
DIR29IN\1088

Upscaling innovative 'planting-baskets' to restore landscape diversity, enhancing climate-resilient livelihoods

The Selva Maya biodiversity hotspot is being degraded by unsustainable agricultural practices exacerbated by increasing poverty and food insecurity among subsistence farmers. Adapting 'planting basket' ideas originally developed for backyard gardening, we will test and develop innovative planting combinations of nutritious native foodplants, spices and CITES-listed trees, that provide greater food security and possible livelihood benefits. Improving public understanding of these benefits of diverse native planting, and providing training and resources, will widen adoption of these restorative practices.

Section 1 - Contact Details

PRIMARY APPLICANT DETAILS

Title	Dr
Name	NEIL
Surname	STUART
Website	[REDACTED]
Tel (Work)	[REDACTED]
Email (Work)	[REDACTED]
Address	[REDACTED]

GMS ORGANISATION

Type	Charity/ trusts
Name	University of Edinburgh
Phone (Mobile)	[REDACTED]
Email	[REDACTED]
Website	[REDACTED]
Address	[REDACTED]

Section 2 - Project Summary, Ecosystems, Approaches and Threats

Q3. Title


Upscaling innovative 'planting-baskets' to restore landscape diversity, enhancing climate-resilient livelihoods

Q4a. Is this a resubmission of a previously unsuccessful application?


No

Please attach a cover letter.

Please include a response to any previous feedback in your cover letter.

 [CoverLetter-R29 Innovation Stuart-Belize plant Basket](#)



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Q5. Key Ecosystems, Approaches and Threats

Please select up to 3 biomes that are of focus, up to 3 conservation actions that characterise your approach, and up to 3 threats to biodiversity you intend to address, from dropdown lists.

Biome 1

Tropical-subtropical forests

Biome 2

Savannas and grasslands

Biome 3

No Response

Conservation Action 1

Species management (harvest, recovery, re-introduction, ex-situ)

Conservation Action 2

Livelihood, economic & other incentives (incl. conservation payments)

Conservation Action 3

Education & awareness (incl. training)

Threat 1

Agriculture & aquaculture (incl. plantations)

Threat 2

Natural system modifications (fires, dams)

Threat 3

Climate change & severe weather

Q6. Summary of project

Please provide a brief summary of your project: the problem/need it is trying to address, its aims, and the key activities you plan on undertaking. Please note that if you are successful, this wording may be used by Defra in communications e.g. as a short description of the project on the website.

Please write this summary for a non-technical audience.

The Selva Maya biodiversity hotspot is being degraded by unsustainable agricultural practices exacerbated by increasing poverty and food insecurity among subsistence farmers. Adapting 'planting basket' ideas originally developed for backyard gardening, we will test and develop innovative planting combinations of nutritious native foodplants, spices and CITES-listed trees, that provide greater food security and possible livelihood benefits. Improving public understanding of these benefits of diverse native planting, and providing training and resources, will widen adoption of these restorative practices.

Section 3 - Dates & Budget Summary

Q7. Project Country(ies)

Which eligible country(ies) will your project be working in? Where there are more than 4 countries that your project will be working in, please add more boxes using the selection option below.

Country 1 Belize

Country 2 No Response

Country 3 No Response

Country 4 No Response

Do you require more fields?

No

Q8. Project dates

Start date:

01 April 2023

End date:

31 March 2025

Duration (e.g. 1 year, 8 months):

24 months

Q9. Budget Summary

Darwin Funding Request	2023/24	2024/25	Total request
(Apr - Mar) £	£118,863.00	£80,033.00	198,896.00

Q10. Proportion of Darwin Initiative budget expected to be expended in eligible countries: %

Q11a. Do you have proposed matched funding arrangements?

Yes

What matched funding arrangements are proposed?

Edinburgh University (Moss, Stuart) will provide their time and overheads as in-kind contributions to the project valued at £

BBG will contribute of their Director/owners time, and also contribute towards operational/venue costs for training, and labour to assist with upgrading work, to make an overall contribution of £

IIED are contributing 29 person-days to two work packages in the project as an in-kind contribution to the value of

RBGE will contribute an in-kind £ for the salary costs of Zoe Goodwin during the project

Q11b. Total confirmed & unconfirmed matched funding (£)

Q11c. If you have a significant amount of unconfirmed matched funding, please clarify how you will fund the project if you don't manage to secure this?

All funding required to complete the project, both funded by DEFRA, and as matched-funding by partners is confirmed and in place.

There is scope to lever additional funds once the project is underway, by involving further organisations as additional delivery partners.

Section 4 - Darwin Objectives and Conventions

Q12. Problem the project is trying to address

Please describe the evidence of the problem your project is trying to address in terms of biodiversity and its relationship with poverty. What is the need, challenge or opportunity?

For example, what are the drivers of loss of biodiversity that the project will attempt to address? Why are they relevant, for whom? How did you identify these problems? Please cite the evidence you are using to support your assessment of the problem (references can be listed in a separate attached PDF document).

The Selva Maya is the second largest contiguous block of tropical forest in the Americas (42,300 km²) straddling Belize, Guatemala and Mexico (Bridgewater 2012). In the last decade, agricultural expansion, logging and conversion to cattle pastures have depleted forest resources, leaving many forest patches with degraded biodiversity (Chicas, 2017).

Belize's National Biodiversity Strategy & Action Plan (2018) identifies agricultural clearance as the primary driver behind a 28.4% decline in Belize's forest cover (1986-2018), This rate of deforestation challenges Belize's new REDD+ strategy, undermines the integrity of Belize's protected areas system, and threatens endangered native species such as Rosewood and Prickly Yellow, spider monkeys (*Ateles geoffroyi*) and Baird's tapir (*Tapirus bairdii*); it disrupts passage for jaguars (*Panthera onca*), and threatens over-wintering habitat for an estimated one billion migratory birds (Salas & Shal, 2015), Voight et al (2019) predict a further 7,000 ha or 3% of remaining forest cover will be converted to agriculture before 2026, unless mitigating actions are taken urgently.

The underlying drivers of this degradation of previously biodiverse landscapes in Belize, as in many countries, are poverty and food insecurity, both of which have been exacerbated by the pandemic, which has caused a contraction of the Belizean economy by over 15%, and the collapse of Belize's tourist incomes, which previously accounted for 40% of GDP. Recent government statistics show that numbers of people living below the poverty line, which were traditionally high in southern of Belize (60%), have risen to 80%, but more worryingly, that the population both in poverty and reporting food insecurity has increased by around 50% across the entire country (SIB, 2021).

In this proposal, we directly address the problem of the insufficient understanding and the limited resources currently available for supporting smallholder farmers 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 by providing them training and resources so they can transition toward growing a more diverse set of native food plants, trees and spices, in what we term 'planting baskets'.

Whilst the worsening economic situation drives deforestation, paradoxically, it also creates new opportunities to address some of these root causes. There is now much greater interest in home gardening (Bantihun, 2019), as smallholders recognise the need to diversify their growing as a strategy to build climate-resilience (Peshin (2022), and diversify incomes (Macqueen, 2021).. The opportunity to promote mixed agro-forestry is recognised by the Government of Belize, in its first national AgroForestry Strategy (GOB, 2021) and first Strategy for Forest Restoration, in July (GOB, 2022). Among the immediate challenges, the strategy notes the currently limited knowledge in Belize how to propagate, plant and use native plants, which can underpin a community based approach to restoring forest biodiversity.

Q13. Biodiversity Conventions, Treaties and Agreements

Q13a. Your project must support the commitments of one or more of the agreements listed below.

Please indicate which agreement(s) will be supported.

- ☑ Convention on Biological Diversity (CBD)
- ☑ Nagoya Protocol on Access and Benefit Sharing (ABS)
- ☑ International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA)
- ☑ Convention on International Trade in Endangered Species (CITES)
- ☑ United Nations Framework Convention on Climate Change (UNFCCC)
- ☑ Global Goals for Sustainable Development (SDGs)

Q13b. National and International Policy Alignment

Using evidence where available, please detail how your project will contribute to national policy (including NBSAPs, NDCs, NAPs etc.) and in turn international biodiversity and development conventions, treaties and agreements that the country is a signatory of.

By providing the skills and know-how needed to propagate and grow native plants, the project intends to contribute to addressing the knowledge and skills gaps identified in the Government's National Strategy for Forest Restoration, published this July (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 intensive agro-forestry systems, 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.

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.

Section 5 - Method, Innovation, Capability & Capacity

Q14. Methodology

Describe the methods and approach you will use to achieve your intended Outcome and contribute towards your Impact. Provide information on:

- How you have reflected on and incorporated **evidence and lessons learnt** from past and present similar activities and projects in the design of this project.
- The specific approach you are using, supported by **evidence** that it will be effective, and **justifying why you expect it will be successful** in this context.
- How you will undertake the work (activities, materials and methods).
- What the **main activities** will be and where will these take place.
- How you will **manage the work** (governance, roles and responsibilities, project management tools, risks etc.).

Please make sure you read the guidance documents, before answering this question.

The project is inspired by DAR25-020 using native food plants for land restoration. It learns lessons about incentives and M&E from DAR12012 where Belizean communities grew xaté palms in small nurseries, and uses botanical knowledge from a herbarium and demonstration gardens created for training and public awareness by DAR17-022 We also reviewed

outcomes from 2015 EU and 2017 GEF projects upskilling Belizean smallholders with horticultural training and equipment..

We will be propagating combinations of native species, which have not been trialled before. Some failures are expected, and will aid in identifying less-suited species and planting combinations. Over the last year, BBG began limited trials on a sample of native species, to indicate which species may be successfully propagated, with encouraging results for >60%, (although based on a small sample). BBG also have 20 year's experience from maintaining a native plant garden, and knowledge of planting combinations, landscaping and drainage conditions in which different native species thrive.

BBG are the lead partner in Belize, where the main demonstration agro-forestry garden will be created, where training will be given in propagating native plants, organic growing, nursery development, etc. and where training resources will be developed, with UK partners.

BBG are experienced with many successful Darwin projects. By 'training-the-trainers', their partners will use their extensive outreach networks to greatly increase the reach of the project. Given the 2-year timeframe, all partners are committed to maintaining their demonstration gardens until they reach maturity, and continuing to monitor plot biodiversity. Groups of local subsistence farmers and landless women will also receive training; although some will drop-out, we are confident sufficient numbers of 'champion growers' will derive benefits from more innovative planting, so that others are inspired to trial these methods.

To estimate interest by landless women in participating in 'Gardens-to-Grow' training, BBG ran a trial this year with 10 women, 8 of whom continued the full year; 5 achieved planting a second crop. BBG have learnt from this the importance of continuing, supportive monitoring, using both 'live' online means, and pre-recorded TV shows to raise broader public awareness of the benefits of growing with native plants. BBG's previous Gardening Show on national TV has been very popular, and so we expect similar engagement.

RBGE will provide taxonomic, botanical and horticultural advice enabling BBG to focus on innovative planting combinations that incorporate native varieties with CITES-listings and IUCN conservation status into all planting baskets.

UoE has a track record of successful, co-designed and cost-effective Darwin projects in Belize. We will provide financial stability, value-for-money and robust M&E, handling overall project management and reporting, and adding a research dimension to the work.

IIED will apply their widely tested '30 options for diversified growing' to mentor the subsistence growers in this project IIED successfully mentored Belizean farmers in small business development in DAR21-023.

All partners have all worked together successfully on at least 1 previous Darwin project, understand their roles and responsibilities and are familiar and content with this governance structure.

Q15. Innovation

Please specifically outline how your approach or project is innovative.

Is it the application of a proven approach in a distinctly different geography/issue/stakeholder (novel to the area), or in a different sector (novel to the sector), or an unproven approach in any sector (novel to the world)?

The idea of growing native food plants is not novel to this sector (e.g. BGCI have a current innovation project in Uganda, although focused on native plants for human nutrition), but this is still relatively novel in Central America and there is limited evidence from experiments to date of (i) which native plants can be propagated and grown more successfully, (ii) how the grouping and arrangement of the species when planted in an agro-forestry system, can thrive, to create a functioning ecology, with enhanced biodiversity.

Methodologically, taking the 'planting-basket' concept first developed in food security, adapting and then scaling this up to generate diverse planting combinations of ~15 species per basket of plants, herbs, spices, intermixed with endangered hardwoods, we believe represents innovative cross-sectoral thinking. Similarly, the idea of translating a training scheme and resources originally developed for small backyard or home-gardening (Gardens-to-grow), and working through the

challenges of scaling up each of the components to provide an effective package of resources, training and supportive monitoring, so it can be used effectively by growers at scale in an agroforestry system is also, in our view, a significant challenge, requiring experimentation and innovative thinking.

Technologically, experimenting with different formats of live and pre-recorded media to raise public awareness, to effectively provide the training and support needed by the growers, and to help share their success stories, also requires innovative ideas. Again, evidence of what works here is limited and it is our intention to observe, document and understand this by EoP.

Q16. Capability and Capacity

How will you support the strengthening of capability and capacity in the project countries at organisational or individual levels? Please provide details of what form this will take, who will benefit, and the post-project value to the country.

Institutional capacity will be built for BBG and its local partners through enhancing and upscaling their physical infrastructure - e.g larger capacity plant nurseries; improved facilities for live and recorded demonstrations and training events, by increased access to international mentors in taxonomy, and by learning the business training methods taught by IIED, so it can offer these in future. By accessing resources for media production, and becoming training nodes in a national network, the institutions will increase their capability and capacity to promote restoration activity.


Partner institutions will be more capable of using botanical knowledge to promote growing of native species, learning how to propagate plants, herbs spices and trees more successfully, and be more capable of taking advantage themselves of the benefits of this diverse growing. They will have new capabilities use media to raise awareness and change public perception towards agroforestry, and be capable of using media in these ways to enhance their own outreach activities.


Individual subsistence growers will gain in capacity, through having access to resources such as trainers and demonstration gardens. With these resources, they will become more capable horticulturalists with a wider range of horticultural skills (e.g. seed collecting, potting, grafting, pest control), needed to grow more diversity and higher quality of produce for consumption or sale. Those without farmland will also be given a capacity to grow, through the 'Gardens-to-Grow' scheme, by which they become capable of maintain backyard gardens, supplementing their nutritional needs. Building a network of best practice for growers through these schemes collectively enhances their capacity to support all participants.

The government's first national forest restoration policy published in June, makes clear that operationalising this policy depends on Belize developing a significantly greater capacity for training subsistence growers in agroforestry techniques. This project aims to begin building this national capacity.

If necessary, please provide supporting documentation e.g. maps, diagrams, references etc., as a PDF using the File Upload below:


 [Planting Baskets 2 examples](#)


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 [References](#)

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Section 6 - Gender, Awareness, Change Expected & Exit Strategy

Q17. Gender equality

All applicants must consider whether and how their project will contribute to reducing inequality between persons of different gender. Explain your understanding of gender equality within the context your project, and how is it reflected in your plans. Please summarise how your project will contribute to reducing gender inequality. Applicants should, at a minimum, ensure proposals will not increase inequality and are encouraged to design interventions that proactively contribute to increased gender equality.

In Belize, traditional gender roles can create barriers for women and girls to be involved in economic decision making

within family units. Although women may not appear to have a major role in decision-making, they do exert influence within the household sphere, particularly in decisions about crops to be grown, especially when food is in short supply. In this regard, women can be agents of change, and may adopt innovations more readily as they are more receptive to ideas being shared through their more extensive social networks. This is reflected in our plans in various ways. Although we may expect more uptake by men for the horticultural training (traditionally a male occupation), we balance this by ensuring upto 50% of places are offered to women applicants. We also ensure equal female participation in the consultative workshops to discover what plants are desired to be grown by both men and women.

To increase female participation in training, we will employ local Mayan women to lead some of the training courses, and offer some 'women-only' groups for the business training, and for food-product development and marketing as these are accepted employment roles for women. We will seek to increase female participation by running training activities in local community halls, at times when women traditionally gather. Recognising that women often remain at home, we will promote the 'Gardens to Grow' activity to women who wish to grow plants, herbs and spices in their backyards, and create peer-to-peer networks where these women can communicate with each other (e.g. using WhatsApp) to share experiences of what they are growing and using in recipes, etc. We will broadcast the Garden show at times when women are more able to watch TV and offer stipends to enable women with caring responsibilities to attend short residential courses.

Q18. Awareness and understanding

How will you raise awareness and understanding of biodiversity-poverty issues in your stakeholders, including who your stakeholders are, what approaches/formats/products will you use, how you will ensure open and free access to all data, and how will you know that the messages are understood?

Individual stakeholders (subsistence growers, landless households, horticulture students, and staff from institutes promoting agroforestry) will be made aware of biodiversity-poverty connections in various activities. Demonstration farms will illustrate the benefits of new agroforestry approaches, showing how growing a greater variety of foodplants, herbs, spices and trees restores biodiversity, improves food security and builds resilience to climate change, all helping to alleviate poverty. After growing higher quality produce using nutrient-conserving agro-forestry methods, beneficiaries will receive training in branding and basic market analysis, so they may understand how to gain income by improving the quality of produce grown, and understand how to access identified domestic markets.

A specific component is designed to raise awareness and understanding among landless persons, who are often excluded from agro-forestry initiatives. The concept of 'plant diversity' will be miniaturised to create small baskets of 10-20 plants which landless persons (especially women) will be encouraged to grow in their own backyards, developing their awareness and understanding by growing a wider range of fruits, herbs, spices and fibres. Recipients of these take-away 'Gardens to Grow' starter kits will be supported through the project by free online mentoring sessions, YouTube videos. Individual grower success stories will be promoted using social media. A free-to-air TV series explaining how to grow different plants, and cookery programmes, offering free planting guides, cookery recipes featuring dishes made with native foodplants, Materials will all be freely downloadable and distributed in hard copy in areas without internet. Viewing figures, downloads, requests for copies of materials and expressions of interest to attend further trainings will provide indicators of public engagement. Feedback from practical skills exercises from the training courses, monitoring of grower's plots and successes and failures, and monitoring of Frequently Asked Questions, will provide more nuanced understanding of what has been understood by the project beneficiaries.

Q19. Change expected

Detail the expected changes to both biodiversity and poverty reduction, and links between them, this work will deliver. You should identify what will change and who will benefit a) in the short-term (i.e. during the life of the project) and b) in the long-term (after the project has ended) and the potential to scale the approach.

When talking about how people will benefit, please remember to give details of who will benefit, differences in benefits by gender or other layers of diversity within stakeholders, and the number of beneficiaries expected. The number of communities is insufficient detail - number of households should be the largest unit used.

The project seeks to reduce degradation driven by clearing of forest for less sustainable forms of agriculture which are also

more at risk to climate change because of the limited variety of species cultivated. By demonstrating how risk is reduced by using a greater diversity of plants, especially native species more adapted to the local climate, and for which markets exist, we seek to enrich landscape biodiversity, improving habitat for the birds and mammals identified as being at risk from habitat loss in Q12, and offering growers resilience to climatic changes, enhanced food security, and potential livelihood benefits.

Short-term beneficiaries (within project)

(1) ~24 households (> 30% female) from beneficiary groups including subsistence growers, landless women's groups, college students taking technical courses in horticulture/agriculture, and staff from government departments and NGOs promoting agro-forestry throughout Belize, will be trained to increase their capabilities in organic growing, soil and water conservation and innovative mixed planting in agroforestry systems.

(2) ~ 15 households (> 50% female) without access to land, will receive resources and training so they can learn how to grow native plants in home gardens, building their network of support and practice, and influencing decisions in their and other family units about the benefits of growing native plants.

(3) ~24 households (> 50% female), with some overlap of members from (1+2) will receive mentoring in the resilience benefits of diversified production, sale, social organization and management, enabling them to derive possible economic benefits from group organisation, branding and sale of native plant products to domestic markets.

(4) ~ 12 Staff from at least 4 institutions across Belize (Belize Zoo, Tropical Education Center Mopan Technical College; Galen University) will gain both physical capacity (e.g. enhanced nurseries, propagation facilities, demonstration gardens), and through access to training and media resources, increase their own institutional capacity and capabilities to deliver training to others in agro-forestry, specifically in how to grow a wider variety of native species.

(5) the wider public will also benefit within the project lifetime from a raised awareness of the benefits of growing native plants in agroforestry systems. This change in awareness will be delivered through media campaigns such as the TV Gardening show, online video clips, shared posts on social media and news about success stories from the Gardens-to-grow group,

Longer-term beneficiaries (beyond project)

By using 'train-the-trainer' approaches, building physical legacy in the form of demonstration gardens, and by creating shareable resources, such as training guides refined using the accumulating evidence from the propagation trials, and the experiences of the first cohort of growers, the partner institutions will be able to offer their own informal or formal training programmes to a wider group of beneficiaries. This replication will scale-up national capacity for training, and promote further uptake. By also offering training places to extension officers in government Agriculture and Forest departments, we hope to increase acceptance by government of the model as a contribution to their national forest restoration activity, accelerating the diffusion of the approach nationwide.

Q20. Pathway to change

Please outline your project's expected pathway to change, including how your outcome can be scaled. This should be an overview of the overall project logic and outline why and how you expect your Outputs to contribute towards your overall Outcome and, longer term, your expected Impact.

This should directly relate to your overall project's Theory of Change which must be uploaded alongside your application. See the separate [Monitoring, Evaluation and Learning Guidance](#) for further information on your Theory of Change.

(1) By combining learning from indigenous knowledge of 'useful' plants and taxonomic knowledge of endangered native plants, we jointly identify plants providing food, fibre, fuel, medicinal and other products and then instal physically resilient nurseries and horticultural technologies that underpin the restoration of agro-biodiversity in farmed areas in the Selva Maya.

(2) By learning to propagate a greater diversity of native plants in an enriched agroforestry system, and adopting sustainable harvesting ideas, participants improve their ecological resilience to climate change, and their food security,

using land more efficiently, and reducing degradation of biodiversity.

(3) By learning how to manage risk through diversification and develop climate-resilient business options, beneficiary growers secure economic resilience, whilst reducing the need to expand agriculture or foraging further into natural forests.

(4) By using national/international media outlets to demonstrate the success of these practices, rapidly expanding training via 'train-the-trainer' methods, and lobbying to encourage adoption of techniques as part of government endorsed national training strategies promoting the benefits of agroforestry, the benefits for growing more novel combinations of local foodplants, spices and CITES-listed trees within smallholder agroforestry in Belize will be evidenced and widely spread, with repositories of learning established for future use.

Q21. Exit strategy

How will the project reach a sustainable point and continue to deliver benefits post-funding?

Will the innovation be mainstreamed into "business as usual" to continue to deliver the benefits? How will the required capability and capacity remain available to sustain the benefits? How will your approach, if proven, be scaled? Are there any barriers to scaling and if so, how will these be addressed?

Our project outcome envisages restoration of CITES-endangered timber species growing for shade and shelter in long-term agroforestry systems, yielding enhanced climate resilient livelihoods for subsistence grower, with Belize's national forest restoration programme built upon sound evidence from growing trails of how native plant species can be used within the agroforestry system. To reach that outcome, our exit strategy involves leaving a legacy post-funding of four dimensions of resilience within our Belizean partner organizations and the communities they support:

- (1) physical infrastructure resilience through permanent nurseries, demonstration gardens, training materials and staff capacity to commercially propagate and use a wider range of native and endangered species;
- (2) environmental resilience through diversified 'food-forest' agro-forestry systems established through botanical and technical inputs that will enhance climate resilience, local nutrition, and landscape biodiversity;
- (3) economic resilience through a stronger understanding by those wanting to create small forest businesses of risk-management and how to diversify their production for resilience (to climate change and other potential shocks), and;
- (4) social resilience by building BBGs connections with other NGOs through cascaded training, by enhancing their capability to influence national restoration actions, by their incorporation into national strategy working groups.

We will exit leaving enhanced Institutional capacity of project partners to achieve change (capacitation scaling - e.g. training given to other institutions, including government, to identify, propagate, manage and harvest native and endangered species; and by IIED to incubate climate resilient businesses. The installation of demonstration plots at popular locations such as zoos and colleges will facilitate further educational activities, while recordings of TV gardening and cookery shows, 'how-to' technique videos, and the embedding of material into horticultural training courses, will provide diverse repositories of learning that will remain available for future audiences - enabling future upscaling to spread awareness of these benefits to many thousands of Belizeans

Section 7 - Risk Management

Q22. Risk Management

Please outline the 6 key risks to achievement of your Project Outcome and how these risks will be managed and mitigated, referring to the [Risk Guidance](#). This should include at least one Fiduciary, one Safeguarding Risk, and one Delivery Chain Risk.

Projects should also draft their initial risk register, using the [Risk Assessment template](#), and be prepared to submit this when requested if they are recommended for funding. Do not attach this to your application.

Risk Description	Impact	Prob.	Gross Risk	Mitigation	Residual Risk
<p>Fiduciary (financial)</p> <p>Risk of funds being used (probably unintentionally) for purposes which do not attain required project outputs</p>	moderate	unlikely	moderate	By exercising tight financial controls, requiring activities with budgets above £500 to be signed off at project meetings, and by regularly reviewing activities against logframe and timetables, the risk of undertaking an activity that does not achieve project outputs will be reduced to a minimum.	minor
<p>Safeguarding</p> <p>Staff being at risk of harm of various kinds (health, physical safety etc) when working</p>	moderate	unlikely	moderate	All fieldwork and training will follow protocols agreed between local partners and their communities. These include a policy of no lone working, and obtaining permission and agreeing in advance timings and purposes of visits to communities. Mitigations against risk of abuse on training courses are detailed in answer to Q29	minor
<p>Delivery Chain</p> <p>There is a risk of some community members choosing not to engage with the project, or engaging and still continuing to farm causing degradation. degrading</p>	moderate	moderate	major	Mitigated by careful selection of initial beneficiaries, based on evidence of willingness to adopt more sustainable practices. Self-policing by the majority of group members, threat of exclusion for non-compliance, oversight from NGOs and potential buyers, and demonstrable benefits of adopting new methods may further reduce this risk,	moderate
<p>Risk 4</p> <p>Insufficient numbers of native species can be propagated successfully in the growing trials.</p>	severe	moderate	major	Mitigated by already carrying out preparatory growing trials over the last year on a small sample of 10-20 native species, and learning how to improve chances of seedling survival. Some failures are expected as part of these trials. 'Failing fast' will allow resources to be re-directed to more promising species.	moderate

Risk 5	severe	unlikely	major	BBG is located inland, 50 km from the coast, in a site chosen for shelter from severe weather. Early warnings allow some assets to be protected. This week's hurricane led to only minor damage.	minor
Risk 6	possible	moderate	moderate	Risk of limited adoption is expected to be greater by the subsistence growers, who may need longer to adopt new practices. Educational partners who are not expecting short-term returns will be key to creating the physical legacy, and the longer term monitoring needed to ensure evidence of the benefits accumulates.	moderate

Section 8 - Implementation Timetable


Q23. Provide a project implementation timetable that shows the key milestones in project activities


Provide a project implementation timetable that shows the key milestones in project activities. Complete the Word template as appropriate to describe the intended workplan for your project and upload this below as a PDF.


[Implementation Timetable Template](#)

Please add/remove columns to reflect the length of your project. For each activity (add/remove rows as appropriate) indicate the number of months it will last, and fill/shade only the quarters in which an activity will be carried out.

 [DAR-innovation-timetable](#)

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Section 9 - Monitoring and Evaluation

Q24. Monitoring and evaluation (M&E)

Describe how the progress of the project will be monitored and evaluated, making reference to who is responsible for the project's M&E.

Darwin Initiative projects are expected to be adaptive and you should detail how the monitoring and evaluation will feed into the delivery of the project including its management. M&E is expected to be built into the project and not an 'add on'. It is as important to measure for negative impacts as it is for positive impact. Additionally, please indicate an approximate budget and level of effort (person days) to be spent on M&E (see [Finance Guidance](#)).

Regular monitoring and adaptive management will be used to ensure the project achieves its outputs and provides as much evidence as possible in the duration, whilst recognising the risks from fewer growing trials succeeding, and fewer species being adopted in only a 2-year period. Monitoring will also ensure value for money by which those impacts are delivered. 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).

Within our M&E system, we will regularly track situational and compliance issues (especially as they relate to indigenous people such as our Mayan subsistence growers). Additionally, we will combine the UoE's proven activity and financial monitoring systems (using partner reports and field missions) with a detailed results-based system that will track the SMART output indicators expressed within the logframe through regular coordination missions and reporting. These output and outcome indicators have been designed to be consistent with standardised national/international best practices. We will hold annual community assessment gatherings to explore things that worked well (successes) and things to do better (failures) for each output indicator over the lifetime of the project.

Successes and failures of the plant propagation trials will be continuously monitored, with data summarised every 3 months using indicators such as % seedling survival from each trial, supported by interpretive notes. This will allow local learning and adaption, with the possibility for some of the propagation trials to 'fail fast', and for BBG to modify the conditions and methods being used for the growing trials, and the planting combinations, depending on these initial results.

The outcome indicator relating to evidence of the growing of native plant species will be tracked using records of seedling uptake, regular 3-monthly monitoring of progress of the participants on the 'Gardens-to-grow' scheme and accounts of successful / unsuccessful growing using participatory surveys carried out in January 2025 with ~20 beneficiaries, including subsistence farmers (for local learning), and the 'Gardens-to-Go' beneficiaries. Both groups will also be invited to describe what they chose to adopt and not adopt within their agroforestry farms and backyard gardens, why this was so, and any associated changes in food security they believe they will, or are already obtaining (for local learning).

The outcome indicator relating to understanding benefits of more climate resilient livelihoods among direct beneficiaries will use an IIED-led survey of social, ecological, economic and physical/ technological indicators that deploys a set of quantitative resilience indicators, alongside a set of qualitative reflexive learning questions. This will be administered at the start and end of project to ~ 20 beneficiaries receiving mentoring in risk and resilience (results intelligible for both local and national/international learning).

The outcome indicator relating to evidence of BBG having stronger institutional capability and influence to support restorative landscape practices, will be evidenced by tracking media reports, and written evidence of its more active participation in national networks for forest restoration. (for national/international learning).

Total project budget for M&E (this may include Staff and Travel and Subsistence Costs)	£ [REDACTED]
Percentage of total project budget set aside for M&E	[REDACTED]
Number of days planned for M&E	40





Section 10 - Logical Framework





Q25. Logical Framework (logframe)

Darwin Initiative projects will be required to monitor and report against their progress towards their Outputs and Outcome. This section sets out the expected Outputs and Outcome of your project, how you expect to measure progress against these and how we can verify this.

Please complete your full logframe in the separate Word template and upload as a PDF using the file upload below - please do not edit the logframe template structure (other than adding additional Outputs if needed) as this may make your application ineligible. On the application form, you will be asked to copy the Impact, Outcome and Output statements and activities - these should be the same as in your uploaded logframe.

Please upload your logframe and Theory of Change as a combined PDF document.

 [R29 Stuart Innov Logical Framework Finaltosubmit](#)
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 pdf 384.32 KB

 [TheoryofChange-innov29](#)
 07/11/2022
 13:22:36
 pdf 457.38 KB

Impact:

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.

Outcome:

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.

Project Outputs

Output 1:

Output 1. Botanical knowledge broadened.
Institutional capability of Belize Botanic Garden increased by training RBGE staff in taxonomy for conservation assessments, training by IIED in climate resilient business and by expanding the capacity of the BBG plant nursery.

Output 2:

Output 2. Native lant propagation skills developed

Propagation trials on 20-30 more novel native species, providing a more diverse basket of plants for growing in mixed agroforestry landscapes.

Output 3:

Output 3. Agroforestry demonstrators established.

Creation of main Demonstration Agroforest Garden at BBG and at least 4 experimental agroforestry plots on land made available by project beneficiaries.

Output 4:

Output 4. Climate resilience capabilities enhanced

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

Output 5:

Output 5. Biodiversity restoration practices promoted widely.

All partners raise awareness about the benefits of innovative planting of native species to enhance biodiversity, strengthen climate-resilience, 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.

Do you require more Output fields?

It is advised to have less than 6 Outputs since this level of detail can be provided at the activity level.

- Yes
- No

Activities

Each activity is numbered according to the Output that it will contribute towards, for example 1.1, 1.2 and 1.3 are contributing to Output 1.

- 1.1 Training of BBG staff in taxonomy for conservation assessments (by RBGE) and in climate resilient business (by IIED).
- 1.2 Consultations to understand constraints to adopting more diverse growing and gather knowledge on plants beneficiaries wish to propagate.
- 1.3 Conservation assessment 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 15 families without access to land (>50% female) obtain plants, training and ongoing support from BBG to maintain backyard 'Gardens to Go'
- 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

Section 11 - Budget and Funding

Q26. Budget

Please complete the appropriate Excel spreadsheet, which provides the Budget for this application. Some of the questions earlier and below refer to the information in this spreadsheet.





Note that there are different templates for projects requesting under £100,000 and over £100,000. Please refer to the Finance Guidance for more information.

- [Budget template for projects under £100k](#)
- [Budget template for projects over £100k](#)

Please ensure you include any co-financing figures in the Budget spreadsheet to clarify the full budget required to deliver this project.

NB: Please state all costs by financial year (1 April to 31 March) and in GBP. The Darwin Initiative cannot agree any increase in grants once awarded.

Please note the next section is about the financial aspects of your project, rather than technical elements.

 [BCF-Budget-over-£100k-MASTER-Apr22-FINAL](#)
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 19:14:31
 xlsx 97.29 KB

Q27. Funding

Q27a. Is this a new initiative or does it build on existing work (delivered by anyone and funded through any source)? Please give details.

New Initiative

Please give details.

Although this is a new project in its own right, some of the project ideas draw on evidence and resources created by previous projects, especially in order to learn lessons and reduce the risks involved in a more innovative project. For example, we learn lessons about incentives and the need for continuous M&E on propagation trials from DAR-12012 where Belizean communities grew xaté palms in small nurseries. We will draw on botanical knowledge about native foodplants, herbs, spices and trees, and their conservation status, from the national herbarium created at Belize Forest Department by DAR-17022. Ideas for creating a series of agro-forestry demonstration garden were inspired by the demonstration 'savanna' garden created for training and public awareness at BBG and educational trails built at the Tropical Education Center by DAR-17022 We also reviewed outcomes from 2015 EU and 2017 GEF projects which aimed to upskill Belizean smallholders with horticultural training and provision of equipment, to understand how to correctly incentivise and to monitor to ensure that beneficiaries continue to follow practices during the project lifetime, and beyond.

Q27b. Are you aware of any current or future plans for similar work to the proposed project?

No

Q28. Capital items

If you plan to purchase capital items with Darwin funding, please indicate what you anticipate will happen to the items following project end. If you are requesting more than 10% capital costs, please provide your justification here.

We have included the costs of necessary improvements to the BBG plant nursery and Visitor Centre under capital items - these permanent improvements will remain as physical legacy provided by this project to BBG's buildings. £■■ is budgeted for ICT in the form of replacement laptops that will be used for project purposes. They will remain with these organisations after EoP.

Q29. Value for Money

Please demonstrate why your project is good value for money in terms of impact and cost-effectiveness of each pound spend (economy, efficiency, effectiveness and equity).

Our previous DI projects (17-022 and 22-013) were assessed by independent reviewers to have achieved excellent value for money (VFM), using strong budget forecasting and management tools, which ensured effective and efficient use of project

resources to fully deliver (indeed for 17-022, to 'over-deliver') on outputs. By using similar financial management, we expect to achieve similarly high VFM.

In this project we add an additional [REDACTED] to the value of the project through confirmed matched funding, i.e. by adding £ [REDACTED] to the DI funding of £ [REDACTED] we create a total project value of £ [REDACTED]. In the second year, as we lever additional confirmed matched funding in the form of additional staff salary committed by RBGE, only [REDACTED] of the project cost in second year will be met by Darwin funding.

With UoE and RBGE staff salaries contributed as matched funding, this allows £ [REDACTED] of the requested £ [REDACTED] ([REDACTED] of DI funds) to be spent in the eligible country.

We will further maximise VFM by ensuring the sustainability of the investments made in the partner's capacities beyond EoP. For example, the investments in physical capital ensure BBG has good quality facilities for training, an expanded plant nursery and a demonstration garden all of which will allow it to generate revenues from running further training, and educational visits after the project.

Section 12 - Outputs, Open Access, Ethics & Safeguarding

Q30. Safeguarding

Projects funded through the Darwin Initiative must fully protect vulnerable people all of the time, wherever they work. In order to provide assurance of this, projects are required to have appropriate safeguarding policies in place.

Please confirm the Lead Partner has the following policies in place and that these can be available on request:

We have a safeguarding policy, which includes a statement of our commitment to safeguarding and a zero tolerance statement on bullying, harassment and sexual exploitation and abuse	Checked
We have attached a copy of our safeguarding policy to this application	Checked
We keep a detailed register of safeguarding issues raised and how they were dealt with	Checked
We have clear investigation and disciplinary procedures to use when allegations and complaints are made, and have clear processes in place for when a disclosure is made	Checked
We share our safeguarding policy with all partners	Checked
We have a whistle-blowing policy which protects whistle blowers from reprisals and includes clear processes for dealing with concerns raised	Checked
We have a Code of Conduct in place for staff and volunteers that sets out clear expectations of behaviours -- inside and outside the work place -- and make clear what will happen in the event of non-compliance or breach of these standards	Checked

Please outline how you will implement your safeguarding policies in practice and ensure that all partners apply the same standards as the Lead Partner. If any partner of the responses are "no", please indicate how it is being addressed.

Edinburgh University has a 'zero tolerance' policy on bullying, harassment and abuse, detailed in the policy attached to this proposal.

All staff engaged with the project will be required to abide by it, and we will maintain a register of any issues raised and how they have been dealt with.

We have undertaken an assessment of risks, including risk of abuse to women attending overnight residential training, bullying during group business mentoring, etc. We have designed activities to avoid/minimise these risks, e.g. using gender-segregated accommodation for residential training, and generally deprecating non-essential M-F paired working.

Q31. Ethics

Outline your approach to meeting the key principles of good ethical practice, as outlined in the guidance.

This proposal emerges through full participation by BBG and Mayan communities who contributed perspective and knowledge during the design process. As described in Q12, it fully respects policy and legal commitments towards biodiversity conservation – while also recognising the legal land and resource rights for indigenous people within the 2007 UN Declaration on the Rights of Indigenous Peoples endorsed by Belize and the 2021 ruling of the Supreme Court of Belize upholding of the rights of Mayan people to Free, Prior and Informed Consent (FPIC) on their customary lands. Through BBGs trusted, longstanding relationship with local Mayan communities, we will assure due respect to local customs, traditions and land tenure systems. The project will ensure Access and Benefit Sharing (ABS), by respecting and complementing indigenous knowledge with additional botanical and business development 'know-how' to enrich growing with more native plants, endangered timbers and a generally broader diversity of species.

M&E work, including the baseline and EoP surveys of biodiversity and livelihood changes, will be scrutinised by an ethics review board at University of Edinburgh.

Section 13 - FCDO Notifications

Q32. FCDO notifications

Please state if you think that there are sensitivities that the Foreign Commonwealth and Development Office will need to be aware of should they want to publicise the project's success in the Darwin Initiative in any country.


No

Please indicate whether you have contacted FCDO Embassy or High Commission to discuss the project and attach details of any advice you have received from them. If you have not, please say why not.

Yes, advice attached

Please attached details of any advice you have received.

 [British High Commission Belmopan](#)

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Section 14 - Project Staff

Q33. Project staff

Please identify the core staff (identified in the budget), their role and what % of their time they will be working on the project.

Please provide 1-page CVs or job description, further information on who is considered core staff can be found in the Finance Guidance

Name (First name, surname)	Role	% time on project	1 Page CV or job description attached?
Dr Neil Stuart	Project Leader	20	Checked
Duncan Moss	Project Finance, M&E	5	Checked
Zoe Goodwin	Botany & Taxonomy	10	Checked
Duncan Macqueen	IIED Training and mentoring	5	Checked

Do you require more fields?


Yes


Name (First name, surname)	Role	% time on project	1 Page CV or job description attached?
Judy DuPlooy	BBG Director, owner	25	Checked
Rudy Aguilar	Operations Manager	50	Checked
Harry Mesh	Outreach and Comms	50	Checked
Roxanne Richards	Project Manager/Finance	50	Checked
TBA (to be hired)	Horticulturalist	100	Unchecked
<i>No Response</i>	<i>No Response</i>	0	Unchecked
<i>No Response</i>	<i>No Response</i>	0	Unchecked
<i>No Response</i>	<i>No Response</i>	0	Unchecked


Please provide 1 page CVs (or job description if yet to be recruited) for the project staff listed above as a combined PDF.

Ensure the file is named clearly, consistent with the named individual and role above.

 [D29InnovAggregateCVs](#)

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 pdf 1.45 MB

Have you attached all project staff CVs?

Yes

Section 15 - Project Partners

Q34. Project Partners

Please list all the Project Partners (including the Lead Partner – i.e. the partner who will administer the grant and coordinate the delivery of the project), clearly setting out their roles and responsibilities in the project including the extent of their engagement so far and planned.

This section should demonstrate the capability and capacity of the Project Partners to successfully deliver the project. Please provide Letters of Support for all project partners or explain why this has not been included.

The partners listed here should correspond to the Delivery Chain Risk Map (within the Risk Register template) which you will be asked to submit if your project is recommended for funding.

Lead Partner name:	University of Edinburgh
Website address:	https://www.ed.ac.uk/geosciences
Why is this organisation the Lead Partner, and what value to they bring to the project? (including roles, responsibilities and capabilities and capacity):	<p>UoE has led the collaborative proposal design, through extended consultation over 18 months with partners and wider stakeholder across Belize, to ensure this proposal directly addresses 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 upscale national capacity for growing these.</p> <p>Project Lead Dr Stuart brings 30 year's of experience working with partners in Belize for biodiversity conservation. His previous DI Projects all received excellent ratings for outcomes and value-for-money. We have again developed detailed, realistic budgets with the partners, giving us confidence that the ambitious set of outputs can be delivered. Our track record in co-designing projects has led all partners (including local beneficiaries) to offer significant in-kind contributions to enhance overall project value.</p> <p>UoE will be responsible for overall project co-ordination, using an adaptable management style based on 3-monthly progress reviews, and will lead M&E, using this project as case study to inform our wider research to understand adaption to changing environments and sustainable forest use. We will offer our international students opportunities to participate in the project, building wider networks of practice. We will manage budgeting, financial control, and co-ordinate writing of the annual report, based on inputs from each partner. We will contribute trainers to support IIED's business training course, and share our experience of developing public education and awareness campaigns in previous Darwin projects.</p> <p>Fulfilling the University's societal obligations, Stuart and Moss will provide their time as in-kind contributions, significantly adding to the value-for-money of the project. We will also use our role as an international educator to ensure results of this project are widely disseminated to Government of Belize, among international NGOs, and also used in our own teaching of international students (future leaders).</p>
International/In-country Partner	<input checked="" type="radio"/> International
Allocated budget (proportion or value):	██████
Represented on the Project Board	<input checked="" type="radio"/> Yes

Have you included a Letter of Support from the organisation?

Yes

Do you have partners involved in the project?

Yes

1. Partner Name: Royal Botanical Gardens Edinburgh (RBGE)

Website address: <https://www.rbge.org.uk/>

What value does this Partner bring to the project? RBGE has an excellent track record of collaborative research and training in Belize since the 1980s resulting in various floristic publications and legacy databases. RBGE worked previously with UoE and BBG as a partner on DI project 17-022.

(including roles, responsibilities and capabilities and capacity):

Zoe Goodwin from RBGE has been involved in preparatory floristic work for the new proposal over the last 18 months, working collaboratively with BBG to determine lists of trees, herbs and spices to develop 'planting-baskets' of native plants that combine CITES rarity with value for nutrition, pollination, for NTFPs, shelter, etc.

RBGE will lead the project's required botanical activities by providing plant identification and taxonomic training to the 'trainers', with a focus on threatened native and endemic plants. It will plan and lead surveys to examine the diversity of trees and plants being grown on participating demonstration gardens and smallholder plots by EoP.. These surveys will draw upon RBGEs existing collections and expertise to record native plant diversity and functionality, to create baseline biodiversity indicators that all project partners can consistently use for M&E. As part of its outreach obligations, Zoe's salary costs for her time on the project will be contributed in-kind, allowing us to maximise value-for-money and project spend in-country.

International/In-country Partner International

Allocated budget: ██████████

Represented on the Project Board Yes

Have you included a Letter of Support from this partner? Yes

2. Partner Name: Belize Botanic Gardens (BBG)

Website address: <https://belizebotanic.org/>

What value does this Partner bring to the project?

BBG has more than 20 years' experience supporting the ex-situ conservation of Belize's native plant species and implementing many conservation projects (including Darwin Initiative project 17-022 with UoE and RBGE). In Belize's 6th National Report to the Convention on Biological Diversity, BBG is recognized as an important national resource for taxonomic and horticultural knowledge necessary for supporting Belize's commitments to the CBD.

(including roles, responsibilities and capabilities and capacity):

BBG has been involved since the inception of this project and has actively contributed to project design. BBG will use its existing capacity in horticultural science, nursery management and outreach to lead various activities, including propagation of native, rare and endemic plants and delivery of horticultural training for project beneficiaries. BBG has a network of community supporters, and will co-ordinate training with local women's groups, schools, colleges and partner NGOs, wishing to create their own trial agroforestry gardens on their own land. It will specially produce a series of its popular TV Gardening Show to promote starter 'Gardens to Go' plant boxes of CITES-listed and other native plants, herbs, spices and saplings, providing online support to families with majority female members who will be mentored to grow these, build a network of women growers during the project lifetime.

International/In-country Partner

In-country

Allocated budget:



Represented on the Project Board

Yes

Have you included a Letter of Support from this partner?

Yes

3. Partner Name: International Institute for Environment and Development (IIED)

Website address: <https://www.iied.org/>

What value does this Partner bring to the project?

The Forests and Prosperity Team at IIED work closely with their Biodiversity Team and have led international work on small and medium forest enterprise development for more than two decades, publishing a range of practical guidance on small business incubation, and recently, options for climate resilience for subsistence growers.

(including roles, responsibilities and capabilities and capacity):

Duncan MacQueen from IIED worked with UoE on Darwin Project 22-013, leading the development of small community forest enterprises in southern Belize, generating alternative livelihood opportunities for farmers conducting fire management in savanna woodlands. In this project, Duncan will bring his experience from authoring recently published IIED guidance on how to build climate-resilient small businesses based on diversified agroforestry systems. He will mentor project beneficiaries how to create climate-resilient businesses and use methods of branding and market analysis to achieve incomes from sale of sustainably harvested native food produce.

Using their contacts from the FAO Forest & Farm Facility, IIED will help to establish a network of international connections for BBG, through the Mesoamerican Alliance of People and Forests (AMPB) which has expressed interest in expanding its membership to include groups in Belize – to strengthen their role championing Indigenous groups as guardians of biodiverse natural forests in Central America.

International/In-country Partner

International

Allocated budget:

██████

Represented on the Project Board

Yes

Have you included a Letter of Support from this partner?

Yes

4. Partner Name:

No Response

Website address:

No Response

What value does this Partner bring to the project?

No Response

(including roles, responsibilities and capabilities and capacity):

International/In-country Partner

International
 In-country

Allocated budget:

0

Represented on the Project Board

Yes
 No

Have you included a Letter of Support from this partner? Yes No

5. Partner Name: *No Response*

Website address: *No Response*

What value does this Partner bring to the project? *No Response*

(including roles, responsibilities and capabilities and capacity):

International/In-country Partner International In-country

Allocated budget: 0

Represented on the Project Board Yes No

Have you included a Letter of Support from this partner? Yes No

6. Partner Name: *No Response*

Website address: *No Response*

What value does this Partner bring to the project? *No Response*

(including roles, responsibilities and capabilities and capacity):

International/In-country Partner International In-country

Allocated budget: 0





Represented on the Project Board Yes
 No

Have you included a Letter of Support from this partner? Yes
 No

If you require more space to enter details regarding Partners involved in the project, please use the text field below.

No Response

Please provide a combined PDF of all letters of support.

 [Partner Letters of support nov22-combined](#)
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Section 16 - Lead Partner Track Record

Q35. Lead Partner Capability and Capacity

Has your organisation been awarded Darwin Initiative, Darwin Plus or Illegal Wildlife Trade Challenge Fund funding before (for the purposes of this question, being a partner does not count)?

Yes

Please provide details of the most recent awards (up to 6 examples).

Reference No	Project Leader	Title
DAR 22-013	Neil Stuart	Conserving pine woodland biodiversity in Belize through community fire management
DAR 17-022	Neil Stuart	Conservation of the lowland savannas of Belize
EIDPR049	Neil Stuart	Strengthening local capacity for savanna conservation in Belize
<i>No Response</i>	<i>No Response</i>	<i>No Response</i>
<i>No Response</i>	<i>No Response</i>	<i>No Response</i>
<i>No Response</i>	<i>No Response</i>	<i>No Response</i>

Have you provided the requested signed audited/independently examined accounts?

If yes, please upload these on the certification page. Note that this is not required from Government Agencies.

Yes

Section 17 - Certification

Q36. Certification

On behalf of the

Trustees

of

University of Edinburgh

I apply for a grant of

£198,896.00

I certify that, to the best of our knowledge and belief, the statements made by us in this application are true and the information provided is correct. I am aware that this application form will form the basis of the project schedule should this application be successful.





(This form should be signed by an individual authorised by the applicant institution to submit applications and sign contracts on their behalf.)

- I have enclosed CVs for key project personnel, a cover letter, letters of support, a budget logframe, theory of change, Safeguarding Policy and project implementation timetable.
- Our last two sets of signed audited/independently verified accounts and annual report (or other financial evidence - see Financial Guidance) are also enclosed.

Checked





Name Dr Neil Stuart





Position in the organisation Senior Lecturer

Signature (please upload e-signature)  [signature](#)
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Date 07 November 2022

Please attach the requested signed audited/independently examined accounts.

 [uoe annual accounts 2020](#)
 05/11/2022
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 pdf 4.67 MB

 [202007 uoe annual accounts 2021 29 published](#)
 05/11/2022
 09:30:56
 pdf 5.96 MB

Please upload the Lead Partner's Safeguarding Policy as a PDF

 [safeguarding dignity and respect policy](#)
 05/11/2022
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 pdf 777.8 KB

Section 18 - Submission Checklist

Checklist for submission

I have read the Guidance, including the "Guidance Notes for Applicants", "Monitoring, Evaluation and Learning Guidance", "Risk Guidance" and "Finance Guidance".	Checked
I have read, and can meet, the current Terms and Conditions for this fund.	Checked
I have provided actual start and end dates for my project.	Checked
I have provided my budget based on UK government financial years i.e. 1 April – 31 March and in GBP.	Checked
I have checked that the budget is complete, correctly adds up and I have included the correct final total at the start of the application.	Checked
The application has been signed by a suitably authorised individual (clear electronic or scanned signatures are acceptable).	Checked
I have attached the below documents to my application:	Checked
<ul style="list-style-type: none">• my completed logframe as a PDF using the template provided	
<ul style="list-style-type: none">• my 1 page Theory of Change as a PDF which includes the key elements listed in the guidance	Checked
<ul style="list-style-type: none">• my budget (which meets the requirements above)	Checked
<ul style="list-style-type: none">• my completed implementation timetable as a PDF using the template provided	Checked
<ul style="list-style-type: none">• 1 page CV or job description for all the Project Staff identified at Question 32, including the Project Leader, or provided an explanation of why not.	Checked
<ul style="list-style-type: none">• a letter of support from the Lead Partner and partner(s) identified at Question 33, or an explanation of why not.	Checked
<ul style="list-style-type: none">• a cover letter from the Lead Partner, outlining how any feedback received at Stage 1 has been addressed where relevant.	Checked
<ul style="list-style-type: none">• a copy of the Lead Partner's safeguarding policy, which covers the criteria listed in Question 29.	Checked
<ul style="list-style-type: none">• a signed copy of the last 2 annual report and accounts for the Lead Partner, or provided an explanation if not.	Checked
(If copying and pasting into Flexi-Grant) I have checked that all my responses have been successfully copied into the online application form.	Checked

I have been in contact with the FCDO in the project country(ies) and have included any evidence of this. If not, I have provided an explanation of why not. Checked

I have checked the Darwin website immediately prior to submission to ensure there are no late updates. Checked

I have read and understood the Privacy Notice on the Darwin Initiative website. Checked

We would like to keep in touch!

Please check this box if you would be happy for the lead applicant (Flexi-Grant Account Holder) and project leader (if different) to be added to our mailing list. Through our mailing list we share updates on upcoming and current application rounds under the Darwin Initiative and our sister grant scheme, the IWT Challenge Fund. We also provide occasional updates on other UK Government activities related to biodiversity conservation and share our quarterly project newsletter. You are free to unsubscribe at any time.

Checked

Data protection and use of personal data

Information supplied in the application form, including personal data, will be used by Defra as set out in the **Privacy Notice**, available from the [Forms and Guidance Portal](#).

This **Privacy Notice must be provided to all individuals** whose personal data is supplied in the application form. Some information may be used when publicising the Darwin Initiative including project details (usually title, lead partner, project leader, location, and total grant value).

Project Title: Upscaling innovative ‘planting-baskets’ to restore landscape diversity, enhancing climate-resilient livelihoods

Provide a **Project Implementation Timetable** that shows the key milestones in project activities. Complete the following table as appropriate to describe the intended workplan for your project. Quarters are based on UK FYs (**1 April – 31 March** - Q1 therefore starts April 2023, noting that under **Round 29 Darwin Projects can begin from 1 June 2023**). For each activity (add/remove rows as appropriate) indicate the number of months it will last, and shade only the quarters in which an activity will be carried out. The activity numbers should correspond to the activities in your logframe. The workplan can span multiple pages if necessary.

	Activity	Months of effort	Year 1 (23/24)				Year 2 (24/25)			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Output 1	Botanical knowledge broadened and Interests of local communities in growing innovative combinations of foodplant, fruit, spice, palm and endangered tree species understood									
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								
1.2	Consultations with ~ 4 beneficiary groups (> 50% female) to understand constraints to adopting more diverse planting and growing and gather knowledge on food plants to produce, by July 2023 (BBG)	2								
1.3	Taxonomic training for BBG for conservation assessment by Aug 2023 of ~200 local food plant, fruit, palm and tree species for biodiversity, food security and livelihood benefits (RBGE)	1								
1.4	Plant nursery and potting facilities at BBG expanded by August 2023	3								
Output 2	Plant propagation skills developed - Propagation trials on 20-30 more novel native species, providing a more diverse basket of plants for growing in mixed agroforestry landscapes									
2.1	Network of ~15 seed collectors recruited and trained to begin seed collection by June 2023	3								
2.2	Experimental trials by July 2024 on 20-30 native species, assessing ease of propagation, survival and drought resistance	15								
2.3	20 days of bespoke horticultural training during year 1, providing 4 beneficiary groups (24 households, 30% female) by BBG	1								
2.4	12 (>30% female) ‘champion growers’ attend intensive 2 x 1 week courses on permaculture, pest control, seed storage, plot biodiversity monitoring.	1								

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	Activity	Months of effort	Year 1 (23/24)				Year 2 (24/25)			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Output 3	Agroforestry demonstrators established. Creation of main Demonstration Agroforest Garden at BBG and > 4 experimental plots on land of project beneficiaries.									
3.1	‘Agroforest Garden’ created at BBG by April 2024	12								
3.2	Agro-forestry plots designed by December 2023. During 2024. plots enriched with ~ 20 species propagated at BBG	12								
3.3	>15 families without land (>50% female) obtain ‘Gardens to Go’ by Oct 2023 and training and ongoing support from BBG thru March 2025 (EoP)	7.5								
Output 4	Climate resilience capabilities enhanced More climate resilient livelihood opportunities for the beneficiaries, through training in ‘risk to resilience’ and mentoring									
4.1	Consultations with 4 beneficiary groups (~24 households ~50% female) by July 2023 to understand growing systems and expected livelihood benefits	1								
4.2	Up to 4 groups (~50% female) trained and mentored by IIED during 2024 in the resilience benefits of diversified production	2								
4.3	Locally-led assessments of markets for surplus produce for up to 6 food plants being grown by the participants by December 2024.	3								
4.4	Promotional materials developed for 3 existing/potential food products	3								
Output 5	Output 5. Biodiversity restoration practices promoted widely. All partners raise awareness about the benefits of innovative planting to enhance biodiversity and strengthen climate-resilience.									
5.1	Training resources available online, incorporated into courses on agroforestry at technical colleges and university, by EoP	3								
5.2	Production of ~10 new episodes of ‘The Garden Show’ on Cayo TV, showcasing growing native species, and their uses in cooking, during 2024	4								
5.3	Materials promoting growing, eating, cooking and other uses for native species, by December 2024.	3								
5.4	‘success stories’ shared, used to lobby government to further resource and up-scale the training and growing across Belize, by EoP	2								

Project Title: Upscaling innovative ‘planting-baskets’ to restore landscape diversity, enhancing climate-resilient livelihoods.

Project Summary	Measurable Indicators	Means of Verification	Important Assumptions
<p>Impact: 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>Outcome (30 words): 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 Use and value of ~100 native foodplant, fruit, spice, palm and tree species assessed by 4 main beneficiary groups (>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</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 % seed germination; % survival during stages of growth)</p> <p>Reasons for adoption of species (or not) by the subsistence growers, backyard gardeners and</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</p>

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	<p>plots with the target native species. emerging as most successful from these trials by March 2024.</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 '<i>Risk to resilience</i>' training given in 3 periods over 2 years by IIED to the 4 beneficiary groups (>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</p>	<p>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 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>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 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</p>
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	<p>food, spice and craft, and social cooperation structures.</p> <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>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 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 & 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>
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			<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>Output 1. Botanical knowledge broadened.</p> <p>Institutional capability of Belize Botanic Garden increased by training from 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 (>50% female) combined with assessments of biodiversity and livelihood contribution, to select 'planting-baskets' of 15-30 species for nursery</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 (> 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>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</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, 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.</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</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 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>

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<p>trials at BBG by August 2023.</p>	<p>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>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>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>Output 2. Native plant propagation skills developed</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</p>	<p>2.1 Network of ~15 seed collectors recruited and trained to begin seed collection by June 2023</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>2.1 Directory of members in the seed collecting network; records of volume, quality and timing of seed collection for each target species.</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</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 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</p>

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<p>and pest control, enabling innovative mixed planting and growing of more diverse species on their own agroforestry plots.</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 (>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>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>‘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, Cortez, Achiote and Copal, Chaya & 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, Copal, Cedar, Black Cabbage Bark, Emery and Waha leaf</i>, as well as more common <i>Cohune and Bay Leaf</i> (valued for building, thatching and fibre),</p>
<p>Output 3. Agroforestry demonstrators established.</p> <p>Creation of main Demonstration Agroforest Garden at BBG and > 4 experimental plots on land of project beneficiaries.</p>	<p>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>3.2 4 x 1 ha experimental agro-</p>	<p>3.1 Plans of the demonstration garden, presenting the target species in innovative planting combinations, with landscaping to 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</p>	<p>3.1 The demonstration garden is the project’s ‘vision’, evidencing the viability of the innovative planting system both to the beneficiaries (who will use it in their training) and also to the wider public. It will evolve during and beyond the project, as more species are planted and mature. BBG will maintain the garden afterwards,</p>

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	<p>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>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 <i>such as Epazote, Ricardo, Achiote, Chaya, JippiJappa palm and Titoria until and beyond EoP.</i></p>	<p>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>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>Output 4. Climate resilience capabilities enhanced</p> <p>More climate resilient livelihood opportunities for</p>	<p>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</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 shocks. Others may hope to produce a surplus for sale, by improving quality of produce and</p>

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<p>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>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>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>Output 5. Biodiversity restoration practices promoted widely.</p> <p>All partners raise awareness about the</p>	<p>5.1 Training resources available online, incorporated into courses on agroforestry at technical colleges and university, by EoP.</p>	<p>5.1 copies or clips of the training resources shared online.</p>	<p>5.1 Belize’s new National Landscape Restoration policy recommends technical colleges increase training in horticultural skills such as plant propagation.</p>

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<p>benefits of innovative planting to enhance biodiversity, strengthen climate-resilience, 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>5.2 Production and broadcast of up to 10 new episodes of <i>'The Garden Show'</i> on Cayo TV, showcasing 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>5.2 broadcast schedule, showing transmission dates and details. Recordings of sample episodes. 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>5.2 Cayo TV are willing to produce another series of the Garden Show with BBG, as the previous series was popular.</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</p>
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			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.
Activities (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 15 landless families (>50% female) obtain plants, training and ongoing support from BBG to maintain backyard 'Gardens to Go'			
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			

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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