

## Darwin Initiative Innovation Annual Report

To be completed with reference to the "Project Reporting Information Note":  
[\(https://www.darwininitiative.org.uk/resources-for-projects/information-notes-learning-notes-briefing-papers-and-reviews/\)](https://www.darwininitiative.org.uk/resources-for-projects/information-notes-learning-notes-briefing-papers-and-reviews/) .

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

**Submission Deadline: 13<sup>th</sup> May (extension granted by email on 29 April)**

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### Darwin Initiative Project Information

Project reference	DARNV020
Project title	Upscaling innovative 'planting-baskets' to restore landscape diversity, enhancing climate-resilient livelihoods
Country/ies	Belize
Lead Partner	University of Edinburgh (UoE)
Project partner(s)	Belize Botanical Gardens (BBG) Friends for Conservation and Development (FCD) Government of Belize, Forest Department (GoB, FD) Galen University, Belize (GU) International Institute for Environment & Development (IIED) Royal Botanical Gardens Edinburgh (RBGE)
Darwin Initiative grant value	£ 198,896
Start/end dates of project	1 April 2023 – 31 March 2025.
Reporting period (e.g. Apr 2022 – Mar 2023) and number	April 2023 – March 2024 Annual Report 1.
Project Leader name	Neil [REDACTED]
Project website/blog/social media	<a href="https://www.gov.uk/government/news/uk-funds-darwin-initiative-innovation-project-in-belize">https://www.gov.uk/government/news/uk-funds-darwin-initiative-innovation-project-in-belize</a> <a href="https://fb.watch/nWjUP9Fcot/">https://fb.watch/nWjUP9Fcot/</a> <a href="https://www.facebook.com/ukinbelize/videos/658172843131023/">https://www.facebook.com/ukinbelize/videos/658172843131023/</a>
Report author(s) and date	Rudy [REDACTED] (BBG), Zoe [REDACTED] (RBGE), Duncan [REDACTED] (IIED) , Duncan [REDACTED] and Neil [REDACTED] (UoE)

**Please note:** This report is supplemented by **two supporting reports** from our partners. These are referred to as the **Report from IIED**, and the **Report from RBGE/BBG** respectively, These supplementary reports have been attached as PDF files along with this Annual Report, which has been supplied in Word format.

Additional supporting material, organised as a series of folders, can be viewed by reviewers in folders of material at <https://edin.ac/3WG4NL8> For reviewer's convenience, copies of the reports by RBGE/BBG and IIED have also been included in this [supporting online material](#).

## 1. Project summary

In this project, we directly address the problem of the insufficient understanding and limited resources currently available for supporting smallholder farmers in rural western Belize to transition to more diverse agro-forestry systems. This is important because degradation caused by unsustainable agriculture, and clearing forested areas for pasture, are the major threats to biodiverse landscapes in Belize (DEFRA, 2022). Both are symptomatic of the failure of current cropping systems based too narrowly on only a small number of plant species, including many exotic species (Drexler, 2021). We propose to support subsistence farmers in rural villages bordering the Selva Maya biodiversity hotspot, by providing them training and resources to enable them to transition toward growing a more diverse set of native food plants, trees and spices, using what we term 'planting baskets'.

The underlying drivers of this degradation of the biodiverse landscape of the Selva Maya within Belize, as in many countries, are poverty and food insecurity, both of which have been exacerbated by the pandemic. COVID caused a contraction of the Belizean economy by 15%, and the collapse of Belize's tourist incomes, which previously accounted for 40% of GDP. Government statistics show that numbers of people now living below the poverty line and also reporting food insecurity have recently doubled across the entire country (SIB, 2021, 2023).

Whilst the basic idea of growing more native food plants has been tried before in this sector (e.g. BGI have an innovation project in Uganda focused on native plants for human nutrition), it is relatively novel in Central America, where there is limited experimental evidence of (i) which native plants can be propagated and grown successfully, (ii) how species should be planted together in an agro-forestry system so they can thrive, create a functional ecology, and enhance biodiversity. Methodologically, taking the 'planting-basket' concept first developed in food security and then adapting and scaling this up to generate diverse planting combinations of up to 40 species of plants, herbs, spices, intermixed with endangered hardwoods, constitutes innovative and cross-sectoral thinking. Similarly, the idea of translating a training scheme and resources originally developed for backyard home-gardening (Gardens-to-grow), and then thinking how to scale up each of the components to provide packages of plants and other resources including training and supportive monitoring, so growers can scale it into an agroforestry system, also requires innovation through experimentation.

The impetus for this project came from our partners in Belize, who witnessed the effects of the pandemic reducing food security and increasing poverty levels in rural Belize. There was pressure to clear forest to grow more food because many people had lost their incomes from regular employment. Whilst the worsening economic situation was driving an increase in deforestation, paradoxically, it also created this opportunity to address some of these root causes. There is now greater interest in home gardening as smallholders start to recognise the need to diversify their growing as a strategy to build climate-resilience (Peshin (2022), and diversify their incomes (Macqueen, 2021). This has been evident amongst the smallholders surveyed this year under outputs 1.3 and 4.1 (evidenced in IIED's year 1 report in the online [supporting online material](#)).

## 2. Project stakeholders/ partners

The demand for the project stemmed from an initiative by Belize Botanic Gardens (BBG) to provide seeds and plants to rural families during the pandemic who were suffering food insecurity due to loss of employment. As UoE and RBGE had worked with BBG on a previous Darwin main award (DAR 17-022), BBG invited us to co-develop this proposal with them. Over the last 5 years, Friends for Conservation and Development (FCD) had a series of small projects, encouraging local smallholder farmers in the Vaca Forest reserve, to move away from clearing forest for pasture and extensive maize cultivation, as the deforestation was causing a severe loss of biodiversity, and resulting soil erosion was degrading this agricultural production. Belize Maya Forest Corridor and Ya'axche Conservation were two further NGOs that we consulted during the project proposal stage, and who we continue to have regular in-person meetings with, including offering these organisations places for their staff on the project's training events and at our consultative workshops. (Emails and meeting notes can be supplied by the PI to verify).

UoE led the collaborative proposal design, through extended consultation over 18 months with partners BBG, FCD, and wider stakeholder across Belize, including consulting with the National Biodiversity Office NBIO, government departments of Agriculture (responsible for implementing the new National Agroforestry Policy, and the Forest Department (responsible for engaging smallholder farmers in national forest restoration). This consultation helped us to ensure that this proposal was designed to address the knowledge and skills gaps identified in the 2022 Forest Restoration Policy, specifically the need to raise public awareness of benefits of growing native plants, and to increase the number of Belizean organisations with the required botanical and horticultural knowledge required for doing so. This knowledge gap was also identified from similar consultations with the Dept of Agriculture (Emails and meeting notes can be supplied by the PI).

In this way, wider stakeholders have been involved with the project since the outset – including also the educational institutions such as University of Belize, Galen University and Mopan Technical College, who wanted to expand their teaching and technical training courses in agroforestry and agri-biodiversity. During this year, the project has listened to their needs, targeting further resources under output 3 to establishing more permanent demonstration gardens for educators and students at Galen and Mopan, and creating an agroforestry demonstration plot for FCD. Additional to the demonstration garden always planned to be created at BBG, and the installations for smallholders and Gardens to Go beneficiaries, these 3 further gardens created under output 3 for our partners reflects us striving to create a legacy that will endure well beyond this short project. Photographs of some Gardens to Go, sketches and designs by BBG for the demonstration gardens created at Galen and FCD, have been supplied by BBG and are included in the [supporting online material](#) as verification. Annexe 4 of the Report by RBGE illustrates two of the different types of planting baskets they co-designed with BBG, which have been installed and which are now being further expanded by the project beneficiaries.

Particularly under output 5 (awareness raising) and output 1 (broadening botanical knowledge) we have also reached out to relevant local institutions and individuals, including technical specialists in media and TV, local experts in taxonomy, ethnobotany, watershed protection, regenerative agriculture co-ordinators working in NGOs and government forestry and agriculture officers who are seeking to encourage uptake of agroforestry methods by local farmers in Belize.

IIED, our partner with the widest network of contacts with international governments and NGOs involved in promoting agri-biodiversity, has helped raise the international profile of the project under output 5, through featuring the project in a special issue of the Tropical Agriculture Association's journal for agriculture professionals worldwide *Ag4Dev* (Table 1) and publishing a range of news stories and blogs about the project e.g. [Sisters are doing it for themselves in biodiverse Belize | International Institute for Environment and Development \(iied.org\)](#). IIED provided a keynote talk (output 4.1) at a workshop convened by the project to revitalise Belize's National Forest Restoration Taskforce. Evidence of all these activities and further are described on pages 3-10 and in Annexe 5 and 6 of the first year report from IIED, submitted with this report.

Although we initially planned under output 5.3 to develop and market a cookery book, promoting the use of native plants in local dishes, we found that a similar booklet had already been developed by a women's group in the nearby village (Barton Creek). To avoid accidentally competing with this, instead we have agreed that the project will assist with re-printing, promoting and selling this booklet through our project partners and wider stakeholders, with profits going to the women authors. Sample pages can be viewed in the [supporting online material](#).

We acknowledge the strong support received from the British High Commission (BHC) in Belize, notably the High Commissioner Nicole Davison and Deputy Commissioner Kate Reynolds. Following initial contact during the proposal writing stage, since funding was awarded the High Commission has helped us to significantly amplify project communications, and raise awareness of the knowledge and capacity in native plant growing that this project is building within Belize, and the wider value of this skills and knowledge to international projects funded by the BCF, most notably the Biodiverse Landscapes Fund projects in Guatemala and Honduras. Section 15 details the various press releases, blogs, videos as well as project launch and other events in Belize that have been co-created with the BHC in Belmopan. We were also able to present the project to the British Embassy in Guatemala City, and to the co-ordinator of the wider BLF scheme for Meso America. Various media outputs such as a World News Story, and a video of the launch event produced by the BHC media team, are in section 15 and Table 1

Emails can be supplied to verify the regular communication with all these wider stakeholders.

### 3. Project progress

#### 3.1 Progress in carrying out project Activities

Activity	Progress at end of first year
1.1 Training of BBG staff by RBGE in plant taxonomy, conservation assessment and biodiversity monitoring	On-site training in Belize has been rescheduled to year 2, to accommodate staff maternity leave by Zoe Goodwin this year. Course materials are already prepared; the course has been advertised and will take place as 3 mini-courses over 10 days from 30 May 2024, to accommodate higher than expected demand. Advert is in Annexe 7 of the RBGE/BBG report.
1.2 Consultations with ~ 4 beneficiary groups (> 50% female) to understand constraints to adopting more diverse growing and gather knowledge on food plants they wish to produce, by July 2023	Activity Completed. Page 3 of report from IIED (Annex 2) gives details of the survey tools designed and tested on 20 subsistence farmers, pp 4-9 presents an analysis of the main trees and crops grown, balancing this with the challenges they foresee in adopting more diverse growing practices. Report from RBGE & BBG (Annex 1) documents the consultations with smallholder farmers, landless participants in the Gardens to Go scheme, educators and market vendors to comprehensively assess which native and other plants will be desirable to grow, for reasons including biodiversity value, shade/shelter, pollinators, food security, or income generation. Several hardwood species were often highlighted including cedar, mahogany and fiddlewood, and regional endemics 'grande betty', 'black cabbage bark'.
1.3 Conservation assessment by Aug 2023 of ~200 local food plant, fruit, palm and tree species for biodiversity, food security and livelihood benefits.	Activity Completed. Appendix 1 of the report lists >140 species assessed for their conservation status, rarity, contributions to biodiversity, longevity, drought tolerance etc The list was analysed further by IIED to identify species valuable for food security, or to produce income or livelihood benefits within given time frames. Appendix 4 of the RBGE/BBG report presents 'baskets' of plants, mixing native and endemic species with others able to provide food or other value in a shorter time period. Example 'baskets' are illustrated for both 'Smallholder' and for landless 'Gardens to Go' beneficiaries.
1.4 Plant nursery and visitor education facilities at BBG expanded by August 2023 to increase space and enhance facilities for filming 'hands-on' training events for public broadcast in TV shows.	Completed. Photographs and logs of the nursery planting provided by BBG in Appendix 3 of their report, show the 4-fold expansion of their nursery areas between June-December 2023, that enabled them to cultivate over 8,000 plants and seedlings between July 2023 to March 2024. Associated improvements to the BBG Education Center, including solar panels, now provide secure power and lighting, enabling indoor training for longer periods, and more stable power for filming the TV series. The improved Education Center can be seen in the video filmed by the BHC media team at <a href="https://fb.watch/nWjUP9Fcot/">https://fb.watch/nWjUP9Fcot/</a> and also on the 'cooking demonstration' clip from the TV trailer.
2.1 Network of ~ 15 seed collectors recruited and trained to begin seed collection by June 2023	Completed. 15 students from Galen University and Mopan Technical College were recruited as seed collectors and trained by BBG to collect in June 2023. A record of names is available from Dr Denaie Swasey <a href="mailto:dswasey@galen.edu.bz">dswasey@galen.edu.bz</a> An indication of the quality of the training is that additional training has been requested and will take place in June 2024, for further Rangers and students from Galen University and Mopan tech. Collected seeds will then be planted by the students in their demonstration gardens established at their institutions under output 3. Educators who attended the first training course will assist in training new students in this second year.
2.2 Experimental trials by April 2024 on 20-30 of the target species, assessing ease of propagation, survival and drought resistance	Ongoing. Appendix 3 by RBGE/BBG presents the ~ 40 agro-forestry species selected in year 1 for growing in the BBG nursery and native species selected for propagation trials. The spreadsheets systematically document means of obtaining seed or juvenile plants; methods of propagation, assessing ease or difficulty of growing, and feedback from recipients on reasons for adopting or difficulties maintaining specific species. In year 2, BBG will extend this activity, experimenting with ~30

	more native species, again testing their ease of growing, and providing training, before distributing these plants to the smallholder beneficiaries, and installing these into the 4 demonstrations plots.
2.3 20 days of bespoke horticultural training during year 1, providing 4 beneficiary groups (24 households, 30% female) by BBG	Completed. As most beneficiaries could not commit to residential training, a series of five, one-day trainings were held at BBG for smallholders and Gardens to Go participants on topics including organic growing, composting, grafting and pruning. Several smallholders work on remote plots and, for these, BBG made additional custom visits, providing training on-site. A total of 105 person-days of training were delivered at BBG in five sessions to 75 men and 30 women. A sign that the training was valuable was that many people covered their own travel costs to attend, with several attending multiple sessions, and bringing extended family members from other farms, resulting in the training reaching > 40 separate households overall. Attendance lists for each of the training days are provided in the supporting material
2.4 12 Individuals (>30% female) identified in year 1 as 'champion growers' selected to attend intensive 1 wk courses in April 2024.	This is a year 2 activity. In year 1, BBG have been observing levels of motivation of the participants, noting those showing particular interest and ability. Appendix 4 of the RBGE/BBG report provides examples of two beneficiary growers identified from year 1, as examples of finding these 'champion growers' from both the smallholder and G2G schemes.
3.1 'Agroforest Garden' created at BBG by October 2023	Completed. One 2 ha demonstration agroforestry garden has been created at BBG. Photographs taken after initial installations in Feb 2024 in the online <a href="#">supporting material</a> serve as a baseline to document evolution. Nursery reports document the number of species and numbers of plants installed in the garden.
3.2 3 x 1 ha experimental agro-forestry plots co-designed and landscaped on land of project beneficiaries by December 2023.	Completed. Two 1 Ha demonstration agroforestry gardens have been installed by BBG at Galen University and Mopan Technical High School in Cayo District, Belize. One demonstration AF plot has been established in the Vaca Forest Reserve, with co-operation from the NGO Friends for Conservation and Development (FCD). Planting layouts and plot designs for Galen University and FCD are included in the online supporting material. Photographs taken after installations in Feb 2024 serve as a baseline to document evolution. Nursery reports document the plants installed in each plot.
3.3 At least 30 landless local forest users (>75% female) obtain plants, training and ongoing support from BBG to maintain backyard 'Gardens to Grow'	Completed. To create gender balance, the beneficiaries were subdivided into 15 smallholder farming households, with mostly male heads of household (HoH) receiving plants on their own land parcels, and 15 landless households (13 female HoH) receiving backyard 'Gardens to Go' (G2G) and training. Each smallholder farmer received >50 plants, comprising a mix of 15-30 species from the growing lists in Appendix 2 of the report by RBGE/BBG. 15 smallholder farmers received ~ 50 plants each to plant on their own land. Examples of smallholder farmers and the plants and training they receive are fully described in Appendix 4 of the RBGE/BBG report and in Annex 4 of the IIED report. Further details of planting by individual smallholder farms can be provided by emailing <a href="mailto:rudybelizebotanic@gmail.com">rudybelizebotanic@gmail.com</a>  Each G2G participant received a smaller basket of ~ 20 plants, with 10-15 species from the list, usually excluding larger tree species, along with on-site installation and training in their backyard garden space. Examples of G2G participants and the plants and training they received are described Appendix 4 of the RBGE/BBG report, with photographic evidence of the G2G installations in the online supporting material.
4.1 Consultations with 4 groups (~24 households ~50% female) by July 2023 to understand their present growing systems and the livelihood benefits	Completed. Report from IIED describes the tools developed to consult the beneficiary groups. In addition to assessing the ~140 plants also assessed by RBGE in (1.2), a survey tool was developed by IIED and field tested on 20 smallholder farmers who attended training at BBG. 15 shorter survey interviews and 8 longer in-depth interviews were then conducted, to understand present growing systems and the livelihood benefits growers may expect currently and from a model of enriched subsistence use. Interviews were analysed to understand grower's preferences for specific trees and crops. pp 4-9 of the IIED report presents an analysis of the main trees and crops grown, identifying

	hardwoods, native species and other crops that growers would wish to grow more, and reported challenges to do so. Annexes 1 and 2 of the IIED report detail the survey methods used.
4.2 Up to 4 groups (~50% female) trained and mentored during 2024 in the resilience benefits of diversified production, and sale of diversified produce.	Planned as a year 2 activity. However, from the understanding gained from the surveys in (4.1) we expect many growers will not have grown enough of the new plants, to be ready for training in business options, sale, and organisation. IIED propose instead to undertake mentoring as a 'training-for-trainers' activity targeting restorative agriculture and agri-diversity practitioners in our governmental, NGO and educational stakeholders, (although any growers who have previously experimented with diversification can be included). We will submit a Change Request.
4.3 Locally-led assessments of markets for surplus produce for up to 6 food plants by Dec 2024.	Also planned as a year 2 activity. However, most of the beneficiaries will not have opportunity to sell different produce in year 2, as their plants will still be establishing. So, beneficiaries will be asked to assess, by EoP, any changes made to their planting intentions and practices. We propose to re-orient this to a locally-led assessment of changes by EoP, better indicating progress toward overall outcome 0.4
4.4 Promotional materials for 3 existing/potential food products by Dec 2024	Also planned as a year 2 activity. Following the same logic, we will re-orient this towards helping smallholders in promoting benefits and sharing knowledge of these benefits of enriched growing by using AF techniques, to encourage wider uptake.
5.1 Training resources published online during 2024, incorporated into courses on agroforestry at technical colleges and university, by EoP	A year 2 activity. Initial consultations have taken place with Mopan Technical high School, Galen University and University of Belize ERI, who have all attended briefings about the project and further follow-up meetings to begin thinking of means to identify relevant programmes and curricula. Further meetings are planned in week of 19th August 2024 to begin this activity.
5.2 Production of up to 10 new episodes of 'The Garden Show' on Cayo TV, showcasing native species, & uses in cooking, in 2024.	8/10 new episodes of the popular TV series 'The Garden Show' hosted by BBG, have been recorded during year 1. Two further episodes encouraging growing of native species, are dedicated to Darwin outputs – one featuring smallholder champion growers and a second, the most successful Gardens to Go participant.
5.3 Materials promoting growing, eating, cooking and other uses for the target native species, by EoP.	Instead of creating our own cook book promoting dishes based on native species, we will promote an existing book produced by women in the local community of Barton Creek. BBG will sell the cook book at its Visitor Center, and in shops, with profits going to the women. A reprint of the book, coinciding with the project is in the <a href="#">supporting material</a> .
5.4 Project findings shared and promoted internationally as an innovative, scalable scheme; lobbying of government to expand the scheme by Dec 2024	<p>The project convened a workshop in the capital city Belmopan on 7th Feb 2024 with 20 key stakeholders including 3 government departments and 10 NGOs and academic institutions actively running projects promoting agroforestry and climate resilience within Belize. Section 5.4 of the annual report by IIED (included as annexe 2 to this report) describes the workshop, with slides presented in Annex 6, and an attendance list in the <a href="#">supporting material</a>. The workshop resulted in a decision to reconvene a national taskforce on landscape restoration, and invite BBG to share project findings at the meeting in Feb 2025.</p> <p>Project activities have been widely publicised through social media, including blogs on both RBGE and IIED websites, and through press releases in Belize co-ordinated by the High Commission. See Annexes 4 and 5 of the IIED report, Appendix 6 of the RBGE report and watch <a href="https://fb.watch/nWjUP9Fcot/">https://fb.watch/nWjUP9Fcot/</a></p> <p>Press releases about the project have appeared in various local media, and also as World News Story on <a href="http://www.gov.uk">www.gov.uk</a>, and have been widely shared on Facebook and other social media. We were delighted that the project was included by the BCF comms team in BCF's first Newsletter, 'Food for Thought' <a href="https://edin.ac/3wwWh6w">https://edin.ac/3wwWh6w</a> and is presently featuring as 'Latest News' on Darwin.org.uk Section 15 provides details and links to these promotional resources.</p>

### 3.2 Progress towards project Outputs

Please also refer to table in 3.1 above for evidence for each activity under each output described below. Section 3.1 also indicates progress made on each individual activity.

Output	Baseline condition - progress in year 1 – likelihood to achieve by EoP?
<p><b>Output 1. Botanical knowledge broadened.</b></p>	<p>Baseline: Limited knowledge of native plants suitable for growing and which might contribute to biodiversity, food security and livelihood. Only a few staff at BBG and Ya'axhe NGO with skills in native hardwood and native plant and seed identification.</p> <p>Progress: Consultations with beneficiary growers completed to understand which native species they may be willing to grow (1.2); list of ~140 native plants assessed by RBGE, IIED and BBG for biodiversity and livelihood benefits and 40 species selected for trials in year 1(output 1.3 completed as planned) Plant identification training (1.1) rescheduled to June 2022, with all preparations now in place. Likely to achieve (and exceed) targets for numbers of stakeholders from organisations across Belize receiving targeted botanical training for native spp by EoP.</p>
<p><b>Output 2. Native plant propagation skills developed</b></p>	<p>Baseline: ad-hoc collection of a narrow range of seed practiced by farmers. Very few organisations such as BBG and Ya'axhe collected a wider range of seeds to increase genetic diversity.</p> <p>Progress: Seed collecting (2.1) undertaken in year 1 and to be repeated (so exceeding target) in year 2. Educators and Forest Rangers attend training in seed collection. ~ 40 agro-forestry species selected in year 1 for growing in the BBG nursery and the native species selected for the propagation trials (2.2)</p> <p>A further 30 native species to be trialled in the BBG nursery in year 2, exceeding the target of 40 species by EoP. (2.3) A total of 105 person-days of training were delivered at BBG in five sessions to 75 men and 30 women, with some people attending multiple sessions, and reaching &gt; 40 separate households. This exceeds the target for horticultural training of 80 person days. With the additional training planned for year 2 we are confident we can exceed the target for this output by EoP.</p>
<p><b>Output 3. Agroforestry demonstrators established</b></p>	<p>Baseline: with the exception of a few demonstration AF farms in Toledo District of Belize supported by Ya'axhe Conservation. There were very few accessible demonstration areas where farmers or students could see examples of established AF setups, showing how an AF plot could be designed based on diversified planting of hardwoods, fruit trees and shrubs, to restore biodiversity, canopy cover and ecology after a site had been used unsustainably for agriculture.</p> <p>Progress: All four demonstrators (1 at BBG – 3.1); (1 at Galen) (1 at Mopan) (1 at FCD – 3.2) have been established this year, and planted with species grown in the expanded BBG nursery facilities. Additionally, ~15 smallholders have received 40-50 plants each for planting on their own plots (3.3) and 15 families with mainly female HoH have received installations of 'Gardens to Go', with additional training provided by BBG. Beneficiaries will receive further native plants in year 2 to enrich the plots, together with further support. Nevertheless, activities for this output have already achieved targets by the end of year 1.</p>

<p><b>Output 4: Climate resilience capabilities enhanced</b></p>	<p>Baseline: with exception of a small group of smallholders practicing ‘slash and mulch’ cultivation based on Inga intercropping in Toledo, and projects just begun in 2023 to engage smallholders in the Belize River Valley and the Maya Forest Corridor, there have been few successful attempts in Belize to engage with smallholders to understand the challenges they face to adopting more diverse planting and growing.</p> <p>Progress: the thorough consultations carried out this year by IIED and RBGE (4.1) provide considerable insight into what will motivate smallholders in western Belize to consider growing a wider range of crops, including more native crops. The understanding gained from various consultations, including surveys and in depth interviews, has provided a solid base on which RBGE can select native plants that smallholders will be more willing to grow, and will provide food security and climate resilience benefits, as well as biodiversity benefits. Having learnt about these motivations and constraints, we are now able to propose a much more appropriate set of further activities under 4.2- 4.4 to enhance the capabilities of the smallholders in year 2.</p>
<p><b>Output 5: Biodiversity restoration practices promoted widely</b></p>	<p>Baseline: The National Forest Restoration Strategy was signed into law in 2023, and the National Agroforestry Policy was published in 2022. However, there have been few examples of any implementations of either strategy. Ya’axche conservation has promoted one example of community cacao growing within one Forest Reserve, which is the only example of an agreed community use of land for AF within any government protected area in Belize. The Forest Department had established a National Restoration Taskforce, but this had met only one since its inception and had not met at all in the last 3 years. It has been very difficult to co-ordinate meetings between agriculture and forest departments, to discuss the implementation of the Agroforestry Policy. Across Belize, there is growing interest in growing native plants, with some examples of materials produced to promote growing and cooking with native plants. BBG have been the most active organisation promoting the growing of native plants, and have gained popularity and recognition through broadcasting 2 series of a Gardening Show on national TV, and a pilot backyard gardening scheme piloted on 8 local families during the pandemic.</p> <p>Progress: The project convened a workshop in the capital city Belmopan on 7th February 2024 with 20 key stakeholders including 3 government departments including both Agriculture and Forestry, and a further 10 NGOs and academic institutions actively running projects conducting and promoting agroforestry and climate resilience within Belize. The main outcome was to agree to rejuvenate this Taskforce, and invite project partners to a next meeting, to share progress reports and co-ordinate actions across Belize, in February 2025.</p> <p>8/10 new episodes of the popular TV programme ‘The Garden Show’ hosted by BBG, have been recorded during year 1. Episodes encourage the growing of native species, and are filmed in the Garden. take advantage of facilities that have been improved by the project (e.g. BBG’s Visitor Education Center). This will be televised during year 2 of the project.</p> <p>Project activities have been widely publicised through social media, including blogs on both RBGE and IIED websites, and through press releases co-ordinated by the High Commission in Belize. Press releases about the project have appeared in various local media, as well as a World News Story on <a href="http://www.gov.uk">www.gov.uk</a>, and have been widely shared on Facebook and other social media.</p> <p>Evidence for all these changes is detailed, broken down for each contributing activity in section 3.1 above.</p>



### 3.3 Progress towards the project Outcome

Our stated outcome is that 'Opportunities for growing more novel combinations of local foodplants, spices and CITES-listed trees within smallholder agroforestry are evidenced and widely spread, with baseline data on biodiversity and climate-resilient livelihoods collected'.

The baseline condition in Belize, prior to this project was that, despite the Government Department of Agriculture having endorsed a National Agroforestry Strategy, and the Government Forest Department having endorsed a National Forest Restoration Strategy, there were only isolated efforts from individual NGOs to implement projects promoting agri-biodiversity and agroforestry. Although the idea of a National Forest Restoration Taskforce (NRFT) to co-ordinate activities in landscape restoration had been proposed, it had not been formally convened. With the exception of internal reports by the Belizean NGO Ya'axche, there was little documented evidence of how smallholder farmers might be incentivised to adopt more enriched and diversified growing practices. To our knowledge, two previous backyard gardening schemes had been piloted in Belize – a scheme in 2015-16 funded by the US Embassy, re-training 'troubled' youths in horticulture, and in 2021-22 by BBG, providing starter plants for local families who could not feed themselves after loss of employment during the pandemic. Some of the key constraints we identified in Belize, preventing growers from adopting more diverse planting and growing, were (1) a lack of knowledge about how to identify suitable native plants, and (2) how to propagate, plant and maintain these plants as part of a more diverse AF system. Exploring this further with the stakeholders identified above, we learnt that many women, who were interested to learn how to grow using local plants, did not have any available land. A third factor was that there were few examples of successful farmers, who could demonstrate an established functional AF system, from which other farmers could learn. Finally, there was little co-operation between individual farmers, and understandable resistance to invest their very limited resources in an unfamiliar approach.

To address the botanical knowledge gap (outcome 0.1), RBGE has now assembled a comprehensive database of native species considered able to provide a range of benefits to biodiversity, food security and livelihood. (RBGE annual report appendices 1-3). IIED then refined this further by adding in factors that might influence the willingness of our Belizean stakeholder groups to grow these in Cayo District, bordering the Selva Maya Biodiversity hotspot. Through a series of farm visits locally led by BBG, we also analysed the present variety of fruits, hardwoods and other crops currently grown by smallholders, and how they maintain canopy cover on parts of their smallholdings. (IIED annual report, output 1.2)

To address the horticultural skills gap (outcome 0.2), BBG selected and successfully propagated > 40 target agroforestry species this year, which will contribute to restoring local ecology and biodiversity, as well as improving people's food security. BBG have given over 100 person-days of training to over 40 local households, and have successfully recruited 30 households (> 50% female HoH) who are showing a strong commitment to experimenting with diversified growing. As part of this outcome, the Gardens to Go scheme has been successful in meeting demands for training in AF systems for many women who do not own land. (Table 1 this report; RBGE/BBG report, appendix 3 and [supporting material](#)).

To meet the need for accessible demonstrations of successful AF systems, (outcome 0.3), BBG have installed educational, demonstration plots at Belize Botanic Gardens and also at two university and high school campuses, as well as one further AF demonstration plot in the Vaca Forest Reserve. All four of these demonstration gardens are now established, and will be augmented with further native planting, and supported by interpretative educational materials in year 2. Designs for the gardens and illustrative photographs are in the [supporting material](#).

To help overcome the challenges smallholder farmers face as individual growers, with resulting constraints on access to resources and knowledge, outcome 0.4, led by IIED, is enabling the growers to learn about the benefits of enriched subsistence agriculture. This year's activity by IIED (see their attached annual report) has mostly been to help BBG design and apply surveys to understand present growing practices, the varieties of trees and plants currently grown, and farmer's declared constraints and future planting intentions. The horticultural training at BBG (output 3) has allowed some network building among the growers. We will build upon this next year with a series of activities designed by IIED and run together with BBG, to help champion growers share their successes, and provide encouragement for wider adoption by others. Under planned outputs 4.2 – 4.4, IIED will also deliver a series of training on these benefits of adopting AF systems to trainers, so that local NGOs and educational institutions will have the capacity to deliver further training beyond EoP.

Raising awareness (outcome 0.5) of growing more native plants in these AF systems, and sharing success stories are two ways we hope to influence local farmer attitudes and also national decision making towards promoting native planting and mixed AF systems. This outcome seeks to share evidence of how this innovative approach can meet short-term subsistence needs, and also incentivise smallholders to grow in ways that assist and support landscape restoration. Awareness is rising through press and media coverage co-ordinated by the UK High Commission in Belize (Table 1, this report), and international publicity by UK partners (RBGE/BBG report, appendix 6 'Botanical Stories', IIED Report,

annexe 4). In Belize, the project has already been presented to national government ministries and a variety of NGOs, by convening a workshop that re-invigorated Belize's National Forest Restoration Taskforce. (IIED Annual report describes, attendance lists in [supporting material](#) online)

A new series of a popular national TV show in Belize is being recorded at BBG, promoting growing and cooking with native plants. We expect to achieve more of our planned outcome next year by training trainers and their students to use and maintain their demonstration gardens, promoting champion growers on national TV, and influencing the decision-makers who are implementing national landscape restoration projects to consider the evidence and make use of the resources that this project has created.

Assessing each of our outcome indicators (0,1 -0,5), we believe we are on-track so that, by EoP, we will have created and tested a range of opportunities for growing more novel combinations of local food-plants, spices and CITES-listed trees. We have already gathered baseline information on farmers' typical varieties of trees and crops grown under output 1.3 and their willingness to diversify. Those showing greatest willingness have been selected and have received plants and horticultural training. We have done this in a way that is inclusive to female as well as male growers, and creates options for participation by those who do not own their own land. Through these practical interventions, and also by re-energising Belize's national working group on landscape restoration, by EoP we expect to be able to demonstrate to government agencies and NGOs in Belize, that this strategy of growing more native plants in a wider mix of trees and crops, can be accepted and found to benefit smallholder farmers.

### 3.4 Monitoring of assumptions

The table below shows that most outcome and output level assumptions still hold true. There has been some learning this year about the readiness of smallholder growers to receive some of the training planned under activities 4.2 to 4.4. This led us to redesign these activities to be more appropriate for their current stage of transitioning to diversified growing; we will also direct more resources for training of trainers within our partner institutions, This will help them to spread information further about the benefits of diverse planting in enriched AF systems. This decision reflects the motivation shown by educators and students in the local colleges to maintain, develop and integrate the demonstration plots BBG established for them, into their class teaching. With these minor adjustments we believe the pathway to change still holds true, and improves prospects for the project greater to create legacy and ensure sustainability in the use of its physical and knowledge outputs beyond EoP.

Assumption	Current validity
0.0 no severe risks such as hurricanes, market collapse, or a pandemic prevents progress.	No severe weather has affected the plant nursery, which has a good water supply. However, some smallholders who do not have permanent ponds on site have reported some plants failing to grow due to excessive dryness, and have delayed receiving and planting saplings until rains return – instead letting the BBG nursery shoulder this risk. [smallholder growing and training activities 3.2]
0.1 'Planting-basket' concept promotes ideas of diversity, enabling both genders to contribute to a 'long-list', from which shortlist of 10-30 species will be selected for seed collecting and propagation trials.	RBGE/IIED successfully created planting baskets for year 1 and year 2 from longer lists assembled under output 1. Sufficient farmers were found who began experimenting with more diverse planting. Standard indicators for year 1 show that all activities successfully recruited female participants. To obtain a gender balance Activity 3.3 was subdivided into 15 smallholder farming households (mostly male heads of household) receiving plants on their own land parcels, and 15 landless households (13 female heads of household) receiving backyard 'Gardens to Go' installations and training.
0.2 assumes a sufficient number of the native species in each 'planting basket' can be propagated and grown on successfully.	Appendix 3 of the RBGE report documents the nursery trials at BBG of > 40 species that were mostly grown successfully. BBG report also on more difficult to grow species, and RBGE identify further native species that will be selected for further propagation trials in year 2 of the project.
0.2 There is a moderate risk of some beneficiaries 'dropping out' of the scheme. This risk will be reduced by making access to further resources dependent on regular monitoring and reporting	Informal interviewing was used to select participants most motivated to continue, to reduce drop-outs after the horticultural training activities in output 3. The evidence in the RBGE annual report suggests a high level of motivation among most project participants as a result of the ongoing engagement and support provided by BBG.
0.3 Assumes BBG will maintain the garden beyond EoP so benefits arising as the planted native species mature to yield fruits, fibres and shelter continue to be monitored.	The project decided to establish a total of 4 demonstration gardens, as there was a strong commitment from local NGO and educational partners to continue to maintain plots and monitor these beyond EoP. We believe these demonstration plots will enable benefits of diverse planting and growing to be showcased with a wider reach to a greater number of people, than relying on farmer-farmer

	interactions in local villages. (new assumption, based on learning this year).
0.3 By having a working example of an enriched agro-forestry landscape in which to train, beneficiaries will gain skills and confidence to propagate, plant and grow a greater diversity of native plant species on their own experimental agro-forestry plots.	Consultations with the smallholders (1.2) confirmed the need for farmers to see examples of established AF systems. For this, BBG's plot was designed to contain more mature plant, shrub and trees in order to demonstrate what a more established AF plot could look like.
0.4 Assumes growers seek greater climate-resilience in subsistence systems. Others wish produce a surplus for sale. Both can benefit from learning to manage risk and better understand how to build resilience through diversification. Since markets are still recovering post-COVID, we will focus on a species-diverse, organic approach to improve quality, and branding & marketing to raise the price of produce to be sold to known domestic markets	Although markets are slowly recovering, in these remote rural Districts there are fewer people with the skills to be hired into the tourism sector, and more for whom growing their own food crops will maintain their livelihoods. However, it is likely that only few of the farmers and growers will have excess produce to market or sell before EoP, with most using the project primarily to meet their own subsistence needs. For this reason, we suggest to focus this mentoring on building capacity of our partner institutions in promoting the benefits of diverse growing, and involving the direct beneficiaries in activities which demonstrate any benefits they are reporting by EoP.
0.5 we assume that by raising public understanding of the benefits of growing native food plants, and then by offering resources and training, a set of committed trainee growers are supported to form networks to upscale home-gardening and to diversify their growing in larger agroforestry plots.	Evidence from the over-subscribed horticultural training sessions (attendance lists in supporting material) and feedback provided on the training, and BBG's own monitoring of progress by smallholder farmers through site visits is that committed beneficiaries have been recruited. The Gardens to Go participants have also been vetted to select only the most motivated for initial set ups. This is necessary to ensure sufficient success stories and champion growers can be found to promote the benefits more widely to others in year 2 (RBGE/BBG report, appendices 4 and 6)
0.5 If initial evidence gained suggests the potential for the approach to be replicable across the country, BBG can then lobby government for further resources to expand the scheme as part of a community-led approach to forest landscape restoration.	Evidence from our series of consultations with NGOs, universities and government agencies (1.2 and 4.1) suggests there is a willingness in Belize to share best practices and for individual projects promoting AF or diverse growing to work more closely together (IIED annual report – national stakeholder consultation workshop February 7th; meetings with FD and AD. PI can supply meeting notes including agreed bi-lateral co-operative visits between stakeholders - e.g. BBG- Ya'axche; FD-BBG, etc.

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

The long term impact is stated as 'restoration of local biodiversity and more climate-resilient livelihoods through innovative planting combinations that mix diverse and nutritious foodplants, spices, and endangered trees in communities bordering the Selva Maya biodiversity hotspot'.

By addressing five of the noted impediments to empowering local farmers and growers to diversify their growing, and providing them incentives to do so, the project will provide evidence to demonstrate the benefits of more diverse planting and growing to encourage more uptake by smallholders. Spreading these messages widely during the project, and creating demonstrator sites and educational and training resources that will persist after the project, will, increase the prospects for the methods being adopted by other farmers, and the approach being replicated by other NGOs and government departments throughout and perhaps beyond Belize.

The project's contributions to a longer-term impact on biodiversity are likely to emanate from the knowledge created and shared through the botanical assessments, the experience documented and shared from the growing trials for native plants, the physical assets created such as the demonstration gardens and the training materials embedded in teaching at local colleges and universities.

The project's contributions to a longer-term improvement on human well-being and reduction of poverty, will stem firstly from evidencing how the enriched AF systems showcased here provide a breadth of benefits to smallholder farmers, decreasing over-reliance on one or two crops, increasing their food-security, as well as their resilience to drought and other climatic changes, and offering them a variety of possible income sources as the AF systems develop.

Clearly a two-year project in one District of Belize can only go some way to providing the more comprehensive base of evidence about the combined benefits to biodiversity conservation and also to

livelihoods that will be required to influence future government decisions about effective farmer-led strategies for forest restoration. Nevertheless by creating this repository for learning, and disseminating our findings widely, we hope this project could be a catalyst, encouraging adoption of the approach and further trials and evidence gathering more widely by other NGOs and government agencies, perhaps as part of multi-national landscape restoration projects such as the BCFs Biodiversity Landscape Fund projects in Belize, Guatemala and Honduras. By engaging early with government departments in Belize, and with national and international NGOs, and making them aware of how this project is providing skills and knowledge that can assist those implementing agro-forestry and landscape restoration schemes, this increases the prospect of the project ideas being more widely adopted.

#### **4. Project support to the Conventions, Treaties or Agreements**

By providing the skills and know-how needed to propagate and grow native plants, the project contributes to addressing the knowledge and skills gaps identified in the Government's National Strategy for Forest Restoration (GOB, 2022), Belize's National Development Plan identifies the conservation of biodiversity and ecosystem health as pre-conditions for achieving basic food security and sustainable economic development through agriculture. However, the National Land Use Policy (2020-2025) recognises the problems of destructive agricultural expansion and the risks to biodiversity and economy from growing too narrow a range of species. Hence, Belize's National Agroforestry Policy (CATIE, 2020) encourages smallholder farmers to replace Milpa farming with agro-forestry, to reduce forest clearance and restore degraded forests.

Our approach will increase Belize's compliance with ITPGRFA objectives of 'maximising the use of all crops and promoting development of diverse farming systems, conserving soil, water and plant genetic resources'. Mentoring forest users to improve their food security also directly addresses needs identified in the government's 2015 National Agriculture & Food Policy, whilst creating climate-resilient small businesses, and strengthening forest users' resilience to droughts and floods, are both actions recommended in the government's 2018 National Climate Change Policy, Strategy and Action Plan (NCCPSAP). These intersecting needs for climate resilience, food security and forest conservation were reiterated by the Belizean delegation at COP26 in October 2021 and were used to develop our (0.4) outcome indicator, and to deliberately widen the project beyond only providing the botanical knowledge (0.1), undertaking the propagation trials (0.2) and giving horticultural training only to smallholders under (0.3). Reducing clearance of tropical forest for agriculture addresses Aichi targets 5 (habitat loss) and 10 (vulnerable ecosystems). These are priorities in Belize's 6th National Report to the CBD (2019). To meet targets B3 and D1 of the Global Strategy for Plant Conservation, the government-endorsed Biodiversity Strategy and Action Plan (NBSAP) recommends Belize to limit rates of deforestation to < 0.6% annually, with 75% of threatened species in vulnerable ecosystems conserved ex-situ through plant and tree restoration programmes

#### **5. Project support to poverty reduction**

This innovation project required us to work with a local institution which had already amassed some expertise in nature plant growing and had some larger specimens that could be used for the demonstration plots it also required an institution with necessary basic facilities and infrastructure, and know-how in TV programme production. Although Belize was reclassified as a UMIC in 2019 by some (not all international agencies) this had the effect of denying it ODA grant funding at the same time as it suffered a reduction in national GDP to levels last seen in 2007 which would clearly place it as a LMIC We therefore acknowledge the timeliness of this support provided to BBG and partners in Belize.

The communities from which participants were chosen include the poorer rural villages in Cayo District of Belize, such as Bullet Tree, Calla Creek, San Jose Succotz, Benque Viejo, San Pedro, and Spanish Lookout, where most income is generated by smallholder farming. Many of these farmers tend small plots far from their village, near the Vaca Forest Reserve, bordering to the Selva Maya biodiversity hotspot and close to the border with Guatemala. A full list of the beneficiaries and their locations is in the [supporting material](#). Annexe 3 Indicator DI-A04 shows that 11 of the beneficiaries reported this year that they are already applying some of the new horticultural skills and capabilities in which they have been trained. 10 beneficiaries reported some improvement to their livelihood as a result of implementing changes to their planting and growing practices. We will gather evidence of these reported benefits more systematically in year 2, but evidence to date (output 4.1 and 5.3) (pp 4-10 of IIED report), points to smallholders reporting that the advice given about AF planting designs and their own improving knowledge about which species should be planted in different terrain and drainage situations, is having immediate benefits in terms of observed plant growth, and drought tolerance.

One of the aims of the project is to begin enhancing food security, and help smallholders understand some of the resilience benefits, from diversifying their growing. Whilst some of the smallholders may receive small income supplementation from selling some excess produce – e.g. limes, avocados, bay leaf, most smallholders and Gardens to Go beneficiaries in this first year are likely to use the new additions from their planting baskets to supplement and broaden their diet. Fulfilling this basic need to enhance food security is an important contribution to poverty reduction and a first step in helping participants understand the benefits of diversifying their growing. Participants reporting (output 4.1 in the IIED report) a greater capability to undertake diversified growing, often linked this to building their resilience to the more frequent droughts occurring in Belize. Building ecological resilience, facilitating adaptation to climate changes, and creating a social network in which formerly isolated individual farmers begin to co-operate and share knowledge are all accepted preconditions for livelihood improvement (Macqueen, 2021) and indirect forms of poverty reduction (Darwin Learning Note).

## 6. Gender equality and social inclusion

Although women may not appear to have a major role in decision-making, in Belize they do exert influence within the household sphere, particularly in decisions about crops to be grown, and especially when food is in short supply. In this regard, women can be agents of change, often adopting innovations more readily as they are more receptive to ideas being shared through their more extensive social networks. For these reasons, we wanted to recruit women into each of the beneficiary groups, although we recognised there would be difficulties, with some traditional gender roles in Belize, e.g. smallholder farming is a predominantly male activity. For this reason, we made extra effort to reach out to identify women showing an interest in smallholder growing. Our standard indicators (table 1) show that we successfully recruited 4 women into the smallholder group of 12 farmers, and that women attended 30 days of a total of 105 days training in growing native plants offered in year 1.

Recognising that women often remain at home, we developed and promoted the 'Gardens to Go' activity to women wishing to grow plants, herbs and spices in their backyards. Since most of the women could not attend residential or other full day training at the BBG, instead training was offered on a 1-1 or small group basis, for the initial installations. Follow-up was maintained by phone, and also by establishing a WhatsApp group where the participants could ask questions and share successes. Table 1 shows that 15 households were successfully recruited for Gardens-to-Go and 13 of these are female head-of-household. We also worked to promote gender balance in our educational and institutionally facing activities. The national consultative workshop had participation from women leaders, whilst of the 63 people indicating they had received support to adapt to climate change, 35 of these were women.

Proportion of women on the Project Board <sup>1</sup> .	Zoe ██████ (RBGE), Heather ██████ (BBG) are 2 of 5 members of the Board. Hence 40%.
Please quantify the proportion of project partners led by women, or which have a senior leadership team consisting of at least 50% women	RBGE, BBG and Galen University are 3 of our 6 partners that meet this condition. Hence 50%

## 7. Monitoring and evaluation

The M&E system targets both local participants (to build local learning around each main outcome indicator) and national stakeholders (to provide evidence of the longer term benefits of the diversified growing of native plant species). We used the SMART indicators in the logframe to track both the progress on the individual activities, and also the degree to which these are contributing to our top-level outcome indicators. Following the workshop given at the start of the project, we re-mapped our indicators to match as closely as possible with the standard indicators. We devised indicators, 15 of which we successfully mapped to DI standard indicators, with two additional which we needed to track the plant propagation activity and success of the installation of the demonstrator plots and gardens.

We also used and regularly updated the implementation timetable to provide a visual summary of where we were with each activity, showing this in our regular progress meetings, which took place approximately 2 monthly, with 2 on-site and 4 remote progress meetings in the first year.

All partners were involved in reporting progress and contributing to the M&E meetings. UoE took the lead in the financial monitoring, with partners providing regular updates on expenditure. Monthly monitoring of expenditure enabled the project to spend >99% of the first year budget, and to redistribute all savings

and underspends to our local partners in Belize. This monitoring increased the project's value for money, allowing BBG to hire an additional member of staff to assist in the plant nursery, to send Rudy Aguilar from BBG to attend an international botanical conference, to complete upgrading works to the power and lighting in the BBG Education Center, and to meet the increased costs of transport so BBG could provide more training to farmers on their own parcels than was initially budgeted. This tight co-ordination between financial and activity monitoring, allowed us to quickly adapt project activities to take advantages of these budget savings.

## **8. Lessons learnt**

The design of the project was enhanced over the year, by refining methods for beneficiary groups, and delivery of both the horticultural training by BBG, and the planned 'risk to resilience' training to be provided in year 2 by IIED. For the horticultural training, many smallholders were unable to come to centralised, residential training at BBG as had been envisaged. This was mainly because their farms were distant, and many smallholders also had other jobs and only worked their farmland part-time. Many women applying to the 'Gardens-to-Go' scheme had caring commitments that prevented them attending on-site or residential training. For both groups therefore, more 1-1 or small group training had to be given than anticipated.

Recruitment of the participants for the horticultural training took longer than initially expected. Informal interviewing was used to select only those participants showing the greatest willingness to try out new planting varieties and designs. Farmers who only wanted to consolidate growing of e.g. lime or avocado, without intermixing native plants and trees, were rejected from the project and did not receive plants and further training. This appears to be proving a good way to ensure participants are remaining committed to the project. Another refinement made was to grow in the first year a larger volume of plants and trees that would provide the shorter-term food security needed by the beneficiary growers; now that the participants are more committed to the project, we will increase the number of native plants and hardwood trees into their planting mix in the second year.

As a result of having more in-depth consultations and monitoring of the farmers (discussed in the IIED annual report), we learnt that many of these farmers may not be able to complete these changes in their growing practices and therefore be unable to obtain substantial livelihood benefits within the short 2 year timeframe of this innovation project. Many growers will not have grown enough of the new baskets of plants, to be ready for training in business options, sale, and social organisation in the coming year. For these reasons, IIED propose instead to undertake mentoring as a 'training-for-trainers' activity, building institutional capacity by targeting restorative agriculture and agri-diversity practitioners in our governmental, NGO and educational stakeholders, (although any growers at a more advanced stage, or who have previously experimented with diversification can also be included). This will still support the overall project outcome, of helping smallholders enhance their resilience by diversifying, as this is one of the main capabilities our NGO stakeholders wish to be able to offer their communities.

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

This is the first year of this project.

## **10. Risk Management**

Judy Duplooy, the founding Director and Owner of BBG, sadly passed away on 5th April 2024. Judy was an inspiring person, who dedicated her life to the idea that the conservation of plant biodiversity does not have to be at odds with creating and improving livelihoods for local people. An early advocate in Belize for the growing, eating and wider use of native plants, she had helped co-design several successful Darwin projects over the last 20 years and continued contributing to this one until very recently.

From the perspective of risk management, this was not unexpected, and BBG had put in place succession arrangements for the Directorship of BBG to transfer to Judy's daughter Heather Duplooy, also a skilled botanist. Heather is supported by a wider Board of Trustees, with considerable financial and project management experience. For example, one of the Trustees, Nancy Adamson, raised the capital to establish Galen University, which has been running successfully for over 15 years. Day-to-day delivery of the project continues as normal and the BBG staff who have been working on the project from the outset remain in post and continue to work on the project.

Other risks identified in the original proposal continue to be regularly monitored. Until now, the risk of participants taking training and then dropping out of the project has not occurred. We sought to minimise this risk through careful vetting of beneficiaries during recruitment, prioritising this simply maximising the numbers signing up for the project.

## 11. Other comments on progress not covered elsewhere

none

## 12. Sustainability and legacy

Evidence for increasing interest and capacity resulting from the project can be found (i) in the high level of demand and uptake of the horticultural training by all beneficiary groups; (ii) in the strengthened capacity reported at BBG (where a demonstration garden has been created and supplemented by physical improvements to the educational visitor center, and (iii) in the rejuvenated national stakeholders, since the project reconvened the National Forest Restoration Taskforce (NRFT), and BBG were invited to be a partner in this.

The fuller benefits of this project will appear in future, as the demonstration gardens mature, and more smallholder farmers adopt and benefit from these native planting and AF planting techniques. Sustaining this project going forward relies on the continued maintenance of the physical demonstrator facilities, and this is primarily why they have been established at NGOs, university and college locations, which have made commitments to continue to maintain and develop their gardens over the coming years.

The project is on track to create (i) physical legacy in the form of demonstration gardens, and expanded nursery facilities created at BBG, FCD and local universities; (ii) educational legacy in the knowledge that will be assembled and made available for re-use by NGOs (e.g. horticultural training in native plant growing) and by local schools and colleges (e.g. embedding knowledge about native plants and agro-forestry designs in courses and supporting practical classroom activities). Institutional legacy (iii) will be achieved by galvanising Belize's NFRT to show government departments how sharing this knowledge and these techniques can support the implementation of new National Agroforestry Policy, and the National Forest Restoration Strategy. These efforts have raised the profile of the project, and the Darwin identity in the country, as is discussed in the next section.

## 13. Darwin Initiative identity

The Darwin Identity is known to government and NGOs Belize, as there have been ~20 Darwin projects in Belize since the fund began. Previous terrestrial Darwin projects such as DAR 17-022 Conservation of the lowland savannas of Belize, and DAR 22-013 Conserving pine woodland biodiversity in Belize through community fire management - the last two terrestrial projects, both established legacies in the forms such as permanent plots for monitoring fire effects, and interpretive educational trails for schoolchildren to learn about the savanna ecosystem. However, since the last project ended in March 2018, and with Belize becoming ineligible for Darwin funding from 2019-2022 after it was reclassified as a UMIC, the Darwin identity has been declining in recent years compared to other funders.

For this reason, throughout the year, all the partners have been working with the FCDO, the local Belize High Commission media team and the BCF Comms team to promote the project and the Darwin identity across a range of media outlets. With the Belize High Commission promoting the project with the World News Story "**UK funds Darwin Initiative Innovation Project in Belize**", it appears on the gov.uk websites, making clear the UK government's central contribution to the project. This is reinforced with the use of the BCF and Darwin logos on the videos produced for the BHC Facebook page by their media team. The BCF comms team have also amplified the food-security aspects of the project, by featuring the project in the **first BCF newsletter 'Food for Thought'** (links in Table 1 later). The next series of the popular TV show, 'The Garden Show' features this Darwin project on two episodes, and the entire series has strong Darwin branding, as illustrated in the TV trailer <https://edin.ac/3JScmGZ>

## 14. Safeguarding

Has your Safeguarding Policy been updated in the past 12 months?	No
Have any concerns been investigated in the past 12 months	No
Does you have a Safeguarding focal point?	Yes. ██████████
Has the focal point attended any formal training in the last 12 months?	No [If yes, please provide date and details of training]
What proportion (and number) of project staff have received formal training on Safeguarding?	Past: 20% [2] Planned: 30% [3]
Has there been any lessons learnt or challenges on Safeguarding in the past 12 months? NO issues have been notified to the contact point or other project staff in the last 12 months. We will remind everyone of the whistleblowing policy in our next regular meeting.	

Does the project have any developments or activities planned around Safeguarding in the coming 12 months? YES - We have set aside time to discuss our safeguarding procedures during a future meeting with all partners in August 2024



## 15. Project expenditure

**Table 1: Project expenditure during the reporting period (1 April 2022 – 31 March 2023)**

Project spend (indicative) since last Annual Report	2022/23 Grant (£)	2022/23 Total Darwin Initiative Costs (£)	Variance %	Comments (please explain significant variances)
Staff costs (see note 2)				
Consultancy costs				
Overhead Costs				
Travel and subsistence				
Operating Costs				
Capital items				
Monitoring & Evaluation (M&E) (see note 3)				
Others (see note 1)				Consumables not required – used for op costs and capital.
<b>TOTAL</b>	£118,863	£118,726.98		

### Notes

- (1) LTS Finance advised in the new project seminar that small over/underspends on small value budget lines (in this case, 'other costs' of £1,250 for consumables that were not required), do not need prior discussion or approval.
- (2) Due to an improved GBP:USD exchange rate since the project was budgeted in Nov 22, and a small underspend by the UK partners, we were able to pass on an additional USD \$11,490, to our local partner, Belize Botanic Gardens this year. This enabled additional activity by BBG, including visits to smallholder farmers for on-site training, support for Rudy Aguilar to attend the Botanical Bridges conference in Colombia, and for BBG to hire an additional nursery technician (Daniel Aquilino) from 1 October – 31 March, with only a £21 variance in staff costs between the original budget and actual expenditure, in GBP terms. If the exchange rate remains at or close to the current rate, we expect to be able to continue to fund this additional staff member until end of Dec 2024 on a similar basis.
- (3) Monitoring and Evaluation costs were contributed in-kind. Matched funding for this year was £ 64,729, contributed mostly as salaried time by project staff at UoE, RBGE, IIED and BBG. One member of UoE staff (Moss) was dedicated to M&E activity and financial monitoring, with an in-kind salary contribution valued at £10k. Stuart (UoE) and Goodwin (RBGE) contributed time to M&E activities valued at a further £10k, with M&E activity undertaken by IIED staff Logan-Pang and Macqueen, valued at £2,000

**16. OPTIONAL: Outstanding achievements or progress of your project so far (This section may be used for publicity purposes)**

We agree for the Biodiversity Challenge Funds Secretariat to publish the content of this section

The project has received outstanding support from the **British High Commission in Belize**. A delegation including the High Commissioner Nicole Davison and Deputy HC Kate Reynolds attended the **Darwin launch event** at Belize Botanic Gardens, and have continued to actively promote the project throughout and beyond Belize.

Watch a video of the launch event here: <https://fb.watch/nWjUP9Fcot/>.  
<https://www.facebook.com/ukinbelize/videos/658172843131023/>

We are pleased to have been able to support Rudy Aguilar from BBG to travel to Colombia to participate in the ‘Botanical Bridges Conference’ organised by Botanic Gardens Conservation International, and congratulate Rudy on his award from BGCI recognising his achievement in botanical education, through the prestigious Marsh Charitable Trust Award.  
<https://www.marshcharitabletrust.org/award/marsh-award-for-education-in-botanic-gardens/>

The project has supported the filming of a new series of the TV Garden Show, hosted by Rudy Aguilar and filmed at Belize Botanic Gardens, using capital facilities improved by this project. The new series to be screened this year, includes two episodes specially commissioned to highlight this Darwin Initiative project. Watch a trailer here: <https://edin.ac/3JScmGZ>

We were delighted when this project was selected by the BCF Comms team to feature in the first ever **BCF Newsletter ‘Food for Thought’** <https://edin.ac/3wwWh6w>

We also appear in the ‘**Latest News**’ section of the **Darwin.org.uk website**  
<https://www.darwininitiative.org.uk/news/2024/01/27/growing-the-potential-of-planting-baskets/>

**Image, Video or Graphic Information:**

Type	File Name or File Location	Caption, country and credit	Consent of subjects received
Gov.uk World News Story	<a href="https://www.gov.uk/government/news/uk-funds-darwin-initiative-innovation-project-in-belize">https://www.gov.uk/government/news/uk-funds-darwin-initiative-innovation-project-in-belize</a>	<b>UK funds Darwin Initiative Innovation Project in Belize</b>	Yes
British High Commission Facebook post	<a href="https://fb.watch/nWjUP9Fcot/">https://fb.watch/nWjUP9Fcot/</a> .	Growing native plants to restore landscape diversity – a Darwin Innovation Project	Yes
Darwin Newsletter	<a href="https://edin.ac/3wwWh6w">https://edin.ac/3wwWh6w</a>	Growing the potential of planting baskets	Yes
TV trailer	<a href="https://edin.ac/3JScmGZ">https://edin.ac/3JScmGZ</a>	Season 3 of the Garden Show is coming soon	Yes

## Annex 1: Report of progress and achievements against logframe for Financial Year 2023-2024

Project summary	SMART Indicators	Progress and Achievements April 2023 - March 2024	Actions required/planned for next period
<p><b>Impact</b></p> <p>Restoration of local biodiversity and more climate-resilient livelihoods through innovative planting combinations that mix diverse and nutritious foodplants, spices, and endangered trees in communities bordering the Selva Maya biodiversity hotspot.</p>		<p>This year, we collected baseline data on the local factors influencing livelihoods of our Belizean stakeholder groups bordering the Selva Maya Biodiverse Landscape. Combining this with ethno-botanical knowledge, we selected and successfully propagated &gt; 40 target agroforestry species this year, which will contribute to restoring local biodiversity, as well as improving people's food security, even this first year.</p> <p>All the planned demonstration gardens are established, and we successfully recruited 30 households (&gt; 50% female HoH) who are showing a strong commitment to experimenting with diversified growing,</p> <p>Awareness is rising through press and media coverage co-ordinated by the UK High Commission in Belize, and by convening a workshop to re-invigorate Belize's National Forest Restoration Taskforce. A new series of a popular national TV show is being recorded, promoting growing and cooking with native plants.</p> <p>By achieving our outcomes by EoP, we will be able to demonstrate to government agencies and NGOs in Belize, that this strategy of growing more native plants in a wider mix of trees and crops, can be accepted as beneficial by smallholder farmers. Broader Impact will be achieved with wider education and training, securing commitment and resources to up-scale this proof-of-concept project and embed it within the Belize's national restoration strategy.</p>	

<p><b>Outcome</b>  Opportunities for growing more novel combinations of local foodplants, spices and CITES-listed trees within smallholder agroforestry are evidenced and widely spread, with baseline data on biodiversity and climate-resilient livelihoods collected.</p>	<p>0.1 Database of native species, CITES listing, IUCN conservation status, rarity, pollination role, ecological importance, nutritional value, climate resilience and markets for produce surplus to subsistence need.</p> <p>Report produced summarising rationale for selecting ~30 target species for combined potential to meet needs of biodiversity, food security and livelihood</p> <p>0.2 Monitoring of trials on targeted native species (indicators such as % survival during stages of growth) Reasons for adoption of species (or not) by the various growers will be monitored continuously using records of seedling uptake and feedback obtained from training sessions.</p> <p>0.3 Plans of demonstration gardens and experimental AF plots, detailing species used, landscaping and planting to enhance biodiversity and conserve soil and water. Progress tracked using photographs evidencing initial planting in 2023 and development through 2024.</p>	<p>Database of 140 species, including a mix of native species and popular local cultivars, assembled and assessed for values including biodiversity contribution; conservation status, rarity, nutritional value, drought tolerance; propagation method, longevity, time to produce income and local market demand.</p> <p>Report produced by RBGE and BBG summarising ~40 target species chosen to be grown in BBG nursery in year 1 (&gt;30% natives), to populate smallholder plots, Gardens to Go installations and 4 demonstration gardens in year 1</p> <p>From July 2023 to March 2024, BBG have successfully grown &gt; 8,000 plants from the selected ~ 40 target species identified for year 1. Spreadsheet reports systematically document their means of obtaining seed or juvenile plants; methods of propagation, assessing ease or difficulty of growing, and feedback from the recipients about reasons for adopting/ not adopting or difficulties maintaining specific species.</p> <p>Demonstration agroforestry gardens established at BBG and at Galen University and Mopan Technical high School in Cayo District, Belize. and AF plot established in Vaca Forest Reserve, with permission of FCD and Belize Forest Department.</p> <p>Planting lists and hand-drawn design layouts produced for each plot installation. Photographs of each plot taken after initial installations in Feb 2024 serve as a baseline to document evolution of each plot.</p>	<p>Key actions for next period are described for each activity below.</p>
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	<p>In parallel ~24 households (&gt;50% women) receive horticultural training to begin planting their own plots with target species.</p> <p>0.4 '<i>Risk to resilience</i>' training given by IIED to up to 3 training organisations' trainers and students, (&gt;50% female)</p> <p>Evidence of changes in the beneficiaries' planting intentions and practices tracked by IIED through locally-led assessments of what participants are growing differently for subsistence and commercial sale by EoP.</p> <p>Promotional materials designed for G2G planting baskets and effective AF plot designs, highlighting the benefits to buyers of sourcing locally from enriched AF systems used by champion growers.</p> <p>0.5 Public awareness of benefits of growing a greater diversity of native species is raised through media campaigns and educational</p>	<p>For improved gender balance, beneficiaries subdivided into 15 smallholder farming households receiving plants on their own land parcels, and 15 landless households (with 13 female heads of household) receiving backyard 'Gardens to Go' installations and training.</p> <p>A practical survey tool was developed by IIED and field tested on 20 smallholder farmers who attended initial training at BBG.</p> <p>15 shorter survey interviews and 8 longer in-depth interviews were then conducted with smallholders, to understand their present growing systems and the livelihood benefits they may expect currently and from a model of enriched subsistence use. Interviews were analysed to understand grower's preferences for specific trees/crops.</p> <p>This was combined with the botanical traits information from (0.1) to prioritise ~40 target species for growing in year 1, that balance longer term needs for biodiversity gains with shorter term needs for food security.</p> <p>Public awareness activities undertaken include project publicity co-ordinated by the British High Commission for Belize, press releases picked up on various international government and press websites, and blogs widely read on both IIED and RBGE websites.</p>	
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	<p>activities around the new agroforestry gardens by EoP.</p> <p>Meetings held with relevant government ministries by June 2023. Schedules for a new series of the TV Garden Show developed by December 2023. Evidence of BBG's inclusion in discussions with National Forest Restoration Taskforce (NRFT) by April 2024.</p>	<p>The project convened a workshop in Feb 2024 on agri-biodiversity in Belize, attended by representatives from 3 government ministries, and 10 NGOs formerly constituting the NFRT. Following this, BBG was invited to participate in further meetings of the NRFT.</p> <p>8/10 new episodes of the popular TV programme '<i>The Garden Show</i>' hosted by BBG, have been recorded during year 1. Once filming of the final episodes is completed, the series will air on national TV</p> <p>Rudy Aguilar, Manager of BBG won the international Marsh Award from BGCI for public education in Botanical Gardens. Rudy also attended and presented this Darwin project to the 'Botanical Bridges' conference in Cartagena, Colombia 12-16 Feb. 2024.</p>	
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**Output 1. Botanical knowledge broadened.**

<p>Activity 1.1 Training of BBG staff in taxonomy for conservation assessments (by RBGE) and in climate resilient business (by IIED).</p>	<p>Rescheduled to year 2, to accommodate staff maternity leave. Report from RBGE (Annex 1) explains the preparatory work undertaken in year 1, including developing training materials, selection of sites and advertising for this training, which is heavily over-subscribed, indicating the demand for training in native plant identification by NGOs and government agencies</p>	<p>The training has been scheduled for June 2024. The report from RBGE provides an outline of the topics to be covered, and Appendix 7 is an advert for recruiting participants. Due to high demand from government and NGOs, capacity has been doubled by running the course twice; nevertheless, a waiting list is also being created.</p>
<p>Activity 1.2, Consultations with ~ 4 beneficiary groups (&gt; 50% female) including subsistence farmers, food producers, landless families, and staff from training and educational institutions, to understand constraints to adopting more diverse growing and to gather knowledge about native plants they wish to grow, by July 2023</p>	<p>Activity Completed. Page 3 of report from IIED (Annex 2) gives details of the survey tools designed and tested on 20 subsistence farmers, pp 4-9 presents an analysis of the main trees and crops grown, and balancing this with the challenges they describe to adopting more diverse growing practices.</p>	<p>To understand the challenges to uptake, and benefits growers have received from the move towards more diverse growing,</p>

	<p>Report from RBGE &amp; BBG (Annex 1) documents the consultations with smallholder farmers, landless participants in the Gardens to Go scheme, educators and market vendors to comprehensively assess which native and other plants will be desirable to grow, for reasons including biodiversity value, shade/shelter, pollinators, food security, or income generation. Several hardwood species were repeatedly highlighted including cedar, mahogany and fiddlewood, and regional endemics.grande betty and black cabbage bark.</p>	<p>the reported risks and benefits will be tracked by re-applying the survey tool developed by IIED, on a sample of smallholders and Gardens to Go participants, near to EoP.</p>
<p>Activity 1.3 Shortlist compared by RBGE with a conservation assessment of ~200 native food-plant, fruit, palm and tree species for contribution to biodiversity, and then by IIED for food security and livelihood benefits. Innovative 'baskets' of 15-30 species selected for trials at BBG by August 2023. (2 examples of mixed baskets of 15 species provided in additional materials to illustrate possible 'planting-basket' compositions)</p>	<p>Activity Completed. Appendix 1 of the report lists ~140 species assessed for their conservation status, rarity, contributions to biodiversity, longevity, drought tolerance etc The list was analysed further by IIED to identify species valuable for food security, or to produce income or livelihood benefits within given time frames.</p> <p>Appendix 4 of the RBGE/BBG report presents example 'baskets' of plants, mixing native and endemic species with others able to provide food or other value in a shorter time period. Example 'baskets' are illustrated for both the 'Smallholder' and for the landless 'Gardens to Go' beneficiary groups.</p>	<p>Whilst the focus in year 1 was on creating 'acceptable' baskets to ease adoption, in year 2 the plan is to augment these baskets with more of the native, rare and threatened plants, including some regional endemics. A second year 'target-list' of native plants for propagation trials is described in Appendix 5 of the RBGE/BBG report.</p> <p>We will continue to build and report further examples of planting baskets that work for both smallholder farmer, and Garden to Go groups of participants.</p>
<p>Activity 1.4 Plant nursery, propagation area and training facilities at BBG expanded by August 2023 to increase capacity for propagation, potting and growing and to increase space and enhance facilities for recording of 'hands-on' training events for wider broadcast.</p>	<p>Completed. Photographs and logs of the nursery planting provided by BBG, and summarised in Appendix 3 of their report with RBGE, show the 4-fold expansion of their nursery areas between June-December 2023, that enabled them to cultivate over 8,000 plants and seedlings between July 2023 to March 2024. Associated improvements to the BBG Education Center, including solar</p>	<p>The improvements to BBG's nursery will allow more growing and propagation trials, Capital improvements the Visitor Center will allow BBG to host school, university and other professional groups for training such as activity (1.1), whilst offering a longer term legacy of the project,</p>

	panels, enable a secure power and lighting, enabling training to be conducted for longer periods.	enabling further education and training in future.
<b>Output 2. Native plant propagation skills developed</b>		
Activity 2.1. Network of ~15 seed collectors recruited and trained to begin seed collection by June 2023	Completed, but to be repeated, 15 students from Galen University and Mopan Technical College were recruited as seed collectors and trained by BBG to begin seed collection in June 2023. A record of names is available from Dr Denaie Swasey dswasey@galen.edu.bz	This first course showed the need for a phot-guide to help less experienced people identify seeds of especially the native hardwood species. This guide will be produced as part of Activity (1.1) by RBGE and BBG.  An additional, second seed collecting will take place in June 2024, again with students from our partners at Galen University and Mopan tech. Seeds will then be planted by the students in their own demonstration gardens established at their institutions under output 3.
Activity 2.2. Experimental trials by April 2024 on 20-30 of the target native species, assessing the ease of propagation, survival and drought resistance for herbs, spices, fruits and endangered hardwoods and benefits observed when these are planted out in combination (termed a 'planting basket') in an agroforest system.	Ongoing. Appendix 3 of the report by RBGE/BBG presents the list of ~ 40 agroforestry species selected in year 1 for growing in the BBG nursery and the native species selected for the propagation trials.  Spreadsheet reports systematically document their means of obtaining seed or juvenile plants; methods of propagation, assessing ease or difficulty of growing, and feedback from the recipients about reasons for adopting/ not adopting or difficulties maintaining specific species.	In year 2, BBG will extend on this activity, experimenting with up to further ~30 native species, testing their ease of growing, and providing training as required, before distribution these plants to the smallholder beneficiaries, and installing these into the 4 demonstrations plots, so that the wider public can become more familiar with these plants, and their biodiversity value.
Activity 2.3 ~ 20 person-days of bespoke horticultural training during year 1, providing 4 beneficiary groups (~24 households, 30% female) by BBG in techniques including grafting, organic growing, soil and water conservation and innovative mixed planting in agroforestry systems.	Completed. As most beneficiaries could not commit to residential training, a series of five, one-day trainings were held at BBG for smallholders and Gardens to Go participants	Some smallholders plant only during certain seasons and moon-phases, and others have availability issues. For these



	<p>on topics including organic growing, composting, grafting and pruning. Several smallholders work on remote plots and for these BBG made additional custom visits, giving training on-site.</p> <p>A total of 105 person-days of training were delivered at BBG in five sessions to 75 men and 30 women, with some people attending multiple sessions, and reaching &gt; 40 separate households. Attendance lists for each of the 5 training days are provided in the [REDACTED]</p>	<p>reasons, BBG agreed to complete remaining training for a remaining minority in the first quarter of year 2.</p>
<p>2.4 12 Individuals (&gt;30% female) identified in year 1 as 'champion growers' selected to attend intensive 2 x 1 week courses (yr 2) on e.g. permaculture, organic pest control, seed storage, and trained in plot biodiversity monitoring.</p>	<p>This is a year 2 activity. In year 1, BBG have been observing levels of motivation of the participants, noting any showing interest and ability in taking the activities to the next level.</p>	<p>Learning from activity 2.3, it is likely that courses will be delivered in shorter, 1 day sessions, to maximise attendance and minimise inconvenience, as many participants are in fulltime work.</p>
<p><b>Output 3. Agroforestry demonstrators established</b></p>		
<p>Activity 3.1 'Agroforest Garden' created at BBG by April 2024, initially using mature target species presently available, becoming more diverse as it receives planting of 20-30 newly grown species from the target list by December 2024</p>	<p>Completed. One 2 ha demonstration agroforestry garden has been created at BBG</p> <p>Photographs taken after initial installations in Feb 2024 serve as a baseline to document evolution. Nursery reports document the number of species and numbers of plants installed. Details can be provided by emailing rudybelizebotanic@gmail.com</p>	<p>In year 2, the demonstration garden will be enriched with more native species being propagated in the BBG nursery.</p> <p>Appendix 5 of the report from RBGE/BBG lists the additional native species to be grown in year 2.</p>
<p>Activity 3.2 4 x 1 ha experimental agro-forestry plots co-designed and landscaped on land of project beneficiaries by December 2023. During 2024. plots enriched with ~ 20 species propagated at BBG, and are maintained to become further demonstration plots by EoP</p>	<p>Completed. Two 1 Ha demonstration agroforestry gardens have been installed by BBG at Galen University and Mopan Technical High School in Cayo District, Belize. Additionally, one demonstration AF plot has been established in the Vaca Forest Reserve, with co-operation from the NGO Friends for Conservation and Development (FCD) and the Belize Forest Department.(FD).</p>	<p>In year 2, the two demonstration gardens and the one AF demonstration plot at FCD will be enriched with more native species being propagated in the BBG nursery.</p> <p>Appendix 5 of the report from RBGE/BBG lists the additional</p>

	Photographs taken after initial installations in Feb 2024 serve as a baseline to document evolution. Nursery reports document the number of species and numbers of plants installed in each plot. Details can be provided by emailing rudybelizebotanic@gmail.com	native species to be grown in year 2.
Activity 3.3 At least 15 landless local forest households (>50% female) obtain plants, training and ongoing support from BBG to maintain small backyard 'Gardens to Go' (G2G), by Sept 2023 and grow herbs, spices, fibres, and pollinators until and beyond EoP.	<p>Completed. To improve the gender balance, beneficiaries were subdivided into 15 smallholder farming households (mostly male heads of household) receiving plants on their own land parcels, and 15 landless households (13 female heads of household) receiving backyard 'Gardens to Go' installations and training.</p> <p>Each smallholder farmer received &gt;50 plants, comprising a mix of 20-30 species from the growing lists in Appendix 2 of the report by RBGE/BBG. Each G2G participant received a smaller basket of ~ 20 plants, with 10-15 species from the same list, usually excluding tree species, along with on-site installation and training in their backyard garden space.</p>	<p>In year 2, both groups will continue to receive support and advice from BBG, through further training in-person, and through phone calls and online communications.</p> <p>~12 individuals will be selected as 'champion growers' from both the Smallholder and Gardens to Go categories, to receive the further horticultural training described in (2.4) as appropriate to their needs.</p>
<b>Output 4: Climate resilience capabilities enhanced</b>		
Activity 4.1 Consultations with 4 beneficiary groups (~24 households ~50% female) by July 2023 to understand their present growing systems and the livelihood benefits they may expect currently and from a model of enriched subsistence and commercial use.	<p>Completed. Report from IIED (Annexe 2 to this report) describes the tools developed to consult the beneficiary groups. In addition to assessing the ~140 plants also assessed by RBGE in (1.2), a survey tool was developed by IIED and field tested on 20 smallholder farmers who attended training at BBG. 15 shorter survey interviews and 8 longer in-depth interviews were then conducted, to understand present growing systems and the livelihood benefits growers may expect currently and from a model of enriched subsistence use. Interviews were analysed to understand grower's preferences for specific trees/crops. pp 4-9 of the IIED report presents an analysis of the main trees and crops grown, and identifies hardwoods, native spp</p>	<p>Unsurprisingly, most growers do need short-term income from fruits and vegetables, but smallholders particularly would be willing to experiment with planting more hardwoods and native plants in the second year.</p> <p>Therefore, all smallholders will be encouraged to receive trainings and plants from the year 2 target list, and receive additional training including under activity (3.3) as champion</p>

	and other crops that growers would wish to grow more, and challenges to do so.	growers who agree to grow a greater diversity.
<p>Activity 4.2 Up to 4 groups (~50% female) trained and mentored during 2024 in the resilience benefits of diversified production, sale, social organization and management systems (using IIED’s “30 climate resilience business options that diversify subsistence use and market commercial options”.)</p> <p>Suggested change to: <i>Up to 3 training organization’s trainers and students (~50% female) trained and mentored during 2024 in the resilience benefits of diversified agroecological production, social organization, enterprise and sale options. An infrastructure and technology investments (using an adapted form of IIED’s “30 climate resilience options that diversify subsistence use and commercial options”.)</i></p>	<p>This was planned as a year 2 activity. However, because of the short 2-year timeline of this project, and understanding gained from the surveys in (4.1) we anticipate many growers are not expected to have grown enough of the new basket of plants, to be ready for training in business options sale, and social organisation.</p>	<p>IIED propose to now undertake this mentoring as a ‘training-for-trainers’ activity targeting restorative agriculture and agri-diversity practitioners in our governmental, NGO and educational stakeholders, (although any growers at a more advanced stage, or who have previously experimented with diversification can be included). We will submit a <u>Change Request</u> for this.</p>
<p>Activity 4.3 Locally-led assessments of markets for surplus produce for up to 6 food plants being grown by the participants by December 2024</p> <p>Propose to change to ‘<i>Confirmation of changes in planting intentions and practice due to the combination of planting baskets and expert advice - through locally led assessments of what participant smallholder farmers are now cultivating differently for subsistence and commercial sales by EoP.</i>’</p>	<p>This was planned as a year 2 activity.</p> <p>For similar reasons, most of the beneficiaries will not have much opportunity to sell many different produce in year 2, as their plants will still be establishing.</p>	<p>Beneficiaries will be asked to assess, by EoP, any changes made to their planting intentions and practices. We propose a <u>Change Request</u> to re-orient this to a locally-led assessment of changes by EoP, better indicating progress toward the overall outcome (0.4).</p>
<p>Activity 4.4 Promotional materials for 3 existing/potential food products highlighting to local buyers both the livelihood and biodiversity benefits of sourcing locally from enriched agroforestry systems, by Dec 2024.</p> <p>Propose to change to ‘<i>at least 3 sets of promotional posters designed for Gardens to Go planting basket crops and/or effective AF plot designs that are being used by our champion growers</i>’</p>	<p>This was planned as a year 2 activity.</p> <p>Following the same logic, we will turn this toward promoting benefits and sharing knowledge of enriched AF growing more generally.</p>	<p>To encourage the Champion Growers in (3.3) and create evidence likely to persuade other farmers to adopt these practices and raise awareness generally (as per output 5) we propose a <u>Change Request</u> to change the activity to that shown to the left.</p>
<b>Output 5: Biodiversity restoration practices promoted widely</b>		
<p>Activity 5.1 Training resources available online, incorporated into courses on agroforestry at technical colleges and university, by EoP..</p>	<p>This is planned as a year 2 activity</p>	<p>Initial consultations have taken place with Mopan Technical high School, Galen University and University of Belize ERI, who have all attended briefings about the project and further follow-up</p>

		meetings to begin thinking of means to identify relevant programmes and curricula. Further meetings planned in week of 19 <sup>th</sup> August 2024 to begin this activity.
Activity 5.2 Production and broadcast of up to 10 new episodes of 'The Garden Show' on Cayo TV, showcasing growing the native species, and their uses in cooking, during 2024.	<p>8/10 new episodes of the popular TV programme 'The Garden Show' hosted by BBG, have been recorded during year 1. Episodes encourage the growing of native species, and are filmed in the Gardento take advantage of facilities that have been improved by the project (e.g. BBG's Visitor Education Center).</p> <p>This video 'trailer', promoting the episodes in the new series, will be shown on national TV, posted on YouTube, and the BBG website.</p> <p><a href="https://drive.google.com/file/d/1XoH4Llxt1u8Z0kw2RNMDLxU2pDTxLPL/view?ts=66294860">https://drive.google.com/file/d/1XoH4Llxt1u8Z0kw2RNMDLxU2pDTxLPL/view?ts=66294860</a> ,</p>	<p>In year 2, the final 2 episodes will be specific project outputs, acknowledging this Darwin project. one episode will exclusively showcase the Gardens to Go participants, and one will dedicated to promoting the native plants being grown by the project's participating smallholder farmers.</p> <p>Once filming of the final two episodes is completed, the series will air on national TV and the broadcast schedules and clips will serve as evidence.</p>
Activity 5.3 Materials promoting growing, eating, cooking and other uses for native species, by December 2024.	<p>Several new episodes of the Garden Show will feature native plants used in local cooking, with one episode specifically focused on cooking with local native vegetable Chaya (<i>Cnidoscolus aconitifolius</i>), All Spice (<i>Pimenta dioica</i>) and Bay Leaf (<i>Sabal mauritiiformis</i>).</p> <p>To meet demand for printed material, by visitors to the demonstration gardens, BBG have republished their popular book, 'Growing with Native Plants', which is on sale in local shops and at BBG. The format of the book can be viewed in the [REDACTED]</p>	<p>Instead of creating our own cook book promoting dishes based on native species, we will promote an existing book produced by women in the local community. BBG will sell the cook book at its Visitor Center, with profits going to the women authors.</p> <p>Photographs of a recent reprint to coincide with the launch of this project are [REDACTED] [REDACTED] [REDACTED]</p>
Activity 5.4 Project findings shared through National Biodiversity Office and promoted internationally as an innovative, scalable scheme in which botanical gardens provide training and resources, enabling smallholders to trial more diverse growing, with lower risk, by EoP.	The project convened a workshop in the capital city Belmopan on 7th February 2024 with 20 key stakeholders including 3 government departments and 10 NGOs and	An outcome of the meeting was a decision to re-convene next year as the rejuvenated National

<p>Belize’s national forest restoration taskforce lobbied to resource and upscale this scheme, with ‘success stories’ and adverts for further training courses to encourage further uptake of training across Belize by Dec 2024</p>	<p>academic institutions actively running projects conducting and promoting agroforestry and climate resilience within Belize.</p> <p>Section 5.4 of the annual report by IIED (included as annexe 2 to this report) describes the workshop, with slides presented in Annex 6, and an attendance list in the [REDACTED]</p> <p>Project activities have been widely publicised through social media, including blogs on both RBGE and IIED websites, and through press releases co-ordinated by the High Commission in Belize. See Annexes 4 and 5 of the IIED report, Appendix 6 of the RBGE report and <a href="https://fb.watch/nWjUP9Fcot/">https://fb.watch/nWjUP9Fcot/</a></p> <p>Press releases about the project have appeared in various local media, as well as a featured World News Story on <a href="http://www.gov.uk">www.gov.uk</a>, and have been widely shared on Facebook and other social media.</p>	<p>Forest Restoration Taskforce (NRFT), to invite BBG to be a partner, and the project to participate. Dates in February 2025 are being proposed, which would enable us to present outputs to this national decision-making group before EoP.</p> <p>Appendices 6 and 7 of the RBGE/BBG report include example adverts for further training courses in native plant identification, and a blog promoting the value of gaining these skills.</p>
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## Annex 2: Project’s full current logframe as presented in the application form (unless changes have been agreed)

Project Summary	Measurable Indicators	Means of Verification	Important Assumptions
<b>Impact:</b> Restoration of local biodiversity and more climate-resilient livelihoods through innovative planting combinations that mix diverse and nutritious foodplants, spices, and endangered trees in communities bordering the Selva Maya biodiversity hotspot.			
<b>Outcome (30 words):</b> Opportunities for growing more novel combinations of local foodplants, spices and CITES-listed trees within smallholder agroforestry are evidenced and widely spread, with baseline data on biodiversity and climate-resilient livelihoods collected.	<p>0.1 Use and value of ~100 native foodplant, fruit, spice, palm and tree species assessed by 4 main beneficiary groups (&gt;50% female) and combined with assessments of biodiversity and livelihood contribution, to select ‘baskets’ combining 15-30 species for propagation and growing trials in expanded nurseries at BBG by August 2023.</p> <p>0.2 Propagation and growing trials conducted in an expanded nursery at BBG on ~30 native species by July 2024. (2 examples of mixed baskets of 15 species provided in additional materials uploaded.)</p> <p>In parallel, 4 beneficiary groups (~24 households, 50% women) receive bespoke horticultural training at BBG, gaining skills to begin planting their own agroforest plots with the target native species. emerging as most successful from these trials by March 2024.</p>	<p>0.1 Database of native species, CITES listing, IUCN conservation status, rarity, pollination role, ecological importance, nutritional value, climate resilience and markets for produce surplus to subsistence need.</p> <p>Report summarising native species identified by the communities, disaggregated by gender, from which ~30 target species are then selected for a combined potential to meet needs for biodiversity, food security and livelihood.</p> <p>0.2 Monitoring of the trials on targeted native species (indicators such as % survival during stages of growth)</p> <p>Reasons for adoption of species (or not) by the subsistence growers, backyard gardeners and educational gardeners, will be monitored continuously using records of seedling uptake and feedback obtained from training sessions; summarised in a written report by Dec 2024. Participants will also report results of a baseline</p>	<p>Assumes no severe risks such as hurricanes, market collapse, or a pandemic prevents progress.</p> <p>0.1 ‘Planting–basket’ concept promotes ideas of diversity, enabling both genders to contribute to a ‘long-list’, from which shortlist of 10-30 species will be selected for seed collecting and propagation trials.</p> <p>0.2 assumes a sufficient number of the native species in each ‘planting basket’ can be propagated and grown on successfully. Small trials by BBG suggest at least some native species that are threatened or overexploited in the wild can be propagated and grown in their nurseries. Failures are also anticipated and we will learn from these which species may be less viable to propagate, grown on or plant out together in agroforestry.</p> <p>There is a moderate risk of some beneficiaries ‘dropping out’ of the scheme. This risk will be reduced by making access to further</p>

	<p>0.3 Demonstration 'Agroforestry Garden' created at BBG by October 2023. At least 4 experimental agro-forestry plots co-designed on land of project beneficiaries and enriched with native species propagated at BBG, and, towards EoP, by the beneficiaries themselves.</p> <p>0.4 'Risk to resilience' training given in 3 periods over 2 years by IIED to the 4 beneficiary groups (&gt;50% female), enabling them to learn how to assess and enrich subsistence and commercial livelihoods; the training explores 30 options for diversifying on-farm ecology, economic production, marketing and labelling of surplus food, spice and craft, and social cooperation structures.</p>	<p>survey of agro-biodiversity on the plots they have established by EoP.</p> <p>0.3 Plans of the demonstration garden and the experimental plots, detailing species used, landscaping and planting to enhance biodiversity and conserve soil and water. Progress tracked using photographs evidencing initial planting in 2023 and development through 2024.</p> <p>0.4 Attendance lists, materials from <i>risk to resilience training</i>; market assessment report for ~6 products by Dec 2024 and promotional material for 3 new or existing products from plants in the target species list, by EoP. Evidence of understanding risk and benefits tracked using a survey tool developed by IIED, applied before/after the training programme.</p>	<p>resources dependent on regular monitoring and reporting.</p> <p>0.3 The garden demonstrates the vision and evidences the viability of the project ideas, both to beneficiaries (who will use it during training) and also to the wider public and government. BBG will maintain the garden beyond EoP so benefits arising as the planted native species mature to yield fruits, fibres and shelter continue to be monitored.</p> <p>By having a working example of an enriched agro-forestry landscape in which to train, the beneficiaries gain skills and the confidence to propagate, plant and grow a greater diversity of native plant species on their own experimental agro-forestry plots.</p> <p>0.4 intends to enhance capacity for climate resilience – i.e. people's capability to persist, adapt or transform their livelihood options in the face of changing climat. Mentoring explores how to make this transition through ecological, economic, social and technological diversification. We also explore the climate risks from 'business as usual' growing with only limited species diversity.</p> <p>Some growers may seek greater climate-resilience in subsistence</p>
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	<p>0.5 Public awareness of benefits of growing a greater diversity of native species, by upscaling familiar home-gardening principles, is raised through media campaigns and educational visits to the new agroforestry gardens, by EoP.</p> <p>BBG is recognised for its enhanced capability and capacity to support more diverse agroforestry and landscape restoration practice nationally and internationally, by EoP.</p>	<p>0.5 Minutes of meetings with Ministries of Education and Sustainability by June 2023; schedules for TV shows by Dec 2023; evidence of BBG's inclusion into the National Forest Restoration Taskforce by April 2024; techniques for diverse growing incorporated into horticulture and agriculture courses at technical colleges by EoP.</p>	<p>systems. Others to produce a surplus for sale. Both can benefit from learning to manage risk and better understand how to build resilience through diversification.</p> <p>Since tourism markets are still recovering post-COVID, we will focus on a species-diverse, organic approach to improve quality, and branding &amp; marketing to raise the price of produce to be sold to known domestic markets.</p> <p>0.5 we assume that raising public understanding of the benefits of growing native food plants, and then by offering resources and training, a set of committed trainee growers are supported to form networks to upscale home-gardening and to diversify their growing in larger agroforestry plots.</p> <p>With initial evidence gained suggesting the potential for the approach to be replicable across the country, BBG can then lobby government for further resources to expand the scheme as part of a community-led approach to forest landscape restoration.</p>
<p><b>Output 1. Botanical knowledge broadened.</b></p> <p>Institutional capability of Belize Botanic Garden increased by training from</p>	<p>1.1 Training of BBG staff in taxonomy for conservation assessments (by RBGE) and in climate resilient business (by IIED).</p> <p>1.2 Consultations with ~ 4 beneficiary groups (&gt; 50% female)</p>	<p>1.1 Attendance logs, certificates of course completion for individuals and course booklets.</p> <p>1.2 Records summarising the opinions of the attendees from the different beneficiary groups,</p>	<p>We expect sufficient consultees can be reached by using the existing outreach networks of BBG and its other local partners (Belize Zoo; Tropical Education</p>



<p>RBGE in taxonomy for conservation assessments, and by expanding capacity at the BBG plant nursery.</p> <p>Interests of local communities in growing innovative combinations of foodplant, fruit, spice, palm and endangered tree species is understood.</p> <p>Information from 4 community groups (&gt;50% female) combined with assessments of biodiversity and livelihood contribution, to select 'planting-baskets' of 15-30 species for nursery trials at BBG by August 2023.</p>	<p>including subsistence farmers, food producers, landless families, and staff from training and educational institutions, to understand constraints to adopting more diverse growing and to gather knowledge about native plants they wish to grow, by July 2023</p> <p>1.3 Shortlist compared by RBGE with a conservation assessment of ~200 native food-plant, fruit, palm and tree species for contribution to biodiversity, and then by IIED for food security and livelihood benefits. Innovative 'baskets' of 15-30 species selected for trials at BBG by August 2023. (2 examples of mixed baskets of 15 species provided in additional materials to illustrate possible 'planting-basket' compositions)</p> <p>1.4 Plant nursery, propagation area and training facilities at BBG expanded by August 2023 to increase capacity for propagation, potting and growing and to increase space and enhance facilities for recording of 'hands-on' training events for wider broadcast.</p>	<p>disaggregated by gender and type of use (for subsistence, for profit, for fibre, medicinal, education, etc.).</p> <p>1.3 Database of ~200 plant species' IUCN conservation status, rarity, pollination role, ecological importance, nutritional value; climate resilience and local markets for any produce grown that is surplus to a grower's subsistence needs. Report summarising rationale for the target species identified as more suitable for propagation trials based on their combined scope to meet needs for biodiversity, food security and livelihood enhancement.</p> <p>Summary of 'Baskets' of native palms, fruits and spices along with native hardwoods recommended, based on the propagation trials, for planting and growing in the agroforestry demonstrator garden and trial plots of beneficiaries.</p> <p>1.4 Plans for the expanded nursery and training facility. Photographs before and after the improvements.</p>	<p>Center; Galen University and Mopan Maya Technical college.)</p> <p>Consultees are able to agree on native species to be trialled. The 'basket' approach enables this, since diversity is encouraged, so a mix of plants serving different needs, including food, shelter, biodiversity, etc can be identified by women and men.</p> <p>1.2 After ensuring nutritional needs are supported within each basket, we propose adding some CITES-listed and overharvested native species into each planting basket. (e.g. Prickly Yellow (EN), My Lady (NT); Cedar (VU) Rosewood (CR), Mahogany (VU).</p> <p>Although new tree saplings will not produce yields in the short-term, more mature specimens from existing nurseries can be planted for demonstration plots, enabling trainees to explore the benefits of mixed systems.</p>
<p><b>Output 2. Native plant propagation skills developed</b></p>	<p>2.1 Network of ~15 seed collectors recruited and trained to begin seed collection by June 2023</p>	<p>2.1 Directory of members in the seed collecting network; records of volume, quality and timing of seed collection for each target species.</p>	<p>Sufficient numbers of seed collectors can be recruited for the training, by using the existing outreach networks of BBG, TEC. local universities and technical</p>

<p>Propagation trials on 20-30 more novel native species, providing a more diverse basket of plants for growing in mixed agroforestry landscapes.</p> <p>Enhanced environmental resilience of beneficiaries to climate change, by building technical skills in organic horticulture, permaculture and pest control, enabling innovative mixed planting and growing of more diverse species on their own agroforestry plots.</p>	<p>2.2 Experimental trials by April 2024 on 20-30 of the target native species, assessing the ease of propagation, survival and drought resistance for herbs, spices, fruits and endangered hardwoods and benefits observed when these are planted out in combination (termed a 'planting basket') in an agroforest system.</p> <p>2.3 20 days of bespoke horticultural training during year 1, providing 4 beneficiary groups (~24 households, 30% female) by BBG in techniques including grafting, organic growing, soil and water conservation and innovative mixed planting in agroforestry systems.</p> <p>2.4 12 Individuals (&gt;30% female) identified in year 1 as 'champion growers' selected to attend intensive 2 x 1 week courses (yr 2) on permaculture, organic pest control, seed storage, and trained in plot biodiversity monitoring.</p>	<p>2.2 Nursery records of numbers of plants successfully grown. Regular, monthly monitoring of the trials on the target species by BBG staff, recording indicators such as % seed germination; % survival at various stages of growth. Cases of failures also recorded, and adaptations to the trials made as a consequence.</p> <p>2.3 Attendance logs. Certificates of course completion for individuals.</p> <p>2.4 Attendance logs. Certificates of course completion for individuals. Participant lists; records of training and notes from follow-up monitoring visits to the individual plots by BBG/ extension officers.</p>	<p>colleges. Many of these will be beneficiaries of the project and hence are incentivised to collect.</p> <p>No major droughts, extreme weather events or fires cause large-scale damage to nurseries or death of saplings.</p> <p>We assume that a sufficient number of the species in each 'planting basket' can be grown successfully in sufficient volume to supply the demonstration gardens. This is based on limited evidence to date with mostly some native fruits, spices and foodplants such as <i>Granadillo</i>, <i>Cortez</i>, <i>Achiote</i> and <i>Copal</i>, <i>Chaya</i> &amp; <i>Jicama</i>, traditionally eaten in Belize.</p> <p>Nevertheless initial trials by BBG with a sample of native trees have yielded some positive results with some less cultivated, but threatened native species, such as <i>Prickly Yellow</i>, <i>Copal</i>, <i>Cedar</i>, <i>Black Cabbage Bark</i>, <i>Emery</i> and <i>Waha leaf</i>, as well as more common <i>Cohune</i> and <i>Bay Leaf</i> (valued for building, thatching and fibre),</p>
<p><b>Output 3. Agroforestry demonstrators established.</b></p>	<p>3.1 'Agroforest Garden' created at BBG by April 2024, initially using mature target species presently available, becoming more diverse</p>	<p>3.1 Plans of the demonstration garden, presenting the target species in innovative planting combinations, with landscaping to</p>	<p>3.1 The demonstration garden is the project's 'vision', evidencing the viability of the innovative planting system both to the</p>

<p>Creation of main Demonstration Agroforest Garden at BBG and &gt; 4 experimental plots on land of project beneficiaries.</p>	<p>as it receives planting of 20-30 newly grown species from the target list by December 2024.</p> <p>3.2 4 x 1 ha experimental agroforestry plots co-designed and landscaped on land of project beneficiaries by December 2023. During 2024. plots enriched with ~ 20 species propagated at BBG, and are maintained to become further demonstration plots by EoP.</p> <p>3.3 At least 15 landless local forest households (&gt;50% female) obtain plants, training and ongoing support from BBG to maintain small backyard 'Gardens to Go' (G2G), by Sept 2023 and grow herbs, spices, fibres, and pollinators <i>such as Epazote, Ricardo, Achiote, Chaya, JippiJappa palm and Titoria until and beyond EoP.</i></p>	<p>create an enriched agroforestry system, enhancing biodiversity and conserving soil and water.</p> <p>3.2 A series of photographs will evidence progress from marking-out, landscaping, initial planting in 2023 and further development throughout 2024. Parts of the garden will be featured in the TV show (output 5) during 2024.</p> <p>Plans and planting lists for each plot provided by December 2023. Photographic monitoring of the plots quarterly during 2024, with a baseline report by EoP on the plot biodiversity using indicators that can be easily reported by beneficiaries (e.g. species richness), and can be compared with a nearby plot that is still planted conventionally.</p> <p>3.3 Participant lists; records of training and notes from follow-up support and monitoring. Online 'awards of growing competence' to those sharing their success stories on social media.</p>	<p>beneficiaries (who will use it in their training) and also to the wider public.</p> <p>It will evolve during and beyond the project, as more species are planted and mature. BBG will maintain the garden afterwards, so longer term benefits as the garden produces fruits, fibre, etc, are demonstrated and monitored.</p> <p>BBG will train a range of other local organisations, with places also offered to extension officers in Forestry and Agriculture Depts, to build a network for upskilling subsistence growers, expanding the national training capacity and physical project legacy. Training will also be given to individual subsistence farmers with a capacity and commitment to become exemplar 'champion growers' who can inspire others by their success.</p> <p>3.3 Growing herbs, spices and pollinators is a traditionally female occupation in Belize. G2G will create networks of women interested in growing and eating native plants, and enabling those without land to participate.</p>
<p><b>Output 4. Climate resilience capabilities enhanced</b></p>	<p>4.1 Consultations with 4 beneficiary groups (~24 households ~50% female) by July 2023 to understand their present growing systems and</p>	<p>4.1 Attendance lists and notes from the consultation.</p>	<p>Some smallholders may be growing only for greater food security or resilience to climate</p>

<p>More climate resilient livelihood opportunities for the beneficiaries, through training in 'risk to resilience' and mentoring to understand the benefits of an enriched agroforestry system (through e.g. reducing input costs via substitution of chemical fertilisers and increased marketing of saleable foods, spices and craft products).</p>	<p>the livelihood benefits they may expect currently and from a model of enriched subsistence and commercial use.</p> <p>4.2 Up to 4 groups (~50% female) trained and mentored during 2024 in the resilience benefits of diversified production, sale, social organization and management systems (using IIED's <i>"30 climate resilience business options that diversify subsistence use and market commercial options"</i>.)</p> <p>4.3 Locally-led assessments of markets for surplus produce for up to 6 food plants being grown by the participants by December 2024.</p> <p>4.4 Promotional materials for 3 existing/potential food products highlighting to local buyers both the livelihood and biodiversity benefits of sourcing locally from enriched agroforestry systems, by Dec 2024.</p>	<p>4.2 Attendance lists and training materials on risk assessment and climate resilience through diversified business organization from IIED</p> <p>4.3 reports on the markets for the products</p> <p>4.3 Basic market assessment report for up to 6 plant foods, including findings from consultative workshops with farmers and producers, market research and knowledge of similar products in other countries.</p> <p>4.4 Examples of materials created for 3 plant-based products with development potential. e.g. adverts on social media, or physical pamphlets for distribution at farmers markets, and trade fairs. Products may also be featured on the TV Garden show (5.3)</p>	<p>shocks. Others may hope to produce a surplus for sale, by improving quality of produce and marketing. Both groups can benefit from learning to manage risk and benefits from a more diverse system.</p> <p>BBG have identified groups within their communities with business ideas. The groups will either include or work with the subsistence growers involved in outputs 1-3. Involvement in developing new or existing small business groups will be voluntary</p> <p>As tourism markets are still recovering after COVID, we will focus on how a more diverse, organic approach can improve quality, and apply branding and marketing to raise the price of produce that can be sold to known domestic markets</p>
<p><b>Output 5. Biodiversity restoration practices promoted widely.</b></p> <p>All partners raise awareness about the benefits of innovative planting to enhance biodiversity, strengthen climate-resilience,</p>	<p>5.1 Training resources available online, incorporated into courses on agroforestry at technical colleges and university, by EoP.</p> <p>5.2 Production and broadcast of up to 10 new episodes of <i>'The Garden Show'</i> on Cayo TV, showcasing</p>	<p>5.1 copies or clips of the training resources shared online.</p> <p>5.2 broadcast schedule, showing transmission dates and details. Recordings of sample episodes.</p>	<p>5.1 Belize's new National Landscape Restoration policy recommends technical colleges increase training in horticultural skills such as plant propagation.</p> <p>5.2 Cayo TV are willing to produce another series of the Garden Show with BBG, as the previous series was popular.</p>

<p>and create livelihood opportunities, through a co-ordinated series of TV programmes, visits to demonstration gardens at BBG and partner sites and 'success stories' shared on social media, and Youtube.</p> <p>Through this process, BBG becomes a node for Belize in national and international agroforestry and landscape restoration initiatives in Central America.</p>	<p>growing the native species, and their uses in cooking, during 2024.</p> <p>5.3 Materials promoting growing, eating, cooking and other uses for native species, by December 2024.</p> <p>5.4 Project findings shared through National Biodiversity Office and promoted internationally as an innovative, scalable scheme in which botanical gardens provide training and resources, enabling smallholders to trial more diverse growing, with lower risk, by EoP.</p> <p>Belize's national forest restoration taskforce lobbied to resource and upscale this scheme, with adverts for further training courses to encourage further uptake of training across Belize by Dec 2024.</p>	<p>Estimated viewer numbers by the TV company.</p> <p>5.3 Examples of the success stories cook-books and recipes promoted on TV, and made freely available online. Analytics on number of downloads, or requests in responses to campaigns. Numbers of hardcopy versions of cook-books distributed to communities without internet access.</p> <p>5.4 minutes of meetings and other interactions with NBO, AMPB, government of Belize Depts of Forestry and Agriculture, etc. Briefing note to lobby government departments to further resource and up-scale the model beyond EoP.</p> <p>Press releases of the 'success stories'.</p> <p>Adverts for further training courses at BBG and partner sites.</p>	<p>5.3 With the economic downturn, and rising food costs there is increased interest in home-gardens, growing native species that require less inputs.</p> <p>5.4 Evidence demonstrating how enriching agri-diversity can lead to reported improvement in food security, greater resilience to climate change, and in some cases also improve livelihoods, is expected to encourage a wider uptake of the enriched model by subsistence farmers and women in similar villages across Belize.</p> <p>Belize's Forest Restoration Taskforce needs organisations such as BBG to share expertise in native plant horticulture that will underpin the diversification of growing that is required.</p> <p>By demonstrating the viability of the pilot project and potential for the scheme to be replicated at scale, we will lobby government to seek additional resources based on this initial proof of concept; We will show how it provides a route to community implementation of their National Agroforestry and also the Forest Restoration Strategy, and helps fulfil Belize's Bonn Challenge and 20x20 commitments.</p>
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<b>Activities</b> (each activity numbered according to the output that it contributes towards, for example 1.1, 1.2 and 1.3 contributing to Output 1)
1.1 Training of BBG staff by RBGE in plant taxonomy, conservation assessment and biodiversity monitoring, and by IIED in incubating small climate-resilient businesses.
1.2 Consultations with ~ 4 beneficiary groups (> 50% female) to understand constraints to adopting more diverse growing and gather knowledge on food plants they wish to produce, by July 2023
1.3 Conservation assessment of by Aug 2023 of ~200 local food plant, fruit, palm and tree species for biodiversity, food security and livelihood benefits.
1.4 Plant nursery and potting facilities at BBG expanded by August 2023
2.1 Network of ~ 15 seed collectors recruited and trained to begin seed collection by June 2023
2.2 Experimental trials by April 2024 on 20-30 of the target species, assessing ease of propagation, survival and drought resistance
2.3 ~20 days of bespoke horticultural training during year 1, providing 4 beneficiary groups (24 households, 30% female) by BBG
2.4 12 Individuals (>30% female) identified in year 1 as 'champion growers' selected to attend intensive 2 x 1 week courses in April 2024.
3.1 'Agroforest Garden' created at BBG by October 2023
3.2 4 x 1 ha experimental agro-forestry plots co-designed and landscaped on land of project beneficiaries by December 2023.
3.3 At least 30 landless local forest users (>75% female) obtain plants, training and ongoing support from BBG to maintain backyard 'Gardens to Grow'
4.1 Consultations with 4 groups (~24 households ~50% female) by July 2023 to understand their present growing systems and the livelihood benefits
4.2 Up to 4 groups (~50% female) trained and mentored during 2024 in the resilience benefits of diversified production, and sale of diversified produce.
4.3 Locally-led assessments of markets for surplus produce for up to 6 food plants by Dec 2024.
4.4 Promotional materials for 3 existing/potential food products by Dec 2024
5.1 Training resources published online during 2024, incorporated into courses on agroforestry at technical colleges and university, by EoP
5.2 Production of up to 10 new episodes of 'The Garden Show' on Cayo TV, showcasing the native species, uses in cooking, etc. during 2024.
5.3 Materials promoting growing, eating, cooking and other uses for the target native species, by EoP.
5.4 Project findings shared and promoted internationally as an innovative, scalable scheme; lobby government to expand the scheme by Dec 2024

## Annex 3: Standard Indicators

Table 1 Project Standard Indicators

DI Indicator number	Name of indicator using original wording	Name of Indicator after adjusting wording to align with DI Standard Indicators	Units	Disaggregation	Year 1 Total	Year 2 Total	Total to date	Total planned during the project
DI-A01	People attending structured training on seed collecting/ native tree planting an seed collecting.	Numbers of stakeholders attending structured training at BBG on seed collecting and native tree identification.	People	Smallholder 'Gardens to Go' Government/NGO Teacher/ student Total (M/F)	12 (8/4) 12 (8,4)		24	60
DI-A01	People attending structured training on planting and growing of native species	Numbers of stakeholders attending structured horticultural training at BBG on planting and growing of native species	People or house holds  Training -days	Smallholder 'Gardens to Go' Government/NGO Teacher/ student Total M/F	25 (20,5) 15 (2,13) 0 4 (0,4) 44 (15,16)		44  105	40  80
DI-A01	Numbers of people attending consultative workshops/ train-the-trainer seminars on agro-forestry and agri-biodiversity	Numbers of stakeholders attending consultative workshops/ train-the-trainer seminars on agri-biodiversity	People	Government/NGO Teacher/ student Champion Grower Total M/F	16 (8,8) 4 (0,4)  20 (8, 12)		20	40
DI-A03	Number of local/national organisations with improved capability and capacity as a result of project.	Number of local/national organisations with improved capability and capacity in AF systems as a result of project.	Number of organisations	Government NGO Educational Total	0 2 2 4		4	8
Di-A04	Number of people reporting that they are applying new capabilities (skills and knowledge) 6 (or more) months after training.	People reporting they are applying (or teaching others) more diversified growing capabilities (skills/ knowledge) 6 months after training.	People	Smallholder 'Gardens to Go' Government/NGO Teacher/ student Total M/F	4 (2,2) 4 (1,3) 0 3 (0,3) 11 (3,8)		11	40

DI Indicator number	Name of indicator using original wording	Name of Indicator after adjusting wording to align with DI Standard Indicators	Units	Disaggregation	Year 1 Total	Year 2 Total	Total to date	Total planned during the project
Di-A05	Number of trainers trained reporting to have delivered further training by EoP.	Number of trainers trained reporting to have delivered further training by EoP	People		0		0	20
Di-B09	Number of individuals / households reporting an adoption of livelihood improvement practices as a result of project activities.	Number of individuals / households reporting adoption of diversified growing activities as a result of project activities.	People/ House hold	Smallholder 'Gardens to Go' Teacher/ student Total M/F	4 (2,2) 4 (1,3) 2 (0/2) 10 (3,7)		10	40
DI-B12	Number of policies <sup>9</sup> developed or formally contributed to by project and being implemented by appropriate authorities.	Number of policies <sup>9</sup> developed or formally contributed to by project and being implemented by appropriate authorities.	number	International National Subnational	0 1 1		2	4
DI-C04	New assessments of community use of biodiversity resources published.	New assessments of community use of native plants and trees published.	Number		2		2	2
Di-C14	Number of decision-makers attending briefing events	Number of decision-makers attending briefing events	Number		20 (14/6)		20	40
DI-C15	Number of media related activities.	Number of Media related activities.	Number	Activities recorded/broadcast on national TV Events streamed or published on internet	8/0 6		8/0 6	10/10 12
Di-CXX	Number of species grown in propagation trials in new nursery facilities	Number of species successfully grown in propagation trials	Number	Native Other Total	13 29 42		42	60
				Demonstration Gardens/ plots	4		4	4



DI Indicator number	Name of indicator using original wording	Name of Indicator after adjusting wording to align with DI Standard Indicators	Units	Disaggregation	Year 1 Total	Year 2 Total	Total to date	Total planned during the project
Di-CYY	Number of AF installations established by project	Number of AF installations established by project	Number	Smallholder plots Gardens to Go installations	15 15		15 15	15 15
DI-C17, C18, C19	Number of publications produced.	Publications produced or submitted for publication.	Number	Policy Briefs Press packs/ blog Technical reports Academic articles	6 2	6 2	6 2	1 6 2 1
DI-D02	Number of people whose disaster/climate resilience has been improved.	Number of people who report their climate resilience or food security has been improved by EoP.	People/ house hold	heat/drought/ water security food security  Total (M/F)			0	30
Di-D05	Number of people supported to better adapt to climate change as a result of the project [ICF KPI 1].	Number of people supported to better adapt to climate change as a result of the project [ICF KPI 1].	People	Smallholder 'Gardens to Go' Government/NGO Teacher/ student  Total M/F	30 (18,12) 30 (10,20) 3 (0,3) 63 (28,35)		63	80
Di-D10	Area of improved sustainable agriculture practices benefitting people to be more resilient to weather shocks and climate trends.	Number of Area of improved sustainable agriculture practices benefitting people to be more resilient to weather shocks and climate trends.	Number of individual farms or plots (Total area (ha))	Demonstration Gardens/ plots  Smallholder plots Gardens to Go  Total	4 ( 8 ha)  15 ( 10 ha) 15 ( 2 ha) 34 (20 Ha)		34 (20 Ha)	34 (20 Ha)

**Table 2 Publications**

<b>Title</b>	<b>Type</b> (e.g. journals)	<b>Detail</b> (authors, year)	<b>Gender of Lead Author</b>	<b>Nationality of Lead Author</b>	<b>Publishers</b> (name, city)	<b>Available from</b> (e.g. weblink or publisher if not available online)
*Growing the potential of planting baskets	Darwin Newsletter	Stuart, Neil 2024	M	UK	BCF Comms	<a href="https://www.darwininitiative.org.uk/news/2024/01/27/growing-the-potential-of-planting-baskets/">https://www.darwininitiative.org.uk/news/2024/01/27/growing-the-potential-of-planting-baskets/</a>
*Rare Plants and Rare Skills	Magazine/ Blog	Goodwin , Zoe 2024	F	UK	Royal Botanic Garden Edinburgh	<a href="https://stories.rbge.org.uk/archives/38824">https://stories.rbge.org.uk/archives/38824</a>
<b>Grow Native Belize: a gardener’s guide to using native plants</b>	Booklet	Belize Botanic Gardens	-	Belize	Belize Botanic Gardens	Sold in shops throughout Belize, BBG store in San Ignacio.and at the Gardens.
<b>Fruits, roots and shoots – using tropical plants for self-sufficiency (2/ed)</b>	Booklet	Maria Benque	F	Belize	Belize Botanic Gardens	Sold in shops throughout Belize, BBG store in San Ignacio.and at the Gardens.
<b>The Darwin ‘planting basket’ project at Belize Botanic Gardens</b>	International Conference Presentation	Aguilar, Rudy, 2024	M	Belize	Botanic Gardens Conservation International	<a href="https://www.bgci.org/news-events/2024-botanical-bridges-congress/">https://www.bgci.org/news-events/2024-botanical-bridges-congress/</a>
*The Darwin Initiative: boosting biodiversity worldwide	Journal MODUS	Stuart, Neil 7-Nov-2023	M	UK	Royal Institution of Chartered Surveyors (RICS)	<a href="https://ww3.rics.org/uk/en/modus/natural-environment/land/darwin-initiative.html">https://ww3.rics.org/uk/en/modus/natural-environment/land/darwin-initiative.html</a>
*Smallholder producer organizations and Indigenous Peoples’ strategies to advance agrobiodiversity	Journal Ag4Dev	Macque en, Duncan 2024	M	UK	Tropical Agriculture Association international	<a href="https://taa-international.org/publications/journals/">https://taa-international.org/publications/journals/</a>
*Sisters are doing it for themselves in biodiverse Belize	Online News/ blog	Macque en, Duncan 2024	M	UK	International Institute for Environment Development	<a href="https://www.iied.org/sisters-are-doing-it-for-themselves-biodiverse-belize">https://www.iied.org/sisters-are-doing-it-for-themselves-biodiverse-belize</a>

## Annex 4: Onwards – supplementary material (optional but encouraged as evidence of project achievement)

Extensive supporting material is included as appendices 1-7 to the accompanying report by the Royal Botanic Garden/Belize Botanic Garden, and as appendices 1-6 to the annual report by International Institute for Environment & Development.

Additional materials such as attendance lists at training events, and supplementary photographic evidence showing e.g the development of the demonstration gardens are included in a folder of further

### 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 <b>correct template</b> (checking fund, type of report (i.e. Annual or Final), and year) and <b>deleted the blue guidance text</b> before submission?	YES
<b>Is the report less than 10MB?</b> If so, please email to <a href="mailto:BCF-Reports@niras.com">BCF-Reports@niras.com</a> putting the project number in the Subject line.	YES
<b>Is your report more than 10MB?</b> If so, please discuss with <a href="mailto:BCF-Reports@niras.com">BCF-Reports@niras.com</a> about the best way to deliver the report, putting the project number in the Subject line.	NO
<b>Have you included means of verification?</b> You should not submit every project document, but the main outputs and a selection of the others would strengthen the report.	YES
<b>Do you have hard copies of material you need to submit with the report?</b> If so, please make this clear in the covering email and ensure all material is marked with the project number. However, we would expect that most material will now be electronic.	NO
If you are submitting photos for publicity purposes, do these meet the outlined requirements (see section 16)?	N/A
Have you involved your partners in preparation of the report and named the main contributors	YES
Have you completed the Project Expenditure table fully?	YES
Do not include claim forms or other communications with this report.	