

## Darwin Initiative Main: Annual Report

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

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

**Submission Deadline: 30<sup>th</sup> April 2023**

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### Darwin Initiative Project Information

Project reference	29-020
Project title	Strengthening community capacity for evidence-based forest restoration in Indonesia
Country/ies	Indonesia with UK partners
Lead Partner	UK Centre for Ecology & Hydrology
Project partner(s)	BRIN, Fauna & Flora International, KKI Warsi, Plan Vivo, University of Kent
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Reporting period (e.g. Apr 2022 – Mar 2023) and number (e.g. Annual Report 1, 2, 3)	June 2022 – March 2023, Annual Report 1
Project Leader name	Dr Lindsay F Banin
Project website/blog/social media	<a href="https://www.ceh.ac.uk/our-science/projects/forest-restoration-indonesia">https://www.ceh.ac.uk/our-science/projects/forest-restoration-indonesia</a>
Report author(s) and date	LF Banin, K Olsen, N Berry, K Bohannon, S Budiharta, E Damayanti, J Hutabarat, K Kazlauskis, D Kiswayadi, D Muenzel, E Primadona, H Purnama, Radinal, E Raine, E Schoof, M Struebig, 30 <sup>th</sup> April 2023

### 1. Project summary

**Overview:** *Tropical forest restoration is considered a major route to mediating the biodiversity and climate crises whilst also supporting livelihoods and well-being of local communities. To meet these aims over the long-term, restoration actions must be effective and sustainable while benefiting people. Our project will co-produce and apply methods that foster a strategic, evidence-based approach to forest restoration in Indonesia, facilitating i) spatial prioritisation, ii) restoration interventions, iii) efficient restoration monitoring and iv) a route to certification for ecosystem service-based finance.*

Intact tropical forests are carbon-rich, productive and diverse. Land-use change and resource extraction have degraded these functions in many parts of the tropics while large areas of forest have been lost completely, with consequences for native plant diversity and wildlife habitat. Restoration presents an opportunity for the ‘triple-win’ – positive outcomes for biodiversity, climate change mitigation and people and this has been encapsulated in the UN Decade on Restoration. However, restoration outcomes can strongly diverge, with many projects hindered by short funding

cycles, insufficient long-term planning and challenges around monitoring to determine their success. Notably, projects that fail to empower local communities in their own land governance often fail to secure long-term success in restoration, particularly where local residents cannot access benefits. Forest-dependent peoples make up a notable proportion of Indonesia's population, and thus forest condition and human well-being are tightly connected. Projects also fail if too few or inappropriate plant species are selected, and opportunities to meet multiple objectives are missed.

To date forest restoration has strongly focussed on tree planting, with less attention on assisted natural regeneration and long-term maintenance of regenerating stems. Determining the most appropriate interventions in a given location enables more efficient use of resources while supporting the capacity for regional species to recolonise. Similarly, strategic spatial planning could help to maximise outcomes for forest cover, biodiversity and poverty and allow a joined-up approach between different project areas and stakeholders. This incorporation of restoration objectives into the broader needs of landscape planning could be central to minimising further habitat degradation and land-based carbon emissions while enhancing the movements of threatened wildlife over the longer term.

One of the main challenges discussed globally in the context of restoration is making it scalable. Our project considers the whole pathway, from restoration area planning, to implementation, monitoring and income generation, providing a model approach which could be applied in other locations worldwide. The project is designed to be self-sustaining by formulating a process through which local communities can derive economic benefits. Local land-users often select economically important tree species when bringing degraded lands back into a tree-dominated system. Payments for Ecosystem Services (PES) may allow land-users to diversify and access another revenue stream, bringing economic resilience and stability, whilst allowing for more biodiverse tree communities.

One of the key criticisms of forest restoration is the lack of involvement, agency and benefit-sharing of local communities, whilst social factors have been identified as important drivers of restoration outcomes. Our project works within the Plan Vivo model of ensuring that restoration is guided by the needs of local communities and we test mechanisms for using forest restoration as an approach for deriving ecosystem service and economic benefits to local communities, contributing to the poverty alleviation aspect of the 'triple win'.

The Indonesian Government introduced a moratorium on clearing primary forests and has committed to reducing carbon emissions by 29-41% by 2030, through its nationally determined contributions (NDCs). The deforestation trend has declined since 2015, but there are still large gaps between pledges, targets, implementation and successful outcomes, an issue that has been identified across the tropics. Our project focuses on two social forestry project landscapes, in two provinces (Aceh and Bengkulu) on the Indonesian island Sumatra (Fig.1). Some of our activities are applicable to the whole of Sumatra and Indonesia, and tropical forest regions more broadly, as we consider opportunities and challenges for scaling up forest restoration activities (e.g. spatial prioritisation; cost-benefit and market analyses; restoration certification methodology).

Our identification of these key challenges and knowledge gaps came from 1) a published synthesis of restoration outcomes and an in-depth knowledge of the tropical/SE Asian forest literature (Banin et al. 2023), 2) in-country knowledge from the project partners, 3) a recent Darwin Initiative Main Grant project on effectiveness of community forest policy in Indonesia and 4) Plan Vivo knowledge of the current status of policies, practice and certification methodology and markets.

Figure 1: Map of the project's two focal landscapes on Sumatra, Indonesia



## 2. Project stakeholders/ partners

All project partners contributed to the development of the proposal, to ensure that the project outputs reflected in-country needs, and these are represented in our four high level outputs (restoration planning; implementation; monitoring; income generation). Key examples are: spatial prioritisation to allow for strategic restoration decision-making and local-scale spatial planning for restoration activities, provision of nursery and seedling materials for on the ground implementation, resource efficient monitoring processes, improved understanding of the market and income generation potential through different methodologies to assess project viability, and support through Plan Vivo project development and certification processes (see Logframe, Annex 4.2). The project governance, with different organisations leading/co-leading the four work packages has worked well, distributing responsibilities effectively (see Proposal).

We have sustained an excellent collaborative partnership through year 1, through monthly full-project team meetings (first Thursday of every month) and frequent bi-lateral/multi-partner meetings for more detailed discussions on particular activities, which have enabled ongoing monitoring and evaluation. These were consolidated through in-person workshops and field-site visits in Indonesia in September, which enabled the whole team to develop a more in-depth understanding of the contexts in which the restoration is happening in the two provinces and Indonesia more broadly and strengthen our co-working relationships. Language barrier challenges have been overcome by using closed-captions in online meetings, live translation by multi-lingual meeting participants and written communications which can more easily be translated.

The project team have successfully engaged important stakeholders, in particular, the province-level forest management and watershed management units. As part of this engagement, representatives attended workshops in Indonesia in September. This was valuable because we were able to share the objectives of the Darwin project with them (see Annex 1.1a &b, they identified aspects that were particularly interesting and aligned with their own forest protection and restoration goals. They also shared their perspectives on priority restoration areas (e.g. to protect

water catchments from erosion, flooding and water quality) and demonstrated support for the project by pledging contribution of tree seedlings (see Output 2). Another important outcome of these meetings was an improvement of our understanding of forest management decision-making at the province level, which will help us ensure that our Output 1 (spatial prioritisation) can be impactful. Both project areas and in-country teams have established excellent relationships with local communities at Air Tenam village, Bengkulu and Mane and Lutueng villages, Aceh. Prior to the start of the project, community land management rights had been secured.

We secured a letter of support from Dan Montgomery-Hunt at the British Embassy, Jakarta for the project (see proposal letter of support) and we look forward to providing an update on our Year 1 achievements. In March 2023 the DICE-Kent team presented an overview of the spatial prioritisation tool to their Biodiversity and Nature Officers in Jakarta. The team are organising a 'teach in' with Embassy staff after the Eid celebrations (in Year 2) with the view that this could develop into a more formalised partnership as the embassy plans its biodiversity strategy for the years ahead.

### **3. Project progress**

#### **3.1 Progress in carrying out project Activities**

Our project activities are largely on track in accordance with our Implementation Plan.

##### **Output 1: Restoration Planning**

Provincial level stakeholder meetings were held in September 2022 to understand how forest protection and restoration decisions are currently made in Indonesia, the stakeholders involved and the objectives that are considered. These conversations particularly highlighted the needs to 1) reduce threats, e.g. illegal logging and mining, 2) protect wildlife and reduce human-wildlife conflict, 3) protect watersheds for erosion control and water quality provisioning and 4) ensure economic benefits for local communities, e.g. through diversification of MPTS, to improve livelihoods and reduce pressures to clear forests (Activity 1.1; Annex 1.1a,b & c). The meetings were also required to obtain approval for the restoration location and support from all parties. Nationally, the role of restoration is important in the context of NDCs; we plan to have further stakeholder engagement and feedback sessions at the provincial and national level on the prioritisation outcomes in year 2.

Datasets relating to land areas available for restoration (i.e. indicative government maps; PIAPS), forest carbon, and faunal biodiversity have been collated and applied in spatial prioritisation for forest restoration and conservation in Sumatra (Activity 1.2; Annex 1.2b). A workflow for assessing trade-offs and synergies in biomass protection/recovery and biodiversity protection has been developed, and now extended to other regions of Indonesia as well as some more detailed analyses conducted at the provincial level for the case-study areas in Aceh and Bengkulu (Annex 1.2c). An abstract has been accepted for the work to be presented at a symposium on 'Trees for Climate Change, Biodiversity and People' taking place in June 2023 (year 2), which aims to bring together researchers, practitioners and policymakers to explore the restoration and expansion of wooded areas following recent 30x30 commitments at COP15. The work is currently in preparation for a peer-reviewed publication (Annex 1.2a; Indicator 1.2).

Several community meetings were held in Aceh and Bengkulu landscape areas to determine local community priorities and co-agree restoration objectives (Activity 1.3/4; Annexes 1.3 a-g). Communities and local stakeholders prioritised the planting of multi-purpose tree species; there are plans to incorporate the planting of rare and threatened tree species at the site in Aceh following some additional planning, whilst at the site in Bengkulu the focus will be on the recovery and natural regeneration within the areas of degraded forest, by co-agreeing forest protection zones.

In Aceh, the social forestry management plan (RKPS) document (Annex 1.4a, 2021), which is prepared in a participatory manner involving all community representatives, describes the bio-physical condition of the village forest, the socio-economic condition of the community, the division of management zones/blocks and the area management work plan. The work plan details activities in accordance with the zone/block in its utilisation such as rehabilitation of open land with MPTS plants, protection and enrichment of local endemic plants (RTE). A meeting to obtain mutual agreement to identify restoration objectives and seedling selection was held on 14 November 2022 (Annex 1.3). There were 32 participants (14 men, 18 women) from the village government, the Village Forest Management Board (LPHD) and women's representatives from three villages. The meeting agreed 1) approved objectives and implementation of the restoration of the Putro Ijo village

forest area in Gampong Lutueng, 2) to participate in planting, maintenance, and monitoring of planted seedlings, 3) the MPTS plants to be planted (petai, jengkol, avocado and durian), and 4) involvement of women in restoration activities is only in the nursery management activities. The follow-up meeting with the community focused on Lutueng was held on 26 January 2023 with 16 participants (male) consisting of the Village Head, Village Forest Management Institution (LPHD), and community leaders. The meeting discussed efforts to care for planted seedlings, record people who have long managed the land and an agreement not to clear land/cut trees other than shrubs. To accommodate restoration in the forest buffer zone, it was necessary to form a Forest Farmer Group (KTH) so that legality can be recognised by the Aceh Environment and Forestry Service (DLHK). The KTH formation meeting was held on 14 January 2023 attended by 12 participants consisting of FMU I, Social Forestry assistants from BPSKL (Social Forestry and Environmental Partnership Center), Village Heads, LPHD and FFI's-IP. The meeting discussed the procedures for the formation of KTH as part of the government's recognition in terms of conducting restoration outside the forest area (buffer zone/farm). The purpose of establishing KTH is to coordinate and empower community groups to carry out planting outside the forest restoration area to receive guidance from the government (DLHK & FMU).

Additional activity has been undertaken using a mixture of remote sensing (drone survey and high-resolution satellite imagery) and ground checking to 1) help determine appropriate restoration interventions, 2) define appropriate approaches to the baseline monitoring of vegetation and 3) aid the community decision-making and consent around defining forest protection zones (Annexes 1.4a-e). Early in year 2 we will co-produce community land management plans (Activity 1.3/4) and produce proceedings of the community consent (Indicator 1.3) and develop restoration training (Activity 1.5) to help ensure good tree survival in future years and generate further community support. The finalisation of community consent has been slightly delayed because of the extra work needed to define the forest protection zone in the Air Tenam landscape, however, good progress has been made fostering community commitment to the forest protection and restoration, with support from the FMU (Annex 1.3e).

### **Output 2: Restoration Action**

During the first year of our project, three nurseries have been established: in Air Tenam, Lutueng and Pulo Kawa (Activity 2.1; Annex 2.1a-c). The nursery in Pulo Kawa was built in October 2022 - January 2023. This activity involved 40 people (15 men, 25 women) from land preparation, nursery construction, filling soil into polybags, to seeding 20,000 *Liberica* coffee seedlings. The nursery in Gampong Lutueng was built in November 2022-March 2023 with 7,000 petai seedlings. This activity involved 18 people (6 men, 8 women) from the village forest community (Annex 2.1a). Some seedlings were contributed in-kind from watershed management units (BPDAS). RTE seedling sowing will be conducted in year two as we are still waiting for the mother trees to produce seeds.

In Lutueng/ Pulo Kawa seedlings have been planted in the restoration site and community forest 'buffer zone' (community gardens neighbouring the community forest boundary). An initial 4000 seedlings (MPTS species) sourced from BPDAS had a survival rate of only 20% and it was deemed that the seeds were of low quality; a further 2,017 seedlings were planted in the restoration area and buffer zone adjacent to the restoration area and will continue to be monitored for growth and survival (Activity 2.2; Annex 2.2a). The planting process involved 18 people (16 men, 2 women) who are land managers in the restoration area.

In Air Tenam, 9,719 seedlings (Jengkol, Durian and Pinang) were distributed to smallholders and planted in 28 land plots covering a total area of approximately 30.2 hectares (Activity 2.2; Annex 2.1c & 2.2b). The distribution of seedlings to landowners in Air Tenam is ongoing.

In year 2 of the project, further consideration will be made as to the propagation and planting locations for RTE tree species, tree protection and potential for assisted natural regeneration.

### **Output 3: Restoration Monitoring**

We have made good progress in designing the scope of the mobile app for monitoring forest restoration, which places us to develop and iterate the app more fully in year 2 of the project, as per the implementation plan. We reviewed other apps that are currently available and assessed their applicability for our purposes. We did not find an alternative that combined all of the tools we require

in one single app. Project partners responded to an online survey to identify user needs, high level features and important parameters that the app must operate within (e.g. mobile phone access, operating systems, access to Wifi and data) (Activity 3.1; Annex 3.1). We have hosted four online meetings amongst the partnership team to hone the key modules, and identified the need for flexible data structures to accommodate different methods amongst partners and other key challenge areas (e.g. language, tree taxonomy, field use, GPS accuracy) (Activity 3.2; Annex 3.2). We have developed a mock-up (Annex 3.2), which is particularly detailed for plot-based monitoring but still requires some development for other modules applicable to agroforestry/individual tree-based planting and monitoring that may be used by farmers and landowners. Provincial stakeholders were also interested in the tool, demonstrating potential for broader use of the app once it is developed and we still plan to engage some broader stakeholders (project developers/leaders; forest management units) once the mock-up is finalised, to understand how the app can be applied outside of the Darwin project areas. Capacity building and app training will be undertaken in year 2 (as per the implementation plan) after app development to support local use of the app and iteration of app features (Activity 3.3).

In line with schedule, the vegetation baseline assessment, including survey of naturally regenerating seedlings (Activity 3.4) was undertaken at the restoration site in Aceh (see further detail on methods under section 3.2). Assessment of mother trees to support recovery of native RTE species and diversity within project areas will be conducted in year 2. The baseline monitoring of the site in Air Tenam will be conducted in year 2 once the forest protection zone is finalised and agreed with the community. Annual monitoring is planned to be conducted in years 2 and 3.

#### **Output 4: Restoration income generation**

A desk-based cost-benefit analysis (CBA; Activity 4.1) was initiated in August 2022, and completed in March 2023 (see Annex 4.1). The analysis, drawing on data from 9 Plan Vivo project developers and the [Trillion Trees initiative](#), aimed to understand costs and income of projects managed under the Plan Vivo system and consider how these would change under four different PES scenarios or models. Its' purpose was to support projects in determining which 'route to natural capital finance' should be pursued in order to maximise finance reaching rural communities, and to support PVF in guiding future projects to make those decisions. PES scenarios were developed in discussion with project partners and informed by the evolving Indonesian policy environment and current global market for biodiversity credits and 'PES', as well as an understanding of the likely outcomes that the Darwin-funded restoration projects are likely to deliver. The four PES options considered were as follows:

- Plan Vivo Standard, focussed on restoration. Through this Darwin Initiative project the Plan Vivo Foundation is developing a new methodology that will enable projects to measure and report restoration interventions, alongside carbon sequestration.
- Plan Vivo Nature, a new certification standard being developed to enable certification of biodiversity certificates, achieved through enhancing or protecting biodiversity. Plan Vivo Nature will be launched in the middle of 2023.
- Plan Vivo Standard and Plan Vivo Nature. Where projects aim to generate carbon and biodiversity certificates, a stacking approach will be permitted. In the longer term, as the market for biodiversity certificates becomes established, it is hoped that the need for stacking will be reduced.
- Plan Vivo PES, a new product that enables buyers to recognise and support robust forest restoration outcomes delivered through a robust Plan Vivo approach, without being tied into the expense and bureaucracy of the current nature credit market.

An analysis of the market for restoration or biodiversity-focussed (nature positive, non-offset) Payments for Ecosystem Services (PES) market in Indonesia and globally was conducted between September and December 2022 (Activity 4.2; Annex 4.2). Finalisation of the report was slightly delayed so that it could incorporate the volume of reports and discussions around biodiversity credits at COP15 in December 2022.

The report is informed by a review of literature published by think tanks, academia and market actors, semi-structured interviews with key market actors and stakeholders within Indonesia and globally and Plan Vivo's internal market intelligence established through engagement with the sector in supporting the development of the market for biodiversity credits and PES. The report (see Annex 4.2) provides an overview of the emergent nature positive 'credit' market, including current

market drivers and trends, opportunities and risks – and reflects on the implications for this Darwin Initiative project.

Note that this study was conceived and initiated during a ban in carbon trading by the Government of Indonesia, and as such aimed to present viable alternatives for community forestry/ conservation projects. Whilst recent developments in Indonesia indicate that carbon trading will again be an option for communities in Indonesia (online source: Indonesia adopts carbon trading regulations « Carbon Pulse (carbon-pulse.com)) the project will continue to seek to understand the viability of alternative markets for the project sites, and this report provides valuable insights (see section 3.2) in that context.

Options for the development of a Restoration Standard were discussed with key stakeholders within the Plan Vivo network, including key technical staff and advisors (Activity 4.3) during Q3 / Q4 2022 . Key considerations were to develop a relatively quick, robust and cost-efficient mechanism to reward restoration efforts. Rather than develop a new Standard, it was decided that a new restoration methodology could be integrated into the current Plan Vivo Standard.

Within the recently updated Plan Vivo Standard (version 5) approved methodologies are required to quantify the carbon benefits of projects. Methodologies currently being expert reviewed include methodologies for forest restoration, however there are currently gaps in methodologies relating to assisted natural regeneration (ANR) or agroforestry that does not result in a change in land use. A new restoration approved methodology could fill this gap, thereby enabling projects with different types of restoration interventions to access the Plan Vivo Standard. This will be an important development because it may help incentivise ANR in community forests, which is currently a gap in making ANR an effective restoration method.

A Working Group convened by Plan Vivo's Technical Advisory Committee (TAC) was convened in Q1 2023 to advise on the development of a restoration-approved methodology under the Plan Vivo Standard (Activity 4.4; Annex 4.3b.). The Working Group consists of 20 members and includes NGO practitioners, carbon project developers and academics from the UK, Indonesia, Kenya, Zambia, Ecuador, Mexico and the Netherlands. An initial convening of the committee took place on 28th March 2023 to discuss the scope and fit of restoration methodology into the existing approach of the Plan Vivo methodological framework. Since that meeting, a scoping paper (Annex 4.3a) has been developed and shared with Working Group members as a basis for discussing different technical options for estimating carbon in ANR scenarios. Options presented to the Working Group and under discussions include options for estimating baseline changes in woody biomass and approaches for estimating carbon benefits of increasing tree density in agroforestry areas, as well as options for including modules into the Plan Vivo methodology. The next steps include the design of a methodology concept note for submission to the Plan Vivo Foundation, as well as targeted working documents and discussions with members of the Committee on specific issues identified during the first meeting. A follow-up meeting is planned following feedback on working documents, with the aim of getting a final version ready for submission over the next 6-9 months.

### **3.2 Progress towards project Outputs**

A key goal of our project is to develop aspects across the full 'restoration workflow', from restoration planning to action, monitoring and income generation, which are reflected in our four outputs. We have made good progress in all outputs in year 1 of the project, with a particular focus on restoration planning (Output 1) and identifying opportunity for income generation (Output 4).

**Output 1: Restoration Planning** – Co-produced spatial prioritisation and community land management & intervention plans for two project areas and improved local capability for delivering restoration with multiple objectives

Co-produced restoration plans and associated methodology are progressing well, and we anticipate that we are likely to achieve the output by the end of the project. We consider restoration planning activities at several spatial scales. We are conducting analyses for strategic spatial planning at the national and provincial level (Indicator 1.1-1.2) and landscape scale spatial planning of interventions with community involvement (Indicator 1.3-1.4). From meetings with provincial stakeholders (Indicator 1.1; Annex 1.1) we learnt that the baseline condition was that some spatial analyses are

being used to prioritise restoration sites, but these typically focus on the needs for erosion and flooding prevention and may not necessarily take into account biodiversity, carbon gain potential and social factors in a multi-objective analysis, so there may be scope to identify synergistic opportunities for restoration. To the best of our knowledge, the baseline condition is that spatial prioritisation is not being used to strategically plan restoration at the national level to optimise multi-objective outcomes. We have made good progress with data collation, workflow design and initial analyses (Annexes 1.2a-c) and in forthcoming stages of the project we plan to re-engage with stakeholders and restoration project developers to get feedback on the approach and understand if stakeholders would like to apply the prioritisation in practice. We will explore whether the analyses could be used to identify additional communities/landscapes referred to in our 'legacy' plan.

The baseline condition of the landscape-scale spatial planning at Air Tenam was that project partner KKI Warsi had initiated community engagement and the community had agreed in principle to allocating part of the social forestry area to protection and retain other areas for production (coffee, durian and other MPTS species). The KKI Warsi team had begun to map land parcels with associated land ownership, but there were no methods in place for defining the protection zone and processes to monitor change over time. In the project we are exploring the opportunity to generate income from natural regeneration/assisted natural regeneration – in order to do this, we needed to produce a ground-truthed landcover map (Annex 1.4) to serve three purposes, 1) to work with the community to define the protected forest zone, 2) establish representative baseline and ongoing monitoring locations and 3) develop methods to track project impact over time. We are using open data and software, using reproducible methods, with the ambition that the methods could be applied by in-country organisations in the future, raising capacity for restoration planning and monitoring. We have also identified some important challenges in mapping from remote sensing in complex forested landscapes. With the landcover mapping exercise close to completion, we are now well-positioned for developing the co-agreed community land management plans (Indicator 1.4) early in year 2.

In Aceh, the baseline condition was that the community forest (hutan desa) boundaries had already been agreed in a community land management plan, which included defined forest protection and rehabilitation zones. We therefore focussed restoration plans on these rehabilitation areas and the community garden areas which are outside the boundary of the community forest area but act as an important buffer to the protection zone. Local scale restoration planning in this landscape required checking through drone survey, ground-based spot checks and discussions with the local communities to understand current land-use, to inform decisions as to appropriate interventions. A total of 478 aerial photos were captured by drones, then all photos were combined to produce high-resolution imagery. According to a mutual agreement by evaluating the images captured, restoration area was determined around  $\pm 24$  ha, where previously only  $\pm 15$  ha was determined by BPDASHL (Annex 3.4, technical report). Some of the areas within the demarcated rehabilitation zone are waterlogged with an uncertain land-use history, and are not suitable for tree planting currently. Some areas are also currently used as grazing land. The scale of the areas available for planting at the Aceh site may not be as large as originally conceived, and at the start of year 2 we will reassess restoration targets and natural regeneration/assisted natural regeneration monitoring zones.

Training conducted in year 2 of the project will help to ensure a sustainable legacy for restoration planning and activities that generate long term success within the project landscapes (Indicator 1.5)

**Output 2: Restoration Action** - Two project areas with seedlings planted, protected and/or maintained

The baseline condition in the two project areas was that there was no functioning tree nursery at either site. As outlined in section 3.1, this output is on track to deliver because nurseries have been established and MPTS seedlings have started to be distributed and planted, with support through the in-kind provision of seedlings from local stakeholders (BPDAS) (Indicator 2.1 & 2.2; Annexes 2.1-2.2). Local communities are incentivised to maintain the planted MPTS seedlings because they will yield future economic return; this will contribute to success of the restoration areas and support other protection activities within the landscapes. Further activities are required to identify RTE species and build capacity and capability to propagate these species in the Aceh site and discuss with communities in Air Tenam whether there is interest in integrating RTE species as valuable shade tree species in the agroforestry areas. If an El Nino event later this year triggers a mast fruiting event, this may provide an opportunity for collecting seed from the intact forest areas, but the El Nino drought itself may challenge recently planted MPTS seedlings, which may require



additional maintenance. These activities will help us deliver our intended outputs of enhancing biodiversity in restoration activities.

**Output 3: Restoration Monitoring** - Mobile-based application enabling robust and efficient monitoring of restoration objectives, developed for use in community-managed forests

Our mobile application design process is largely on track to deliver as planned. Through a review of existing, related mobile applications for tree/forest monitoring, we determined that the baseline condition was that a number of useful tools exist, but no single mobile application met all the monitoring needs of forest restoration projects in social forestry systems in Indonesia, and likely tropical forest restoration projects more broadly. Our user needs assessment identified some key design parameters and the priority modules for the applications data capture (Indicator 3.1). We are currently working to finalise the mock-up (current status in Annex 3.2) which we aim to achieve in year 2 Q1. We will track our progress on app development through the following steps: a) final mock-up and back-end database design, b) functioning beta version of app and within-team iteration, c) delivery of open-access mobile application. We plan to use our year 2 field visit to conduct some training and feedback sessions on the application, which will help to ensure the app meets user needs. We will also be able to track data entry and app use, allowing us to measure how the app features are being used.

Plot-based forest inventories are used at both the Aceh and Bengkulu landscapes to establish the vegetation baseline prior to restoration activities (Indicator 3.4). These plots will be re-surveyed through the project and beyond to quantify biomass and plant compositional change (Indicator 3.4). Our survey methodology uses plots with a nested design which capture the structure and composition of trees in different size classes, which helps develop understanding on recruitment of seedlings and saplings and therefore forest recovery. At the site in Aceh, the initial baseline survey was conducted on 17-20 March 2023 (see Annex 3.4a,d). Within the rehabilitation zone in Lutueng, plot locations were selected using a stratified-random approach (Annex 3.4c). 13 (of a proposed 16) plots measuring 20 x 50 m (0.1 ha) were surveyed. Vegetation at the restoration site is dominated by shrubs and pioneer plants generally such as *Piper aduncum*, *Melastoma malambraticum*, and *Pteridophyta*. The results of the survey conducted recorded 19 morphospecies belonging to 15 families and 73 individuals, demonstrating low mean stem density. Based on family distribution, Fabaceae is the dominant family found, namely (26.0%), followed by the Malvaceae family (19.2%), Rubiaceae (17.8%), and Piperaceae (8.2%). *Erythrina* sp was the most common species found, with 15 individuals.

In Bengkulu, we have conducted detailed ground check points to record land-use and forest condition (Annexes 1.4b,c), to support the production of a landcover map. This provided valuable information about the initial site condition. Plot-based baseline surveys have not yet been conducted in Bengkulu (see Section 3.1) but locations will be selected once the landcover map is complete and the community have agreed on the boundaries of the protection zone and utility zone, because different monitoring approaches will be used in the two land-use zones.

We intend that when the mobile app development is at an appropriate stage, it can be used to record plot re-surveys and we can evaluate whether this supports the partner teams and communities in recording data more efficiently.

**Output 4: Restoration Income Generation** - Model to incentivise communities through income generation from restoration is developed and available to community-managed forest PES projects.

The baseline condition for this output was that community driven PES projects were under threat due to the restrictions on carbon trading in Indonesia and that there was currently no viable alternative such as biodiversity crediting or a PES model specifically designed to support restoration activities. As a result of the first year of the Darwin project, we have built a good understanding of the rapidly evolving biodiversity credit market (market analysis; Indicator 4.2) and of the cost implications of alternative PES models (Indicator 4.1). Progress has also been made on developing a restoration monitoring methodology that can be approved under the Plan Vivo Standard (Indicator 4.3).

The cost-benefit analysis (CBA) has increased our understanding of the potential cost and benefit implications of community managed restoration (see Annex 4.1). As noted above, we were unable to model cost-benefit relating directly to tree planting and restoration interventions due to a lack of

data (reflecting a data gap also observed by the Trillion Trees initiative). The methodology was therefore adapted to make use of detailed cost and income data from Plan Vivo projects globally (as well as Trillion Tree data) to better understand the costs and income from community conservation and tree planting projects and explore how these would vary under different PES models. Key findings from the study are reported below and implications of these findings for the project are discussed in section 3.3.

- Plan Vivo project costs are broadly in line with, or lower than, other restoration projects which may have lower requirements around social and biodiversity outcomes. Plan Vivo projects are also well-placed to deliver restoration outcomes as they are required to develop and implement long-term management plans. Collaboration with smallholders is one of the more cost-effective ways of delivering restoration. As such Plan Vivo projects represent good value for money, and this should be a factor in setting a fair price for restoration outcomes.
- Projects focussing on 'restoration' interventions such as agroforestry, afforestation and reforestation tend to have higher costs per hectare than projects with stronger protection/conservation focus i.e. REDD+/ avoided deforestation projects. For restoration projects, low intervention approaches (such as assisted natural regeneration) also tend to be less expensive than agroforestry and afforestation interventions; extra data on (A)NR efficacy will be beneficial.
- Although Plan Vivo projects also deliver biodiversity outcomes, to different degrees, the costs of low-intensity or vegetation biodiversity monitoring in projects are currently not a significant component of costs (over and above monitoring required for carbon measurements). Whilst Plan Vivo Nature monitoring costs are anticipated to be higher due to the number of metrics, these may not be significant over and above current monitoring costs – once project capacity and expertise has been built. Use of technology and enabling projects to build local capacity for robust biodiversity monitoring provide key opportunities to reducing costs. PES projects could reduce costs by leading on developing/ using methodologies that are community-led to a greater extent, for example. The PhD studentship affiliated to the Darwin project may examine accuracy of a range of indicators using rapid vs technological data collection methods (starting Year 2).
- Where projects are intending to stack i.e. deliver carbon and biodiversity certificates, costs of monitoring are likely to be significantly higher – unless monitoring efforts can be streamlined with carbon monitoring, as is currently the case in some projects. These projects will also (initially) have to pay higher certification and verification costs associated with two types of metrics.
- Finally, there is currently a lack of disaggregated cost data for conservation and restoration projects, and we identify a need to improve cost reporting to better inform land management decision making. Several ongoing initiatives have developed frameworks to enable better cost reporting, and Plan Vivo projects could be supported to use these frameworks in order to have access to better cost data moving forward.

The results of the CBA will be discussed with in-country partners, to support decision-making at the point of Plan Vivo PIN development.

The market analysis (Indicator 4.2; Annex 4.2) provided a good insight into the rapidly evolving biodiversity credits markets, as well as a picture of demand for restoration PES units from community projects. Whilst partner projects may choose to pursue 'conventional' carbon routes to finance, following the clarification of the position of the Government on Indonesia on carbon trading (elaborated in section 3.1), the analysis clearly points to an alternative route, and an opportunity to spread risk, in the future. The Darwin project will continue to explore the viability of the biodiversity and PES routes to nature finance, using the FFI (Aceh landscape) and KKI Warsi (Bengkulu landscape) projects as case studies to support future initiatives. Key findings from the market study are summarised below:

- A nascent market for *nature positive* biodiversity credits is emerging in response to nature-related policies, growing awareness of the global biodiversity crisis and its economic consequences, as well as efforts to establish principles and mechanisms for enabling the private sector to contribute to 'mitigating and managing nature-related risks and delivering nature-positive outcomes'.
- Nature credit markets (including carbon and biodiversity) are currently valued at >US\$5 billion per year; nature-related voluntary carbon credits at US\$1.3 billion per year.
- The current global biodiversity conservation financing gap is estimated at around \$711 billion per year. The private sector is therefore anticipated to play a critical role in meeting these global targets. Trends show increasing private sector investment in nature.
- Urgency to respond to the crisis is manifesting policy and regulation changes at international, regional and national level, reflected in COP-15 and the 2030 Nature Compact, as well as EU legislation such as the EU Taxonomy on Sustainable Finance and ESG reporting requirements.

- Increased public awareness of nature positivity, the prominence of global targets such as the SDGs (driver for responsible investment), as well as risks of economic impact are driving responsible investment. For example, 86% of investors (327 respondents from 35 countries) were concerned about impact of biodiversity loss on financial markets in a 2021 Responsible Investor and Credit Suisse survey.
- Demand is also reflected in efforts by the finance and investment sector to address key market barriers to investment in biodiversity including through the development of: market standards for high integrity and high impact nature positive investment (e.g. [Plan Vivo and FFI high level principles](#)); metrics to support robust disclosure and reporting of impact (e.g. ValueNature Score and Opwall Basket of Metrics), market instruments to mobilize private sector finance for conservation (e.g. Voluntary Biodiversity Credits (Terrasos); Plan Vivo Nature; Value Nature, Ekos SDUs); data required to understand financial performance or risks associated with nature (e.g. [Taskforce on Nature-related Financial Disclosures](#)), and to guide biodiversity investment decisions; and opportunities for investment at sufficient scale.
- Current investment into (non-offset) biodiversity outcomes is primarily from companies in Europe and the US motivated by ESG reporting requirements, social conscience and interest in nature positive supply chains. Within Southeast Asia and Indonesia there is also interest in investment in biodiversity outcomes, primarily linked to addressing historical negative practices (although not as formal offsetting), for example companies with palm oil value chains or extractive industries. There is also an emerging speculative investment market – ‘return-seeking’ investors are also working to improve their inclusion of biodiversity in broader sustainable investing funds or strategies
- Market actors indicate that transparency about the management of biodiversity is essential to gaining a fair price for biodiversity credits, particularly as costs of management will vary significantly across different landscapes, countries and asset ownership types. In addition, willingness to pay is affected by the perceived value of the biodiversity that is being protected or restored (‘the conservation story’) as well as the existence of rigorous (and transparent) scientific monitoring to generate trustworthy evidence of impact. Details of the report methodology and evidenced findings are available in Annex 4.2. The implications of these findings for the project are discussed in section 3.3.

Technical discussions with the project team, key Plan Vivo stakeholders and its Technical Advisory Committee (TAC) has resulted in a scoping paper to guide decisions on the development of a restoration methodology (focusing on ANR and agroforestry, to complement existing restoration methodology for restoration through tree planting) for integration within the Plan Vivo Standard (Indicator 4.3; Annex 4.3). This route was chosen as being feasible and cost-effective, as well as delivering a key tool that will incentivise ANR as a restoration intervention within community managed initiatives. The restoration methodology lead is currently compiling feedback from the scoping paper which will inform the next stage of development – a method concept note and targeted working documents which will be progressed by the Plan Vivo Working Group in year 2, in line with our implementation plan and with the output on track to deliver by the end of the project.

### 3.3 Progress towards the project Outcome

As we are on track with project activities and outputs, the project is showing great potential for delivering on its overall outcome of ‘*high-quality and sustainable ecosystem restoration is delivered on social forestry and degraded forest land in Aceh Province and Bengkulu Province delivering climate, biodiversity and socio-economic co-benefits*’. During this initial year, we have focussed particularly on assembling the baseline data for the outcome indicators, which we summarise below, and other underpinning activities which will support the longer-term success of strategic planning, monitoring and methodology for income generation.

#### Outcome Indicator 0.1

Project partners (FFI and KKI Warsi) have conducted socialisation activities around sustainable land management practices (Indicator 0.1) in two social forestry areas (in Aceh and in Bengkulu) and communities are engaged and showing good commitment, which is fundamental to the achievement of the outcome. Remote sensing analyses and community land management agreements will confirm the scale at which the sustainable land management practices will be applied. Surveys of the two community forest areas have been conducted using remotely sensed data and ground

checks (Annexes 1.3-1.4) and these have been used in conjunction with community discussions to determine which restoration and sustainable land management practices are to be applied and contribute to the baseline quantification.

Field-based monitoring (monitoring of individual tree planting and plot-based surveys) will track the progress of tree cover and species richness. Baseline plots have been measured in Aceh (Annexes 3.4) and we are on track to establish baseline plots in Bengkulu in the first half of year 2. Activities under Output 2 are contributing to enhanced MPTS tree cover in smallholdings and restoration areas (Annexes 2.1-2.2). Developing the ongoing monitoring design and Plan Vivo project idea notes (PINs) for the two areas will support quantification (stem density, species richness) of this outcome as the project progresses. Data will be captured using the mobile application that has been in design phase in Year 1 (Annex 3.2). Monitoring and impact evaluation will also be important for quantifying project impacts on natural regeneration areas. Early in year 2 we will assess potential additional social forest areas and the likelihood of restoration projects being developed within 3 years after the end of this project. We plan to submit a logframe change request to update the target around tree cover and species richness enhancement (see Section 9).

### **Outcome Indicator 0.2**

Baseline surveys of wellbeing (Indicator 0.2), in the form of participatory wellbeing assessments (PWAs) were undertaken in Aceh (Lutueng, Blang Dalam and Mane villages) by the FFI team and in Bengkulu (Air Tenam village) by the KKI Warsi team, in November 2022. Prior to conducting the assessments both teams were provided with training in the Plan Vivo/ Verra CCB approved PWA methodology by Elyn Damayanti (Plan Vivo Foundation and TLLG) in October 2022. The virtual training was attended by 8 staff members from FFI (7 men and 1 woman), including some staff members from other FFI projects, and 3 staff members (all women) from KKI Warsi.

In Aceh, PWAs were conducted through Focus Group Discussions (FGDs) with representatives from different groups including farmer groups, family wellbeing empowerment (PKK), integrated health post, educational assembly, traditional caretaker, village government, business actors, village forest management organisation, animal conflict mitigation, village disaster preparedness, youth and sports, forest utilization and crafts. In total, 121 people participated in FGDs in Aceh: 34 in Lutueng (41% women), 33 in Blang Dalam (36% women) and 54 in Mane (39% women). In Air Tenam village the PWA was undertaken through FGDs, direct observation, interviews and household surveys. In total 180 people participated in the socio-economic assessment, and 16 people in the FGDs, including representatives from community forestry (HKM) and community plantation forest (HTR) groups, women and youth groups, village government and community leaders. The socio-economic assessment for Air Tenam collected data on income, spend and ownership of land and homes across the whole village (50 households, 180 people). The baseline assessment is detailed in Annex 4.6c-d. It provides assessments of 3-4 categories of wellbeing across each of the project villages, with between 14-38% people being considered as having moderate levels of wellbeing. Indicators and success criteria which provided the basis for assessment were selected by community representatives in collaboration with project partner facilitators. Note that each community developed their own success levels and therefore cannot be compared. For example, whilst Air Tenam residents considered a larger proportion of their population as moderate, the socio-economic assessment indicates that the majority of the population of Air Tenam are living under the poverty line.

A follow up assessment will be made in year 3 of the project, which will act as an endline survey of wellbeing. Beyond the lifetime of the project, socio-economic monitoring will be ongoing as part of the Plan Vivo certification and review process. We plan to submit a small revision to this indicator to reflect the fact increases in wellbeing during the project lifespan may be hard to realise (see M&E section) so the target of 'maintained or enhanced wellbeing' is more appropriate.

### **Outcome Indicator 0.3**

Restoration activities in the two provinces typically follow 'ecosystem restoration' as opposed to 'ecological restoration' (where some ecosystem functions are restored, and restoration does not have the goal of recovering the full natural forest plant community). Restoration through planting MPTS is more frequently applied as this brings the potential for economic benefits to communities, which can help support and incentivise forest protection, and because these seedlings are more widely available (Annexes 1.1a, b). Including multiple MPTS species can also enhance resilience

(e.g. lower community reliance on one species). Incorporating additional plant diversity into restoration requires engagement, capacity building around collection, nursery, propagation and maintenance and incentivisation (e.g. through viable biodiversity credits or stacking). Preliminary discussions have been held amongst stakeholders and project partners for integrating planting of 20% RTE species into restoration in Aceh landscape; further discussion and planning is required to specify how this will be delivered in practice and with which species. The forest management unit has already identified a threatened *Magnolia* species as an important species locally in Aceh. In the landscape in Bengkulu, there is a commonly held belief that shade trees negatively impact coffee production – we are planning extension work to support communities in coffee/MPTS productivity and identify whether there may be ecosystem (dis)benefits of additional shade trees; increasing variety of MPTS species is supporting land-holders that are negatively affected by poor coffee productivity. The two community forest areas have planned natural regeneration areas to test how their inclusion may enhance landscape-level biodiversity outcomes and provide opportunities for biodiversity credit finance. We have recruited a PhD student to consider the role of forest connectivity for faunal biodiversity outcomes (Annex 3.5a). Camera trapping training conducted in Air Tenam (Annex 1.5) and sampling design established (Annex 3.5b) and cameras deployed. Nonetheless, it may be challenging to observe improvements to functional connectivity within the project lifespan as any new tree cover will be small, rather than full canopies, meaning we may have to apply space-for-time substitution in our analyses. We plan to submit an updated logframe to better define the target biodiversity enhancement for this outcome.

#### **Outcome Indicator 0.4**

A key outcome for the project is the development of a viable model (see logframe for definition) for income generation from multi-objective restoration (Indicator 0.4). The baseline position at the start of the project is that no viable model existed. A significant shift in the viability for community managed restoration has resulted from the new regulations on carbon trading introduced by the Government of Indonesia in November 2022. This change, which is entirely independent of the Darwin project, has increased the likelihood that community projects will be able to access carbon finance through a ‘tried and tested’ route – following a new restoration methodology, which carries significantly reduced risk for projects. Whilst there are indications that Plan Vivo will be an accepted Standard under these new regulations, efforts to ensure that the Plan Vivo Standard qualifies for ‘mutual recognition’ will remain a priority. Mutual recognition refers to the recognition of Voluntary Carbon Standards as suitable frameworks and methodologies to implement community-based carbon projects and estimate climate benefits.

Efforts to develop alternative models through PES or Plan Vivo Nature, informed by the CBA and market analysis, will also continue. This will help to provide alternatives in case there are challenges with carbon trading moving forwards or in the event that the promising biodiversity credit market proves to be more ‘lucrative’ for these particular projects than carbon, once markets and mechanisms are established. Key opportunities emerging from the Darwin Initiative project are evident:

- Community projects designed under the Plan Vivo model are cost effective, in terms of delivering restoration interventions such as tree planting and natural regeneration – not least as collaboration with small holders helps to maintain long-term ownership in restoration efforts and reduce costs of maintenance. Plan Vivo projects are also well-placed to deliver restoration outcomes as they are underpinned by long-term management plans, in stark contrast to most restoration projects which have lifespans of 3-5 years. Whilst the market for biodiversity is nascent and evolving, there are clear signs of a private sector demand for trusted biodiversity outcomes, supported by a biodiversity trading market infrastructure enabling sale of biodiversity credits, as well as PES certificates. Demand is also evident within Indonesia. Project developers, such as FFI and KKI Warsi who are familiar with the Plan Vivo ‘high integrity’ approach, are at an advantage in this market that is embracing values of nature positivity.
- For projects supporting communities to deliver restoration and biodiversity outcomes, there must be clarity on the outcomes that can be delivered. Development of robust monitoring methodologies – such as biodiversity metrics applied in Plan Vivo Nature or restoration-focussed monitoring in Plan Vivo Standard (both of which are being developed in this project) will be critical to establishing that confidence. Establishing clearer cost reporting will also be an important component of building transparency around process and costs, to ensure that pricing is fair and buyers can

have confidence in the value of their product. Efforts to reduce costs, for example through use of technology (as in this Darwin project) will also be important in remaining competitive.

### 3.4 Monitoring of assumptions

We continue to monitor our assumptions through regular cross-partner meetings, where partners have contact with a range of stakeholders and knowledge sources.

Outcome level:

1. Indonesia remains committed to its stated goals on poverty alleviation, restoration, community-managed land and addressing climate change. *Comments:* This assumption holds true – we are not aware of any policy changes related to these goals, as communicated by in-country partners.
2. Ongoing support from key government institutions (Ministry of Environment and Forestry; Ministry of Land Use and Spatial Planning) for involving influential thinkers among their staff at national and local levels in our sequential workshop in spatial planning consultation processes. *Comments:* This assumption holds true. We continue to have support from government agencies through BRIN and provincial government level support through meetings held in September 2022.
3. There will not be any large-scale mortality events (e.g. severe drought, fire) which affect ecological restoration. *Comments:* There have been no such events affecting our project sites in year 1. There have been predictions of an El Nino event later in 2023; we will monitor the situation and plan any restoration and maintenance activities bearing this in mind.

Output 1

1. Multiple stakeholders continue to see value in the process. *Comments:* The stakeholders continue to be engaged.
2. Agreement reached on multi-objectives and management. *Comments:* Partners have achieved good collaboration and agreement with local stakeholders and communities regarding local land management, demonstrating the assumption that agreements can be achieved holds.
3. Community forestry representatives and government extension workers available to attend training. *Comments:* This assumption holds – we have good engagement from local stakeholders, but training is still due to happen in year 2.

Output 2

1. Selected seedlings/restoration materials available. *Comments:* MPTS seedlings have already been provided by watershed and forest management units and some purchased. RTE species still need to be identified, collected and propagated – species will be selected based on availability.
2. Activities are not interrupted by major natural hazards (e.g. El Niño drought). *Comments:* There have been no such events affecting our project sites in year 1. There have been predictions of an El Niño event later in 2023; we will monitor the situation and plan any restoration and maintenance activities bearing this in mind.

Output 3

1. Multiple stakeholders continue to see value in the process. *Comments:* This assumption holds – we have good engagement from local partners and stakeholders; we will expand our stakeholder group.
2. Community forest representatives and government extension workers available to attend training. *Comments:* This assumption holds – we have good engagement from local partners and stakeholders; training is still due to happen in year 2

Output 4

1. Multiple stakeholders continue to see value in the process, supported by the cost-benefit analysis. *Comments:* The CBA has been successfully completed, with input from relevant stakeholder.

2. Co-benefits from nature-based PES certification schemes continue to command high market prices and demand for high quality PES credits (including from restoration in Indonesia) continues to grow. *Comments:* This assumption holds – there continues to be high demand in the market for high quality PES credits. The government of Indonesia continues to support carbon trading framed by new legislation (as of November 2022).

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

Our proposed impact was *“Forest restoration in Indonesia achieves ‘the triple win’ of sustainable biodiversity conservation, carbon sequestration and enhanced livelihoods and governance outcomes”*.

Our project is showing good potential for some short-term impacts – local communities and stakeholders in two areas are supportive of restoration activities that we hope will derive ecosystem services benefits, yield medium-term economic benefits through the multi-purpose tree species planted (Annexes –1.1c, 1.3b - f). In-country partners are looking for opportunities to extend the model to other communities towards the end of the project to expand the impact, and our spatial prioritisation analysis will be shared with stakeholders later in the project to help identify the most strategic opportunities for restoration in Sumatra and Indonesia more broadly (Output 1). Later in the project we plan to look at opportunities to incorporate habitat connectivity into spatial planning so that restoration positively impacts faunal species, involving stakeholder input. Both case-study sites are on the periphery of large forest areas, and so crude measures of connectivity based on forest extent will not be informative. A PhD student recruited to join the project in Year 2 will explore alternative methods as part of their study at DICE-Kent, co-supervised by UKCEH.

During development of the project, in-country partners described two challenges - i) resource intensive processes for forest monitoring and data processing and ii) poor data capture on the fate of seedlings distributed to community members. We hope that our co-produced monitoring app (Annex – 3.2) will alleviate some of these pressures, making it easier for individuals and organisations to motivate and track progress, leading to more positive restoration outcomes. Our community training in Year 2 will help to ascertain whether using an app motivates smallholders to track trees planted in agroforestry areas, and engagement with other stakeholders will reveal whether it will be adopted in other project areas. Our monitoring will enable us to understand potential carbon and biodiversity benefits of the project actions. This has value from the perspective of optimising management, as well as understanding the potential income from the nature capital market. These benefits may take some time to realise, both in the project areas and across other sites in Indonesia (e.g. low biomass gain at small tree sizes; slow rates of population change; time to on-board new communities). Restoration priorities for local communities have focussed on multi-purpose tree species, but each project area has components of natural regeneration and propagation of rare and threatened tree species. We hope that through engagement with stakeholders, we can expand the contribution of greater diversity and threatened species in restoration planning.

Our market analysis has also enabled us to understand the potential for community restoration projects to benefit from the emergent market in biodiversity certificates as well as interest in less formal PES markets. The analysis indicates that the market places high value on robust monitoring, cost transparency and social impact. This project therefore contributes valuable learning for community projects in Indonesia and beyond.

The advances that our project is making will facilitate the scaling up of community-led tropical forest restoration in several ways: 1) our vision is that our two project sites will form positive demonstration sites for successful community-led restoration (Output 2 and 3). 2) Development of the restoration standard methodology will create a route for communities to access benefits from restoration action, including (assisted) natural regeneration. 3) Assessing PES and biodiversity credit options may identify alternative income generation models and support communities to have a greater focus on biodiversity in restoration planning (Output 4). 4) Capacity building (e.g. land use analyses, spatial planning and restoration monitoring tools (Output 1; Output 3) will support strategic decision-making and more efficient MRV for forest restoration.

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

We have not had any interaction with host country convention focal points in the last 12 months but in the coming year we will seek opportunities to do so. Two members of the project team are members of the UN Decade on Restoration Task Force for Restoration Best Practice and two members of the UN Decade on Restoration Task Force for Restoration Monitoring, presenting an opportunity for the lessons learned from the project to be disseminated more widely.



Our project contributes to the following national policies and international conventions, treaties and agreements:

IBSAP/ CBD Aichi Targets No. 2 by providing spatial planning & prioritisation tools to integrate biodiversity values to local development plans (see Output 1 Annex 1.1c, 1.3b, 1.4e, 1.2);

IBSAP/ Aichi No. 14 by restoring degraded ecosystems to improve essential ecosystem services. Aichi target No. 12 on efforts to maintain and restore habitat of the critically endangered species (such as the Sumatran elephant, *Elephas maximus sumatranus*, also listed in CITES Appendix 1) (see Output 2 Annexes 2.1 – 2.2 on restoration action); SDGs 13 and 15, by restoring degraded ecosystems through tree planting activities and assisted natural regeneration in project sites – and mitigating climate change threats and impacts. The project will also build resilience within communities to climate change in the long term (see Output 2). This project also contributes to the National Action Plan for Climate Change Adaptation in Indonesia (RAN-API, 2014) by increasing local community capacity in reducing climate risk through the rehabilitation of degraded ecosystems, using agroforestry.

IBSAP No. 21 by providing restoration tool for assessing, monitoring, and mapping biodiversity and restoration impact in target areas (see Output 3 Annexes 3.1 – 3.4 a - d on restoration monitoring);

SDGs 1, 5 and 8, by enabling access to direct and indirect income from PES and planted trees, equitable benefit sharing and community-led development opportunities (including seasonal and permanent employment) for project communities. The project will have an inclusive approach, and ensure safeguarding of marginalised groups, women, and children and of traditional knowledge and rights in all project activities. (see Output 4, working towards Plan Vivo certification and income generation; Annexes 4.6 a - f)).

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

The expected beneficiaries of the project are members of households in the villages of Air Tenam (Bengkulu province) and Mane, Blang Dalam and Lutueng (Aceh province). In the short-term our project will contribute to strengthening community governance of natural resources, building local skills and capacity in tree nurseries and restoration, and generating income from multi-purpose tree species. In this first year, project partners have held several meetings with communities (including with women and youth) to discuss and agree priorities for restoration and MPTS planting. Local priorities included planting species to support livelihoods and reduce further expansion into areas good quality forest, and to allow regeneration in riparian areas to protect water courses and reduce incidence of landslides. In addition, forest protection zones are being established in Bengkulu. Three tree nurseries have been established across both project sites. Seedlings were provided by the Watershed Management Agency or purchased. In total, 36,719 seedlings have been planted, with guidance and support of project staff across both project landscapes. These achievements are documented and evidenced in section 3 (outputs 1 and 2 above). In year 2 we are planning extension activities which we hope will support productivity of cash crops (a major barrier described by some members of the communities), enhance diversity and resilience of MPTS planted and reduce land-clearance pressure.

In the longer term, our project aims to strengthen ecosystem services (carbon sequestration biodiversity, soil and water regulation), through restoration efforts (tree planting and natural regeneration) and enabling communities to access PES finance to support long-term management of natural resources and community development. In the first year, progress towards accessing PES certification has been achieved by working with communities to undertake baseline studies of ecological (see Annexes - 3.4, 3.5b) and socio-economic conditions (see Annex - 4.6). In addition, progress was made on developing a restoration methodology to support PES linked to restoration efforts and the restoration monitoring app aimed at reducing costs of restoration monitoring by communities under the PES scheme. In addition, community members from Air Tenam received training in camera trap installation to support wildlife monitoring (Annex 1.5). Local capacity building will be important if project areas plan to incorporate biodiversity monitoring in their project proposals to access income from biodiversity credits, and this project will act as a pilot for opportunities and barriers to accessing finance through biodiversity credits.

An important achievement this year is the detailed gender analysis conducted by KKI Warsi which will support the project to benefit and engage women and youth in Air Tenam (see Annexes – 4.6 e-f).

## 6. Gender equality and social inclusion

Please quantify the proportion of women on the Project Board <sup>1</sup> .	50% of the Project Board are women (Lindsay Banin, UKCEH; Emmy Primadonna, KKI Warsi, Kristin Olsen & Eva Schoof, Plan Vivo, ) and 50% are men (Matt Struebig, University of Kent, Sugeng Budiharta, BRIN, Joseph Hutabarat, FFI, Keith Bohannon, Plan Vivo).
Please quantify the proportion of project partners that are led by women, or which have a senior leadership team consisting of at least 50% women <sup>2</sup> .	To our knowledge, none of the partner organisations are led by women or have a senior leadership team >50%.

Our project team is diverse, with women and men represented approximately equally across different career stages and in positions of responsibility within the project. During project meetings, space is given to allow everyone to have a voice, as the agenda most often cycles between the various project partners with lots of opportunity for discussion.

Within the project landscapes, typically, women and men have different roles in terms of their use and involvement in the forest and its management. Men are typically more active in formal forest management institutions. Women are more involved in managing tree nurseries (e.g. see Annex 2.1x on nursery establishment in Aceh). Project teams have sought to involve women in community meetings and training events:

In Bengkulu, women represented 12.5% of people trained in camera trap installation (Annex 1.5) and 96% people involved in planting seedlings within their landscape (Annex 2.1c). Women, youth and elders were represented in the initial meetings to discuss and agree the project priorities. In Aceh, women represented 56% of people discussing restoration objectives and selecting seedlings, 61% people involved in establishing the nursery and 11% people involved in tree planting (Annex 1.3g, 2.1a, 2.2a). Women were also represented at Provincial and initial community meetings. Women were also involved in participatory wellbeing assessments. (Annex 4.6c-d)

An important achievement this year is the detailed gender analysis conducted by KKI Warsi in December 2022 which will support the project to benefit and engage women and youth in Air Tenam (see Annex 4.6 e-f). Guidance and input into the proposed methodology was provided by Plan Vivo’s Programme Manager Eva Schoof and Social Impact Officer Caroline Stillman through a presentation and discussion with the KKI Warsi team. The study aimed to understand the distribution of gender roles in family and in society – including in relation to activities, and the dynamics of access and control in forest management and land use, in order to better understand the needs of men, women and youth. The study identified gender disaggregated access to and control over, different commodities and means of livelihood across the ‘living spaces’ of residents in Air Tenam (i.e. at the level of forest, river, garden, farm, waterfall and yard). In terms of the forest, whilst both men and women had access, men used this ‘public’ space more frequently as women’s access is limited by domestic responsibilities. Men and women had different interests within the forest, based on the types of livelihoods they were associated with. Women were typically responsible for spaces nearer to the home, and with commodities linked to crafts and cooking. Youth were typically associated with the river and waterfall, as responsible for ecotourism activities.

<sup>1</sup> A Project Board has overall authority for the project, is accountable for its success or failure, and supports the senior project manager to successfully deliver the project.

<sup>2</sup> Partners that have formal governance role in the project, and a formal relationship with the project that may involve staff costs and/or budget management responsibilities.

A number of challenges were associated with livelihood opportunities, including changing climate, and challenges associated with remoteness, pests and diseases. Although the ecotourism activities were successful, greater capacity and effort was required in marketing and tourism management. Many livelihood opportunities were seasonal in nature, and families often have multiple livelihood strategies.

In relation to forest and land management, men typically harvest forest and garden products, whilst women are responsible for maintenance such as spraying fertilising and harvesting in gardens. Whilst maintenance and guarding the forest are typically the responsibility of all, forest management institutions are currently not functioning – with low capacity and participation, nor inclusive of women and youth and their ability to contribute to decision-making. A foster tree programme aimed at minimising illegal logging is appreciated. The study recommended that forestry institutions needed to become functional with regards their responsibility to the forests as well as to government programs – including through enabling women to contribute to decision-making. Supporting women’s input into decision making in other aspects of village life was also identified as important and enabling women to share their knowledge and skills in crafts to support seasonal income. Youth were interested in greater capacity in ecotourism management.

## 7. Monitoring and evaluation

*M&E focus and responsibility:* Monitoring, evaluation and learning effort has been focussed on poverty and wellbeing, biodiversity and restoration, and project implementation. As far as possible, the project has focussed on drawing on MEL expertise of partners, whilst also strengthening capacity where needed, and aligning project monitoring efforts with wider requirements of the certification process. M&E is the responsibility of all project partners, with PVF as lead partner.

*Activity and output tracking and reporting:* Project delivery is guided by project design (outlined in the Darwin application) as well as the logframe. Project partners are responsible for tracking and reporting on the activities for which they hold responsibility (as outlined in the governance structure). A project M&E plan was developed to support partners in understanding what should be measured as they carry out activities, as well as responsibilities for monitoring. A project OneDrive has been established to enable projects to upload reports and other forms of ‘evidence’ that activities have been carried out and records of meetings held – all members of the project team have access to this shared space. Planning, reporting and discussion of activities takes place during monthly team meetings.

*Capacity building:* In October 2022, Indonesian project partners received training in the Participatory Wellbeing Assessment methodology delivered by Elyn Damayanti (Plan Vivo Foundation and TLLG) in October 2022. The training provided was based on TLLG’s PWB Methodology protocol, aligned with Plan Vivo and CCB Standards. The virtual training was attended by 8 staff members from FFI (7 men and 1 woman), including some staff members from other FFI projects, and 3 staff members (all women) from KKI Warsi. The PWA methodology is recommended under the Plan Vivo Standard (and other Standards) as a tool that can be used for setting livelihoods baselines. Using this methodology therefore enabled projects to establish a ‘socio-economic’ baseline for the Darwin project and progress their certification. In January 2023, 16 people in Air Tenam (14 men, 2 women) received training in camera trap installation to support wildlife monitoring.

*Outcome tracking:* During the first year of the Darwin project, baselines were established for each outcome level indicator. This is described in detail in section 3.3.

*Changes to the logical framework:* Several small changes were made to the logframe following discussions with project partners, and to better reflect the outcome level changes that were being tracked. These are summarised below, but a revised version of the logframe is due to be submitted (see Section 9):

- SMART indicator 0.2 was changed from monitoring ‘socio-economic benefits’ to ‘wellbeing’, reflecting more accurately what is being assessed by the community through the PWA. The PWA methodology monitors community wellbeing using success criteria and indicators developed by the community themselves through a participatory and facilitated process. Participant communities agree a range of criteria relating to a range of socio-economic conditions including status of home, land, vehicles, livestock, employment, education, health and income.
- SMART indicator 0.2 was changed from expecting an ‘increase’ in benefits, to wellbeing that will remain ‘similar or improved relative to baseline’ in order to be more realistic about what can be

achieved within the 3-year lifetime of the project. Many of the livelihood benefits from the project are likely to happen in years following the end of the project.

*Areas for improvement:* Whilst it has been important to ensure that project partners themselves have responsibility for tracking progress, there is scope for a greater level of coordination and support to project partners in M&E, particularly to support the annual reporting process and use of the OneDrive project filing system. This will be achieved through more targeted follow up with partners throughout the year, and establishing a project management system that is more accessible to all.

## **8. Lessons learnt**

Overall, the partners have worked successfully together. The opportunity to meet in person in September was really valuable for developing the project together and getting a much better understanding of the sites and the local contexts and communities around the restoration activities. The monthly online meetings and smaller focal meetings have been really useful for keeping track of each others activities and maintaining a common vision for the project and ensuring that challenges are dealt with quickly.

One of the challenges we encountered was the varied understanding of the word 'restoration' amongst the different organisations and in relation to carbon accounting methodology, and also in terms of the priorities of the local communities. Through our discussions we identified potential goals and objectives of restoration in the two study landscapes, to determine appropriate interventions and aspects to monitor over time. Integrating of biodiversity into restoration planning may require additional engagement across partners, stakeholders and communities.

We extended our activities around mapping local land-use in the Bengkulu landscape, to help inform the local decision making around forest protection and baseline monitoring. This was very illuminating in terms of the technical challenges around monitoring forest restoration through remote sensing and the potential limitations around this approach and has led to an in-depth study that will be developed into a paper and an opportunity for in-country capacity building.

Involving additional stakeholders (e.g. provision of seedlings) sometimes meant we had to make rapid decisions regarding restoration interventions. This was challenging for planning work activities and communicating across time zones, and brought to the fore some of the frequent challenges that restoration projects encounter.

We had to think carefully about appropriate methods for equality and social inclusion in the Aceh community meetings whilst being sensitive to cultural norms. The project team should carefully monitor attendance to meetings, especially those which result in important decision-making. Delivery of the CBA was slightly delayed due to a number of factors, including a lack of availability of cost data for restoration and conservation projects, particularly where costs are disaggregated between different intervention strategies. The CBA initially intended to incorporate costs and benefits of the tree planting activities within the project. However, this was not possible as species yield data was not available, and decisions on species selection were not made by the projects until later. The urgency of the cost benefit analysis also shifted, as the Government of Indonesia adopted new carbon trading regulations in November 2022, opening the door for projects to pursue the 'well tested' route to market through carbon under certain conditions. Nonetheless, the CBA was completed and generated useful insights for restoration projects discussed in section 3.2 above.

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

This is our first Annual Report so we have not yet received feedback.

We received feedback when our project was funded. We were able to respond to most of this adequately at the time but we can now offer several important updates which took longer to enact. We were asked about the opportunity to monitor faunal biodiversity as well as plant biodiversity as part of the project – we have now recruited a PhD student through the ARIES DTP to contribute to this element of the project (see Annex 3.5a) and have established a camera trap survey in Air Tenam landscape to initiate data collection (Annex 3.5b).

Our latest feedback received read "The outlined suggested edits to the logframe look broadly ok. However, on indicators 0.1 & 0.3 we'd like to ask if you could provide specific particular targets for the proposed increase/enhancement. On indicators 0.2 - once specific criteria have been

established and baseline set then a clear, realistic target should be established to ensure effective monitoring.” We plan to submit a logframe change request early in year 2 to accommodate this feedback. Having conducted the baseline participatory well-being assessments, indicator 0.2 can be made more specific (see Section 7 for more detail). Once community land management plans and biodiversity plans are finalised (see Section 3.2 on Outputs) we can refine the tree cover and biodiversity enhancement targets.

## **10. Risk Management**

The main risk we identified was around project deliverables for the restoration action at the Aceh site. Involving external stakeholders (BPDAS) meant that seedlings arrived at the nursery and needed to be planted at short notice. This put pressure on the project team in terms of finalising intervention plans with local communities and baseline monitoring design, compounded by different time zones and challenges around communication. There have also been issues with seedling quality (low survival rates). These are common problems associated with restoration projects but warrant further investigation and forward planning. The project team will work on careful planning for the restoration zones, consider seed sourcing (also an activity related to planting RTE species), monitoring and maintenance. We have also identified the predicted, forthcoming El Nino drought as a possible risk for seedling survival (both of planted and naturally regenerating stems) but also an opportunity for collecting seeds from RTE species.

## **11. Other comments on progress not covered elsewhere**

Whilst we have been discussing restoration interventions that have been co-agreed by communities, the project team felt that it could be beneficial to bring forward some decision-making on the Plan Vivo methodology that would be followed by FFI and KKI Warsi if they would develop their project areas as Plan Vivo projects. We intend to initiate activities on the Project Idea Note (PIN) development aspect of Output 4 so that Darwin project indicators can be aligned well to monitoring methodology required for the Plan Vivo certification process. One particular area of discussion and development has been around defining counterfactual areas and how to monitor those or alternatively generate appropriate, robust assumptions.

## **12. Sustainability and legacy**

Stakeholder meetings held with provincial government and forest management unit representatives indicated that the goals of the project are well-aligned to the challenges they are trying to address, with opportunities for future coordination around best practice and monitoring tools. Partner and provincial government engagement in the spatial planning and prioritisation activities indicates that tools (Output 1 and 3) may be applied to additional project areas in the future (see Outcome Indicator 0.1). As the project outputs develop, we plan to host workshops with state-level government representatives, as supported by our project partner BRIN. Meetings held with BRIN (National Research and Innovation Agency, Indonesia) in September 2022 revealed that the project is well-aligned to the interests in their ecology division, demonstrating good opportunity for ongoing collaboration on forest restoration in Indonesia.

Partner engagement in land-use mapping activities is an opportunity to build capacity within in-country partner organisations, to apply to other project areas and allow scaling up of activities. We have used open-source software and reproducible workflows for mapping and prioritisation analyses so they can easily be applied in the future. The mobile application will be open-source so that it can be accessed by other projects.

Positive community response around diversification of MPTS and possible ecosystem benefits of tree planting and forest restoration indicate that forest restoration activities should be sustainable, particularly if survival rates can be maintained and landowners/holders can realise direct economic benefits and improvement in land management practices. This will also help to secure forest protection zones and allow areas for natural recovery to occur, which will hopefully have longer-term positive biodiversity outcomes. Training and extension work in year 2 of the project will support local capacity building, and will also be an opportunity for knowledge exchange and incorporating local knowledge in restoration activities and decision-making.

Underpinning activities around carbon/PES markets and restoration standards and development of certified Plan Vivo projects will help to ensure additional economic benefits can be accessed.

### 13. Darwin Initiative identity

A project webpage is hosted on the UKCEH website, which acknowledges Darwin funding support including the approved Darwin Initiative logo (<https://www.ceh.ac.uk/our-science/projects/forest-restoration-indonesia>). The webpage can be updated with selected outputs generated throughout the project. We plan to initiate a Twitter account for the project early in Year 2, linking back to BCF.

The project team delivered Powerpoint presentations in Indonesia which included a slide about the purpose of Darwin Initiative grants more generally. These presentations were specifically aimed at describing the aims of this project; funding was acknowledged with logos. In-country partners also provided banners for stakeholder workshops.

Dominic Muenzel (DICE-Kent post-doc employed on the Darwin project) presented the prioritisation tool (Output 1, Indicator 1.2) at a research symposium at the National Library in Jakarta (Leveraging Science for the Future of Wallacea).

Project PI (L Banin) has delivered several conference and seminar presentations that include slide(s) describing the project, acknowledging the funding source with logos (forming part of a larger programme of research) including British Ecological Society (BES) Annual Meeting in Edinburgh December 2022, University of Leeds departmental seminar, workshop as part of Defra funded scoping study on monitoring biodiversity in low-middle income countries. Project participants Matt Struebig and Beth Raine are the lead authors of two abstracts accepted for the BES Symposium at University of Kent, June 2023 on distinct Darwin project outcomes (Annexes 1.2a & 1.4f) where the funding source will be acknowledged.

### 14. Safeguarding

Has your Safeguarding Policy been updated in the past 12 months?	Yes/ <del>No</del>
Have any concerns been investigated in the past 12 months	Yes/No
Does your project have a Safeguarding focal point?	Yes/ <del>No</del> [If yes, please provide their name and email] Lindsay Banin [REDACTED] for project level; Emmy Primadona and Dedi Kiswayadi for project site-level
Has the focal point attended any formal training in the last 12 months?	Yes/No [If yes, please provide date and details of training] UKCEH are providing training in May for all staff members.
What proportion (and number) of project staff have received formal training on Safeguarding?  Notes: Two Plan Vivo staff members received Safeguarding training this year and one UKCEH staff member (Darwin focal point) will receive training in the near future. In addition, FFI and KKI Warsi staff attended a meeting to introduce the new social and environmental safeguarding requirements of the revised Plan Vivo Standard on 24th February. In total 4 staff attended this meeting. As part of the Plan Vivo project development procedures, there will be more formalised check-ins regarding environmental and social management for the project specific context throughout the project development phase (approximately 2 per year).	Past: 18% [3] Planned: 50% [9]
Has there been any lessons learnt or challenges on Safeguarding in the past 12 months? Please ensure no sensitive data is included within responses.  No	

Does the project have any developments or activities planned around Safeguarding in the coming 12 months? If so please specify.

Environmental and social safeguards policies aim to ensure that participants' human rights are respected and that any risks of non-intended negative impacts of projects are managed and addressed. Robust environmental and social risk management leads to better and more sustainable projects and avoids projects harming people or nature.

Due to the nature of the Plan Vivo Standard, which focuses on participatory approaches to project development and equitable benefit-sharing, Plan Vivo projects already incorporate many aspects of environmental and social (E&S) safeguarding. As part of the recent update of the Plan Vivo Standard (v5.0), new requirements in Plan Vivo Standard v5.0 and the implementation of new environmental and social risk management procedures ensure that all Plan Vivo projects are aligned with international best practice.

To demonstrate ongoing commitments to identifying, monitoring and reporting environmental and social (E&S) risks, projects are required to complete key environmental and social safeguards activities to be completed during project development and implementation:

- Pre-screening of environmental and social risks (PIN stage)
- E&S screening, assessed by the Plan Vivo Foundation's E&S reviewers (PIN stage)
- Depending on the risk level of the project, E&S assessment scoping and planning (PDD stage)
- Depending on the risk level of the project, an E&S assessment in the field (PDD stage)
- Development of an E&S management plan (ESMP) (PDD stage)
- Development of an E&S monitoring plan (PDD stage)
- Validation of E&S assessment & ESMP (Validation)
- Annual E&S monitoring and reporting (Annual Reporting)
- Verification of E&S monitoring and reporting (Verification)
- Final evaluation of ESMP implementation at the end of the project (Verification)

## 15. Project expenditure

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

*Notes: \*We have had two change requests approved by Darwin Initiative following the submission of change request forms. 2022/23 Grant column contains figures from the latest budget submission. \*\*All figures are indicative, based on partner invoice and annual cost statements, not based on full review of receipts. \*\*\*Most notable differences originate from one in-country partner less familiar with Darwin projects; these have not been discussed with Darwin Initiative yet but the project team would welcome the opportunity. \*\*\*\*M&E costs are covered within staff, consultancy and operating costs.*

Project spend (indicative) since last Annual Report	2022/23 Grant (£)	2022/23 Total Darwin Costs (£)	Variance %	Comments (please explain significant variances)
Staff costs (see below)				
Consultancy costs				
Overhead Costs				
Travel and subsistence				
Operating Costs				
Capital items (see below)				

Monitoring & Evaluation (M&E)***				
Others (see below)	██████	██████	██████	████████████████
<b>TOTAL</b>	<b>178,23</b>	<b>162,784.6</b>	<b>8.67</b>	████████████████

**Table 2: Project mobilising of matched funding during the reporting period (1 April 2022 – 31 March 2023)**

	Matched funding secured to date	Total matched funding expected by end of project
Matched funding leveraged by the partners to deliver the project.	[REDACTED]	
Total additional finance mobilised by new activities building on evidence, best practices and project (£)		

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

The project team decided that it would be more appropriate to complete this section in the next half/full year report when some of the outputs are publicly available.



## Annex 1: Report of progress and achievements against logframe for Financial Year 2022-2023

Project summary	SMART Indicators	Progress and Achievements April 2022 - March 2023	Actions required/planned for next period
<p><b>Impact</b></p> <p>Forest restoration in Indonesia achieves 'the triple win' of sustainable biodiversity conservation, carbon sequestration and enhanced livelihoods and governance outcomes</p>		<p>The project work has generated community support and distributed MPTS seedlings/planted seedlings which are intended to bring ecosystem service, economic and biodiversity benefits to community forest areas. Underpinning activities (creating a restoration standard and efficient monitoring systems and strategic planning methodologies) are contributing to a future where restoration can generate well-being and economic benefits to local communities.</p>	
<p><b>Outcome</b></p> <p>High-quality and sustainable ecosystem restoration is delivered on social forestry and degraded forest land in Aceh Province and Bengkulu Province delivering climate, biodiversity and socio-economic co-benefits</p>	<p>0.1 130 hectares of land have received sustainable land management practices (ICF KPI 17) and tree cover (stem density, species richness) is enhanced across at least 2 community forest areas (at least 500 ha) in Sumatra as a result of multi-objective restoration activities by end of project, with a remaining 4 community forests on track to deliver within 3 years.</p> <p>0.2 Smallholders and forest-dwelling communities (8624 people) in at least 2 community forest areas receive increased socio-economic benefits from multi-objective restoration and access to community-based restoration payment for ecosystem services (PES) by end of project, with a remaining 4 community forests on track to deliver within 3 years.</p>	<p>0.1 Surveys of 2 community forest areas have been conducted using remotely sensed data and ground with checks (Annexes 1.3-1.4) and these have been used in conjunction with community discussions to determine restoration and sustainable land management practices and to be used as a baseline. Representative baseline plots have been measured in Aceh.</p> <p>0.2 Baseline wellbeing assessment has been completed in each partner village through a Participatory Wellbeing Assessment. Modest levels of wellbeing were reported as between 14-38% in November and December 2023. In addition, a socio-economic survey and gender analysis was undertaken in Air Tenam village (Annexes 4.6).</p>	<p>0.1 Finalise community land management plans and fully define project areas in-line with Plan Vivo PIN development (Indicator 4.5); complete baseline monitoring plot surveys; continue relevant actions (tree propagation and planting; assisted natural regeneration). Annual monitoring and monitoring of planted trees will establish restoration outcomes for stem density and species richness.</p> <p>0.2 Endline wellbeing assessment will be carried out in Year 3 of the project. The gender analysis will inform strategies for promoting gender equality through the project.</p> <p>0.3 Develop community engagement activities around plant biodiversity within restoration and tree/forest protection. Plan collection, nursery</p>

	<p>0.3 Biodiversity (tree species richness and functional diversity) and habitat connectivity with extant forest areas increased across at least 500 hectares as a result of multi-objective restoration activities by end of project.</p> <p>0.4 Viable model for income generation from multi-objective restoration, developed in collaboration with stakeholders, and piloted in Aceh Province and Bengkulu Province. (Value of ecosystem services generated or protected – aligned with ICF KPI 10).</p>	<p>0.3 Preliminary discussions held amongst stakeholders and project partners for integrating planting 20% RTE species into restoration in Aceh landscape. Planned natural regeneration areas to test how their inclusion may enhance landscape-level biodiversity outcomes and provide opportunities for biodiversity credit finance. PhD student recruited to consider the role of forest connectivity for faunal biodiversity outcomes (Annex 3.5a). Camera trapping training conducted in Air Tenam (Annex 1.5) and sampling design established (Annex 3.5b) and cameras deployed.</p> <p>0.4 Baseline condition is that no viable model for income generation exists. Cost benefit analysis and market study completed (Annex 4.1 &amp; 4.2).</p>	<p>handling and planting/maintenance of RTE species. Consider how restoration actions may contribute to fine-scale forest connectivity for faunal species.</p> <p>0.4 Indonesian partners will develop and submit their PIN and progress their PDD application for certification. Cross-partner discussions will generate understanding around choices on preferred income generation pathways. Plan Vivo will work to ensure that the Plan Vivo Standard qualifies for mutual recognition by the Government of Indonesia.</p>
<p><b>Output 1.</b></p> <p><b>Restoration planning:</b> Co-produced spatial prioritisation and community land management &amp; intervention plans for two project areas and improved local capability for delivering restoration with multiple objectives</p>	<p>1.1 Two province-level participatory stakeholder workshops held where engagement with participants resulted in defining restoration objectives and identification of data needs for spatial prioritisation (yr1)</p> <p>1.2 Spatial prioritisation framework developed, databases collated and priority areas for restoration identified on community and government land in Bengkulu and Aceh Provinces (yr1)</p> <p>1.3 Community consent achieved through at least four participatory community workshops and focus group discussions to identify restoration objectives, representing the view of women, men, cultural and age groups and where at least 30% of the participants are women (yr1)</p>	<p>Provincial level stakeholder meetings were held in September 2022 to present our project, understand how forest protection and restoration decisions are currently made in Indonesia, the stakeholders involved and the objectives that are considered (Activity 1.1; Annex 1.1 a-c).</p> <p>Datasets relating to land areas available for restoration, forest carbon, and faunal biodiversity have been identified and collated (Activity 1.2; Annex 1.2b). A workflow for assessing trade-offs and synergies in biomass protection/recovery and biodiversity protection has been developed and initial prioritisation analyses conducted (Annex 1.2c). An abstract has been submitted for the work to be presented at an academic conference and the work is currently in preparation for a peer-reviewed publication (Annex 1.2a; Indicator 1.2).</p> <p>Several community meetings have been held in Aceh and Bengkulu landscape areas to determine local community priorities and co-agree restoration objectives (Activity 1.3/4; Annexes 1.3 a - g). Communities and local stakeholders prioritised the planting of multi-purpose tree species; there are plans to incorporate the planting of rare and threatened tree species at the site in Aceh following some additional planning, whilst at the site in Bengkulu the focus will be on the recovery and natural regeneration within the areas of degraded forest, by co-agreeing forest protection zones.</p>	

	<p>1.4 Community land management plan objectives reflect socio-economic, biodiversity and long-term restoration benefits and prioritise interventions at the project-site scale and including at least 20% RTE (rare, threatened, endangered) species (yr 1)</p> <p>1.5 At least 50 community and government representatives attend two-day training workshop in restoration management (25 in year 1, 25 in year 2)</p>	<p>Additional activity has been undertaken using a mixture of remote sensing (drone survey and high resolution satellite imagery) and ground checking to 1) help determine appropriate restoration interventions, 2) define appropriate approaches to the baseline monitoring of vegetation and 3) aid the community decision-making and consent around defining forest protection zones (Annexes 1.4 b-e).</p>	
Activity 1.1: Workshops and stakeholder engagement to define restoration objectives and data needs for spatial prioritisation (yr1). Workshops will be held in each of the two provinces to maximise stakeholder engagement.		Initial workshops completed (Annexes 1.1 a-c)	Re-engage provincial and national stakeholders to share the methodology and receive feedback during future field visits.
Activity 1.2: Collation of appropriate datasets, produce a spatial prioritisation workflow and conduct multi-objective spatial prioritisation analysis to assess synergies and trade-offs		Data collation completed. Analysis currently being finalised (Annex 1.2 a,c).	Preparation for peer-reviewed publication in the first half of year 2
Activity 1.3/4: Focus Group Discussions and village meetings to confirm community consent and to develop community land management plan applying the 'intervention continuum approach' and guiding principles for supporting diversity, as well as local and traditional knowledges, including at least 20% RTE (rare, threatened, endangered) species (yr 1-2)		Some community meetings have been held (Annexes 1.3 a-g, 1.4a). Final land management plans have been slightly delayed because of the extra work needed to define the forest protection zone in the Air Tenam landscape, whilst the rehabilitation zone had previously been defined in community land management plans in Aceh, associated with the Hutan Desa arrangements.	Early in year 2 we will co-produce community land management plans (Activity 1.3/4) and produce proceedings of the community consent. Conduct engagement activities around diversity and co-develop plans for integrating RTE species into forest restoration.
Activity 1.5: Training workshops to ensure sustained capacity in restoration activity management within two case study landscapes.		To be completed in year 2.	
<b>Output 2.</b>	2.1 At least two nurseries established to process c. 500010,000 seedlings with at least 20% RTE species (the	Three nurseries were established: in Air Tenam, Lutueng and Pulo Kawa (Annexes - 2.1 a - c).	

<p><b>Restoration action:</b> two project areas with seedlings planted, protected and/or maintained</p>	<p>remainder are multipurpose tree species) (yr1-2)</p> <p>2.2 At least 250 ha planted, weeded and protected in two case study areas (yr2-3). More than 1400 ha allocated to ongoing and future restoration activities (yr3)</p>	<p>In Air Tenam, 9,719 seedlings (Jengkol, Durian and Pinang) were planted in 28 land plots covering a total area of approximately 30.2 hectares (Annex – 2.2b).</p> <p>In Lutueng/ Pulo Kawa some seedlings have been planted in the restoration site and buffer zone (community garden). An initial 4000 seedlings (MPTS species) sourced from BPDAS only had a 20% survival rate; a further 2,017 seedlings were planted in the restoration area and buffer zone adjacent to the restoration area (Annex – 2.2a).</p>	
<p>Activity 2.1. Constructing two tree nurseries in the targeted villages (yr2)</p>		<p>Completed.</p>	<p>Selection and propagation of RTE species in year 2 and 3</p>
<p>Activity 2.2. Tree planting, weeding, protection and maintenance including re-planting to replace lost stems (yr 2)</p>		<p>15,736 seedlings were planted in restoration sites (Aceh and Bengkulu) and smallholdings and buffer zones (including 2,017 seedlings to replace lost stems).</p>	<p>Weeding, protection and maintenance including re-planting to replace lost stems.</p> <p>Identify suitable mother trees, collect seed/material for propagation and plant RTE species.</p>
<p><b>Output 3.</b></p> <p><b>Restoration monitoring:</b> mobile-based application enabling robust and efficient monitoring of restoration objectives, developed for use in community-managed forests</p>	<p>3.1 One multi-stakeholder needs assessment to inform design of restoration monitoring tool (yr1)</p> <p>3.2 Restoration monitoring tool developed in collaboration with stakeholders through two codesign workshops (yr1-2)</p> <p>3.3 Training of at least 50 community forest monitoring team members provided where at least 30% of the participants are women (yr2)</p> <p>3.4 Baseline assessment (yr1-2), and annual monitoring and replacement re-planting conducted (yr3).</p>	<p>We reviewed other apps that are currently available and have some similar purposes and assessed their applicability for our purposes. We did not find a single app that combined all of the tools we require. Project partners responded to an online survey to identify user needs, high level features and important parameters that the app must operate within (e.g. mobile phone access, operating systems, access to wifi and data) (Activity 3.1; Annex 3.1).</p> <p>We have hosted four online meetings amongst the partnership team to hone the key modules, and identified the need for flexible data structures to accommodate different methods amongst partners and other key challenge areas (e.g. language, tree taxonomy, field use, GPS accuracy) (Activity 3.2; Annex 3.2).</p>	
<p>Activity 3.1. Conduct a user needs assessment and review of existing tools, involving the project partnership team, consultants and relevant stakeholders, in alignment with Activities 1.4 (land management plan), 4.3 and 4.4 (development of the restoration standard)</p>		<p>Completed (Annex 3.1).</p>	
<p>Activity 3.2. Hold co-design workshops with relevant stakeholders and community representatives to develop app features in detail (yr1-2).</p>		<p>Ongoing. Four online meetings with partners and app designer have been</p>	<p>Complete co-design process and develop a functional app to pilot.</p>

<p>App development undertaken in collaboration with consultant, Flumens Ltd. Activity</p>	<p>held. Decisions have been made on key areas including key modules. Key challenges considered included language, tree taxonomy, field use, GPS accuracy. Preliminary mock-up produced (Annex 3.2)</p>	
<p>Activity 3.3. Undertake training to build capacity with community membership to understand and use the forest monitoring tool and supply feedback to make improvements to the tool (yr2)</p>	<p>To be completed in Year 2 (as per implementation plan).</p>	
<p>Activity 3.4. Baseline assessment, including survey of naturally regenerating seedlings and mother trees to support recovery of native species and diversity within project areas, and annual monitoring conducted in years 2 and 3.</p>	<p>Baseline monitoring nearly complete in Aceh aside for some natural regeneration plots.</p>	<p>Baseline monitoring to be undertaken early Year 2 in Air Tenam. Annual monitoring to be completed in Years 2 and 3 (as per implementation plan).</p>
<p><b>Output 4.</b> <b>Restoration income generation:</b> Model to incentivise communities through income generation from restoration is developed and available to community-managed forest PES projects</p>	<p>4.1 Cost-benefit analysis of community managed restoration (considering benefits from restoration planting over time, payments for ecosystem services (PES) models, and optimisation of ecosystem restoration) demonstrates short, medium and long-term income from restoration at two community forestry sites in Aceh and Bengkulu Provinces (yr 1)</p> <p>4.2 Market analysis of multiple PES for restoration options in Indonesia undertaken and provides options for design of PES model (yr1)</p> <p>4.3 One stakeholder consultation (involving Indonesian and Plan Vivo global stakeholders) to inform design of adapted Plan Vivo ‘restoration’ Standard (yr1)</p> <p>4.4 Adapted Plan Vivo ‘restoration’ Standard to secure payments for ecosystem services from demonstrated restoration impact drafted and quality assured (yr2)</p>	<p>Cost benefit analysis completed. Design was adapted to reflect the lack of disaggregated cost data for restoration and conservation interventions. This is a common challenge which the Trillion Trees initiative is also seeking to address. The study indicated that Plan Vivo projects are cost effective compared to other restoration projects and provide a long-term management solution which many other restoration interventions lack. In addition, working with small holders, considering natural regeneration where possible, and developing cost-effective monitoring solutions and capacity are key to reducing restoration costs. (Annex – 4.1)</p> <p>Market analysis was completed. There is a rapidly developing market for biodiversity certificates, as well as ongoing interest in PES solutions outwith the formal nature credit market. The analysis found that the market values robust monitoring (of biodiversity/ restoration), cost transparency and social impact. This project therefore contributes valuable learning for community projects in Indonesia and beyond. (Annex – 4.2)</p> <p>Global stakeholders were consulted on the approach to and design of a restoration methodology for the Plan Vivo Standard. A Technical Working Group has been established and the initial meeting was held. Development by the WG is ongoing. (Annexes – 4.3a &amp;b)</p>

	4.5 Access to PES extended to at least 250 small holders and/ or forest-dwelling community members in Aceh and Bengkulu Provinces with at least 2,500 planned beneficiaries from equitable benefit sharing mechanism (yr 3)		
Activity 4.1. Cost benefit analysis, including diverse restoration income sources from restoration activities and PES markets, to inform design of PES model in Indonesia		Completed (Annex 4.1).	
Activity 4.2. Market analysis, in Indonesia and globally, to inform design of PES model		Completed (Annex 4.2).	
Activity 4.3. Stakeholder consultation to inform design and quality assurance of the Restoration Standard.		Initiated and in feedback phase (Annex 4.3a, b).	Some ongoing consultation work through Working Group established to develop the standard.
Activity 4.4. Standard development by the Technical Advisory Committee		Initial meeting of TAC held; review is ongoing.	TAC will continue to advise on the development of the methodology. Methodology will be developed.

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

Project Summary	SMART Indicators	Means of Verification	Important Assumptions
<b>Impact:</b> Forest restoration in Indonesia achieves ‘the triple win’ of sustainable biodiversity conservation, carbon sequestration and enhanced livelihoods and governance outcomes. (Max 30 words)			
<b>Outcome:</b> (Max 30 words) High-quality and sustainable ecosystem restoration is delivered on social forestry and degraded forest land in Aceh Province and Bengkulu Province delivering climate, biodiversity and socio-economic co-benefits	0.1 130 hectares of land have received sustainable land management practices (ICF KPI 17) and tree cover (stem density, species richness) is enhanced <sup>[1]</sup> across at least 2 community forest areas (at least 500 ha) in Sumatra as a result of multi-objective restoration activities by end of project, with a remaining 4 community forests on track to deliver within 3 years.	0.1 Land-use change assessment; baseline and annual monitoring of vegetation recovery	Indonesia remains committed to its stated goals on poverty alleviation, restoration, community-managed land and addressing climate change. Ongoing support from key government institutions (Ministry of Environment and Forestry; Ministry of Land Use and Spatial Planning) for involving influential thinkers among their staff at national and local levels in our sequential workshop in spatial planning consultation processes. There will not be any large-scale mortality events (e.g. severe drought, fire) which affect ecological restoration
	0.2 Smallholders and forest-dwelling communities (8624 people) in at least 2 community forest areas receive increased socio-economic benefits <sup>[2]</sup> from multi-objective restoration and access to community-based restoration payment for ecosystem services (PES) by end of project, with a remaining 4 community forests on track to deliver within 3 years.	0.2 Baseline and end-of-project surveys of socio-economic benefits, including context-specific wellbeing and resilience indicators (disaggregated by gender). Indicators and success criteria will be developed in collaboration with community partners.	
	0.3 Biodiversity (tree species richness and functional diversity) and habitat connectivity with extant forest areas increased across at least 500 hectares as a result of multi-objective restoration activities by end of project.	0.3 Baseline and annual restoration monitoring reports, including biodiversity assessments; forest connectivity assessed through land-use maps.	

	0.4 Viable model <sup>[3]</sup> for income generation from multi-objective restoration, developed in collaboration with stakeholders, and piloted in Aceh Province and Bengkulu Province. (Value of ecosystem services generated or protected – aligned with ICF KPI 10).	0.4 Plan Vivo Restoration (PES) Standard, enabling PES income for community managed restoration, is produced and piloted within Indonesia. <b>Cost benefit analysis and market analysis.</b>	
<b>Outputs:</b> <b>1. Restoration planning:</b> Coproducted spatial prioritisation and community land management & intervention plans for two project areas and improved local capability for delivering restoration with multiple objectives	1.1 Two province-level participatory stakeholder workshops held where engagement with participants resulted in defining restoration objectives and identification of data needs for spatial prioritisation (yr1)	1.1 Stakeholder workshop proceedings (Q2, yr 1)	Multiple stakeholders continue to see value in the process
	1.2 Spatial prioritisation framework developed, databases collated and priority areas for restoration identified on community and government land in Bengkulu and Aceh Provinces (yr1)	1.2 Maps of priority areas for restoration activities; scientific publication of spatial modelling (Q2, yr 1)	Agreement reached on multi-objectives and management
	1.3 Community consent achieved through at least four participatory community workshops and focus group discussions to identify restoration objectives, representing the view of women, men, cultural and age groups and where at least 30% of the participants are women (yr1)	1.3 Community workshop proceedings and statement of intent (FPIC), with participants list disaggregated by gender and cultural groups (Q3, yr 1)	Community forestry representatives and government extension workers available to attend training
	1.4 Community land management plan objectives reflect socio-economic, biodiversity and long-term restoration benefits and prioritise interventions at the project-site scale and including at least 20% RTE (rare, threatened, endangered) species (yr 1)	1.4 Community and government management plans, reflecting needs of women and men, for two restoration implementation landscapes (Q4, yr 1)	



	1.5 At least 50 community and government representatives attend two-day training workshop in restoration management (25 in year 1, 25 in year 2)	1.5 Training attendance and attendee feedback, disaggregated by gender (Q2, yr 2)	
<b>2. Restoration action:</b> two project areas with seedlings planted, protected and/or maintained	2.1 At least two nurseries established to process c. 500010,000 seedlings with at least 20% RTE species (the remainder are multipurpose tree species) (yr1-2)	2.1 Project activity reports (including nursery photographs; reports on seedling provision/wildling collection) (Q2, yr 2)	Selected seedlings/restoration materials available.  Activities are not interrupted by major natural hazards (e.g. El Niño drought)
	2.2 At least 250 ha planted, weeded and protected in two case study areas (yr2-3). More than 1400 ha allocated to ongoing and future restoration activities (yr3)	2.2 Project area maps; land management plans; bi-annual mobile app monitoring records to document planted trees (Q3, yr3)	
<b>3. Restoration monitoring:</b> mobile-based application enabling robust and efficient monitoring of restoration objectives, developed for use in community-managed forests	3.1 One multi-stakeholder needs assessment to inform design of restoration monitoring tool (yr1)	3.1 Restoration monitoring needs assessment report (Q2, yr 1)	Multiple stakeholders continue to see value in the process  Community forest representatives and government extension workers available to attend training
	3.2 Restoration monitoring tool developed in collaboration with stakeholders through two codesign workshops (yr1-2)	3.2 Co-design workshop proceedings (Q4, yr1) and delivery of open-source monitoring tool (Q1, yr 3)	
	3.3 Training of at least 50 community forest monitoring team members provided where at least 30% of the participants are women (yr2)	3.3 Training attendance and assessment disaggregated by gender (Q2, yr 2)	
	3.4 Baseline assessment (yr1-2), and annual monitoring and replacement re-planting conducted (yr3).	3.4 Monitoring reports to show changes in vegetation structure relative to baseline (Q2 yr 2; Q3 yr 3)	
<b>4. Restoration income generation:</b> Model to incentivise communities through income generation from restoration is developed and available to community-managed forest PES projects	4.1 Cost-benefit analysis of community managed restoration (considering benefits from restoration planting over time, payments for ecosystem services (PES) models, and optimisation of	4.1 Cost-benefit analysis report for community managed restoration, including gender analysis (Q3, yr 1)	Multiple stakeholders continue to see value in the process, supported by the cost-benefit analysis

ecosystem restoration) demonstrates short, medium and long-term income from restoration at two community forestry sites in Aceh and Bengkulu Provinces (yr 1)		Co-benefits from nature-based PES certification schemes continue to command high market prices and demand for high quality PES credits (including from restoration in Indonesia) continues to grow.
4.2 Market analysis of multiple PES for restoration options in Indonesia undertaken and provides options for design of PES model (yr1)	4.2 Market analysis report and recommendations for PES model (Q3, yr 1)	
4.3 One stakeholder consultation (involving Indonesian and Plan Vivo global stakeholders) to inform design of adapted Plan Vivo 'restoration' Standard (yr1)	4.3 Stakeholder consultation records and design document (Q4, yr 1)	
4.4 Adapted Plan Vivo 'restoration' Standard to secure payments for ecosystem services from demonstrated restoration impact drafted and quality assured (yr2)	4.4 Draft Plan Vivo 'restoration' Standard peer and reviewed and approved by the Plan Vivo Technical Committee (Q4, yr 2).	
4.5 Access to PES extended to at least 250 small holders and/ or forest-dwelling community members in Aceh and Bengkulu Provinces with at least 2,500 planned beneficiaries from equitable benefit sharing mechanism (yr 3)	4.5 Project Idea Note (PIN) submitted (Q1, yr3) and draft Project Design Documents (PDDs) detailing beneficiaries and co-developed equitable benefit sharing mechanism prepared (Q4, yr3) for at least two community forests in Aceh and Bengkulu Provinces.	
<p><b>Activities</b> (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)</p> <p><b>Output 1: Restoration planning</b></p> <p>Activity 1.1: Workshops and stakeholder engagement to define restoration objectives and data needs for spatial prioritisation (yr1). Workshops will be held in each of the two provinces to maximise stakeholder engagement.</p> <p>Activity 1.2: Collation of appropriate datasets, produce a spatial prioritisation workflow and conduct multi-objective spatial prioritisation analysis to assess synergies and trad-offs</p>		

Activity 1.3/4: Focus Group Discussions and village meetings to confirm community consent and to develop community land management plan applying the 'intervention continuum approach' and guiding principles for supporting diversity, as well as local and traditional knowledges, including at least 20% RTE (rare, threatened, endangered) species (yr 1-2)

Activity 1.5: Training workshops to ensure sustained capacity in restoration activity management within two case study landscapes.

### **Output 2: Restoration action**

Activity 2.1: Constructing two tree nurseries in the targeted villages (yr2)

Activity 2.2: Tree planting, weeding, protection and maintenance including re-planting to replace lost stems (yr 2)

### **Output 3: Restoration monitoring**

Activity 3.1: Conduct a user needs assessment and review of existing tools, involving the project partnership team, consultants and relevant stakeholders, in alignment with Activities 1.4 (land management plan), 4.3 and 4.4 (development of the restoration standard)

Activity 3.2: Hold co-design workshops with relevant stakeholders and community representatives to develop app features in detail (yr1 -2).

App development undertaken in collaboration with consultant, Flumens Ltd. Activity

Activity 3.3: Undertake training to build capacity with community membership to understand and use the forest monitoring tool and supply feedback to make improvements to the tool (yr2)

Activity 3.4: Baseline assessment, including survey of naturally regenerating seedlings and mother trees to support recovery of native species and diversity within project areas, and annual monitoring conducted in years 2 and 3.

### **Output 4: Restoration income generation**

Activity 4.1: Cost benefit analysis, including diverse restoration income sources from restoration activities and PES markets, to inform design of PES model in Indonesia

Activity 4.2: Market analysis, in Indonesia and globally, to inform design of PES model

Activity 4.3: Stakeholder consultation to inform design and quality assurance of the Restoration Standard.

<sup>[1]</sup> Tree cover (as quantified by mutually agreed vegetation metrics) is greater than baseline.

<sup>[2]</sup> Socio-economic benefits will be increased relative to baseline (indicators and success criteria will be agreed with community partners). Key benefits will include economic (income and employment), socio-political (knowledge and skills gained, as well as increased voice, agency and inclusion), and ecological (restoration and sustainable use of natural resources).

<sup>[3]</sup> A viable model is one that (a) ensures that income from PES and multi-objective restoration covers project operational costs and delivers tangible livelihood benefits, and (b) is commercially viable. This will be measured through the cost benefit analysis and market analysis.

# Annex 3: Standard Indicators

**Table 1 Project Standard Indicators**

We have selected the following Standard Indicators to track throughout the project.

DI Indicator number	Name of indicator using original wording	Name of Indicator after adjusting wording to align with DI Standard Indicators	Units	Disaggregation	Year 1 Total	Year 2 Total	Year 3 Total	Total to date	Total planned during the project
DI-A03	Number of local/ national organisations with improved capability and capacity as a result of project.	Number of local organisations with improved capability and capacity as a result of project.	Number of organisations	Community forest management organisations	4			4	4
DI-A03	Number of local/ national organisations with improved capability and capacity as a result of project.	Number of national organisations with improved capability and capacity as a result of project.	Number of organisations	Conservation NGOs	2			2	2
DI-A04	Number of people reporting that they are applying new capabilities (skills and knowledge) 6 (or more) months after training.	Number of local people in project villages applying new capabilities in nursery management and restoration 6 (or more) months after training.	People	Women/Men Local people	0			0	25/25
DI-A04	Number of people reporting that they are applying new capabilities (skills and knowledge) 6 (or more) months after training.	Number of people applying new capabilities in wildlife monitoring 6 (or more) months after training.	People	Women/Men Project staff	0			0	5/5
DI-B03	Number of new/ improved community management plans available and endorsed [by a third party]	Number of new/ improved community management plans available and endorsed by an independent certification body	Number	Bahasa & English PDD/ Certification application	0			0	2
DI-B07	Number of people participating in community-based management groups and/ or Payment for Ecosystem Service schemes.	Number of people participating in community-based Payment for Ecosystem Service schemes.	People	Women/Men (direct beneficiaries) Age group	0			0	795
DI-C04	New assessments of community use of biodiversity resources published.	New assessments of community use of biodiversity resources published in community management plan.	Number	Participatory resource use assessment	0				4

DI Indicator number	Name of indicator using original wording	Name of Indicator after adjusting wording to align with DI Standard Indicators	Units	Disaggregation	Year 1 Total	Year 2 Total	Year 3 Total	Total to date	Total planned during the project
DI-C12	Social media presence	Social media presence on Twitter platform	Number	Followers	0				250
DI-D01	Hectares of habitat under sustainable management practices	Hectares of community forest under sustainable management practices	Hectares	Community forest area	0			0	130
DI-D08	Value of ecosystem services generated or protected as a result of project support [ICF KPI 10]	Value of ecosystem services generated or protected as a result of project support [ICF KPI 10]	GBP Sterling		0			0	TBD (a reliable estimate can be made once a community management plan is in place)
DI-D12	Area of degraded or converted ecosystems that are under active restoration	Area of degraded or converted ecosystems that are under active restoration	Area (hectares)	Active restoration typology	TBD				500
DI-D16	Number of households reporting improved livelihoods.	Number of households reporting improved wellbeing.	Households	% levels of moderate wellbeing across 4 villages as assessed through Participatory wellbeing assessment	14-38%			14-38%	≥14-38%

In addition to reporting any information on publications under relevant standard indicators, in Table 2, provide full details of all publications and material produced over the last year that can be publicly accessed, e.g. title, name of publisher, contact details, cost. Mark with an asterisk (\*) all publications and other material that you have included with this report.

**Table 2      Publications**

<b>Title</b>	<b>Type</b> (e.g. journals, manual, CDs)	<b>Detail</b> (authors, year)	<b>Gender of Lead Author</b>	<b>Nationality of Lead Author</b>	<b>Publishers</b> (name, city)	<b>Available from</b> (e.g. weblink or publisher if not available online)
Forest Restoration in Indonesia	Webpage	L Banin (2023)	Woman	UK		<a href="https://www.ceh.ac.uk/our-science/projects/forest-restoration-indonesia">https://www.ceh.ac.uk/our-science/projects/forest-restoration-indonesia</a>

## Checklist for submission

	Check
Different reporting templates have different questions, and it is important you use the correct one. Have you checked you have used the <b>correct template</b> (checking fund, type of report (i.e. Annual or Final), and year) and <b>deleted the blue guidance text</b> before submission?	Y
<b>Is the report less than 10MB?</b> If so, please email to <a href="mailto:BCF-Reports@niras.com">BCF-Reports@niras.com</a> putting the project number in the Subject line.	Main report – Y Annexes - N
<b>Is your report more than 10MB?</b> If so, please discuss with <a href="mailto:BCF-Reports@niras.com">BCF-Reports@niras.com</a> about the best way to deliver the report, putting the project number in the Subject line.	
<b>Have you included means of verification?</b> You should not submit every project document, but the main outputs and a selection of the others would strengthen the report.	Y
<b>Do you have hard copies of material you need to submit with the report?</b> If so, please make this clear in the covering email and ensure all material is marked with the project number. However, we would expect that most material will now be electronic.	N
If you are submitting photos for publicity purposes, do these meet the outlined requirements (see section 16)?	NA
Have you involved your partners in preparation of the report and named the main contributors	Y
Have you completed the Project Expenditure table fully?	Y
Do not include claim forms or other communications with this report.	