Darwin Initiative Innovation Annual Report

To be completed with reference to the "Project Reporting Information Note":
(https://www.darwininitiative.org.uk/resources/information-notes/)

It is expected that this report will be a maximum of 20 pages in length, excluding annexes)

Submission Deadline: 30th April 2025

Submit to: BCF-Reports@niras.com including your project ref in the subject line

Darwin Initiative Project Information

Project reference	DARNV024
Project title	Digital innovation to protect Colombian coffee farms and farmers
Country/ies	Colombia
Lead Organisation	CABI
Project partner(s)	Cafexport (Fundación Local Partners), Assimila
Darwin Initiative grant value	£199991
Start/end dates of project	1 April 2024 - 31 March 2026
Reporting period (e.g. Apr 2024 – Mar 2025) and number (e.g. Annual Report 1, 2, 3)	April 2024 – March 2025
Project Leader name	Steve Edgington
Project website/blog/social media	https://www.cabi.org/projects/digital-innovation-to-protect-colombian-coffee/
Report author(s) and date	Steve Edgington 29/04/2025

1. Project summary

This project aims to deliver an innovative pest alert system to coffee farmers in Colombia which will help them reduce their reliance on synthetic chemical pesticides. Coffee berry borer (CBB) is the most serious pest of coffee worldwide, causing annual crop losses in excess of US$500 million. In Colombia, the coffee industry is estimated to be worth US$2.5bn annually, employing 540,000 smallholder families and over 135,000 seasonal workers, who are vulnerable to poverty and climate impacts. Increases in temperature and humidity in Colombia have tripled CBB infestation in recent years. Due to its cryptic nature CBB is notoriously difficult to control. Management strategies centre around chemical pesticide sprays, however these cause acute and chronic health issues among farmers and harm key farm biodiversity.

The project is developing and testing an innovative digital technology, utilising Earth Observation (EO) data, that will provide optimal timings for environmentally benign biological pesticides (biopesticides), for CBB. An 'alert' will tell farmers when CBB are emerging, hence the optimal time to spray them with a biopesticide. CBB biopesticides in Colombia are fungal based with limited persistence, so timing is critical. By providing optimal timing for biopesticides, the project's innovative technology will help reduce chemical pesticide usage and help protect biodiversity.

The project is delivering complementary training to local farmers and advisors, on the alert and on biopesticides. The project is focused on working with women farmers, as despite some

specific efforts of cooperative organisations and extension services, women farmers do not receive the same level of support and engagement as their male counterparts.

The project is a continuation of work from 2019-2021, in which the same partners collaborated with women coffee farmers in Colombia to produce a prototype CBB alert (UK Government Agri-Tech Catalyst Programme). The present innovation project is vigorously field-testing the prototype, to ensure it's a robust, reliable digital tool. The earlier project worked with the same women farmer cohort as now and included the identification of, knowledge gaps with regards biopesticides and chemical pesticides and, appropriate pathways for delivering information at the 'farm-gate'. The Darwin innovation project is building on the outputs of the earlier project, to ensure the CBB alert and complementary resources and know-how, are delivered in an effective and inclusive means, for impactful farmer uptake. The project is located in the Caldas department of Colombia.

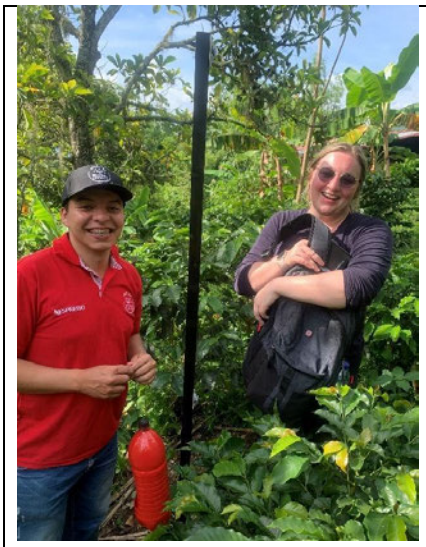
2. Project stakeholders/partners

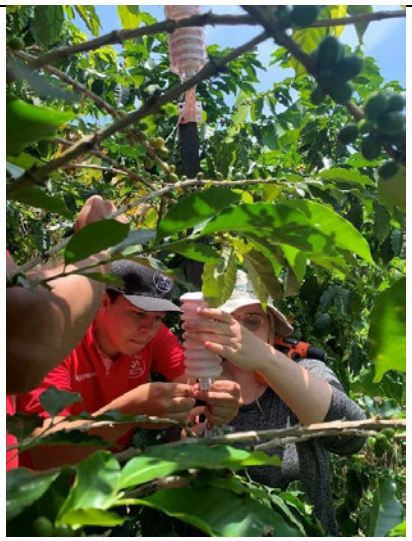
The origins of this innovation project were demand led from the Colombian project partner Fundacion Local Partners (FLP). The farmers they represent can receive higher premiums if they adhere to sustainability programmes, which include reduced chemical pesticide use. FLP requested support for the farmers they represent, on better use of CBB biopesticides. All partners were/are involved in project planning, for field activities and local delivery of the alert. At project initiation FLP created a new, full time field officer role for the project. This appointment has proved critical for project delivery as the field work is intensive, with weekly visits and data collection from all 16 project farms, for the project duration. In Y1, project partners met with industry representatives from crop protection and food and beverage, to discuss potential scale-out of project outputs across Colombia.

3. Project progress

3.1 Progress in carrying out project Activities

Activity 1.1 Design, implementation and training on data capture process for biopesticide vs chemical applications, CBB numbers and crop yields. FLP appointed a full-time project field officer (Daniel Candamil Medina). Daniel's role includes a weekly visit to each farm, collection/submission of field data and farmer support and engagement. The project partners mapped out data requirements for model validation, which included visits to each farm and training for Daniel in data capture protocols. Open Data Kit (ODK) forms were set up, in Spanish, to enable efficient collection and delivery of the field data.





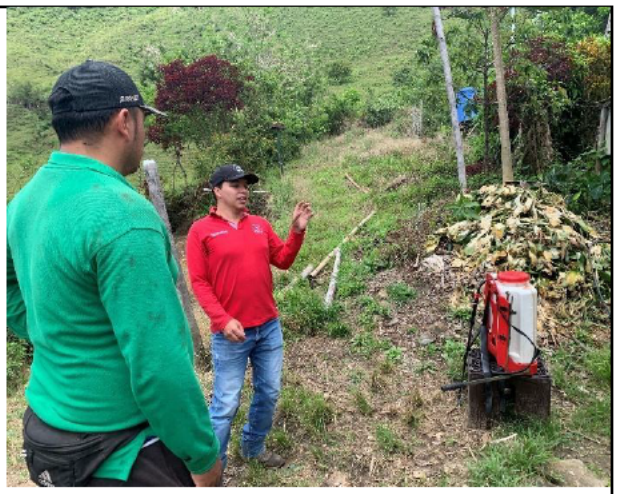
Figures 1 and 2. New project officer Daniel Candamil Medina in the field with project technical lead Alyssa Duffy, for training and farm set-up

Activity 1.2 Design, implementation and training on data capture process for biodiversity indicators. Biodiversity assessments will begin in Y2, in parallel with the biopesticide validation

component (Y2 Q1 to Q3). This component will assess the impact of the CBB alert when combined with biopesticide sprays. The team initiated training with Daniel on biodiversity assessments in Y1 Q4, with training to continue in Y2 Q1.

Activity 1.3 Install and run CBB alert on the project farms. From Y1 Q1 to Q4, the project 'ran' the prototype CBB model, validating it with real-time and historical field and satellite data. Late Q4, analysis was complete and the CBB model signed off for the next stage of field testing. The model will now run from Y2 Q1-3 and the project will assess the impact on CBB numbers (and their damage) on implementing the alert and applying biopesticides during the alert's call-to-action windows. The team designed messages on biopesticide guidance and timings, to accompany alerts. In Y2 the model will produce alerts across the season which will automatically generate field guides for farmers and agronomists.

Activity 1.4 Data capture across multiple cropping seasons. Weekly farm visits and data collection, done throughout Y1, will continue for Y2 Q1-3. Collecting the data to validate the alert + biopesticide component. In Y1 Q4, the UK team spent time in the field with Daniel and several project farmers, to provide guidance and training on biopesticide application, including preparation and sprayer calibration. Daniel used this training to train project farmers, in preparation for the forthcoming biopesticide component and this training will continue in Y2 Q1 to cover all project farmers.



Figures 3 and 4. Training of trainers (CABI - project field officer and team) on biopesticide spray application/calibration; followed by farmer training.

Activity 2.1 Facilitate workshop with farmer cohort to co-design and produce outreach resources (posters and movie). This is scheduled for Y2. The appropriate teams from CABI and FLP are in contact and have been mapping out activities.

Activity 2.2 Facilitate stakeholder workshops (local and national level) on gender sensitives. The project team reviewed the gender training previously received by agronomists and clarified the approach to be followed in Y2. In Y2, Q2-4, project agronomists will complete the CABI Academy course "Gender-Inclusive Strategies for Improving Agricultural Productivity", which is a self-paced online course.

Activity 3.1 Weekly visits of project partners to cohort farms. Since Y1 end-Q1, the project (via Daniel) has visited each project farm every week, collecting field data and engaging with each farmer.

Activity 3.2 Design and facilitate stakeholder training on biopesticides and biodiversity conservation. In Y1 Q4 UK and Colombia project partners facilitated an in-person workshop with the project farmers. The workshop was hosted by the local coffee cooperative and focussed on i) chemical pesticide safety and ii) benefits and correct use of biopesticides. Followed by Q&A at lunch. Of the 16 project farmers 12 attended, others were unable to travel on the day due to prior commitments. The project team visited the absentee farmers the following day.

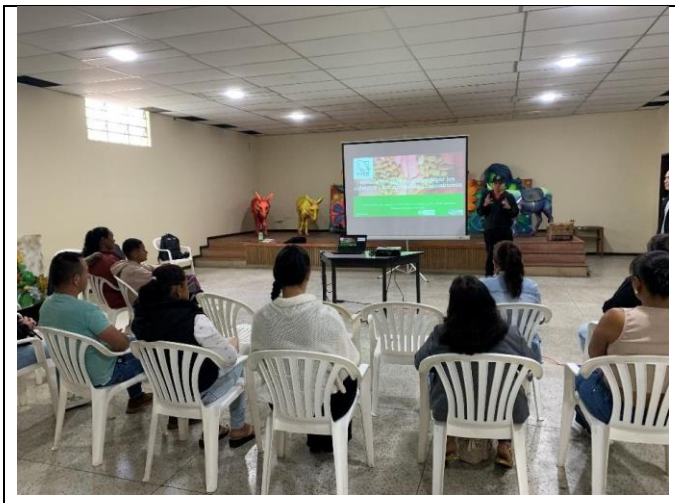
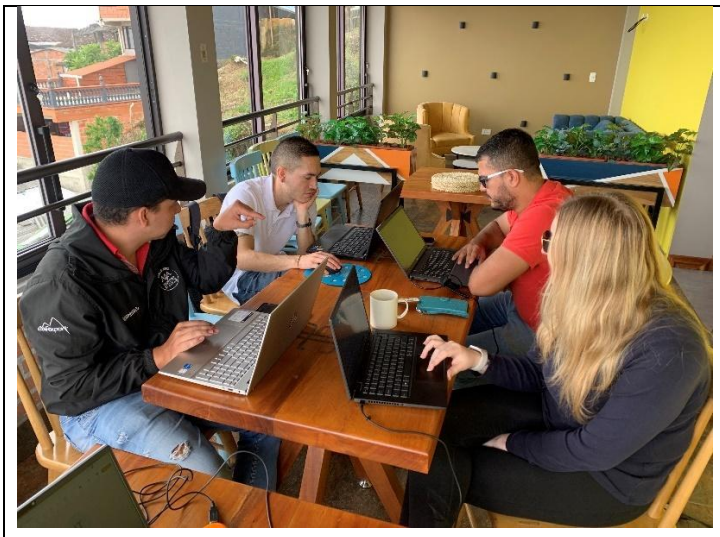
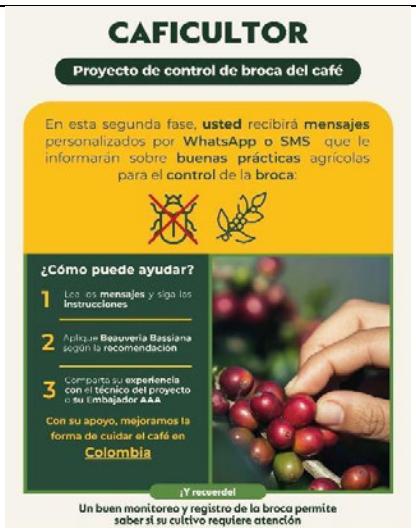


Figure 5. Farmer workshop on chemical pesticide safety and biopesticide application

Activity 3.3 Design and facilitate workshops to deliver SMS series for local capacity building. Project partners, through remote and in-person workshops, designed a series of messages to accompany the CBB alerts. These messages will be delivered to all project farmers via SMS and/or Whatsapp during the biopesticide component of model validation.





Figures 6 and 7. Messaging workshop with project team; and example of messaging output that will be sent to all project farmers, to accompany the model alert

Activity 3.4 Design and facilitate data-sharing workshops at a national level. This will take place in Y2

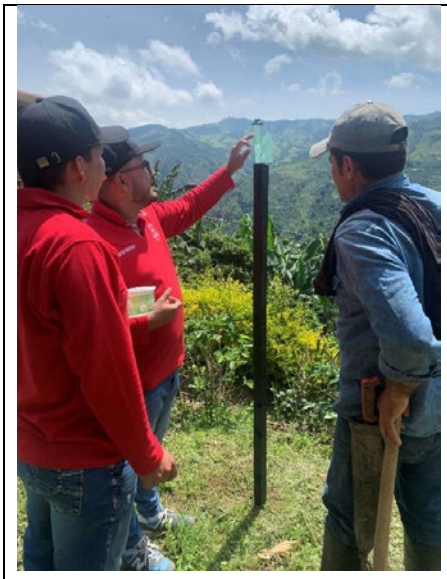
3.2 Progress towards project Outputs

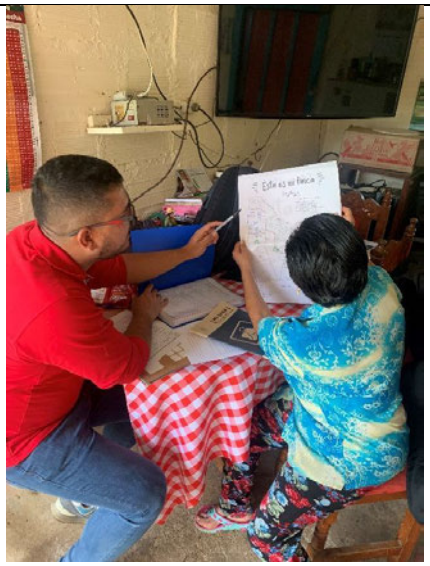
Output 1. CBB digital tool implemented and field tested across multiple cropping seasons. In Y1 the CBB model was analysed and validated as a tool for predicting CBB movement. This incorporated 12-months of field data, collected during the project. The model accurately predicted components of crop phenology critical to CBB development and CBB movement out of the coffee berry. This will enable validation of the next phase, combining an alert with messaging on biopesticide timing. A series of call-to-action messages will be delivered to the project farmers and in-field support provided on biopesticide spraying. The project will measure impact on CBB control, coffee yield and biodiversity. The benchmark, as far as the team is aware, is that no validated CBB emergence model exists, based on crop phenology and environmental data. This is the first of its kind and, as of Y1 Q4, is in the hands of farmers and

their advisors. Output indicators being measured include: i) number of farmers supporting CBB capture methods, to validate the model; ii) number of data sets produced on coffee yields, which will begin during Y2 and assess the impact of model adoption and biopesticide incorporation; iii) number of farmers reporting a decrease in unsustainable practices, as a result of project activities; and iv) number of datasets published for key biodiversity indicators.

Output 2. Enhanced engagement with key stakeholders at local and national level. The project has so far facilitated one farmer workshop on chemical pesticide safety and biopesticide application. Other activities will be focussed on gender sensitivity and to be actioned in Y2. There were some unforeseen circumstances around the health of some of the project farmers, for which the project has acted with due care and sensitivity.

Output 3. Enhanced local and national capacity in and awareness of biodiversity conservation and biopesticides. Enhanced local awareness and capacity has been achieved by weekly visits to all project farms, from Q1-Q4. Every visit enabled engagement with each farmer and family and provided training on data collection and biopesticide spraying. Farmers recorded data they collected in logbooks, which Daniel subsequently inputted via ODK. Daniel took photos of all CBB traps, at each farm visit. On Friday of every week, he submitted the weekly data to and joined a virtual meeting to give data updates and highlight any issues from the field.





Figures 8 and 9. Farmers collect daily rainfall; the team working with the farmers to map out their experimental plots

3.3 Progress towards the project Outcome

Project outcome: Smallholder livelihoods, farm biodiversity, farm safety and female empowerment improved through digital innovation, equitable gender opportunities and biological pest management. At present the project is on track to achieve its Outcome, however there will be some reductions in the number of immediate beneficiaries. A key achievement in Y1, was the completion and sign-off of the CBB model. This will now be incorporated into a second phase of validation, complementing model outputs with biopesticide spraying. This will, in turn, enable the project to measure financial benefits of model implementation and impact on biodiversity. The indicators being used to measure progress towards the Outcome are: i) number of female farmers benefiting from improved sustainable agriculture practices and more resilient to weather shocks and climate trends (16); ii) number of female farmers reporting they are applying new capabilities two or more months after training (16); and iii) number of stabilised/improved species populations within the project area. The descriptors hold true, however due to the inability of some farmers to commit to project demands (sometimes due to health and age), the project has had to reduce indicator numbers from 20 to 16.

3.4 Monitoring of assumptions

Assumption: Female farmer cohort utlising/applying the digital innovation supported by the project. The project met with the farmers in Y1 and 16 women farmers agreed to test the model in phase 2 (biopesticide incorporation)

Assumption: There will be no crises (e.g.COVID, human conflicts) that prevent project implementation. Sadly, one farmer passed away.

Assumption: Farmers see the value of the CBB alert and are willing to invest their time and resources to support implementation through full project duration. The project met with the farmers in Y1 and 16 women farmers agreed to test the model in phase 2

Assumption: Key local and national stakeholders able to embrace and facilitate the utilization of the CBB alert. The project met with a global food and beverage company re potential scale-out of the CBB alert.

Assumption: Suitable and available times and venues found to accommodate attendees. A farmer workshop, on pesticide safety and biopesticide use, was delivered at the coffee cooperative (a well-known and accessible location for the farmers).

Assumption: Outreach resources produced are appropriate for the local context. The communication and social inclusion teams have begun engagement on outreach material. Design will include input from the project's farmer cohort and local agronomists.

Assumption: The local cooperative agrees to display the posters. No issues and none expected. The cooperative hosted the farmer workshop and is supportive of the project.

Assumption: Local and national stakeholders engage and send staff to workshops. No issues. FLP sent additional staff to the recent farmer workshop and spray training.

3.5 Impact: achievement of positive impact on biodiversity and multidimensional poverty reduction

The project is monitoring biodiversity on coffee farms during alert + biopesticide implementation. This is not a structured scientific experiment on chemical vs biopesticide use, as the project cannot enforce chemical pesticides on farms. Instead, the project will monitor biodiversity over time and record biopesticide applications and regular farm management activities. At the higher level, by producing a validated tool that can improve uptake of environmentally benign biopesticides (thereby reducing the use of chemical pesticides) the project will contribute to reducing negative impacts on local biodiversity. It will enable better CBB control, a pest that is forcing farmers to move into and remove native forest to start new production. The earlier phase (2019-2020) identified a lack of knowledge on biopesticides amongst local farmers and suboptimal timing of pesticide sprays, leading to wasted time and money. A validated CBB alert would improve (bio)pesticide timing and reduce costs.

4. Project support to the Conventions, Treaties or Agreements

A leading objective of this Darwin innovation project is to enable smallholder coffee growers in Colombia to reduce their use of chemical pesticides. A global target from the UN Biodiversity Conference (COP 15) in Dec 2022 is to reduce by half excess nutrients and overall risk posed by pesticides. The proposed project contributes to two national policies/plans, which in turn will support the COP15 global target: 1. Colombia's National Policy for the Integral Management of Biodiversity and its Ecosystem Services (PNGIBSE). The project will contribute to PNGIBSE implementation in Axis I. 'Biodiversity, Protection and Care of Nature', including 'the *in-situ* care of biodiversity to enable ecosystem services to thrive', with a specific goal focussed on controlling CBB and, Axis IV. 'Biodiversity and the Management of Knowledge, Technology and Information', with a focus on 'increased investments in the areas of scientific research, publication and innovation'; and 2. Colombia's National Adaptation Plan for Agriculture (2017). Formulated in light of climate change adaptation and mitigation with a key component of integrating gender in national adaptation planning for agriculture. Climate change is enabling CBB spread in Colombia, the project will provide innovation and support to women farmers to help control CBB spread

safely. As yet, the project has not interacted with host country policy focal points. However, it is in contact with the Federación Nacional de Cafeteros de Colombia, who represent the needs of coffee farmers across Colombia.

5. Project support for multidimensional poverty reduction

In Colombia, there is widespread use of chemical pesticides amongst smallholder coffee growers, for the control of CBB. These pesticides lead to acute and chronic poisoning in humans and damage essential ecosystem services. As a result, there is reduced human capacity to work and lower yields from farms, impacting on incomes and livelihoods. The primary goal of this project is to validate an innovative, automated CBB alert system. A validated system will have the potential to scale out to and benefit thousands of coffee farmers. The CBB alert system will empower farmers to apply pesticides at optimal times and reduce unnecessary applications. This will reduce product costs and enable farmers to allocate their resources more efficiently, contributing to poverty reduction and improved livelihoods. Additionally, the project encompasses greater biopesticide use; these will protect farmer's health and capacity to work and, protect valuable ecosystem services. The project is collaborating with 16 women coffee farmers, who all participated in an earlier pilot project. These farmers have low incomes and some have faced vulnerability due to displacement from conflict areas. There was strong engagement with these farmers in an earlier project and this has continued throughout the present, including weekly project visits to each farmer, farmer participation with data collection and a workshop on chemical pesticide risk and biopesticides. The introduction of a validated CBB alert system would enhance CBB control for these women farmers. This, in turn, would likely lead to higher yields and reduced financial expenditures, by minimizing unnecessary pesticide applications. Incorporating biopesticides would enable the farmers to protect their ability to work and protect ecosystem services, in turn enhancing crop resilience to environmental changes. Transitioning away from chemical pesticides would enable the farmers to explore certification schemes, which can yield higher profits. To note, realizing such transformative effects, may take several growing seasons and extend beyond the project's duration. The project anticipates that the alert system could ultimately benefit thousands of coffee farmers across Colombia (and potentially beyond). FLP has established a strong relationship with coffee cooperatives in the region who represent more than 6,000 coffee farms. Furthermore, in Y1 the project met with representatives from the Nespresso AAA Sustainable Quality™ Program, which covers tens of thousands of farmers across Colombia.

6. Gender Equality and Social Inclusion (GESI)

GESI Scale	Description	Put X where you think your project is on the scale
Not yet sensitive	The GESI context may have been considered but the project isn't quite meeting the requirements of a 'sensitive' approach	
Sensitive	The GESI context has been considered and project activities take this into account in their design and implementation. The project addresses basic needs and vulnerabilities of women and marginalised groups and the project will not contribute to or create further inequalities.	X
Empowering	The project has all the characteristics of a 'sensitive' approach whilst also increasing equal access to assets, resources and capabilities for women and marginalised groups	
Transformative	The project has all the characteristics of an 'empowering' approach whilst also addressing unequal power relationships and seeking institutional and societal change	

Although the Colombia coffee industry has made efforts to address gender inequality in farming households, women are still marginalized socially and economically, with low recognition of the work they do on the farms (both looking after family and home and in coffee growing). The project will, first and foremost, enable 16 women farmers to make better, safer decisions on coffee growing, empowering them via innovation, combined with sensitive approaches to skills awareness and capacity building. The project is working with the same 16 women farmers from an earlier (related) project, thus strengthening already established relationships and trust. These women farmers will be the central users of the innovative CBB alert during the project. This could gain them higher respect as innovators and businesspeople. In Y1 the project met every farmer once a week. This was at their farms and at pre-arranged times that suited their schedules. A farmer workshop in Y1, on pesticide safety and biopesticide use, took place in a convenient location for the farmers (the Aguadas cooperative facility), at a time aligned with local transport services. All family members were invited, including children, with lunch provided. In Y2, Q2-4, planned activities aim to engage project farmers in participatory action research emphasising collective enquiry and social change. A key aim of this is to increase awareness of women's lived experiences and provide a space for considering negative social norms (attitudes, customs, beliefs) and unequal power relations (representation). It is hoped this will contribute towards strengthening the project's GESI.

7. Monitoring and evaluation

CABI has overall responsibility for the project's M&E, however throughout Y1 the planning, implementation and reviewing of activities was done in collaboration with partners and, at times, local, external stakeholders. Every Friday, throughout Y1, the team met on-line to discuss activities and outputs from the field and map out next activities. The earlier project collected baseline datasets with respect to capacity strengthening, for example farmer use and knowledge of (bio)pesticides. This information helped design a farmer workshop in the present project, which addressed some key knowledge gaps. In Y2, there will be farmer interviews and assessments to measure whether knowledge gaps have been successfully addressed. In Y1 a set of farm protocols were established to assess the accuracy of the CBB alert, prior to the biopesticide component. The scheduling and content for complementary alert messages was established and these will be delivered to farmers in Y2. Protocols were established to monitor (bio)pesticide treatments on the 16 farms, as well as CBB infestation levels and crop yields, to validate the alert + biopesticide component.

8. Lessons learnt

In Y1 Q1 the host-country lead FLP created a new full time field officer role for the project (Daniel Candamil Medina). Daniel oversees and coordinates all project field activity, including weekly visits to all project farmers. The creation of this role has been absolutely key to project delivery; from data collection to validating the alert to strong farmer engagement. The project's location is logistically difficult. Movement between farms, particularly during rainy times, can be awkward and at times impossible via any method apart from foot. A strong recommendation to others looking to do projects in similarly difficult environments, with regular field activity, is to be realistic with scale and numbers (in this case of farms). Know the minimum requirements and edge towards that in the planning phase.

9. Actions taken in response to previous reviews (if applicable)

Most reviewer issues were addressed in the Y1 HYR. Only updated responses are listed below.

Please consider the below confidential. Could it please be kept out of the public domain report? Particularly notes regarding Nestlé Nespresso, as conversations are sensitive.

1. Reviewer comment: To complement the training given on biopesticide use, it would be useful to know if there are plans to make sufficient biopesticides available in a timely manner. Delivery of biopesticides to farmers was not in the original workplan, however, FLP has agreed to provide sufficient biopesticide product for upcoming trials. In addition, to ensure the trials use the freshest biopesticide material (the products are live microorganisms, with a finite

shelf-life), the project has engaged with a local biopesticide producer who has agreed to provide freshly produced biopesticide product, direct from factory.

2. Reviewer comment: further information on the future business model for covering the costs of the Coffee Berry Borer (CBB) alert system when being scaled up would be useful: Important point and this topic has and will form part of the discussions regarding scale-out with industry and government. In Y1, there were two meetings with representatives from Nestlé Nespresso, in which scale-out was discussed. One meeting was on-line, the other was in-person in Colombia.

10. Risk Management

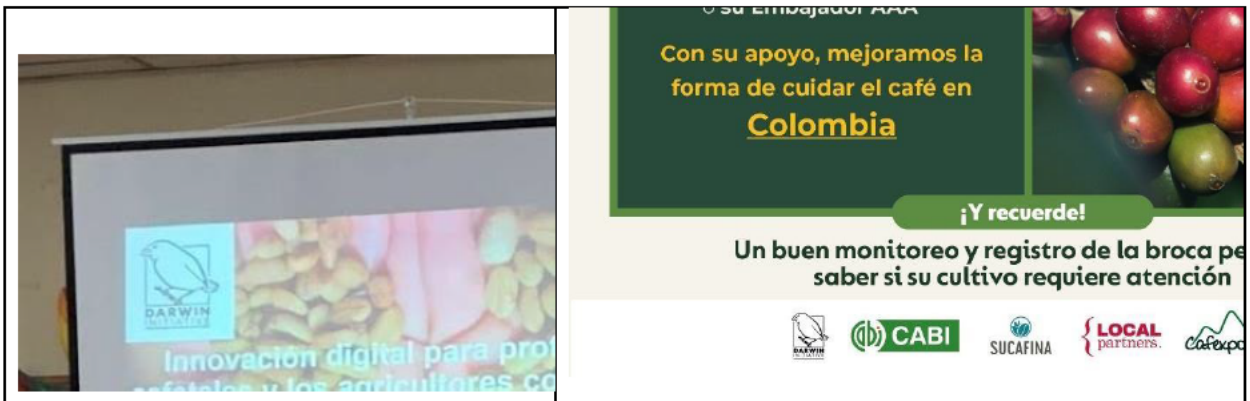
No new risks and no significant adaptations to project design. Issues of farm accessibility due to periods of adverse weather and farmer availability due to ill health, but impact on project minor as data collection protocols designed with an element of buffer, to allow for such circumstances. No adjustment to the risk register. Risk register attached as a separate file

11. Scalability and durability

The project was designed to deliver on three scaling approaches: **Landscape:** The robust field-testing of the CBB alert, across the farmer cohort and over multiple cropping seasons, would enable this technology to be applied across a broader geography in Colombia and beyond. In Y1 the project met with senior representatives from Cafexport, who manage thousands of coffee farms in Colombia and from Nestlé Nespresso, who source from thousands of coffee farms globally. During these meetings the potential to scale-out the alert and the necessary next steps were discussed. At present there is genuine interest from industry to scale the alert across thousands of coffee farms (pending successful validation from the project). **Replication:** With minimal R&D work the CBB alert system could be applied to other geographies. In Y2 CABI will be investigating how data from coffee fields in Kenya (within another CABI-led project) can be integrated into the CBB alert. **Capacitation:** The project has had continuous engagement with its farmer cohort, with a focus on strengthening capacity on biopesticides and chemical pesticide safety. In addition, the project has reached out to the crop protection industry in Colombia, to promote the project, its outputs and the potential increase in biopesticide demand over time. The project met with Nestlé Nespresso to discuss the project including scale-out potential. Further outreach activities are planned in Y2.

12. Darwin Initiative identity

The project used the Darwin Initiative logo on all outputs, including farmer bulletins and workshop presentations; it will continue to do so throughout the project.



Figures 10 and 11. Y1 Darwin Initiative identity in project outputs (workshop material and alert bulletin)

13. Safeguarding

14. Project expenditure

Table 1: Project expenditure during the reporting period (1 April 2024 – 31 March 2025)

PLEASE NOTE THESE ARE DRAFT FIGURES AS NOT ALL RECEIPTS ARE IN YET

Project spend (indicative) since last Annual Report	2024/25 Grant (£)	2024/25 Total Darwin Initiative Costs (£)	Variance %	Comments (please explain significant variances)
Staff costs (see below)	[redacted]			
Consultancy costs				
Overhead Costs				
Travel and subsistence				
Operating Costs				
Capital items (see below)				
Others (see below)				
TOTAL	**99395**	**92034.74**		

Table 2: Project mobilised or matched funding during the reporting period (1 April 2024 – 31 March 2025)

	Secured to date	Expected by end of project	Sources
Matched funding leveraged by the partners to deliver the project (£)	[redacted]	[redacted]	All from partners
Total additional finance mobilised for new activities occurring outside of the project, building on evidence, best practices and the project (£)	0		

15. Other comments on progress not covered elsewhere

Please see request for confidentiality of details in Section 9, many thanks.

16. OPTIONAL: Outstanding achievements or progress of your project so far (300-400 words maximum). This section may be used for publicity purposes

I agree for the Biodiversity Challenge Funds to edit and use the following for various promotional purposes (please leave this line in to indicate your agreement to use any material you provide here).

17. Annex 1: Report of progress and achievements against logframe for Financial Year 2024-2025

Project summary	Progress and Achievements April 2024 - March 2025	Actions required/planned for next period
Impact Productive, healthy and safe Colombian coffee farms reconciling biodiversity conservation and poverty alleviation through digital innovation, equitable gender opportunities and biological pest management	Y1 has been validating the CBB alert and strengthening local capacity. In Y2 we expect to be testing the alert on farms and measuring its impact on coffee yields	[redacted]
Outcome Smallholder livelihoods, farm biodiversity, farm safety and female empowerment improved through digital innovation, equitable gender opportunities and biological pest management		
Outcome indicator 0.1 Number of women farmers benefitting from improved sustainable agriculture practices and are more resilient to weather shocks and climate trends (20) [DI-D11]	This innovation project is still in its testing phase (of the pest alert)	From April 2025 the project will move into a new phase, of implementing the digital innovation on project farms and measuring impact
Outcome indicator 0.2 Number of women farmers reporting they are applying new capabilities (skills and knowledge) two or more months after training (20) [DI-A04]	This innovation project is still in its testing phase (of the pest alert)	From April 2025 the project will move into a new phase, of implementing the digital innovation on project farms and measuring impact
Outcome indicator 0.3 Number of stabilised/improved species populations (abundance/distribution) within the project area (4) [DI-D04];	This innovation project is still in its testing phase (of the pest alert)	From April 2025 the project will move into a new phase, of implementing the digital innovation on project farms and measuring impact
Output 1 CBB digital tool implementated and field tested across multiple cropping seasons		
Output indicator 1.1 Number of data sets published for key biodiversity indicators (4 datasets) [DI-C02]	Drafted protocols for biodiversity assessments	Biodiversity assessments to be done in Y2 on all project farms
Output indicator 1.2, Number of farmers implementing capture and assess methods for CBB (16)	16 farmers assisting data capture in the field	Farmer participation to continue in Y2

Output indicator 1.3 Number of data sets produced on coffee production (2 per season per farm)	This innovation project is still in its testing phase (of the pest alert)	From April 2025 the project will move into a new phase, of implementing the digital innovation on project farms and measuring impact on yield
Output indicator 1.4 Number of farmers reporting a decrease in unsustainable practices as a result of project activities (16) [DI-B09]	This innovation project is still in its testing phase (of the pest alert)	From April 2025 the project will move into a new phase, of implementing the digital innovation on project farms and measuring impact of changes to crop protection practice(s)
Output 2. Enhanced engagement with key stakeholders at local and national level		
Output indicator 2.1. Number of farmers completed workshop to design outreach strategy and resources (16) [DI-A01]	Only planning in Y1	Planned for Y2. To coincide with publicity of the CBB alert, at the local coffee cooperative in Aguadas
Output indicator 2.2. Number of farmers see gender sensitive outreach posters (estimate 1000)	Only planning in Y1	Planned for Y2. To coincide with publicity of the CBB alert, at the local coffee cooperative in Aguadas
Output indicator 2.3 Number of farmers see gender sensitive outreach movie (estimate 1000)	Only planning in Y1	Planned for Y2. To coincide with publicity of the CBB alert, at the local coffee cooperative in Aguadas
Output indicator 2.4 Number of local and national stakeholders completed structured workshop on gender sensitivity (50) [DI-A01]	Only planning in Y1	Planned for Y2. To coincide with publicity of the CBB alert, at the local coffee cooperative in Aguadas
Output 3. Enhanced local and national capacity in and awareness of biodiversity conservation and biopesticides		
Output indicator 3.1 Number of in-person farm visits by project partners (minimum 60 visits per farm)	Approximately 40 in-person visits per farm achieved, for all 16 farms	To continue at same rate, throughout 2025

Output indicator 3.2 Number of local stakeholders with enhanced knowledge of biodiversity conservation and biopesticides following structured training (25)	19 local stakeholders (16 farmers and 3 agronomists) given training on biopesticides (introduction, application and calibration)	Further training in Y2 with emphasis on CBB alert implementation and biopesticide applciation
Output indicator 3.3 Number of national stakeholders completed structured workshops on data-sharing (10) [DI-A01]	No progress	Planned for Y2
Output indicator 3.4 Number of government federations/departments completed structured training on biodiversity conservation and biopesticides (2) [DI-A07]	No progress	Planned for Y2
Output indicator 3.5 Number of female farmers with improved access to services and resources for improved health and well-being (16) [DI-A06]	Fresh biopesticide sourced from local producer. Agreement established that all 16 women farmers will be provided with free biopesticide product (for the duration of alert testing)	From April 2025 the project will move into a new phase, of implementing the digital innovation on project farms which will include applying biopesticide product

18. Annex 2: Project's full current logframe as presented in the application form (unless changes have been agreed)

Project Summary	SMART Indicators	Means of Verification	Important Assumptions
Impact: Productive, healthy and safe Colombian coffee farms reconciling biodiversity conservation and poverty alleviation through digital innovation, equitable gender opportunities and biological pest management (Max 30 words)			
Outcome: (Max 30 words) Smallholder livelihoods, farm biodiversity, farm safety and female empowerment improved through digital innovation, equitable gender opportunities and biological pest management	0.1 Number of female farmers benefitting from improved sustainable agriculture practices and are more resilient to weather shocks and climate trends (20) [DI-D11] 0.2 Number of female farmers reporting they are applying new capabilities (skills and knowledge) two or more months after training (20) [DI-A04] 0.3 Number of stabilised/improved species populations (abundance/distribution) within the project area (4) [DI-D04];	0.1 Baseline data, monitoring and end of project evaluation 0.2 Baseline and end-of project evaluation focusing on level of implementation 0.3 Project reports and data-sets	Female farmer cohort utlising/applying the digital innovation supported by the project There will be no crises (e.g. COVID, human conflicts) that prevent project implementation.
Outputs: 1. CBB digital tool implementated and field tested across multiple cropping seasons	1.1 Number of data sets published for key biodiversity indicators (4 datasets) [DI-C02] 1.2 Number of farmers implementing capture and assess methods for CBB (16) 1.3 Number of data sets produced on coffee production (2 per season per farm) 1.4 Number of farmers reporting a decrease in unsustainable practices	1.1 Project records 1.2 Field record books 1.3 Field record books 1.4 Farmer surveys	Farmers see the value of the CBB alert and are willing to invest their time and resources to support implementation through full project duration. Key local and national stakeholders able to embrace and facilitate the utilization of the CBB alert.

	as a result of project activities (16) [DI-B09]		
2. Enhanced engagement with key stakeholders at local and national level	2.1 Number of farmers completed workshop to design outreach strategy and resources (16) [DI-A01] 2.2 Number of farmers see gender sensitive outreach posters (estimate 1000) 2.3 Number of farmers see gender sensitive outreach movie (estimate 1000) 2.4 Number of local and national stakeholders completed structured workshop on gender sensitivity (50) [DI-A01]	1.1 Attendance record 1.2 Poster copies 1.3 Movie copy 1.4 Attendance record	Suitable and available times and venues found to accommodate attendees Outreach resources produced are appropriate for the local context. The local cooperative agrees to display the posters
3. Enhanced local and national capacity in and awareness of biodiversity conservation and biopesticides	3.1 Number of in-person farm visits by project partners (minimum 60 visits per farm) 3.2 Number of local stakeholders with enhanced knowledge of biodiversity conservation and biopesticides following structured training (25) 3.3 Number of national stakeholders completed structured workshops on data-sharing (10) [DI-A01] 3.4 Number of government federations/departments completed structured training on biodiversity conservation and biopesticides (2) [DI-A07] 1.1 Number of female farmers with improved access to services and	1.1 Project log book, including farmer sign-off 1.2 Project log books; training assessments; and attendance records 1.3 Project log books and attendance records 1.4 Project log books and attendance records 1.5 Record books and attendance records 1.6 Project records, farmer survey/feedback, SMS dashboard records	Local and national stakeholders engage and send staff to workshops

	resources for improved health and well-being (16) [DI-A06]		

Activities (each activity is numbered according to the output that it will contribute towards, for example 1.1, 1.2 and 1.3 are contributing to Output 1. Each activity should start on a new line and be no more than approximately 25 words.)

1.1 Design, implementation and training on data capture process for biopesticide vs chemical applications, CBB numbers and crop yields
1.2 Design, implementation and training on data capture process for biodiversity indicators
1.3 Install and run CBB alert on the project farms
1.4 Data capture across multiple cropping seasons

2.1 Facilitate workshop with farmer cohort to co-design and produce outreach resources (posters and movie)
2.2 Facilitate stakeholder workshops (local and national level) on gender sensitives

3.1 Weekly visits of project partners to cohort farms
3.2 Design and facilitate stakeholder training on biopesticides and biodiversity conservation
3.3 Design and facilitate workshops to deliver SMS series for local capacity building
3.4 Design and facilitate data-sharing workshops at a national level

19. Annex 3: Standard Indicators

Table 1 Project Standard Indicators

Please see the Standard Indicator guidance for more information on how to report in this section, including appropriate disaggregation.

DI Indicator number	Name of indicator	If this links directly to a project indicator(s), please note the indicator number here	Units	Disaggregation	Year 1 Total	Year 2 Total	Year 3 Total	Total to date	Total planned during the project
DI-A01	Number of people in eligible countries who have completed structured and relevant training	3.2	People	Colombia; Women; IPLC	14	2		14	16
DI-A01	Number of people in eligible countries who have completed structured and relevant training	3.2	People	Colombia; Men; IPLC	2	5		0	6
DI-A03	Number of local or national organisations with enhanced capability and capacity		Number	Colombia; Private	1	0		1	0
DI-A05	Number of trainers trained under the project reporting to have delivered further training	3.2	People	Colombia;Men;non-IPLC	2	0		2	3
DI-A05	Number of trainers trained under the project reporting to have delivered further training	3.2	People	Colombia;Women;non-IPLC	1	0		1	0
DI-D01	Area of land or sea under ecological management (a)		Number of hectares	Country; T7; Vegetation management	16	0		16	16

Table 2 Publications

Title	Type (e.g. journals, best practice manual, blog post, online videos, podcasts, CDs)	Detail (authors, year)	Gender of Lead Author	Nationality of Lead Author	Publishers (name, city)	Available from (e.g. weblink or publisher if not available online)
NA						

20. Checklist for submission

	Check
Different reporting templates have different questions, and it is important you use the correct one. Have you checked you have used the **correct template** (checking fund, scheme, type of report (i.e. Annual or Final), and year) and **deleted the blue guidance text** before submission?	y
Is the report less than 10MB? If so, please email to BCF-Reports@niras.com putting the project number in the Subject line.	y
Is your report more than 10MB? If so, please consider the best way to submit. One zipped file, or a download option is recommended. We can work with most online options and will be in touch if we have a problem accessing material. If unsure, please discuss with BCF-Reports@niras.com about the best way to deliver the report, putting the project number in the Subject line.	n
Have you included means of verification? You should not submit every project document, but the main outputs and a selection of the others would strengthen the report.	y
Have you provided an updated risk register? If you have an existing risk register you should provide an updated version alongside your report. If your project was funded prior to this being a requirement, you are encouraged to develop a risk register.	y
If you are submitting photos for publicity purposes, do these meet the outlined requirements (see section 16)?	
Have you involved your partners in preparation of the report and named the main contributors	y
Have you completed the Project Expenditure table fully?	Y as much as we can for now
Do not include claim forms or other communications with this report.	