Darwin Initiative Main & Extra Annual Report

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

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

Submission Deadline: 30th April 2025

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

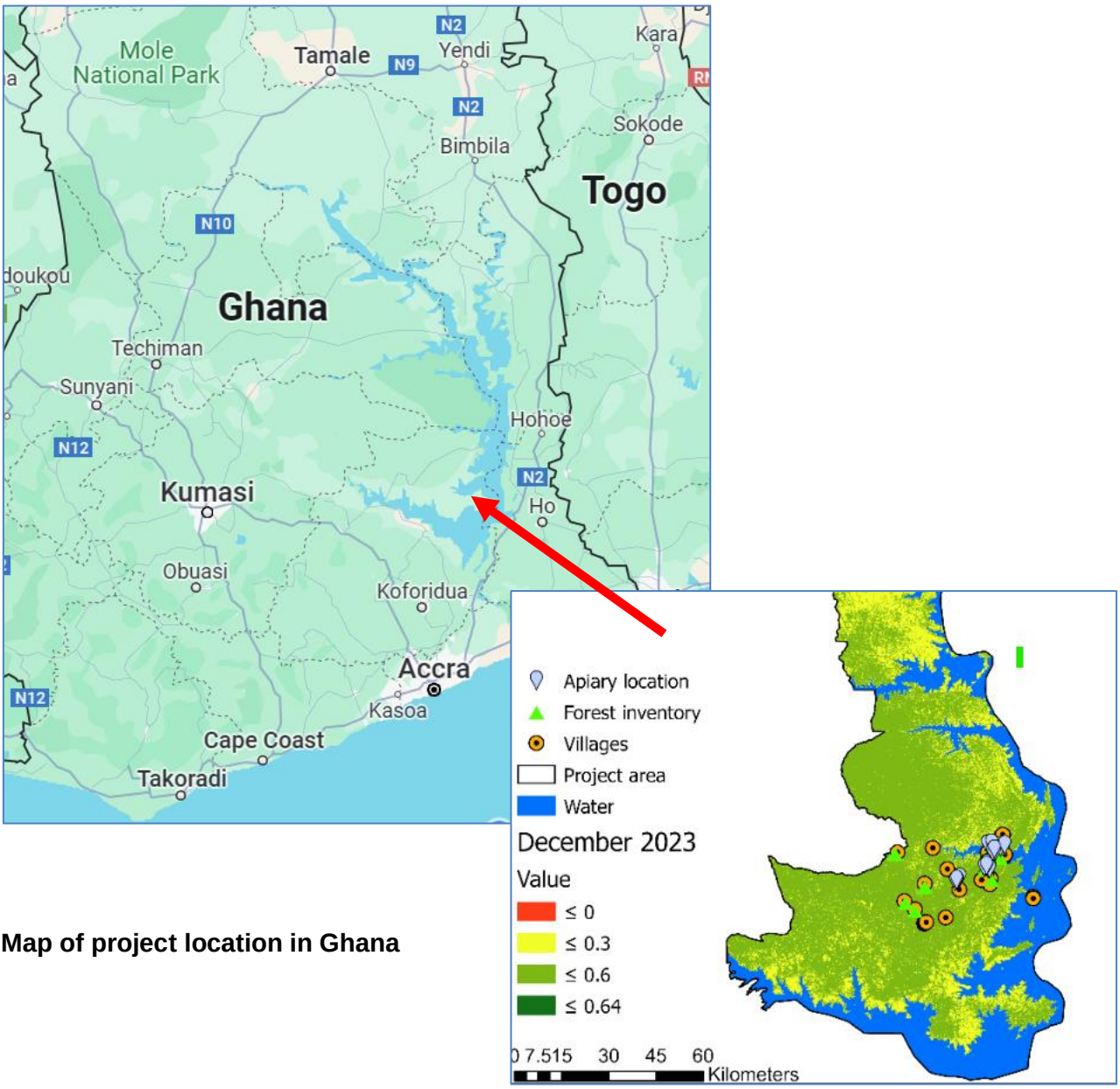
Darwin Initiative Project Information

Scheme (Main or Extra)	Main
Project reference	30-001
Project title	Beekeepers Restore the Forests of Afram Plains
Country/ies	Ghana
Lead Organisation	Bees for Development CIO
Project partner(s)	Bees for Development Ghana
Darwin Initiative grant value	£394,738
Start/end dates of project	April 2023 – March 2026
Reporting period (e.g. Apr 2024 – Mar 2025) and number (e.g. Annual Report 1, 2, 3)	April 2024 – March 2025 Annual Report 2
Project Leader name	Dr Janet Lowore
Project website/blog/social media	https://beesfordevelopmentghana.org/blog/ https://web.facebook.com/BfDGhana https://www.instagram.com/officialbfdghana/ https://twitter.com/BfDGhana https://www.instagram.com/beesfordevelopment/ https://twitter.com/BeesForDev https://www.beesfordevelopment.org/blog/ https://www.facebook.com/beesfordevelopment
Report author(s) and date	Janet Lowore & Isaac Mbroh April 2025

1. Project summary

The forests of Afram Plains, and the biodiversity within, are suffering from unsustainable exploitation, lack of management and destructive dry season fires. People in this area suffer from deep poverty and deprivation – having access to few employment and livelihood opportunities. Despite the degradation, the forests support a healthy honey bee population and good floral resources from trees, shrubs and herbs. The landscape has the potential to support vibrant beekeeping activity. As bees and beehives are economic assets, beekeepers are determined to maintain the forests where their hives are located, and they are fighting to protect forests from wildfires and charcoal production. This project is providing skills training, support and allies to support them in this endeavour. We are also providing a reliable and rewarding route to market

for their honey and beeswax. In this project we are enrolling a further 1,000 beekeepers on our training programme, expanding it to include wildfire management and forest restoration. Working with Ghana's Forestry Commission, we are mobilising communities to invest in forest conservation – by planting trees, reducing drivers of forest damage and encouraging natural regeneration. Led by the Ghana National Fire Service, beekeepers have been trained in bush fire prevention and mitigation. We are assessing the impact on forest recovery through forest inventory, the use of satellite imagery, monitoring burnt areas and vegetation trends, and correlating changes with beekeeping activity.



Map of project location in Ghana

2. Project stakeholders/ partners

We are delivering this project in collaboration with:

Bees for Development Ghana (BfDG) – main implementing partner in Ghana

Afram Plains Development Organisation [APDO] – implementing partner

Ghana National Fire Service – implementing partner

Forestry Commission – implementing partner

CSIR College of Science and Technology (CCST) – technical support

Kwahu Afram Plains North and South District Assemblies – local collaboration

Local communities and their traditional leaders – participants

Project draws together a collaboration of partners and stakeholders to ensure that the project is tailored to meet the specific needs and priorities of the local people, considering context and environment. All partners were engaged in project planning, to varying degrees, and our relationships have matured over the course of Year 2. Decision-making and planning are shared. We have built a collaborative and inclusive partnership to ensure project effectiveness and sustainability. Some achievements of BfD's partnerships in Ghana include:

(a) Stakeholder ownership – building strong partnerships with local organisations and stakeholders has empowered them to take ownership of the project. Ghana National Fire Service and Forestry Commission are actively involved in advocacy and sensitisation of local communities against bush fires and charcoal production.

(b) Mutual benefit – partnerships are based on mutual respect, trust, and shared goals, and this has fostered a sense of ownership and commitment, and BfDG has shared beekeeping skills with other stakeholders, enhancing the project's sustainability.

(c) Our partner APDO have experience of establishing and supporting Village Savings and Loans Associations in the Donkorkrom area. In February 2025 we held a brainstorming session with APDO about how VSLAs can be used as a vehicle to set-up and deliver a beekeeping loan fund – with a focus on meeting the needs of women without capital. Although this conversation with APDO is still in its infancy – this prompted APDO to deliver a training to Bees for Development Ghana about VSLA set-up and management and also lead to a scoping activity – to find out if beekeepers are members of existing VSLAs or not. We resolved, with APDO, to continue this work and seek possible funding options for a new project.

(d) Our collaboration with APDO is centred around the radio broadcasts and this continued to prove successful until the recent disaster (the radio facility burned down).

(e) We engaged with the University of Cape Coast and Kwadaso College of Agriculture and accommodated two students who were undertaking research for their BSc degrees. We made it possible for the students to collect data about the beekeeping and charcoal activities in Kwahu Afram Plains and do research about the livelihood implications of beekeeping and charcoal. This was a bit of a new undertaking for us, and we faced some challenges (one of the students became unwell) – but we have formed a new relationship with these academic institutions as a result.

3. Project progress

3.1 Progress in carrying out project Activities

An additional 39 (31M and 8W) beneficiaries were equipped with skills and knowledge in hive making and apiary setup and management (Act 1.1). The Ghana team decided to direct more efforts into monitoring and supporting the 919 beneficiaries trained in Year 1 rather than training new beneficiaries. One BfD Ghana team member benefited from disability-inclusive approach training from our Ugandan partners. Ghana experienced a long drought from mid-July 2024 into March 2025, which seriously affected beekeeping and the beekeeping calendar. Harvesting training and distribution of harvesting equipment must coincide with the communities' honey harvesting season. Due to the long drought, the honey flow could not happen as expected. Therefore, honey harvesting training (Act 1.2) and distribution of harvesting equipment (Act 1.3) were not actioned. These shall be done in May 2025 or November 2025, depending on the situation. However, bee suits with safety boots were distributed to the beekeepers to help them safely manage their colonies. We continued the weekly radio show on Radio Afram Plains (RAP) FM, promoting beekeeping and offering expert advice, discussing bushfires, and general forest and biodiversity conversation in Afram Plains (Act 1.4). Thirty-eight (38) radio broadcasts have been done from May 2024 to mid-March 2025. The broadcast is currently on hold because the radio station caught fire towards the end of March 2025. Repair works are ongoing and the broadcast will resume immediately after the repairs. There has been continuous monitoring and extension service delivery to the new beekeepers (Act 1.5). Three women trained by BfD Ghana were all employed in October 2024 to provide technical support and extension service to the

beekeepers. The floral data collection exercise started in December 2023, and this activity is ongoing – currently filling gaps to have a complete data set for the project location's floral calendar. The common and scientific names of some of the species flowering in the various communities have been identified with the help of the Forest Service Division of the Forestry Commission. We are working with the Forestry Commission and the CSIR College of Science and Technology [CCST] to identify the common and scientific names of the unidentified species. Data on weather seasons as well as swarming seasons have been collected for December 2023 to November 2024 (Act 1.6).

Evidence: (1) image of beekeeping training in Donkorkrom; (2) image of extension work on the field; (3) GNFS officer on RAP FM; (4) image of radio tracking form; (5) image of fire-damaged radio station; and (6) floral/season data collection forms.

Output 2

The mobile honey system has been updated continuously, making it more efficient for traceability and friendly to the Honey Collection Coordinators (Act 2.2). The processing facility is 100% complete with borehole and water storage tanks installed (Act 2.3). A beeswax extractor had been manufactured locally. Extra honey packaging materials were procured (Act 2.4). Ghana National Fire Service (fire safety) and Food and Drugs Authority [FDA] (food safety) certifications are ongoing and nearing completion soon (Act 2.5). Honey Collection Coordinators were not trained because the honeyflow season was delayed due to the long drought (Act 2.6). The Centre received honeycombs from beekeepers in April and May 2024. The December 2024 – March 2025 honey harvest period was delayed due to the drought (Act 2.8). To broaden our market, we participated in the Eastern Regional Commodity Satellite Market organised by Ghana's Ministry of Food and Agriculture in September 2024. The Centre also exhibited honey and beeswax during the 40th Ghana National Farmers' Day Celebration in Kwahu Afram Plains North District (Act 2.7). Honey and beeswax sales are rising, as many packers and consumers identified the HBTC as a quality honey and beeswax source. A total of 320.8kg of beeswax produced in the year was purchased by a local (Ghanaian) trader (Act 2.9).

Evidence (7): Image of the HBTC from behind displaying poly tanks and borehole pump
Evidence (8): Image of the honey test result
Evidence (9): Image of trade event at the Eastern Regional Commodity Satellite Market

Output 3:

Ninety-five (95) FMVTs in 19 communities received training in wildfire response and community fire management, specific to their roles as volunteers, with the Ghana National Fire Service. This was addition to the community-based fire awareness training delivered in 2023. Firefighting items for the FMVT have been procured and distributed (Act 3.3). No work has been done concerning activity 3.4 due to poor internet connectivity and low technical know-how on the usage of the smart mobile phone by most of the fire management volunteers. Picking of apiary coordinates commenced in Year 1 and is currently going on (Act. 3.5). We continue to create forest fire awareness through our weekly radio show on RAP FM and fire management posters (Act. 3.6).

Evidence (3) and (16): Radio programme discussing bushfire and awareness raising posters.

Output 4:

We were supported with 738 free seedlings from the Forestry Commission nursery from June to October 2024 (Act 4.4). The Forestry Commission trained BfD Ghana field staff on silviculture in May 2024 and some beekeepers in June 2024 (Act. 4.7). BfD Ghana staff provided basic silviculture to beekeepers during the distribution of the seedlings (Act 4.8). Delivered 3117 seedlings to 185 beekeepers in 14 communities from June to September 2024 (Act 4.8). Ongoing support for and monitoring of trees planted by beekeepers began in October 2024 (Act 4.9). This activity will continue in Year 3. Tree population inventory and survival rates assessment led by Prof Appiah as part of the end-of-year project evaluation would be done in Year 3 (Act 4.10). Negotiated agreements between beekeeping groups and the Forestry Commission to establish apiaries in forest reserves began in Year 1, and more investment has been made in this (Act 4.11). More effort would be put into this activity in Year 3.

Evidence (10): Picture of silviculture training, seedlings in a nursery and beekeepers planting tree

Output 5:
We continued constructive engagement with charcoal producers, encouraging them to become beekeepers in the target communities. We interviewed 30 charcoal producers in the target communities (Act 5.1). The opportunity cost of producing charcoal was done to understand the trade-offs between charcoal production and honey production. The traditional authorities and other opinion leaders are being engaged (Act 5.2). Former charcoal producers were interviewed, with interviews posted on social media. Talks on charcoal production and its impacts on the environment aired on the local radio programme 'Farmers Time' (Act 5.3).

Evidence (11): BfD and BfD Ghana team having constructive engagement with traditional leaders, charcoal producers, and beekeepers at Nton-Aboma

Output 6:
A how-to manual for low-cost digital traceability based on the experience of developing and implementing the Mobile Honey and System in Afram Plains (Act 6.1) is being developed nearing completion. We have started to conceptualise an animated explainer video explaining how the Mobile Honey System works and what it is for (Act 6.2) and once finalised, publication of the same will be on BfD Online Resource Centre, BfG Ghana website, Wikifarmer, The Africa Report, KoboToolbox blog and other web-based platforms, alongside press releases in both the UK and Ghana (Act 6.3). The presentation of reviewing the project approach and impact at Apimondia 2025 will be done in September 2025 (Act 6.4). Many activities and progress posts (comprising photos, videos and texts) have been posted on BfD and BfD Ghana's social media handles and website (Act 6.5). Acts 6.6 and 6.7 are yet to be done. Two major review meetings were held during the reporting period (6.8), and articles on the link between honey trade, fire mitigation and forest recovery were published on the BfD website (6.9).

3.2 Progress towards project Outputs

Output 1: 1000 men and women practising sustainable beekeeping and selling honeycomb for fair and rewarding returns

We remain optimistic about achieving the target of 1000 beekeepers by the end of the project. Beekeeping activities have been highly impacted by a long period of drought in the area from 2024 into 2025. Old and new beekeepers experienced absconding and low colonisation of bee hives. This phenomenon influenced the number of potential beekeepers (the newly trained people) who constructed hives. The census conducted in December 2024 revealed that 111 (74m, 37w) more beneficiaries have started beekeeping, making it a total of 627 (502m, 125w) over the two years, from a baseline of 130. We also set a target that for someone to 'count' as a beekeeper, they should manage at least 3 colonies. Even after many colonies absconded (reported by beekeepers) in 2024, the estimated range is between 4 to 40 colonies. The third indicator (income earned) could not be fairly assessed since there was not much honey harvested and sold in the first quarter of 2025 (i.e. the expected season). Nonetheless, the average earnings of beekeepers who sold honey over the reporting period was £151.00, which is 50% above the average earnings in Year 1.

Evidence (12): Image of Mobile Honey System

Output 2: Sustainable honey and beeswax trade established through BfDG Honey and Beeswax Trade social enterprise

The Honey and Beeswax Trade Centre is well-established and operating. Beekeepers in the Kwahu Afram Plains identify and appreciate the centre as a reliable market for their honeycomb. Consumers and packers also visit the centre to purchase honey. During this lean honey season in Ghana (November 2024 to March 2025), we have had calls from packers in the Kwahu Afram Plains, Volta Region, and other parts of the country searching for honey to buy. These have established the fact of the viability and potential for financial success of the social enterprise. The 5.8 tonnes of (refined) honey produced in project Year 1 have all been sold out. The honey

produced (3.4 tonnes) in project Year 2 is also sold out. The Centre earned about £4000 of income (difference between total spent, and total earned before deducting costs).

The Year 2 target aimed to purchase 18 tonnes of honeycomb and pay beekeepers £19,800. Between April and May 2024 the Honey and Beeswax Trade Centre purchased 3.4 tonnes, which earned beekeepers £5,025.20. We were on track to meet our target if we consider capacity of the Trade Centre, capacity of beekeepers, logistics, hives made by beekeepers and confidence in being able to sell. Our target was not met due to the drought in 2024 (extending into 2025) which severely impacted on flowering, nectar production and honey.

Output 3: Integrated fire management practiced by beekeepers across 20 communities in Afram Plains, in collaboration with Ghana National Fire Service.

Twenty (20) volunteer teams (target = 20) were formed with 80 members (target = 100). However, in Year 2, 95 members from 19 communities gained additional specialist training from the Ghana National Fire Service. We could not complete the training due to the unavailability of some volunteers at the time of the training. Following the additional specialist training, fire management tools and equipment were procured for the fire volunteers to enable them to work efficiently. Per recommendation from the Ghana National Fire Service, these fire volunteers should be inaugurated and gain recognition from the general public and the GNFS.

Output 4: Beekeepers plant and protect trees by their apiaries, on their land, on land granted for this purpose by chiefs and on forest reserves

The number of apiaries established within the fringing forest reserves increased to ten (10) in Year 2. Extensive efforts are being made to meet the target of 20 apiaries at the end of the project.

Beekeepers planted 3117 seedlings in Year 2. The target of beekeepers planting 5000 seedlings at the end of Year 1 was not reached because the cost per seedling increased and the conditions for tree-planting were very poor (drought). The drought caused some mortality and the surviving trees are 1226 (as at March 2025). The target of a 70% survival rate was not met, as only 39.33% survived due to a change in the rainfall pattern and a long period of drought over the reporting period. The good news is that beekeepers and the project team have learnt from this, and beekeepers are keen on irrigating their young trees after planting to achieve a higher survival rate in the coming year. Beekeepers are using silviculture and wildfire mitigation knowledge and skills to protect the surviving trees. We are also planning to pivot our approach away from tree planting in some locations, towards managed natural regeneration.

Evidence (13): Beekeepers with their surviving trees

Output 5: People understand the negative impact of charcoal burning on honey production and the advantages of beekeeping as a sustainable livelihood

The charcoal economy survey result indicates that people fully understood the negative impact of charcoal burning and the benefits of beekeeping as a sustainable livelihood. In our engagement with the beekeepers, we recorded that the number of beekeepers involved in charcoal production is reducing – quite a number of people have stopped their involvement in charcoal burning after witnessing what others in the same communities earned from keeping bees.

There is strong evidence that beekeepers are stopping charcoal production. For example, Joyce Brebi of Nton-Aboma and Samuel Drie Dodzi of Bebuso testified that they have stopped producing charcoal and are now engaged in beekeeping.

A profitability analysis for charcoal making was conducted – see Annex 5. Chainsaws are used to cut trees for charcoal and to cut Borassus palms for making beehives. The results in Annex 5

show that an investment of GHC 2080 in charcoal production yields a loss of GHC 580 (about £29), whilst an investment of GHC 1694 in beekeeping can yield a profit of GHC 1694. Both require 6 litres of fuel for the chainsaw and this '6 litre of fuel' was used by the respondents as return on investment measure i.e. spending 6 litres of fuel gives more back in beekeeping, than charcoal making.

The comparison presented in Annex 5 is the one used and presented by local people – but it is clearly simplistic in other ways. There are many other factors which determine participation in charcoal making and/or beekeeping. In the Afram Plains landscape bees are highly mobile, depending on the season, so 100% occupation is rarely achieved. However, Borassus logs last 'forever'[1] and **give a yearly income** with very little repeat financial outlay – so (without discounting) the £68 a year profit in Year 1 may deliver £100 a year for the next 20 years. On the other hand, as we have learned in 2024 honey yields fall in times of severe drought, whilst charcoal making can continue. Charcoal making can be done 'as and when' whilst, honey can only be harvested when it is ready.

In the analysis [Annex 5] the charcoal making yields a loss – raising questions about why people do it at all. The answer is that charcoal traders sometimes give advance payments to people, taking advantage of their extreme need for cash. If they fail to make enough money to offset the advance payment the charcoal makers fall into debt. This speaks to the need for people to gain greater financial self-sufficiency which is why we are now introducing a new component to the work, towards enabling beekeepers to establish savings and loans groups.

Honey production is a more profitable venture and has the potential to sustain livelihoods and conserve biodiversity. The benefits of beekeeping far outweigh those of charcoal production. Many people are involved in charcoal production because they need immediate cash, and are attracted by advances made by charcoal traders.

Can the two be done side by side? Does the one impinge on the ability to do the other? Yes the two can be done side by side, up to a point, but this depends on scale. Beekeepers will not make charcoal at the same place where they are keeping their bees and will deter other people from doing so, but there is a lot of land and forest 'out there'. It appears that opportunity cost of land use choices is not the main driver here – it is socio-economic drivers. If beekeeping gives people the economic freedom to give up charcoal burning, they will do so willingly.

Evidence 14: Photo of Joyce Brebi of Nton-Aboma and Samuel Drei at Bebuso testified that they have disengaged from making charcoal.

Output 6: Stakeholders interested in reversing forest degradation through honey trade have access to information, project results and a blueprint for a low-cost, digital traceability system based on the Mobile Honey System

Information and project results on our website have been published on our social media handles and websites. See Table 2 below.

With great support from BfD and BfD Ghana, Bees for Development Ethiopia developed a similar traceability system for a forest conservation project in southwest Ethiopia. Beekeepers are selling honey to cooperatives with the traceability system, and the testimonies are overwhelming. Another startup in Ghana, Tropical Ecoharvest, also made contact with the Ghana team to learn and adopt this traceability system.

[1] Borassus logs are long-lasting and resist rot, termite damage and fire. This not only favours a high return on initial investment but also offsets concerns about depleting the resource itself. Some hives are made from palms which have been felled when clearing land and because they are durable they can be found lying around. Some are felled to make hives – but again because they last for a long time, once a beekeeper has established an apiary they do not need to replace the hives whilst the palms are re-growing.

3.3 Progress towards the project Outcome

Project Outcome: Beekeeping, fire management and forest restoration by communities in Afram Plains, leads to sustainable livelihoods, less reliance on charcoal trade, reversal of forest degradation, and regrowth of scarce tree species.

Outcome indicator 0.1: *Number of people engaged in profitable beekeeping. Target by end of project = at least 1000 beekeepers, of whom 350 women (from baseline of 118 beekeepers of whom 28 women1).*

In this project year we focused on the provision of technical support to the 919 people trained the previous year. We also trained an additional 39 people (31m, 8w) in December 2024. This increased the number to 958. During the provision of technical support, we noticed that some of the original cohort of people trained had died or moved away, whilst other people not trained had adopted beekeeping. Monitoring data collected so far suggests that an additional 111 (74m, 37w) people made hives, and this increased the number from 362 in Year 1 to 473 in Year 2. We are monitoring active participation in beekeeping by using the app FarmerLink. 473 = new beekeepers since project start, making 627 including those who were beekeepers before project start.

See Evidence 20 in Annex 4.

Outcome indicator 0.2: *Number of people who disengage from commercial charcoal production by the end of the project, as a result of keeping bees. Target = 100 beekeepers*

We have anecdotal evidence and have adapted our FarmerLink App to include this as a question. The full results will be available in the final year of the project.

Outcome indicator 0.3: *25% reduction of charcoal trade in the project area.*
We are yet to assess indicators 0.2 and 0.3. However, qualitative data indicates that people are reducing their commercial involvement in charcoal making drastically. We will be in better position to provide some quantitative results in our next report.

We have identified two approaches to collect quantitative data: (1) record keeping at ferry crossing at Ekye (2) data collected by the Forestry Service Division of the Forestry Commission.

Outcome indicator 0.4: *20% increase in density and extent of vegetation through natural regeneration and tree planting, across apiary cluster sites averaging 1000 hectares each, by the end of project.*

BfD Ghana's trained beekeepers planted trees to increase the density of the vegetation. Despite the change in the rainfall pattern, the long drought and bushfires, beekeepers invested much effort to protect their apiaries and trees from wildfires. Notwithstanding the relentless efforts of beekeepers to protect their hives from the fires, a few of them reported that they had lost some hives to the bushfires – this because they have travelled and had left their apiaries unattended. This act of protecting apiaries is contributing to the density and extent of vegetation through tree planting and natural regeneration.
We are just now engaging with a GIS consultant and working with him to develop a methodology to measure impact of apiary set-up on surrounding vegetation. Results to follow in Year 3.

Evidence (15): Apiaries and trees protected from wildfire at Nton-ABoma and Bondaso

Outcome indicator 0.5: *50% reduction in burned area between December and March, across 20 apiary cluster sites averaging 1000 hectares, by the end of project.*

A total of 627 beekeepers (111 new beekeepers in project period) with an average apiary number of 4 have cumulatively protected over 500 hectares of land while protecting their colonies and hives. They did this by adopting fire mitigation or prevention practices. We are optimistic that they are going to protect more areas in the coming years as we continue with our fire management

campaigns across the project area. As the fire management teams continue to raise awareness of bushfires in the various communities, the project team are using fire posters illustrating the causes and impact of bushfires, which have been distributed to beekeepers and pasted at vantage points in the communities to educate community members on bushfire impact and mitigation strategies. Beekeepers at Abomesarefu testified of reduced bushfire incidence in their community as result of the campaign.

Evidence (16): Images of fire posters, educating communities about wildfires and fire mitigation strategies

Outcome indicator 0.6: *10% increase in tree species richness across 20 apiary cluster sites averaging 1000 hectares, by end of project*.

Through the planting of trees and the protection of apiary sites and study plots, we expect a reasonable increase in tree species richness across the 10 study and protected plots (we are yet to repeat the forest inventory work). However, beekeepers at Adzasekope mentioned that the 1-hectare land size used for the Plant Species Population and Diversity Baseline Survey Study has become a haven for many wild animals whose habitats have been ravaged by wildfires. Beekeepers at Nton-Aboma, Avatime, and Mmradan see the 1-hectare study plot as a haven and forage-rich site to establish their apiaries. As of the reporting period, 10 beekeepers have established 10 apiaries on the study plot at Nton-Aboma and 1 beekeeper has established an apiary on the study plot at Avatime.

The species richness count will be done in Year 3 and compared with baseline inventory.

3.4 Monitoring of assumptions

Assumption 0.1. Demand for honey remains reliable and strong, as does demand for residue-free beeswax internationally.

Comment: This assumption still holds as honey demand remains strong and international beeswax buyers continue to demand residue-free beeswax. This is evidenced in the number of calls received from potential buyers in Ghana and abroad. Others in the business, for example, Saltpond Honey Centre, indicate that they are never short of customers, but they sometimes experience a shortage of honey. Our Honey and Beeswax Processing Centre in Donkokrom also more demand for honey, than we could supply.

Assumption 0.2. Income from beekeeping more than compensates income from charcoal burning. Preliminary evidence of this from Bondaso community supports this assumption.
Comment: This also still holds and beekeepers who featured on our weekly radio show gave testimonies stating that honey production is more rewarding and less difficult to engage in compared to charcoal production [also see data on page 8 above]. Women state that they prefer beekeeping to charcoal making, because they can do beekeeping by themselves – whereas they have to pay men to make charcoal for them. Whilst it is possible to make more income and more profit from beekeeping, beekeeping income comes in ‘infrequent lumps’. To use beekeeping as a springboard for greater economic prosperity, it is essential that beekeepers can either save or re-invest their honey income, so that can have year-round income.

Assumption 0.3. Charcoal production is not displaced to non-beekeepers, because beekeepers influence the traditional authorities which regulate tree felling.
Comment: We believe this assumption is still relevant up to a point, but we are mindful that the demand for charcoal (from urban consumers) will not be impacted by this project – and so displacement may occur.

Assumption 0.4. Forestry Commission continues to set tree planting targets and provide seedlings to volunteers.
Comment: Forestry Commission is the leading institution in Ghana promoting tree planting and provides seedlings to people who are interested to plant trees every year and so we are confident

that we can rely on them to supply seedlings to beekeepers. We have also linked up with the Green Ghana Initiative.

Assumption 0.5. Dry season not extraordinarily severe or prolonged.
Comment: We remain mindful that beekeeping and honey production can be impacted by weather extremes. We can report that there was a prolong drought during the reporting period affecting honey production levels and timing of harvest.

Assumption 0.6. Forestry Commission [FC] successfully broadens range of species in seedling nursery. Sufficient genetic reservoir of fire-sensitive species to allow natural regeneration.
Comment: The FC remain interested in raising any kind of species the project may require.

Output assumptions:

1.1 Interest in beekeeping remains high. Local honey bees continue to be very prolific and occupy hives readily.
Comment: Interest in beekeeping remains high in the area. We have witnessed a very strong and increasing interest for beekeeping, integrated with forest conservation, across the Afram Plains. This is evidenced in the number of people who come to the Honey Centre asking to join the project and be trained in beekeeping. We are responding to this demand by organising additional training sessions at the Centre. The wild honey bee population is large.

1.2 The processing centre in Donkorkrom is completed and has capacity to process the growing supply of honey. National demand for quality Ghanaian honey remains strong. We continue receiving purchase requests for beeswax from export agents.
Comment: We have completed Honey and Beeswax Processing Centre and working on increasing and investing in our capacity to process the anticipated growing supply of honeycombs. We continue to receive many enquiries from people asking for honey and beeswax.

2.1 Market for honey and beeswax is not hit too hard by cost-of-living crisis. Cost of fuel does not increase further.
Comment: Honey and beeswax sales have not been affected by cost of living, but the cost of distributing packed honey is high due to increasing fuel price – most sales are in urban area where people still have some reasonable purchasing power and further away from our production centre. We need to invest in our business plan, and develop a cost-effective distribution system. It is normal that honey is produced a long way from the main urban centres.

2.2 Price of 20GHS per kg of honeycomb continues to remain attractive for beekeepers as their volumes grow (compensating for inflation).
Comment: The price per kg of honeycomb has been reviewed upwards to GHS25 per kg to compensate for effect of inflation in Ghana in 2024. This price though attractive for beekeepers in Kwahu Afram Plains but there is also growing concerns demanding a review of the price this year – 2025. This is happening as result of strong demand of honey from other honey traders who are trying to meet the demand in the urban areas.

2.3 Access to sufficient land for new apiary sites and sufficient floral resources to sustain production – otherwise we expand number of communities where we train and register beekeepers.
Comment: This assumption holds true. There is abundant space to locate apiaries and sufficient floral resources to support honey production.

3.1 The extent of land that beekeepers will be able to protect around their apiaries will also depend on their time availability.
Comment: Conversations which beekeepers still suggest that beekeeping and apiary protection is ‘worth it’ – when considering labour versus income.

3.2 Beyond the economic incentive to protect hives and livelihoods, FMVTs will also find motivation in good team dynamics and sharing common purpose.

Comment: Yes, in addition to the economic incentive, FMVTs and beekeepers are becoming aware of the need to work for the public good, to raise awareness, and to coordinate community fire management and wildfire response.

4.1 Beekeepers continue to be interested in reforestation and respect terms of agreement with FC to access reserves (no hunting, farming, clearing).
Comment: This remains relevant because if beekeepers break the terms of agreement with FC they will be denied access to useful beekeeping sites.

4.2 FC continues to raise tree seedlings and broadens range of species successfully, including trees that provide abundant nectar and pollen for honey bees.
Comment: We are confident that we can rely on FC to supply seedlings to beekeepers every year and they are proving amenable to specific species requests.

4.3 FC and beekeepers ensure adequate measures are taken to protect seedlings planted and to protect natural regeneration.
Comment: Over reporting period, there was long drought which really affected beekeepers' efforts to nurture seedlings. Some went the extra mile to water their seedlings to aid survival. We recognise the effort required for this, when people struggle to carry water for household needs.

4.4 Sufficient genetic reservoir for natural regeneration.
Comment: This appears to be true as the permanent sample plots selected for the forest inventory are showing strong signs of natural regeneration.

5.1 Beekeepers successfully influence traditional authorities to consider the costs of charcoal production in terms of foregone honey production.
Comment: We increasingly understand that traditional authorities have relatively little influence over the activities of charcoal burner – so this assumption may not stand.

5.2 We succeed in getting across a positive message of the opportunities offered by beekeeping (rather than criticising charcoal making) so as to not alienate charcoal makers.
Comment: This remains relevant.

6.1 That no other traceability and supply chain management systems with comparable specifications and use cases are developed concomitantly, which are superior in functionalities or ease of use, and are made freely and widely available - thus reducing need/demand for the method underlying our system.
Comment: This is still relevant.

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

Target impact in application form: Thriving rural communities across Afram Plains where women and men earn stable incomes by safeguarding and restoring biodiversity in forested landscapes and sustainably managing native honey bee populations.

Portions of the forest landscape where beekeepers establish their apiaries are being protected from bushfires. In Year 3 we will re-measure the permanent forest sample plots to investigate how forest in this landscape responds to protection from fire. This will provide an indicator of what biodiversity gains we might be able to predict will occur to forests which are used for beekeeping.

Although not an outcome that the project is seeking to measure the Wildlife Service reports that since people have started to adopt sustainable beekeeping, the number of people entering Digya National Park for honey hunting has reduced. Since honey hunting often involves felling trees and burning bees, a reduction in this activity has a positive impact on biodiversity.

Beekeepers continue to use honey income to build houses, pay school fees, support farming, and provide food for the family. Beekeepers' efforts have been recognized by the Department of

Agriculture in the Kwahu Afram Plains and two of them were awarded District Best Beekeepers. They received some equipment to support their beekeeping business.

Evidence (17): Improved house built by Hawa & Ibrahim Issah, using honey income at Kodjobator

Evidence (18): Abdul Shafik Asminu of Kodjobator receiving the District Best Beekeeper at the Kwahu Afram Plains North District during the 40th National Farmers' Day Celebration.

4. Project support to the Conventions, Treaties or Agreements

National Level (NBSAP):

1. Reducing the rate of loss of all natural habitats, including forests, to at least half and where feasible brought close to zero, and degradation and fragmentation significantly reduced (Aichi Target 5).

We are empowering beekeepers to address drivers of deforestation through fire management and tree planting, while also advocating to reduce communities' reliance on charcoal production. More bees in the landscape can achieve increased pollination which accelerates recovery of vegetation.

2. Maintaining the genetic diversity of cultivated plants and farmed and domesticated animals and of wild relatives (Aichi Target 13).

We are promoting sustainable health and genetic integrity of native honey bee populations, through promoting nature-based beekeeping and habitat creation.

3. Restoring and safeguarding ecosystems that provide essential services, including ecosystem services (Aichi Target 14).

We are supporting beekeepers' forest restoration activities. This is because if trees, vines, shrubs and grasses are protected from fire, and not destroyed, they can provide essential habitat for wildlife, as well as food, medicine and building/crafting materials that are vital for local people. We are doing this through the delivery of technical and logistical support for bushfire management activities in collaboration with Ghana National Fire Service.

4. Enhancing ecosystem resilience and restoration to promote the contribution of biodiversity conservation to carbon stocks and ensure restoration of at least 15 per cent of degraded ecosystems. (Aichi Target 15).

We have collaborated with Ghana National Fire Service to train Fire Volunteers across project communities to lead the fight to reduce extent of vegetation lost to fire during dry season. We are also empowering beekeepers to plant and nurture trees on their farms. From literature we know African fires are responsible for 14% of global CO_2 emissions from fossil fuel burning. Beekeeper-led indigenous fire management is scalable, provided there is market for their products. Our Mobile Honey System is replicable and scalable, expanding market opportunities for African honey and beeswax.

5. Knowledge, on the science base and technologies relating to biodiversity, its values, functioning, status and trends, and the consequences of its loss, are improved, widely shared, and transferred, and applied (Aichi Target 19).

Since December 2023 we are collaborating with beekeepers to develop floral calendars for: (1) correct timing of beekeeping activities (2) targeted planting to increase diversity of forage for bees throughout the seasons and (3) tracking of changes in seasonal patterns. As part of our tree population inventories led by Prof Mark Appiah of CSIR College of Science and Technology (CCST) we are monitoring ten permanent sample plots. The next assessment will be done in the third quarter of the third year.

International level:

1. CBD - Addressing COP 9 Decision IX/5, (b) major human-induced threats to forest biodiversity, (f) lack of market access for value-added forest products, (g) forest-biodiversity monitoring, (k) forest restoration, and (m) involving local and indigenous communities.

Through community sensitisation and radio broadcast/campaigns the project is contributing to human-induced threats (such as bush fire and charcoal production) to forest biodiversity. The completion of the Honey and Beeswax Trade Centre in Donkorkrom is providing market access for valuable forest products i.e. honeycomb – beekeepers have sold nearly 12 tons of honeycombs through the centre. The project has reached over 900 local people and about 24 indigenous communities.

2. UNFCCC – Contributing to commitment to halt and reverse forest loss by 2030 in Glasgow Declaration on Forest and Land Use (COP26). The project is working towards reducing the drivers of forest loss.

3. SDGs – We are creating income opportunities for rural poor in districts with poverty incidence between 43.6% and 59.7% (SDGs 1,2,8,9). Through the project, beekeepers have earned GHS213085.00 (£12,773.05) within the reporting period. The project is also promoting sustainable production and consumption of bee products (SDG12). Through delivery of fire management training to beekeepers we are contributing to reducing forest fires (SDGs 13,15). Again, we are working on removing barriers excluding women and persons with disability from opportunities offered by beekeeping (SDG 5).

5. Project support for multidimensional poverty reduction

Project is being implemented in Ghana a lower middle-income country which is experiencing a number of macroeconomic crises and debt distress. This is resulting in worsening poverty levels and falling living standards of the population. The “international poverty” rate is estimated at 31.4% in 2023, a worsening of 4 percentage points since 2022 [World Bank 2024]. The project site is located in Kwahu Afram Plains North. In Kwahu Afram Plains North, 48.5 per cent of the population live in multidimensional poverty, and the average intensity of poverty is 41.9 per cent. Kwahu Afram Plains North is placed 235th out of the 261 districts in terms of the percentage of the population living in multidimensional poor households. Within the Eastern Region it is placed 33rd out of 33 districts (i.e. the poorest). Kwahu Afram Plains North (KAPN) is most deprived in the areas of improved toilet facilities (92.2%), housing (78.8%), and drinking water (68.1%). For 12 out of 13 indicators, Kwahu Afram Plains North had a higher deprivation than the national averages.

The beneficiaries of this project are the rural poor in KAPN.

This project is having an impact on poverty levels through raising cash incomes. This is already occurring as indicated above.

Evidence (9): Images of beekeepers selling honey.

6. Gender Equality and Social Inclusion (GESI)

GESI Scale	Description	Put X where you think your project is on the scale
Not yet sensitive	The GESI context may have been considered but the project isn’t quite meeting the requirements of a ‘sensitive’ approach	
Sensitive	The GESI context has been considered and project activities take this into account in their design and implementation. The project addresses basic needs and vulnerabilities of women and marginalised groups and the project will not contribute to or create further inequalities.	
Empowering	The project has all the characteristics of a ‘sensitive’ approach whilst also increasing equal	X

	access to assets, resources and capabilities for women and marginalised groups	
Transformative	The project has all the characteristics of an 'empowering' approach whilst also addressing unequal power relationships and seeking institutional and societal change	

Project pays close attention to gender inclusion. Before project start many of the people harvesting and selling honey were honey hunters – a wholly male activity. One of the strengths of our approach has been to show that beekeeping is accessible to women, unlike honey hunting. Honey hunters travel deep into the forest, not practical for women, whilst bee hives can be established in the farm land or near the village. This narrative is bearing fruit and 41% of the beekeepers registered on Farmer Link are women.

Despite progress, barriers remain. In 2024 of the 106 who sold honey to the Honey and Beeswax Centre, 21 were women and 85 were men. Women tend to have fewer beehives than men.

There are a number of barriers which are specific to women and these include:

- Some communities are muslim and women are discouraged from attending events which are also attended by other men – we have solved this problem by inviting women to attend training in women-only groups
- Women have less disposable income than men, making it hard for them to obtain the resources need to make hives / buy hives – we are working to reduce this problem by exploring how we can support Village Savings and Loans Groups – a community-based solution towards providing financial services at village level. This is new work we are exploring with support from implementation partner APDO
- Women have limited free time to make their own beehives, and some prefer to pay men to do it for them – this reduces their profit. We held a meeting with APDO to discuss the idea of creating a beekeeping loan fund for women (this is work in progress).

On gender the Bees for Development Ghana staff team is skewed towards women. The team of nine comprises four men and five women, with the women holding responsible positions. We are proud of our team as those women who work directly in the community serve as role models to others, and show that women can take on positions of influence and leadership in the beekeeping sector.

We have recently appointed one person in the team to take on the role of Gender and Social Inclusion Coordinator.

Despite the barriers mentioned above beekeeping is accessible to women. In a recent meeting in Ntona-Boma, Joyce Brebi explained, "Beekeeping is accessible to us women and is better than charcoal making. With charcoal we give money to men to do for us, but sometimes they just take the money and we never get the charcoal. With bees – they are mine and I can do it by myself".

In Year 3 we will endeavour to break down the barriers facing people with disabilities and in March we engaged with the Office of Social Affairs in Donkorkrom towards this end, and project staff attended disability mainstreaming training in April 2024.

7. Monitoring and evaluation

Overall responsibility for M&E lies with the Project Leader, Janet Lowore, who is supported by the Project Manager in Ghana, Isaac Mbroh and the wider team. Based on the Project Logical Framework we created an M&E plan at project outset which sets out baseline data and/or how to collect baseline data (where we did not have this data) against each output indicator. A baseline survey was undertaken July-September 2023 and 305 men and 273 women were interviewed. The M&E plan also included milestone targets, source of evidence, method of

collecting evidence, timing of evidence collection and person responsible. We are using an M&E database within a Salesforce environment for storing (and or signposting) evidence data. The main local partner in Ghana collect data that feed into this database which means the lead partner and the main local partner in Ghana share M&E work. BfDG is also using FarmerLink platform to collect data on beekeepers to track their beekeeping progress. Regular meetings are held (online) between BfD and BfDG. We held a review meeting in November 2024, and this meeting was attended by representatives from all implementing and collaborating partners during which time we examined our progress against our targets and discussed any challenges or issues.

Where possible we have built formative assessments into Project activities, for example, asking beekeepers to recall learning points from earlier training sessions, and using this feedback to inform subsequent training. Our Mobile Honey traceability system records all honey purchases and this data indicates, in real time, the rate of beekeeping adoption, success and income earned which contributes to the overall livelihood improvement. Regular beekeeper and apiary visits by BfDG team has helped to assess the rate of beekeeping adoption and the number of hives and colonies managed by beekeepers – this is made possible using FarmerLink app. Over the reporting period, we visited all project communities to make these assessments. These steps have helped us to track progress over a period and have identified areas of support.

We understand biodiversity changes do not happen rapidly and may not be discernible until end of Project, which is why we have included a wide range of intermediary indicators. The biodiversity changes will be measured in Year 3. See Evidence 21 concerning approach to NDVI metrics. **Refer to Annex 4 for evidence of achievements**.

8. Lessons learnt

Financial literacy and access to savings are critical. We have seen strong interest among beekeepers to save and manage their income, but a lack of financial literacy and accessible savings mechanisms has been a barrier. Again, a good number of people (especially women) we trained in Year 1, complain about a lack of money to build hives to start beekeeping, hence the need for financial support. To address this, the project is now planning to introduce Village Savings and Loan Associations (VSLAs) in the communities. These grassroots financial groups will not only offer a practical way for people to save and access small loans but also provide a platform for regular financial literacy training. We expect this to strengthen economic resilience and enable beekeepers to reinvest in their enterprises more effectively. Importantly these VSLA groups offer a sustainable and lasting development opportunity – in contrast to hive donations

We have learned also that while tree planting is often promoted as a simple environmental fix, in the Kwahu Afram Plains context it is not always practical or effective. We think the real priority should be reducing the drivers of forest degradation (i.e. unsustainable farming, charcoal burning, and bushfire) rather than only focusing on planting new trees.

We also learned that the harsh environmental realities limit survival of trees planted. Water scarcity is a major constraint in parts of the project area. Expecting people to water seedlings when household water is limited is unrealistic. Tree planting efforts are more viable near homes or farmland where care is easier, rather than in distant bush areas where neglect is more likely. Hence with regards to site selection, planting near homesteads or on farm and/or its boundaries has proven more successful than trying to reforest large communal or remote areas. This lesson highlights the need to integrate restoration with people's daily lives and routines.

Community engagement needs continuous strengthening and long-term change depends on deep and sustained community ownership. Regular dialogue, participatory planning, and responsiveness to local realities are essential to keep motivation and trust high.

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

No.	Comment	Discuss with BCFs Admin	Next half year report	Next Annual Report	No response needed
1	The project states that it would be more logical and relevant to consider average income per person, as beekeepers are concerned primarily with their total take-home income, rather than earnings per colony. While this is clear, it is unclear why earnings per colony are significantly lower than originally targeted. How was the target of £16.50 per colony established? What is the average return per colony? And why is this return significantly lower than targeted?			x	
2	Indicators for Output 3 are not timebound and indicator 3.1 lacks a target. Please revise.			x	
3	Has a charcoal opportunity cost assessment been undertaken to establish the scale of HH income that may be required to permanently disincentivise illegal charcoal activities? It would be useful to understand the economics here.			x	

No. 1. Measuring beekeeping success. The target of £16.50 was arrived at through a desk-top calculation by multiplying expected honey comb yield by honey comb sale price at the time [10kg of honey comb per colony x £1.65 per kg]. We did not report that the return per colony was lower than £16.50 – in fact project and beekeepers are not measuring this. Project and beekeepers are recording total sales from all their bees. We do record the number of hives that beekeepers have but this does not equate to number of colonies as some hives are empty and not consistently. Honey bees in this environment are highly mobile – their swarming, migration and absconding rates vary much from season to season, and keeping track of number of colonies at any one time would be difficult – as constantly changing. Beekeepers base their beekeeping cost-benefit analysis on total effort expended by them (not their bees!) (i.e. time, money, resources) compared to total income. This is why we have changed this indicator to **average beekeepers' income in GBP per year from total honey sales.**

No 2. This has been corrected. See Logical Framework below.

No 3. Yes this has been done. See Output 5 above.

We updated the Logical Framework in October 2024 and submitted it with a non-financial change request in October 2024. We are using the most up-to-date version here.

10. Risk Management

Updated risk register submitted.
Yes – one new risk has arisen. The project area experienced a severe drought in 2024. This affected honey yield and tree planting success. We are adapting to this risk by:

- introducing a new component to the project about Village Savings and Loans Groups. The aim is to leverage honey income towards savings and re-investments with view to creating more resilient livelihoods that are less susceptible to shocks.
- by shifting emphasis away from planting seedlings which are extremely vulnerable to drought, to management of natural regeneration.

11. Scalability and durability

The project is highly visible in the Donkorkrom area. (1) The fully-completed Honey and Beeswax Trade Centre provides visible and tangible evidence of economic development in the area and receives attention and visitors. Many stakeholders are impressed not only by the building but also by the increasing number of people interested in beekeeping who have ready market for their product. (2) Our honey brand (Digya Forest Honey) is putting Kwahu Afram Plains on the map. Traditional leaders are excited by this development and are happy to be associated with this project – one new outcome is that they have given out a parcel of land to be used for building a beekeeping training centre. They see this as helping to change the 'negative perception' about Kwahu Afram Plains – poverty and bad road network. (3) The radio programmes aired by RAP FM are reaching into the homes of thousands of people (target and non-target) across the Kwahu Afram Plains landscape. This is creating extensive visibility and interest.

We continue carrying stories, blogs and new updates on the websites and social media channels of BfD UK and BfDG.

Our visibility nationwide is still not as strong as we would like it to be, so we have embarked on media engagement to improve our visibility countrywide. At a recent meeting organised by the international NGO World Vision in Ghana for grass-roots organisations, we learned that BfDG was not known to the other organisations. This once again, served as a wake-up call that we need to double our efforts to be more visible and reach out to a wider network of stakeholders.

It was against this background that we were delighted that Gideon Zege (BfDG) was nominated for the MTN Hero of Change Award and received good coverage on national television.

Ghana MTN hero award Gideon – Google Search

There is very strong and increasing interest in beekeeping, integrated with forest conservation, across the Kwahu Afram Plains and beyond. One piece of evidence of this is the number of phone calls we receive and the number of people who come to the Honey and Beeswax Processing Centre asking to join the project and be trained in beekeeping. We are responding to this demand by organising additional training sessions at the Centre – so the trainees bear the cost of travelling, and BfDG provides the training.

As the honey sales are picking up in more distant towns, we are using the honey sales to 'tell the story' about the project, about the beekeepers and about the impact on forest conservation. This is generating interest and demand.

There is no question about the legacy in terms of beekeeping and honey trade. More and more people are taking up beekeeping, and the demand for high-quality honey remains high. The Honey and Beeswax Trade Centre and the honey business will continue long after the project.

The impact of the growing beekeeping economy on forest recovery is still in its infancy. Anecdotally, beekeepers are showing forest patches that they are protecting. One person reported losing a colony to forest fire because he was away for a long time with no one caring for his bees. A few other beekeepers reported losing hives to fire in the dry season on 24/25. Upon probing, we realised that the people who lost hives to fire were those who had been away from their village for a long time, leaving their apiaries unattended. Those who attend their apiaries protect them from fire and, in these cases trees and their saplings are also protected. The task now is to increase the scale of the industry so more beekeepers will protect forests from fire and more people choose to invest labour and effort into beekeeping instead of charcoal making.

Evidence (15): Apiary in protected forest location.

12. Darwin Initiative identity

To promote the Darwin Initiative identity, we have incorporated the DI logo on project materials, documents and presentations and we have acknowledged DI support in our communications and publications on our websites and social media handles (X, Instagram, Facebook, and Blog). Since the beginning of the project, we have been airing a jingle on radio (Radio Afram Plains) about the project and Darwin Initiative is duly acknowledged and publicised in the piece. When the radio station is up and running again – this will resume. Additionally, our beekeeping, bushfire and tree planting campaign on radio is a vehicle to spread news about the project and discuss issues that will promote the conservation of biodiversity in the area, and proudly acknowledges DI. Our social media posts are tagged or linked to Darwin Initiative/Biodiversity Challenge Funds. Signposts showing direction to our Honey and Beeswax Trade Centre (HBTC) also has the DI logo on it. Inscriptions on the HBTC also acknowledges that the building was proudly supported by DI. This project with Darwin Initiative funding is being recognised as a distinct project with a clear identity.

Evidence of promoting Darwin Initiative identity:

1.
2. https://www.facebook.com/share/p/MBbEhUWsD82AjYgF/
3. https://beesfordevelopmentghana.org/blog/
4. https://www.facebook.com/share/p/kEcR8ahsCrDCAqHK/

The project is highly visible in Donkorkrom and the target communities understand very well about the project. The level of engagement with local stakeholders is high. All five major partners and other stakeholders in the area are familiar with the Darwin Initiative and are promoting visibility amongst their networks. Government officials in the Afram Plains, are familiar with the Darwin Initiative. Community leaders within communities where the project is being implemented have knowledge of DI because they have been engaged in project activities or consultations. Researchers and academics in Ghana, especially those from CSIR College of Science and Technology who have been involved in the forest inventory are adequately aware of the Darwin Initiative. Students from the University of Cape Coast who conducted research in the Kwahu Afram Plains using our beekeepers as respondents have also become aware of DI through the project. Beekeepers in the Afram Plains involved in the project are very familiar with the Darwin Initiative's investment in supporting their activities.

Evidence (22): DI logo in use.

13. Safeguarding

14. Project expenditure

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

Project spend (indicative) since last Annual Report	2024/25 Grant (£)	2024/25 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)				
Others (see below)				
TOTAL	**110278**			

Non-financial change request submitted 15 October 2024 included request to change money across budget lines. The above reflects the change.

All the above figures are DRAFT.

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

	Secured to date	Expected by end of project	Sources
Matched funding leveraged by the partners to deliver the project (£)			Unrestricted funds from Bees for Development UK
Total additional finance mobilised for new activities occurring outside of the project, building on evidence, best practices and the project (£)			

15. Other comments on progress not covered elsewhere

In the last quarter of the reporting year, the project took important steps to strengthen its design and sustainability. Notably, we completed a scoping study about Village Savings and Loan Associations (VSLAs) in some project communities. With the groundwork now laid, we are ready to roll out the VSLAs in the coming months. This initiative is expected to enhance financial inclusion, enabling beekeepers to save securely, access small loans, and improve their financial literacy—supporting long-term economic resilience.

In addition, we have initiated a promising collaboration with Telecel[2] Ghana aimed at improving mobile network coverage in the project areas. Reliable communication is crucial for coordinating beekeeping activities, facilitating digital payments for honeycombs, and ensuring smooth operation of our Mobile Honey System (honey traceability tool), some of its components rely on network connectivity. We have already distributed SIM cards to beekeepers and their families, and Telecel has assured us of imminent network expansion, which we believe will significantly enhance project effectiveness. They have also indicated that we will set up points where beekeepers can withdraw their money once they receive payment for honeycombs sold.

These developments reflect our commitment to refining the project's approach to ensure long-term success and sustainability.

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

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

The Beekeepers Restore Forest of Kwahu Afram Plains project has made good progress in promoting sustainable livelihoods, and the value that people place on forest resources is increasing. A significant achievement has been the increase in honey and beeswax sales. The Honey and Beeswax Trade Centre processed and sold all the honeycombs purchased from the beekeepers in Year 1 and Year 2 – sold 7911.45 kg of 9313.10 kg of liquid honey and earned a revenue of GHS408,785.50. To date, participating beekeepers have collectively produced and sold over 12,600.20 kg of high-quality, forest-friendly honeycombs, generating more than GHS315,005.00 in income for rural households. This income is directly reducing dependency on destructive forest practices such as charcoal burning and other practices that are not environmentally friendly.

Another milestone has been the successful development and promotion of the Digya Forest Honey brand, which is gaining local recognition. The project facilitated participation in the 2024 Eastern Regional Trade Fair, where our brand Digya Forest Honey was showcased to wider markets and potential buyers. This opportunity enhanced our brand visibility and connected rural producers to premium markets.

Furthering this progress, the honey has undergone quality testing and passed Food and Drugs Authority (FDA) standards for registration (process ongoing and nearing completion), enabling us to legally sell on formal markets. This certification marks a key turning point for the brand, instilling consumer confidence and creating pathways for scale-up and export readiness.

Additionally, the project has supported community-led forest restoration efforts by linking beekeeping with tree growing. Over 1226 out of the 3117 indigenous trees planted survived the harsh weather conditions over the reporting period and are being protected by beekeepers across the project area. The approach of demonstrating that forest has an economic value is creating incentives for forest conservation.

On the social front, the project has made significant contributions to gender equality and social inclusion. Over 50% of trained beekeepers are women and youth, many are now earning income and leading community conservation groups. Through targeted training and mentorship, women

[2] Mobile phone company in Ghana

have emerged as honey producers and peer mentors in their communities. Some beekeepers have gained social recognition in their communities due to their improved livelihoods.

These achievements reflect strong alignment with the Darwin Initiative's goals around biodiversity protection, sustainable livelihoods, and inclusive development. The project stands as a replicable model of how nature-based solutions can drive conservation outcomes while empowering communities in rural Ghana.

File Type (Image / Video / Graphic)	File Name or File Location	Caption including description, country and credit	Social media accounts and websites to be tagged (leave blank if none)	Consent of subjects received (delete as necessary)
Image			Social media accounts: Instagram – @officialbfdghana and @beesfordevelopment X – @BfDGhana and @BeesForDev Facebook – Bees for Development Ghana and Bees for Development Websites – www.beesfordevelopment.org and www.beesfordevelopmentghana.org	Yes
Image			Social media accounts: Instagram – @officialbfdghana and @beesfordevelopment X – @BfDGhana and @BeesForDev Facebook – Bees for Development Ghana and Bees for Development Websites – www.beesfordevelopment.org and www.beesfordevelopmentghana.org	Yes

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

Project summary	Progress and Achievements April 2024 - March 2025	Actions required/planned for next period
Impact ⇒ Thriving rural communities across Afram Plains where women and men earn stable incomes by safeguarding and restoring biodiversity in forested landscapes and sustainably managing native honey bee populations.	The Beekeepers Restore Forests of Afram Plains project has created significant interest in scaling beekeeping efforts in the Afram Plains. Beekeepers earn good income for household subsistence; others procure assets such as motorcycles from income earned from beekeeping. The beekeepers who have enjoyed substantial income from honey sales in 2024 have reinvested in more bee hives which has aroused the interest of their neighbours. The investment in hives has made these beekeepers the guardians of the forested lands against bushfires, charcoal production and indiscriminate logging. These efforts are promoting the natural regeneration of plant species in the area and protecting the habitat of wildlife, enriching the ecosystem.	[redacted]
Outcome Beekeeping, fire management and forest restoration by communities in Afram Plains, leads to sustainable livelihoods, less reliance on charcoal trade, reversal of forest degradation, and regrowth of scarce tree species.		
Outcome indicator 0.1: Number of people engaged in profitable beekeeping. Target by end of project = at least 1000 beekeepers, of whom 350 women (from baseline of 118 beekeepers of whom 28 women).	There are 627 (502M, 125W) beekeepers who have established apiaries and own colonies ranging from 4 to 40. One hundred and six (106) beekeepers sold honey to the centre earning an average income of £151.00. There are also 400 potential beekeepers who when supported will begin keeping bees.	We will further support beekeepers and potential beekeepers, especially women, with beehives to earn sustainable income from beekeeping.
Outcome indicator 0.2: Number of people who disengage from commercial charcoal production by end of project, as a result of keeping bees. Target = 100 beekeepers	This will be measured at the end of the project through interviews with beekeepers. See Section 3.3 and Evidence 14 in Annex 4.	In Year 3, we will have a constructive discussion session with traditional authorities and landowners about trade-offs between charcoal and honey production. We will also continue the radio campaign and community engagements on the dangers of charcoal production.
Outcome indicator 0.3: 25% Reduction of charcoal trade in project area.	This has not been measured yet. See Section 3.3	

Outcome indicator 0.4: 20% Increase in density and extent of vegetation through natural regeneration and tree planting, across 20 apiary cluster sites averaging 1000 hectares each, by end of project.	Beekeepers have planted 3117 tree seedlings to increase the vegetation density. With more apiaries established, the density and extent of vegetation through natural regeneration across 20 apiary cluster sites is gradually being achieved. See Section 3.3 and Evidence 10.	We will continue to give technical support to beekeepers to set up and protect more apiaries and trees from wildfires.
Outcome indicator 0.5: 50% Reduction in burned area between December and March, across 20 apiary cluster sites averaging 1000 hectares each, by end of project.	Beekeepers are protecting their apiary sites from fire. We are mapping apiary sites so we can corroborate this through satellite imagery. To be done in final project year. See Evidence 21 in Annex 4.	We will continue to support our beekeepers to increase their apiaries and protect forest landscapes from fires.
Outcome indicator 0.6: 10% Increase in tree species richness across 20 apiary cluster sites averaging 1000 hectares, by end of project.	The rise in the number of apiaries established by beekeepers is gradually leading to an increase in tree species richness in surrounding areas. Forest inventory will be done in final project year.	
Output 1 **1000 men and women practising sustainable nature-based beekeeping and selling honeycomb for fair and rewarding returns.**		
Output indicator 1.1: Number of people with productive apiaries and practising beekeeping independently. Target = 400 (325M, 175W) people managing 3 colonies or more, by end of Year 1 and 1000 by end of project. Baseline = 130 (90M, 28W).	106 (75M, 21W) beekeepers sold honey to the centre in the project period. This is a reduction from the baseline. This was due to the long drought which led to the absconding of many honey bee colonies of beekeepers over this period. However, there are 627 beekeepers with colonies who will earn income from their hives in the coming year. Section 3.2 and Evidence 12 in Annex 4.	Follow-ups and extensive support shall be provided for the beekeepers so that they maintain their colonies and earn income from honey sales.
Output indicator 1.2: Number of beekeepers selling honeycomb. Target = 300 by end Year 1, 600 by end Year 2, 1000 by end of project. Baseline = 118 (90M, 28W).	From our mobile honey system, 106 beekeepers sold honeycombs to the Centre, which is less than 20% of the Year 2 target. As explained in Section 3.1, (progress in carrying out project activities), Ghana experienced a long drought which affected beekeeping activities. Many beekeepers lost their colonies, and the honeyflow season did not happen as expected. It is worth mentioning that we do not make the sale of honeycombs to the Centre compulsory for the beekeepers. Beekeepers can sell their honey if they have a market for it. However, we expect the honeyflow season to have moved forward. This means the beekeepers who have colonies will harvest honey and earn income.	The Honey and Beeswax Trade Centre will continue to support beekeepers to create a relationship ensuring beekeepers sell honey to the centre during harvest.

Output indicator 1.3: Average beekeepers' income in GBP per year from total honey sales. Targets. Year 1 = £84 Year 2 = £90 Year 3 = £100	The average income earned per beekeeper in Year 2 is £151.00, which is a 79% increase from the Year 1 average of £84.00. This is also almost twice the target.	We will provide support and refresher training for beekeepers to manage their apiaries to have healthy colonies for higher honey yield.
Output 2: Sustainable honey and beeswax trade established through BfDG Honey and Beeswax Trade social enterprise, so that beekeeping can be a vital source of income for more people across Afram Plains into the future.		
Output indicator 2.1: Turnover of BfDG Honey and Beeswax Trade social enterprise, minus costs of honeycomb purchased from beekeepers, transport costs and marketing costs. Targets = Year 1: £3,000, Year 2: £6,000, Year 3: £10,000.	The HBTC made a cumulative profit of £4000.00 for the two years. The Year 2 target could not be reached because honeycomb purchases were low, due to drought. Considering the number of colonies possessed by beekeepers, the target of £10,000.00 in Year 3 is achievable if all assumptions hold true.	BfDG Honey and Beeswax Trade social enterprise will continue to buy and sell honey in the coming months and years. We will work to reduce the cost of honey collection, as beekeepers are willing to bring their honey to the Centre.
Output indicator 2.2: Total sum of payments made to beekeepers through Mobile Honey System. Targets = Year 1: £9,900, Year 2: £19,800, Year 3: £33,000	In April and May 2024, a total of GHS85,605.50 (£5,074.40) was paid to beekeepers. The total payment made to the beekeepers cumulatively over the two years is £17,637.97. The target of £19,800.00 could not be achieved because there was little honeycomb purchased in the usual period in Year 2 as expected.	The social enterprise will continue to purchase honeycombs from beekeepers.
Output indicator 2.3: Volume (kg) of honeycomb sold by beekeepers. Targets = Year 1: 9 tons, Year 2: 18 tons, Year 3: 30 tons	The total honeycomb purchased from our beekeepers over the two years is 11.9 tons. The drought has pushed us off-track.	Honeycomb purchases are expected to continue in Year 3.
Output 3: Integrated fire management practised by beekeepers across 20 communities in Afram Plains, in collaboration with Ghana National Fire Service		
Output indicator 3.1 Number of apiaries and hectares of land where beekeepers are adopting fire prevention and mitigation practices. Target = 10 apiary cluster sites averaging 1000 hectares, by end of Year 2 and 20 sites by end of project.	In Year 2, new 111 beekeepers are maintaining 549 beehives (190 colonies) in over 335 apiary sites. These people are cumulatively protecting about 500 hectares of land in the project area. This data is recorded in FarmerLink app. See Evidence 20 in Annex 4.	
3.2 Number of Fire Management Volunteer Teams (FMVTs) working effectively throughout dry season to raise awareness, monitor risks and coordinate community fire management and wildfire response. Target = 10 teams, at least 50 volunteers, by end of Year 1 and 20 teams and 100 volunteers by end of Year 2. Baseline = 0, 0	19 out of 20 fire management volunteer teams with 95 members received additional training in bush fire management – specific to their roles at FMVTs. This in addition to the general training they received previously at community level.	The volunteers will receive on-the-field support from the Ghana National Fire Service and any other logistical support from BfD Ghana to enable work effectively.

Output 4: Beekeepers plant and protect diverse selection of indigenous trees with economic value by their apiaries, on their land, on land granted for this purpose by traditional authorities, in buffer zones between communities and forest/wildlife reserves, and on reserves – working closely with the Forestry Commission of Ghana.		
Output indicator 4.1: Number of apiary sites established within the fringing forest reserves under an agreement between beekeeping associations and the Forestry Commission. [Target = 5 by end Year 1, 10 by end Year 2 and 20 by end of project]	Ten (10) apiaries have been set-up in forest reserves	More engagements will be made to establish apiaries in forest reserves in year 3.
Output indicator 4.2: Number of seedlings distributed and planted by beekeepers. Target = 5,000 by end of Year 1, 10,000 by end of Year 2, 20,000 by end of project.	A total of 3,117 tree seedlings were distributed and planted by 185 beekeepers. The target of 5000 trees in year 2 was not achieved because the price of the seedlings increased due to inflation and the rains stopped early. We are unlikely to meet the target of planting 20,000 trees by end of project. See Section 8 on Lessons Learned.	Depending on the weather conditions in Year 3, we will plan our tree-planting campaign carefully – we predict implementing a scaled-back campaign.
Output indicator 4.3: 70% survival rate of seedlings planted at end of project.	After the monitoring exercise, a 39.33% survival rate was recorded. The 70% target was not achieved because of climate change: changes in the rainfall pattern and severe drought.	More technical support will be given to beekeepers to nurture and protect the surviving trees in Year 3.
Output indicator 4.4: Populations of now scarce and important species (e.g. *Antiaris africana*, *Afzelia africana*, *Celtis zenkeri*, *Milicia excelsa*, and various mahogany species (e.g. *Khaya senegalensis*) recovering, as measured by increase in number of seedlings in plots near apiaries. End of project target = improvement in at least two biodiversity (Shannon, Simpson, Richness) measures in 80% of sites.	Not done yet	This will be done at the end of the project.
Output 5: People understand the negative impact of charcoal burning on honey production and the advantages of beekeeping as a sustainable livelihood		
Output indicator 5.1 Number of people involved in charcoal production and trade who attend our beekeeping training workshops. Target = 350 in Year 1 and 350 in Year 2.	Year 2 target not met. Our main training programme was done in Year 1, so having this additional Year 2 target here was misplaced. Our baseline survey suggested about 33% of people trained in beekeeping are involved in charcoal making.	We continue to provide follow-up and in-field training to all new beekeepers, including those who have been engaged in charcoal making.
Output indicator 5.2 Number of beekeepers who reduce their involvement in charcoal production and trade. Target = 50 beekeepers by end of Year 2 and 100 by end of Year 3.	This will be measured in Year 3. We have modified FarmerLink app to include this as an attribute for measurement.	
Output 6: Stakeholders interested in reversing forest degradation through honey trade have access to information, project results and a blueprint for a low-cost, digital traceability system based on the Mobile Honey System		

Output indicator 6.1: Number of downloads of how-to-manual based on Mobile Honey System from the Bees for Development Resource Centre. Target = 300 by end of project.	No new results in Year 2.	The manual will be produced in Year 3.
Output indicator 6.2: Number of requests for support/consultancy to develop similar systems received by BfD and BfD Ghana. Target = 20 by end of project.	Two enquiries received in Year 2. We focused on topic of traceability in Bees for Development's Bee Bulletin – to 850 readers.	We expect to receive more requests once the manual is shared.
Output indicator 6.3: Case studies of agribusinesses replicating our traceability, quality assurance and supply chain system. Target = 5 by end of project.	Status from Year 1 still stands. Replication is occurring in Ethiopia.	
Number of people reading articles published on website (including articles within Bees for Development Journal) about the link between honey trade, fire mitigation and forest recovery. Target = 1000 each year of project.	Two articles about honey trade and forests on Bees for Development and Bees for Development Ghana websites have been viewed over 890 times in Year 2.	

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

[Changes were agreed October 2024 – this logframe is the revised one]

Project Summary	SMART Indicators	Means of Verification	Important Assumptions
Impact: Thriving rural communities across Afram Plains where women and men earn stable incomes by safeguarding and restoring biodiversity in forested landscapes and sustainably managing native honey bee populations (Max 30 words)			
Outcome: Beekeeping, fire management and forest restoration by communities in Afram Plains, leads to sustainable livelihoods, less reliance on charcoal trade, reversal of forest degradation, and regrowth of scarce tree species. (Max 30 words)	**0.1** Number of people engaged in profitable beekeeping. Target by end of project = at least 1000 beekeepers, of whom 350 women (from baseline of 118 beekeepers of whom 28 women[3]). **0.2** Number of people who disengage from commercial charcoal production by end of project, as a result of keeping bees. Target = 100 beekeepers **0.3** 25% Reduction of charcoal trade in project area. **0.4** 20% Increase in density and extent of vegetation through natural regeneration and tree planting, across 20 apiary cluster sites[4] averaging 1000 hectares each, by end of project.	**0.1** Registered users and purchase form records on our Mobile Honey System[5]. **0.2** End of project interviews with beekeepers. **0.3** Charcoal Conveyance Certificates issued by Ghana's Forestry Commission. **0.4** Baseline and end of project comparison by remote sensing (NDVI/FAPAR scores analysis based on data from Copernicus Global Land Service) **0.5** Annually through remote sensing with NASA Fire Information for Resource Management System. **0.6** Baseline and end of project forest plot inventories measuring all	**0.1** Demand for honey remains reliable and strong, as does demand for residue-free beeswax internationally. **0.2** Income from beekeeping more than compensates income from charcoal burning. Preliminary evidence of this from Bonaso community supports this assumption. **0.3** Charcoal production is not displaced to non-beekeepers, because beekeepers influence the traditional authorities which regulate tree felling. This is what we are seeing in communities where the number of beekeepers is increasing. **0.4** Forestry Commission continues to set tree planting targets and provide seedlings to volunteers.

[3] This baseline is based on submitted Beekeeper Registration forms in the *Mobile Honey System* at 01/12/22. The baseline will be adjusted on project launch. Since 2018 over 700 community members have attended our beekeeping training workshops. Of these about 350 have gone on to complete the training programme and have colonised hives. Of these about 100 have already harvested some honey, and about 25 have sold honeycomb through the pilot of the Mobile Honey System in May 2022.

[4] Apiary cluster sites are land areas measuring cc. 1000 hectares that we have mapped (see attached 'Map') on the basis of current GPS waypoint of existing apiary sites and potential expansion of beekeeping activities around target communities. The areas comprise a mix of farmland, degraded off-reserve forests, forest reserves and open savannah.

[5] *Mobile Honey System* is an innovative digital traceability and supply chain management system we developed to manage BfD Ghana Honey and Beeswax Trade social enterprise. Running on the KoboToolbox Platform, it allows us to keep track of all beekeepers and honeycomb we are purchasing from them for processing at the Donkorkrom Honey Centre.

	0.5 50% Reduction in burned area between December and March, across 20 apiary cluster sites averaging 1000 hectares each, by end of project. **0.6** 10% Increase in tree species richness across 20 apiary cluster sites averaging 1000 hectares, by end of project.	tree species greater than 10cm dbh and down to 5cm dbh every 5 quadrats (standard set by Forestry Commission of Ghana for off-reserve inventories). Analysis of change using Simpson/Shannon indices.	**0.5** Dry season not extraordinarily severe or prolonged. **0.6** Forestry Commission successfully broadens range of species in seedling nursery. Sufficient genetic reservoir of fire-sensitive species to allow natural regeneration.
Outputs: **1**. 1000 men and women practising sustainable nature-based beekeeping, and selling honeycomb for fair and rewarding returns.	**1.1** Number of people with productive apiaries and practising beekeeping independently. Target = 400 (325M, 175W) people managing 3 colonies or more, by end of Year 1 and 1000 by end of project. Baseline = 118 (90M, 28W) **1.2** Number of beekeepers selling honeycomb. Target = 300 by end Yr1, 600 by end Yr2, 1000 by end of project. Baseline = 118 (90M, 28W) **1.3** Average beekeepers' income in GBP per year from total honey sales. Targets. Year 1 = £84 Year 2 = £90 Year 3 = £100	**1.1** Mobile Honey System records / Farmer Link **1.2** Mobile Honey System records **1.3** Mobile Honey System records	**1.1** Interest in beekeeping remains high. Local honey bees continue to be very prolific and occupy hives readily. **1.2** The processing centre in Donkorkrom is completed according to plans with capacity to process the growing supply of honey. National demand for quality Ghanaian honey remains strong. We continue receiving purchase requests for beeswax from export agents.
2. Sustainable honey and beeswax trade established through BfDG Honey and Beeswax Trade social enterprise, so that beekeeping can be a vital source of income for more people across Afram Plains into the future	**2.1** Turnover of BfDG Honey and Beeswax Trade social enterprise, minus costs of honeycomb purchased from beekeepers, transport costs and marketing costs.	**2.1** Accounts of social enterprise **2.2** Vodafone cash and MTN MoMo[7] merchant statements **2.3** Mobile Honey records + conversations with beekeepers to	**2.1** Market for honey and beeswax is not hit too hard by cost-of-living crisis. Cost of fuel does not increase further. We are still at this point selling in bulk at competitive wholesale prices (not fully exploiting

[7] MoMo = mobile money

	Targets[6] = Year 1: £3,000, Year 2: £6,000, Year 3: £10,000. **2.2** Total sum of payments made to beekeepers through Mobile Honey System. Targets = Year 1: £9,900, Year 2: £19,800, Year 3: £33,000. **2.3** Volume (kg) of honeycomb sold by beekeepers. Targets = Year 1: 9 tons, Year 2: 18 tons, Year 3: 30 tons	gauge how much (if any) is sold outside of system	our point of difference). Most sales still within Kumasi/Accra range. **2.2** Price of 20GHS per kg of honeycomb continues to remain attractive for beekeepers as their volumes grow (compensating for inflation). **2.3** Access to sufficient land for new apiary sites and sufficient floral resources to sustain production – otherwise we expand number of communities where we train and register beekeepers.
3. Integrated fire management practised by beekeepers across 20 communities in Afram Plains, in collaboration with Ghana National Fire Service	**3.1** Number of apiaries and hectares of land where beekeepers are adopting fire prevention and mitigation practices. Target = 10 apiary cluster sites averaging 1000 hectares, by end of Year 2 and 20 sites by end of project. **3.2** Number of Fire Management Volunteer Teams (FMVTs) working effectively throughout dry season to raise awareness, monitor risks and coordinate community fire management and wildfire response. Target = 10 teams, at least 50 volunteers, by end of Year 1 and 20 teams and 100 volunteers by end of Year 2. Baseline = 0, 0	**3.1a** Mobile Honey records, interviews with beekeepers, apiary visits by project staff. **3.1b** Remote sensing data with NASA Fire Information for Resource Management System. **3.2** WhatsApp group including member of all FMVTs, local firemen and project staff. Interviews with FMVT members.	**3.1** The extent of land that beekeepers will be able to protect around their apiaries will also depend on their time availability. **3.2** Beyond the economic incentive to protect hives and livelihoods, FMVTs will also find motivation in good team dynamics and sharing common purpose.
4. Beekeepers plant and protect diverse selection of indigenous trees with economic value by their	**4.1** Number of apiary sites established within and fringing forest reserves under agreements	**4.1** Agreements negotiated with FC and visits to apiaries by project staff	**4.1** Beekeepers' continue to be interested in reforestation and respect terms of agreement with FC

[6] Based on exchange rate of 1GBP=12.16GHS

apiaries, on their land, on land granted for this purpose by traditional authorities, in buffer zones between communities and forest/wildlife reserves, and on reserves – working closely with the Forestry Commission of Ghana	between beekeeping associations and FC. Target = 5 apiary sites by end Year 1, 10 by end Year 2 and 20 by end of project. **4.2** Number of seedlings distributed and planted by beekeepers. Target = 5,000 by end of Year 1, 10,000 by end of Year 2, 20,000 by end of project **4.3** 70% survival rate of seedlings planted at end of project. **4.4** Populations of now scarce and important species (e.g. *Antiaris africana, Afzelia africana, Celtis zenkeri, Milicia excelsa,* and various mahogany species (e.g. *Khaya senegalensis)* recovering, as measured by increase in number of seedlings in plots near apiaries. End of project target = improvement in at least two biodiversity (Shannon, Simpson, Richness) measures in 80% of sites.	**4.2** Records of seedling distribution kept by BfD Ghana staff **4.3** Survival of planted trees monitored during end of project tree population inventory **4.4** Baseline and end of project tree population inventories in 20 apiary cluster sites (through sampling)	to access reserves (no hunting, farming, clearing) **4.2** FC continues to raise tree seedlings and broadens range of species successfully, including trees that provide abundant nectar and pollen for honey bees. **4.3** FC and beekeepers ensure adequate measures taken to protect seedlings planted and generating naturally. **4.4** Sufficient genetic reservoir for natural regeneration.
5. People understand the negative impact of charcoal burning on honey production and the advantages of beekeeping as a sustainable livelihood	**5.1** Number of people involved in charcoal production and trade who attend our beekeeping training workshops. Target = 350 in Year 1 and 350 in Year 2. **5.2** Number of beekeepers who reduce their involvement in charcoal production and trade. Target = 50 beekeepers by end of Year 2 and 100 by end of Year 3.	**5.1** Workshop attendance lists **5.2** Annual project surveys with a sample of beekeepers.	**5.1** We succeed in getting across a positive message of the opportunities offered by beekeeping (rather than criticising charcoal making) so as to not alienate charcoal makers. **5.2** In the community Bonaso, 8 men heavily involved in charcoal making were early adopters of beekeeping. They say beekeeping offers better returns and is less hard and dangerous. This year they have

			been making less charcoal, working instead to scale up honey production by setting up new apiary sites. We assume this will happen in other communities and for other charcoal makers.
6. Stakeholders interested in reversing forest degradation through honey trade have access to information, project results and a blueprint for a low-cost, digital traceability system based on the *Mobile Honey System*	**6.1** Number of downloads of how-to-manual based on Mobile Honey System from the Bees for Development Resource Centre. Target = 300 by end of project. **6.2** Number of requests for support/consultancy to develop similar systems received by BfD and BfD Ghana. Target = 20 by end of project. **6.3** Case studies of agribusinesses replicating our traceability and supply chain system. Target = 5 by end of project. **6.4** Number of people reading articles published on website (including articles within Bees for Development Journal) about the link between honey trade, fire mitigation and forest recovery. Target = 1000 each year of project.	**6.1** BfD Online Resource Centre use statistics **6.2** Direct enquiries to BfD and BfD Ghana **6.3** Interviews with agribusiness directors replicating our system. **6.4**. BfD Online Resource Centre use statistics	**6.1** That no other traceability and supply chain management systems with comparable specifications and use cases are developed concomitantly, which are superior in functionalities or ease of use, and are made freely and widely available - thus reducing need/demand for the method underlying our system.
Activities **OUTPUT 1:** 1000 men and women practising sustainable nature-based beekeeping, and selling honeycomb for fair and rewarding returns 1.1 Coordinating beekeeper training workshops across at least 20 communities, from hive making through to post-harvest handling 1.2 Training community-based harvesting teams to support new beekeepers at this delicate time in their first season 1.3 Providing essential harvesting equipment for harvest teams 1.4 Promoting beekeeping and broadcasting seasonal advice on local radio programme 'Farmers' time' 1.5 Ongoing mentoring and support to beekeepers across all communities, working with honey collection coordinators			

1.6 Recording of floral data with honey collection coordinators through Mobile Honey WhatsApp group, feeding into production and distribution of floral calendars

OUTPUT 2: Sustainable honey and beeswax trade established through Donkorkrom Honey and Beeswax Trade Centre, so that beekeeping can be a vital source of income for more people across Afram Plains into the future
2.1 Development of interface for Mobile Honey System so that beekeeper registration, bucket release and honey buying data can be integrated and queried in one database
2.2 Continuing improvement and updating of Mobile Honey System
2.3 Completion of processing facilities infrastructure
2.4 Refitting of processing equipment and procurement of additional containers and packaging materials
2.5 FDA Licensing of Donkorkrom Honey and Beeswax Trade Centre
2.6 Training of at least another 10 honey collection coordinators
2.7 Broadening of honey marketing and client database
2.8 Direct purchase of honeycomb from beekeepers through Mobile Honey System, with working capital provided by Bees for Development
2.9 Direct wholesale of honey to packers serving domestic urban markets, bulk sale of beeswax to export agents

OUTPUT 3: Integrated fire management practised by beekeepers across 20 communities in Afram Plains, in collaboration with Ghana National Fire Service
3.1 Ghana National Fire Services deliver Forest Fire Management Training to 1000 beekeepers across at least 20 communities
3.2 Beekeepers across at least 20 communities elect 5 members to serve on Fire Management Volunteer Teams (FMVTs)
3.3 FMVTs members benefit from additional training in wildfire response and community fire management with Ghana National Fire Services
3.4 Strong channels of communication established between FVMTs in different communities and Ghana National Fire Service through WhatsApp group
3.5 Collection of apiary coordinates and quarterly mapping of apiary cluster sites and monitoring of burned area therein
3.6 Forest fire awareness raising through broadcast on local radio programme 'Farmers' time'

OUTPUT 4: Beekeepers plant and protect diverse selection of indigenous trees with economic value by their apiaries, on their land, on land granted for this purpose by traditional authorities, in buffer zones between communities and forest/wildlife reserves, and on reserves – working closely with the Forestry Commission of Ghana
4.1 Survey of beekeepers' tree planting priorities
4.2 Tree population inventory baseline study led by Prof Appiah (CCST) spanning 10 hectares across 5 sites
4.3 Selection of species for beekeepers' planting activities, informed by survey of their preferences and baseline study
4.4 Procurement of seedlings from Forestry Commission nursery and other local nurseries
4.5 Establishment and maintenance of nurseries to grow selected species that are in low supply at local nurseries
4.6 Intensive silviculture training for BfD Ghana field staff provided by Forestry Commission
4.7 Basic silviculture training for beekeepers provided by BfD Ghana staff
4.8 Delivery of free tree seedlings for beekeepers
4.9 Ongoing support for and monitoring of tree planting by beekeepers
4.10 Tree population inventory and survival rates assessment led by Prof Appiah as part of end of project evaluation
4.11 Negotiation of agreements between beekeeping groups and Forestry Commission to establish apiaries on forest reserves

OUTPUT 5: People understand the negative impact of charcoal burning on honey production and the advantages of beekeeping as a sustainable livelihood
5.1 Constructive engagement with charcoal producers in target communities, inviting them to take part in beekeeping training
5.2 Constructive engagement with traditional authorities to raise awareness of trade-offs between charcoal and honey production
5.3 Interviews with beekeepers who were former charcoal producers to be broadcast on local radio programme 'Farmers' time'

OUTPUT 6: Stakeholders interested in reversing forest degradation through honey trade have access to information, project results and a blueprint for a low-cost, digital traceability system based on the Mobile Honey System
6.1 Following another two seasons of implementation, expansion, testing and improvement, BfD and BfD Ghana co-produce a how-to manual for low-cost digital traceability based on the experience of developing and implementing the Mobile Honey System in Afram Plains.
6.2 Production of an animated explainer video explaining how the Mobile Honey System works and what it is for.
6.3 Publication of above-mentioned video and manual on BfD Online Resource Centre, BfD Ghana website, Wikifarmer, The Africa Report, KoboToolbox blog and other web-based platforms, alongside press release in both UK and Ghana.
6.4 Presentation reviewing project approach and impact at Apimondia 2025 (Project Leader and Master Beekeeper)
6.5 Project news and progress published twice quarterly throughout implementation on BfD Ghana website
6.6 Publication(s) of tree population inventories and impact studies of improved fire management on vegetation and forest restoration
6.7 Publication of floral calendars for Afram Plains on BfD Online Resource Centre
6.8 Mid-term and end of project review workshops with local stakeholders
6.9 Articles published in Bees for Development Journal about the link between honey trade, fire mitigation and forest recovery.

Checklist for submission

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