) Review the current situation related to stakeholders' use of Plantwise to inform activities for further development;

    (ii) Develop and deploy (or expand) ICT-based data and information management tools to support agricultural advisory services;

[1] See EB 2015/114/R.2/Rev.1.

(iii) Support the effective use of data and develop protocols for quick response to emerging and chronic plant health problems; and

(iv) Establish an M&E system for continuous learning and improving processes and documentation of outcomes and impact.

III. Expected outputs and outcomes

11. The programme is expected to have the following outputs and outcomes:

(i) Information on the current use of ICT tools by stakeholders will be used to inform subsequent actions;

(ii) ICT tools will improve the efficiency of delivery of plant health services to assist smallholder farmers in managing plant health problems and reducing losses;

(iii) Appropriate actions will be taken in response to information generated through data collected at clinics, leading to improved services for smallholders. For example, knowledge gaps will be identified, leading to the delivery of new materials and guidance for plant doctors, and major problems identified at clinics will lead to appropriate actions by national plant protection organizations and others to address them; and

(iv) Learning will be used to adjust programme activities and provide evidence that improved use of ICT in Plantwise – and the establishment of systems for using information in response to emerging plant issues – leading to broader impacts on farmers.

IV. Implementation arrangements

12. The grant will be implemented by CABI since the initiative is embedded within the CABI-led Plantwise programme implemented in 34 countries worldwide. Synergies among the individual components of the programme will include: (i) a comprehensive programme management and support structure; (ii) benefits from centralized development and management of the knowledge bank; (iii) in-house expertise in data management and use of ICT in extension and remote diagnostics; and (iv) the sharing of lessons learned from Plantwise experiences worldwide. The initiative integrates elements of CABI's broader Plantwise programme in order to maximize its effectiveness.

13. During the project period, the initiative will regularly engage IFAD staff as well as CABI's managers and national partners. CABI implements its projects in a PRINCE2 project management environment, applying standard techniques and procedures worldwide. This ensures that projects are completed on schedule and within their budgets, meeting donor requirements in terms of activities and the use of financial resources. This initiative will be managed within the framework of the Plantwise programme's global management structure and will also satisfy IFAD requirements.

14. Activities in each country will be led by a CABI country coordinator working with a counterpart, usually from the national responsible organization. Each project country has a steering committee chaired by a representative of the national responsible organization, with broad representation of stakeholders in the plant health system.

15. The outputs and data produced as part of the Plantwise programme are owned by partner countries. Research outputs are jointly owned by CABI and the national partner in each country.

16. There will be no deviations from the standard procedures for financial reporting and audits.

V. Indicative costs and financing

17. The total cost of the initiative is estimated at US$2,814,000, including cofinancing of US$979,000 from CABI and US$135,000 from the National Programme for Agricultural Extension (PRONEA) Support Project (PSP) in Mozambique funded by an IFAD loan. The work of this initiative will contribute to the Plantwise programme, which has US$11.5 million in anticipated funding for 2017-2019. CABI aims to secure an additional US$39 million for 2017-2020 and is currently in talks with its donors.

18. The budget will be utilized over a three-year period. Components 2 and 3 – at 34 per cent and 38 per cent respectively of the total cost – account for the highest percentages of expenditures. Component 2 will cover costs such as setting up ICT-based data collection and management systems, integrating new processes into plant clinic operations, and equipment and staff costs. Component 3 will cover training and support for different user groups to plan and pilot new processes that use data and ICT tools for informing more efficient actions.

Table 1
Costs by component and financier
(United States dollars)

Components	*IFAD*	*Cofinancing*	*Total*
1. Review plant health stakeholders' current ICT use in order to inform subsequent actions	111 419	64 164	175 583
2. Develop and deploy (or expand) ICT-based data and information-management tools to support agricultural advisory services	574 324	394 242	968 567
3. Support the effective use of data and develop protocols for quick response to emerging and chronic plant health problems	646 689	443 918	1 090 607
4. Establish an M&E system for continuous learning, process improvement and documentation of outcomes and impact	367 568	211 676	579 244
Total	**1 700 000**	**1 114 000**	**2 814 000**

Table 2
Costs by expenditure category and financier
(United States dollars)

Expenditure category	*IFAD*	*Cofinancing*	*Total*
1. Salaries and allowances	474 000	233 000	707 000
2. Travel	322 000	174 000	496 000
3. Equipment	102 000	55 000	157 000
4. Training/capacity-building	165 000	224,000	389 000
5. Workshops/research	252 000	136 000	388 000
6. Goods/services/inputs	259 000	140 000	399 000
7. Overhead	126 000	152 000	278 000
Total	**1 700 000**	**1 114 000**	**2 814 000**

VI. Recommendation

19. I recommend that the Executive Board approve the proposed grant in terms of the following resolution:

> RESOLVED: that the Fund, in order to finance, in part, Integrating ICT Tools into Plantwise to Support More Effective Data Capture and Use, shall provide a grant of one million seven hundred thousand United States dollars (US$1,700,000) to the Centre for Agriculture and Biosciences International for a three-year period upon such terms and conditions as shall be substantially in accordance with the terms and conditions presented to the Executive Board herein.

Kanayo F. Nwanze
President

Results-based logical framework

	Objectives-hierarchy	Objectively verifiable indicators	Means of verification	Assumptions
Goal	Goal: Reduced crop losses due to pests and diseases, leading to increases in productivity of key crops and improved returns from agriculture at household level for smallholder farmers	Male and female Farmers in treatment group (clinic areas) have 10% higher yields of key crops	Impact case studies	
Objectives	Development Objective: ICT technologies used in Plantwise to improve pest and plant health monitoring and pest management responses	At least three cases of detection and response in project countries	Evaluation studies; POMS data	PW partners share data and those with a mandate for action have access to data and capacity Those with a mandate to act – are willing to do so based on the information Serious pest outbreaks or new pest incursion occurs in each country
Outcomes	Outcome 1: Information on current use of ICT tools by stakeholders used to inform subsequent actions	Assessment completed in all 3 countries and ICT use adapted to national context	Assessment reports, Annual Work Plan and Budget	National stakeholders are willing to share information and integrate PW ICT tools into their systems
	Outcome 2: ICT tools improve the efficiency of delivery of plant health services	% of plant doctor diagnosis and recommendations rejected decreased by 20% for plant doctors using tablet and simpler systems for validation in use	POMS and project reports	Simplified approaches to data validation that can be automated are identified
		Data from clinics using tablets enters POMS within 0-2 weeks or less of collection (220 clinics in total)	POMS	National responsible organisation and other partners are willing to share data and use system
	Outcome 3: Actions take place in response to information generated through data collection at clinics	Example of action informed by data in at least 2 of project countries, Mozambique may lag behind	POMS usage metrics and stats showing how stakeholders access data	Stakeholders with a mandate to respond are willing and have the capacity to do so
			Evaluation case studies following examples where data has actually been used	
	Outcome 4: Learning used to adjust project activities and address the project hypothesis	Hypothesis proved or disproved	Evaluation reports and papers	Stakeholders provide information needed to test hypothesis
			Case study material on how Plant doctors and other	

			stakeholders (including farmers) use ICT and social media to network with each other	
Outputs	2.1 ICT tools integrated into plant clinic operations to improve plant doctors' access to information resources and facilitate real-time data collection	90 Plant Doctors trained in Rwanda and Uganda and using tablets at clinics; 40 in Mozambique	Regular program reporting	Local staff have skills, aptitudes to use tablets and national infrastructure able to support ICT tools.
		Updated Plantwise Factsheet Library app with gaps filled through development of at least 6 new fact sheets to cover missing pests and crops; 2 per year per country; Additional guidance sent at least twice a year; All plant doctors with tablets using information resources	Knowledge Bank, and Factsheet App usage reports	Local staff are willing to use online resources and plant doctors, supervisors and other stakeholders support each other through social media networks
		Data management systems optimised	Volume/frequency of communication via ICT	
			Protocols for data cleaning and sharing	Improved processes can be identified
		and simpler data cleaning and validation processes developed and automated where possible	Updated data validation protocol	
		POMS clinic data entry more up to date	POMS database entries	
	3.1 Data identifies new or emerging pests threats	At least 3 plant health threats identified	Stakeholders flagging pest problems of relevance/interest	New data management approaches facilitate rapid identification of threats
	3.2 Gender-sensitive mass extension campaigns implemented using existing communication services (e.g., mobile, including voicemail and SMS, radio, television, etc.)	At least 300,000 farmers (both male and female) reached in 3 mass extension campaigns and through clinics and rallies	Project reports; campaign materials; partner audience statistics (radio, TV etc.)	Mechanisms exist to collect audience feedback;
				Pest problems emerge during project period to justify extension campaigns; Media partners willing to engage Organisations using mass media agree to work with CABI and partners
	4.1 Evidence to test the project hypothesis	At least 1 learning brief, case study or evaluation report including paper on testing the project hypothesis	POMS analysis; learning briefs, impact case studies, working/journal papers	Studies return valuable lessons and insights
	4.2 Implementing organisations monitoring plant clinic performance	LIOs have internal systems for monitoring clinic performance and improving quality in all countries	BTORs and case studies	