

Darwin Initiative Main Annual Report

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

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

Submission Deadline: 30th April 2022

Darwin Initiative Project Information

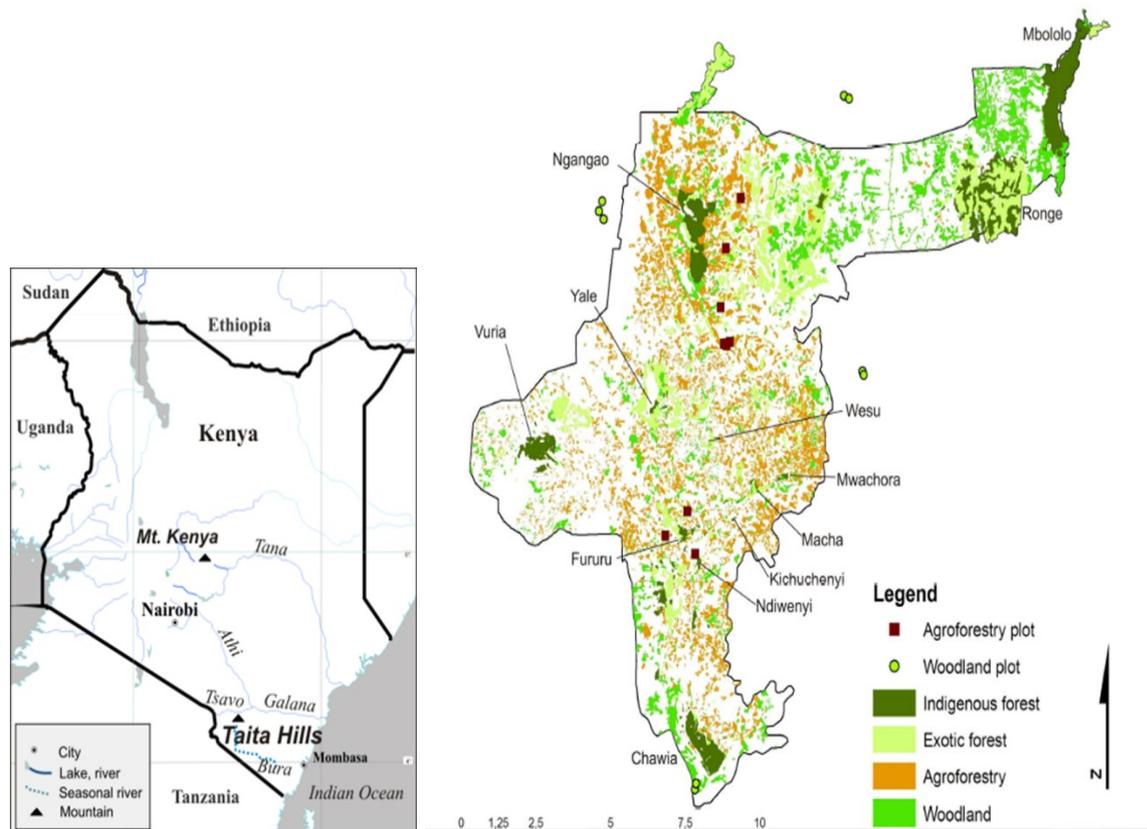
Project reference	28-022
Project title	Restoring the ‘water tower’ cloud forests of Kenya’s Taita Hills
Country/ies	Kenya
Lead partner	RSPB
Project partner(s)	Nature Kenya, Birdlife International, Plants for Life International (PLI), Kenya Forest Service (KFS), Dawida Biodiversity Conservation Group (DABICO)
Darwin grant value	£442,127.00
Start/end dates of project	1 st September 2021 – 30 th June 2024
Reporting period	Annual Report Year 1 Reporting Period = 1 st Sept 2021 – 31 st March 2022
Project Leader name	Jake Zarins – Senior Species Recovery Officer
Project website/blog/social media	
Report author(s) and date	Jake Zarins (RSPB), Paul Gacheru (Nature Kenya), Lawrence Wagura (Natural Africa Concern) - 29 th April 2022

1. Project summary

The aim of the project is to protect and expand the surviving fragments of forest in the Taita Hills in southern Kenya, safeguarding the unique biodiversity of these hills and improving local water security. Project activities include forest conservation and restoration, provision of water harvesting and storage infrastructure, and diversification of local livelihoods through the introduction of agro-forestry and other initiatives.

The Taita Hills cover an area of 35,000ha in southern Kenya, 50km south-east of the world-famous Tsavo West National Park. The Taita Hills historically formed an isolated island of moist, forested habitat in a region that is otherwise much dryer and more open – and have done so for millennia. As a result, they have some of the highest levels of endemism in the world and form an important part of the Eastern Afrotropical Biodiversity Hotspot being recognised as a Key Biodiversity Area and an Endemic Bird Area. At least 28 species of plant and animal are unique to this area, and a further 22 are endemic to the wider region. Of the local endemics, 13 are globally threatened and three are Critically Endangered – namely the Taita apalis (*Apalis fuscugularis*), Taita thrush (*Turdus helleri apalis*), thrush and Taita warty frog (*Callulina dawida*).

The Taita Hills' serve as a vital water catchment for the expansive Tsavo ecosystem and the water catchment and biodiversity values vary heavily on the montane cloud forest habitat with which their upper slopes were once almost entirely covered. This habitat is now severely fragmented, with some 98% of it having been destroyed or degraded over the last 200 years. The remaining forest comprises 12 fragments that range in size from 1 ha to 220 ha and are restricted to the highest peaks and steepest slopes. This degradation has significantly reduced the water retention capacity of the Taita Hills with negative consequences for those that rely on the catchment.



Map of project area illustrating Taita Hills with spatial outlook of Forest Areas (Pellikka et al. 2009)

Protection of remaining fragments is weak because implementation of forest policy and law is hampered by limited capacity of Community Forest Associations. A recent study (Teucher et al, 2020) has shown that the natural forest cover has continued to decrease between 2003–2018. The devastating loss of cloud forest habitat is inextricably linked to high levels of poverty. Data summarised at <https://devinit.org/data/spotlight-kenya> show that, in 2016, 32.3% of people in Taita Taveta County – the county in which the Taita Hills lie – were living below the Kenyan poverty line, and that 38.9% were in food poverty (meaning that they were unable to consume the minimum daily caloric requirement).

More specifically, the three key drivers of forest and biodiversity loss in Taita have been identified¹ as:

- a lack of income-generating opportunities, leading to a direct and heavy reliance on forests and forest products.
- poor farming techniques leading to low productivity – which in turn has led to encroachment into forested areas, as bringing additional land into cultivation has been the only way for farmers to increase overall yields.
- the replacement of native forest with exotic plantations of faster growing species (cypress, eucalyptus, pine, Chinese camphor, *Acacia mearnsii*) for timber and wood production.

The project aims to restore forest function and biodiversity through two primary approaches:

¹ Schmitt et al 2020 ([Link](#))

Firstly, and through direct engagement with local communities the project will aim to diversify and improve livelihood opportunities which it is anticipated will reduce the pressure placed on forest habitats by encroachment or extractive activities. A key activity is to support agroforestry as an alternative to growing maize whilst community nurseries will produce native species for habitat regeneration as well as the cash crop fruit trees needed for agroforestry.

Secondly and in partnership with the Kenya Forest Service areas cleared of invasive and exotic plantation species will be re-established with native plant species so that remaining forest fragments can be improved, expanded, and where possible connected.

2. Project stakeholders/ partners

The Taita Hills restoration project involves a significant number of partner organisations and technical specialists. As lead partner the RSPB provides overall oversight of project implementation and liaison with the Darwin Initiative. During the reporting period, RSPB was responsible in convening partner virtual meetings to assess implementation progress (see Annex 28). Further to this, RSPB provided co-financing to support water balance assessment for the Taita Hills Forest by engaging water experts in UK contributing to Output 4- *Lay foundations for long-term programme to monitor impacts of forest restoration and agro-forestry on Taita's 'water tower' function.*

The primary coordinator and lead on all in country project activities is Nature Kenya who bring a wealth of experience in delivering similar forest restoration projects from other parts of Kenya. Nature Kenya coordinated in country partners to support project implementation. Nature Kenya supported capacity building of community forest associations (see Annex 4-12), community livelihood initiatives (see Annex 14-25) and engagement with national and county government in policy formulation (see Annex 29-30). Nature Kenya supported in consolidation of project implementation for reporting purposes. They are supported in this work by a number of long-time expert collaborators with extensive history and experience of research and delivery in the Taita Hills and working as 'Species Guardian' for the Taita thrush and Apalis. The Species Guardians have worked for many years to identify the issues facing the remaining forest fragments and devised the restoration approaches which they are now assisting to bring to scale through this project and continued species targeted research work (see Annex 26-27).

Kenya Forest Service the lead government agency responsible for maintaining Kenya forest resource base supported the project implementation by supporting in building capacity five Community Forest Associations based in the Taita Hills Forest area (see Annex 4-9). As a result, 3 CFAs commenced the process of the review of PFMPs. In addition, KFS provided technical expertise in guiding and training local community groups in tree nursery establishment management (see Annex 18-20) where 8 community led were supported increasing the seedling production to over 80,000 seedlings. Further to this, KFS coordinated with the Taita Taveta County, identified and mobilised local community groups to progress forest restoration (see Annex 21) where approximately 22 ha of Taita Hills Forest were restored in Y1.

Plants for Life International (PLI) is a specialist NGO based in Kenya and provides specialist technical support on botanical issues and are especially targeting conservation of Taita Hills Forest endemic plant life. Working collaboratively with local consultant Natural Africa Concern (one of the Species Guardians) 2 model tree nurseries were established to provide community learning areas and promote restoration of Taita Hills Forest vegetation. Practical training workshops on tree propagation increasing skills to at least 80 local community members (see Annex 21)

Dawida Biodiversity Conservation Group (DABICO) a community-based organisation and a Site Support Group for Nature Kenya supported project implementation through community mobilisation where identification and capacity building of 8 community led tree nurseries was done- which enhanced the restoration efforts of Taita Hills forest (see Annex 16-17). Furthermore, DABICO members supported in direct forest restoration (see Annex 20) restoring 22ha of degraded forest areas. DABICO led in community led biodiversity surveys in the Taita hills forests (see Annex 27) where documentation of bird species abundance and diversity across different habitat types was done. DABICO support in Taita Hills Forest KBA annual monitoring where results are compiled in the Kenya KBA Status and Trends report ([Link](#))

Birdlife International maintained the global World Bird Database where IBA/KBA State, Pressure and Response data is consolidated- which informs the Kenya KBA Status and Trends report ([Link](#)). Birdlife International provided linkages with regional and international initiatives i.e. Trillion Trees Initiative; where lessons were drawn on forest and landscape restoration.

3. Project progress

3.1 Progress in carrying out project Activities

Despite a delayed start to the project, implementation of year one activities has been delivered broadly as planned. Once project approvals were received in late August 2021 partner contracting and other administrative aspects of coordinating the various partners were initiated. During these discussions it was decided that although the timeframe for project delivery was effectively 3 months less than originally planned project partners were confident it would be possible to fast track a number of priority activities and deliver project outputs as expected.

During the reporting period Organization Capacity Assessments of all 5 CFAs in Taita Hills were held on the 2nd December 2021, bringing together 24 CFA members (16 males and 8 females) along with associated government representatives, to document capacity gaps (Annex 4). As a result of the capacity assessment, Ngangao, IYAWEMBI (Iyale-Wesu-Mbili), and SUNDIFU (Susi-Ndiwenyi-Fururu) CFAs needed to revise and update their PFMPs while Vuria CFA and Chawia CFA needed PFMPs adopted, and Forest Management Agreements negotiated with county government. Consultative meetings were organized and held between Taita Taveta County and Vuria and Chawia CFA management committee and approval of the PFMPs was done by signing of the plans by the minister responsible. This paved way for discussions and negotiation of the Forest Management Agreement (Annex 5) held on the 14th and 15th of December, 2021 coordinated by the county government bringing together 20 (9Women, 11Men) Chawia CFA representatives and 20 (6women, 14men) Vuria CFA representatives together with other relevant stakeholders; to provide forest co-management rights to Vuria and Chawia CFAs together with Taita Taveta County government (Annex 6 & Annex 7 – draft Forest Management Agreement for Vuria and Chawia CFAs).

Informed by the results of the organizational capacity assessment, collaboratively with Kenya Forest Service (KFS) and Taita Taveta Wildlife Forum, consultative meetings were organized between 9th-11th February 2022 to discuss approaches needed to revise and update PFMPs for Ngangao, IYAWEMBI (Iyale-Wesu-Mbili) and SUNDIFU (Susi-Ndiwenyi-Fururu) CFAs bringing together 50 participants (38 men, 12 women) (Annex 8). As a result, a road map was developed to be guided by KFS on revising the PFMPs which includes, updating the CFA membership register, the nomination of an interim CFA management committee, and updating the CFA constitution among other steps. Implementation of the road map commenced by convening a public 50 village-level meeting reaching 1,121 community members (521 males and 600 females) sensitized to PFM (Annex 9). Ngangao, IYAWEMBI (Iyale-Wesu-Mbili), and SUNDIFU (Susi-Ndiwenyi-Fururu) CFAs constituted a management committee paving the way to the review of the three PFMPs aimed at being completed in Y2.

Informed by the organizational capacity assessment results (Annex 4) and guided by the Nature Kenya capacity building manual for CBOs (Annex 10), we developed 3 capacity enhancement plans for DABICO SSG, Vuria CFA, and Chawia CFA (Annex 8- see page 8-37). Three training sessions were organized and executed between 14th to 19th March 2022, covering components of PFM, institutional governance, financial bookkeeping, advocacy, and resource mobilization training 61(34 males and 27 females) community representatives of DABICO SSG, Chawia CFA and Vuria CFA (Annex 11- community groups training report)

To strengthen the capacity of CFAs to co-manage forests together with government (County and National) a consultative meeting led by KFS and Taita Taveta County government were held where a draft Standard Operation Procedures for CFA scouts was developed (Annex 12).

With co-finance from Rain Forest Trust, one more parcel of approximately 0.4 Acres was secured by Nature Kenya through land purchase (Annex 13- land *title deed transferred to Nature Kenya*). This increases the suitable area secured for the Taita Apalis to 26.3 Acres through land purchase and land lease. These target parcels were identified based on the presence of Taita Apalis territories (Annex 14-Map of target parcels based on TA Territories). In addition to using the presence of Taita Apalis territories, the use of GIS and satellite imagery based on the methodology of a recently published scientific paper titled- Habitat suitability modelling to improve the conservation status of two critically endangered endemic Afrotropical forest bird species in Taita Hills, Kenya (Obunga et al 2022) ([Publication Link](#)) will be explored to identify suitable habitat to refine land parcels for future land purchase.

A draft Taita Hills Forest restoration strategy was developed to consult actively with local communities and the government (Annex 15). Informed by this restoration strategy, restoration plans were put in place determining and identifying degraded forest areas and engaging with the community and government on approaches for restoration, which include indigenous tree growing and forest seeding with indigenous plant species. To enable community-led forest restoration 57 Support Group (SSG) /Community Forest Association (CFA) members (21 males and 36 females) living adjacent to Ngangao, Vuria, Chawia, Iyale, and Fururu forest areas were trained by KFS and TTCG foresters on methods of indigenous tree seed collection. As a result, 94 kg of native tree seeds, representing 16 species were collected, of which 65.5kg were from *Maesa lanceolata*, 18.5 from *Craibia zimmermannii*, and 6.3kg from *Millettia oblata* among others (Annex 16). The collected indigenous tree seeds would be used for forest seeding and propagating in the local tree nurseries. Building upon training on seed collection, 32 community members (19men, 13women) representing 11 community groups were trained by Kenya Forest Service between 19th-20th January 2022 on tree nursery management (Annex 17a, 17b- Training report and photos). The community groups were thereafter facilitated with an assortment of tree nursery materials which included- potting tubes, farming implements, and water storage tanks.

To complement and augment the restoration effort through indigenous tree seedling production to meet the restoration targets- we enhanced the capacity of the local Kenya Forest Service-led tree nursery with equipment (Annex 18- Acknowledgement letter from KFS on support provided). Follow-up site-based training and mentorship on tree seedling production was carried out led by KFS and TTCG- documenting a total of increased seedling production up to 46,000 indigenous seedlings (Annex 19- report follow-up tree nursery survey). Building upon synergies and partnerships- a total of 29,000 indigenous tree seedlings of 20 tree species of which 2 are endemic to Taita Hills Forest have been used to restore 22ha of degraded forest area in Taita Hills (Annex 20- progress on forest restoration).

To enable learning and skills sharing on tree seedling production- two model tree nurseries were established with a total of 7,571 seedlings representing 44 indigenous tree species and 3,015 seedlings representing 13 species of fruit trees (Annex 21- Model tree nurseries establishment Report). During the reporting period, 80 community members participated in training on tree growing demonstrated in the model tree nurseries. Additional technical expertise covered via co-funding from the RSPB includes specialist botanical support from Plants for Life International (PLI) who are providing training capacity to build knowledge and skills around the propagation of rarer and more complex endemic tree species as well as botanical identification skills. PLI were scheduled to conduct 4 trainings during the first year of the project but due to the delayed start and other obligations they were only able to conduct one training during the reporting period. It is planned that they increase the number of trainings in year 2 to compensate.

A baseline socio-economic assessment was carried out (Annex 22- Baseline socio-economic report). Data were collected from 151 households in 63 villages Based on the socio-economic survey potential livelihood diversification proposals were identified. The results indicated that 80% of the respondent supported forest conservation, citing a positive relationship between forest conservation and livelihoods; 13% said it was negative while 7% were neutral. Positive relationship was attributed to forests providing essential services e.g., water catchment, purification of air, wind breaking, provision of FTP and source of food and medicinal plants. A livelihood enhancement plan was developed informed through consultation with the local

community (Annex 22 pg7-12). The livelihood options documented were associated with improvement crop farming and diversification, livestock husbandry, nature-based enterprises- i.e., beekeeping and support in on-farm tree growing. Based on these preliminary results, one livelihood enhancement approach identified and promoted was the introduction of recommended fruit trees. These include in order of preference- macadamia, avocado, pear, tree tomato, and white supporter. In consultation with Kenya Plant Health Inspection Services (KEPHIS) the government agency mandated on guiding fruit trees, macadamia and avocado were recommended based on market outlook and seedlings availability. Approximately 890 households were supported with 1000 grafted avocado seedlings, 1000 grafted macadamia, 3000 un-grafted avocado seedlings, and 3000 un-grafted macadamia seedlings to be planted on-farm during the rainy season (Annex 23- Summary report of support to local farmers with fruit trees). These seedlings were sourced from registered local farmers in the Taita Hills. Further to this, 9 community-led tree nurseries were supported with 18,000 avocado seeds each to establish local rootstock which would be grafted when ready in the Y2. In addition to fruit trees as a livelihood option, we enhanced beekeeping nature-based enterprise where 140 beneficiary households were supported by 100 beehives, 20 bee suits, and 2 manual honey processing centrifuges (Annex 25_Summary distribution report).

Supported by the Taita Apalis Species Guardians biodiversity surveys were carried out to survey Taita Apalis and Taita Thrush in the project landscape (Annex 26- Taita endemic birds survey). As a result, the Taita Apalis was only encountered in only 17 out of 405-point count stations (4 in Ngangao, 12 in Vuria, and 1 in Msidunyi). Similarly, the Taita thrush was only encountered in 19 out of 405-point count stations, all being in Ngangao 259. The low numbers were attributed to a combination of timing (season) and/or effects of the prolonged drought experienced in Kenya. To complement the biodiversity monitoring community-led bird surveys were carried out documenting bird species diversity and abundance across three forest fragments, Iyale, Vuria, and Ngangao- across different vegetation types: Indigenous Forest, Mixed Forest (indigenous and Exotic Tree species), Exotic plantation areas and Forest restoration areas. As a result, a total of 45 bird species were recorded (Annex 27- Biodiversity survey report). Indigenous forest had the highest species diversity ($H = 3.2$), followed by Mixed forest- $H = 1.86$, exotic plantation- $H = 1.43$, restoration areas- $H = 1.35$.

A complete assessment of tree cover across the project landscape was carried out providing baseline status of forest and landscape vegetation structure. Use of satellite imagery and ground-truthing was used to determine the extent of vegetation type in the project area (Annex 28- Summary vegetation cover). As a result, 9% of the land use is under indigenous tree cover, 26% under exotic tree cover, and 18% under crop area was determined. The total area under tree cover was 35%.

Additional specialist technical support to the project around water catchment monitoring is being provided by Arctium a UK based consultancy with a long track record of working on water tower restoration. Due to travel restrictions the planned year one visit wasn't possible but will be replaced with 2 visits during year 2 of the project.

To support the coordination of project implementation, several virtual meetings have been held with the project team and partners to enhance project delivery. Such meetings were convened to discuss responses to questions asked by Darwin Initiative (see Annex 28- project team meeting minutes)

3.2 Progress towards project Outputs

The project contributed towards the protection of all surviving fragments of cloud forests (Output 1), by catalysing the setting up of county-level enabling policy frameworks. Nature Kenya supported the formulation of the Taita Taveta County Forest Conservation and Management Bill informed by the Forest policy developed in 2019. As a result, stakeholder consultative meetings were convened by TTCG resulting in the Draft Forest Conservation and Management Bill (Annex 29) which will be validated in Y2. Further to this, contributions were made to the national agro-forestry strategy spearheaded by the Ministry of Agriculture and Livestock (Annex 30) which will

strengthen agricultural land management for the forest adjacent community to ensure that the forest edge habitat is safeguarded.

Informed by the national and county level policy frameworks, Chawia & Vuria Participatory Forest Management Plans were accented by Taita Taveta County Government for implementation. Negotiations between Chawia and Vuria CFA management committee and Taita Taveta County Government on the Forest Management Agreement were held resulting in to draft FMA (Annex 6&7).

Three CFAs- Ngangao, IYAWEMBI, and SUNDIFU were supported to start the process of review of expired Participatory Forest Management Plans (Annex 8). As a result, 50 community meetings were convened with technical support from the Kenya Forest Service resulting in updating of the membership register, and the nomination of the CFA management committee which will coordinate the revision of the management plans (Annex 9).

As part of strengthening the capacity of CFAs, the organizational capacity assessment was carried out to identify capacity gaps of the CFAs. Three capacity development plans were developed for DABICO SSG, Vuria, and Chawia CFAs, and training was conducted (Annex 11) training 61 group representatives (34men, 27women) members on PFM, institutional governance, financial bookkeeping, advocacy, and resource mobilization.

We responded to Output 2-on Restoration of cloud forest habitat is initiated around key forest fragments. Informed by draft Taita Hills Forest restoration strategy developed consultatively with local communities and government (Annex 15), priority forest restoration sites were identified. Different restoration strategies were determined which included, exotic plantation felling, and degraded area restoration, enrichment planting, active forest management. Further to this, the Taita Apalis and Taita Thrush Species Conservation Action Plan 2015-2020 indicates expansion, habitat quality improvement, and safeguarding of suitable habitats to support species range expansion. Using the presence of Taita Apalis territories, 0.4 Acres were secured in 2022 through land purchase (Annex 13). This increases the suitable area secured for the Taita Apalis to 26.3 Acres. In addition to using the presence of Taita Apalis territories, we are using GIS and satellite imagery based on the methodology of a recently published scientific paper ([Publication Link](#)) to identify suitable habitats to refine land parcels for future land purchase. This methodology has been piloted on the existing target land purchase area (Annex 31).

To support direct forest restoration, two restoration approaches are being implemented: wild indigenous tree seed collection for forest seeding, and indigenous tree seedling propagation for growing in degraded forest areas. These two approaches are being led by the local community-led tree nurseries. 57 Support Group (SSG) /Community Forest Association (CFA) members (21 males and 36 females) were trained by KFS and TTCG foresters on methods of indigenous tree seed collection. As a result, 94 kg of native tree seeds, representing 16 species were collected (Annex 16). 32 community members (19men, 13women) representing 11 community groups were trained by Kenya Forest Service between 19th-20th January 2022 on tree nursery management (Annex 17a, 17b- Training report and photos). Using indigenous tree seeds collected, 29,000 indigenous tree seedlings of 20 tree species have been used to restore 22ha of degraded forest area in Taita Hills (Annex 20- progress on forest restoration).

The project team carried out actions to support the delivery of Output 3 by; carrying out a baseline socio-economic assessment (see Annex 22) documenting detailed livelihood options that can be implemented within the project landscape. This includes and is not limited to beekeeping, climate-smart agriculture, chicken farming, fruit tree diversification, and eco-tourism. Informed by this survey, we progress climate-smart agriculture linkages with fruit tree diversification as an approach to increasing on-farm tree growing. Five species of fruit trees were recommended and based on availability and skills requirements based on community capacity two fruit trees, macadamia and avocado were preferred. Supported by two local community tree nurseries 8000 seedlings of 4000 avocado & 4000 macadamias were procured in addition to 12,000 avocado seeds. Working with the nine community-led tree nurseries as focal points with a target of

supporting 300 households a total of 890 households were identified as beneficiaries (Annex 23- Summary report of support to local farmers with fruit trees)). The two fruit trees which are being promoted, provide both an increase in tree cover, as an approach to climate-smart agriculture and an alternative livelihood for income generation through the sale of fruit and nuts through organized markets in Taita Hills.

Output 4 is supported by undertaking biodiversity surveys to assess Taita Apalis and Taita Thrush in the project landscape (Annex 26- Taita endemic birds survey). As a result, the Taita Apalis stronghold was documented to be in Vuria forest while Taita Thrush was recorded in Ngangao forest. Two community-led bird surveys were carried out documenting bird species diversity and abundance across different vegetation types- Indigenous Forest, Mixed Forest (indigenous and Exotic Tree species), Exotic plantation areas, and Forest restoration areas. As a result, a total of 45 bird species were recorded (Annex 27- Biodiversity survey report). Indigenous forest had the highest species diversity (H = 3.2), followed by Mixed forest- H = 1.86, exotic plantation- H = 1.43, restoration areas- H = 1.35.

A complete assessment of tree cover across the project landscape was carried out providing baseline status of forest and landscape vegetation structure. Use of satellite imagery and ground-truthing was used to determine the extent of vegetation type in the project area (Annex 28- Summary vegetation cover report). As a result, 9% of the land use is under indigenous tree cover, 26% under exotic tree cover, and 18% under crop area. The total area under tree cover was 35%.

3.3 Progress towards the project Outcome

Progress made towards the project Outcome of 'The cloud forest fragments that currently survive in Taita are protected and expanded through a combination of conservation and livelihood interventions, safeguarding their unique biodiversity and enhancing local water security' during the reporting period includes;

A baseline land cover assessment was carried out **-Indicator 0.1**. A complete assessment of tree cover across the project landscape covering an area of 5651ha was carried out. Within the survey area- we encompassed all the target forest fragments- Ngangao, Vuria, Iyale, Chawia, Fururu, Susu, Ndiwenyi, and Mbili. Results can be seen at the end of section 3.2

We supported the restoration of cloud forest habitat – **Indicator 0.2**. where we 253ha identified in need of restoration in the restoration strategy (See Annex 4). 22 ha restored through the planting of 29,000 indigenous tree seedlings 20 species and sowing of 15kg of indigenous tree seeds of 16 species (see Annex 20)

We assessed biodiversity by assessing populations of key species in the forest fragment- **Indicator 0.3**. A baseline biodiversity survey was carried out to document the population of the Taita Apalis and Taita Thrush (Annex 26). This is described under Output 4 in section 3.2

We supported the livelihoods of 3600 people through the provision of crop trees for agroforestry- **Indicator 0.4**, where 890 beneficiary households were identified to increase small scale farms productivity (Annex 23- *Summary Report on Community Support with Fruit Trees*). Details are provided in 3.2

We progressed actions towards enhancing the livelihood of 250 households through the provision of at least two low-cost high-impact interventions- **Indicator 0.5** where; 140 households were supported with 100 beehives, 20 bee suits, and 2 honey processing centrifuges (Annex 25). The beneficiary household will have a return on income through the sale of honey up to UKP 15,000 annually.

With the support of water experts from Arctium, the project progressed the water balance study to assess the contribution forest restoration to support water tower function **-Indicator**

0.6 Methodology for water balance study formulated with desktop study started in readiness for field visits in June 22.

3.4 Monitoring of assumptions

All project assumptions remain valid and under review. The majority of project assumptions related to Covid or climatic conditions having negative impacts on project delivery which as yet has not been the case. Some of the longer-term assumptions around livelihood diversification leading to reduced pressures on remaining forest habitat or improving water security are not yet relevant or measurable given the project is still in very initial stages of delivery.

3.5 Impact: achievement of positive impact on biodiversity and poverty alleviation

The desired project impact is to have Cloud Forest habitat restored at a landscape scale throughout Taita, bringing major benefits to both wildlife and people and providing a model for 'water tower' hill ranges throughout Kenya. We have contributed to this impact by supporting the enabling county-level policy framework the formulation of the Taita Taveta County Forest Conservation and Management Bill informed by the Forest policy developed in 2019 (see Annex 30). We are strengthening the capacity of local community institutions responsible for forest conservation and management where Chawia and Vuria CFAs are negotiating with the Taita Taveta County Government on the Forest Management Agreement (Annex 6&7). In addition to this three CFAs are being supported to review their forest management plans (Annex 8). Informed by scientific work, identification of forest areas in need of restoration and commenced restoration of 22ha in Y1 by planting indigenous tree seedlings (see Annex 20) to improve habitat quality for biodiversity. We have made a higher-level impact on human development and well-being by introducing crop trees to 890 households (see Annex 24), which will provide nutrition and alternative income generation in the next 3 years when production starts.

4. Project support to the Conventions, Treaties or Agreements

Convention on Biological Diversity (CBD):

The project is supporting Kenya to meet its obligations under the following CBD articles in particular:

- Article 6b (integrate conservation and sustainable use into plans, programmes and policies) – where formulation of county-level forest policy has commenced in Taita Taveta County (see Annex 30), and support to developed of 3 CFA participatory forest management plans has been advanced (see Annex 8 & 9).
- Articles 8d (promote the protection of ecosystems) and 8f (restore degraded ecosystems) – A Taita Hills forest restoration strategy was developed to guide restoration actions (see Annex 12). Guided by the restoration strategy, direct forest restoration has been implemented in Y1 (see Annex 20) targeting to restore a total of 60ha by end of project and enhance protection of surviving cloud forest in Taita
- Article 10a (integrate conservation and sustainable use into national decision-making) – for the reasons summarised above for Article 6b, addition policy influence has been achieved- integrating into national agro-forestry strategy (see Annex 31)
- Article 10d (support local populations to implement remedial actions) – because we will take a strongly community-based approach and involve local people closely in project delivery. 8 Community led tree nurseries and training has been rolled out-supporting community forest associations structures (Annex 6-7).

It will also contribute towards several Aichi targets, namely:

- 1 (make people aware of the values of biodiversity and how they can conserve it) (see Annexes 9 & 11)
- 2 (integrate biodiversity values into development and poverty reduction strategies (see Annex 22)
- 4 (achieve sustainable production and consumption)- (see Annex 23 & 25) where there is on-farm diversification through fruit trees and adoption of nature-based enterprises

- 5 (reduce habitat loss, degradation, and fragmentation) (see Annex 20-) where there has been direct restoration of degraded areas.
- 12 (prevent the extinction of threatened species)
- 14 (restore and safeguard ecosystems that provide essential services, including services related to water). Linked with restoration actions described in Annex 20.

United Nations Framework Convention on Climate Change (UNFCCC)

The project has both mitigation and adaptation benefits. Activities will help to mitigate climate change by preventing the destruction of the forest fragments that survive in Taita and initiating the restoration of additional forest; and will help local people adapt to climate change by improving their access to water in the short term and water security in the longer term, and by introducing new, climate-resilient livelihood activities.

Other Conventions:

The project will support Kenya's contribution to the African Forest Landscape Restoration Initiative (AFR100) through:

- reforestation and rehabilitation of degraded natural forests (see Annex 15, 16, 20)
- development of agroforestry on cropland. (see Annex 23) where 8000 fruit trees will be grown on-fam, and additional 12,000 fruit tree seed sowed.

In addition, the project contributes to the realisation of the Africa Water Vision for 2025 prepared by the Economic Commission for Africa, the African Union and the African Development Bank (<https://repository.uneca.org/handle/10855/5488>). This vision is summarised as “an Africa where there is an equitable and sustainable use and management of water resources for poverty alleviation, socio-economic development, regional cooperation, and the environment”.

5. Project support to poverty reduction

As referenced in the project summary as of 2016 32.3% of people in Taita Taveta County were living below the Kenyan poverty line, and 38.9% were in food poverty. The vast majority of these low-income families are reliant on small scale subsistence farming as means to produce both the food they need and the means of generating finance to meet other needs such as education and health costs. With climate change bringing ever more unreliable rainfall patterns and the water catchments functions of the Taita Hills significantly compromised by deforestation the ability of these families to survive is becoming ever more precarious.

This project will therefore support poverty reduction through the livelihood diversification initiatives which are being delivered by project partners. So far 890 households have received support to diversify their on-farm production to include cash crop tree species, and in particular macadamia nut and avocado trees (see Annex 23). A total of 4000 macadamia nut trees and 4000 avocado fruit trees have been grown. It is estimated fruit tree maturity timeline of between 2-5years depending on whether it is grafted or not (see [OxfarmKenya](#)). A mature macadamia tree can produce 180Kg of nut per season earning a farmer KSh.18,000 at KSh100/kg. So we estimate increase income of local community by KSh.72million based on 4000 macadamia nut trees supported in Y1 within the next 5years. Similar benefits will be derived from avocado fruit sale. In addition to income, we also see overall communal benefits through improved household nutrition.

As well as the provision of cash crop fruit trees the project is supporting capacity development around the cultivation of a wide range of tree species which will assist local communities' direct involvement in the generation of forest parcels. As the forest regenerates these communities will be active participants in the management of these forest areas thanks to the forest management plans prepared or revised with the support of project partners.

Further to improved income generation at household level, through the planting of fruit trees, attributable ecosystem services of carbon sequestration and soil stabilisation by the fruit trees will be accrued helping improve the fertility of farms – or at least reduce the rate at which fertile soils are degraded. Over time and as tree cover increases across the Taita Hills it is hoped that

the capacity of the hills to retain and slowly release water will improve which in turn will increase water security for the surrounding communities.

In years 2 & 3 local level water security will be improved in two communities through the provision of water tanks which will allow for local springs to be protected and water stored which will increase both access to water and increase the timeframe whereby water is available from these springs.

6. Consideration of gender equality issues

Although the project does not have an indicators or activities related specifically to gender equality the project has key principles of gender equality embedded within its design and delivery, namely:

- i) men and women have equal representation and say
- ii) restoration benefits will be equitably shared
- iii) restoration efforts will equitably compensate men and women.

In practise equal representation is somewhat complicated by the fact that the gender ratio in the CFAs and DABICO is currently about 2:1 (men:women) and although efforts are being made to encourage further advancement towards a 50/50 representation it is important to note that it is beyond the scope of the project partners to push aggressively for this change given current representation aligns with Kenya's constitution whereby all forms of representation must involve at least one-third of each gender.

We have ensured that gender segregated data is captured in all all meetings which are organised, for example see Annex 9, a total of 50 villages were covered reaching out to 1,121 community members (521 males and 600 females) sensitized on PFM, see Annex 17 & 21 - Training on Tree nursery establishment and management where 99community member (46men, 58women) were trained. Aside from formal project indicators it is expected that some project outputs are likely to have positive impacts on women within the projects target communities. In particular the construction of water tanks will improve water security within these communities and allow the collection of water all year round from a safe source. Given that the collection of household water supplies is usually a task for women or children it is anticipated that these water tanks will have positive impacts around reducing time poverty as travel to more distant water sources in the dry season will be reduced. Additionally, and once established the agroforestry plots should result in more productive income generation when compared to conventional subsistence farming on marginal land. Given women undertake a significant amount of the manual labour required in crop production in the area it is anticipated once again that time will be more available to women to engage in other more impactful activities.

7. Monitoring and evaluation

Given the delayed project start to year one implementation the primary focus of partners has been the mobilisation of communities and the initiation of the project's key foundational activities such as establishing nurseries and collecting required seeds from indigenous tree species. With much achieved over a relatively short time frame the project indicators at this point can only really be reported upon from a quantitative perspective with some time required before the more qualitative elements become evident.

As such there have been no changes in the project design and log frame outlines in Annex 1 below. We used Outcome and Output indicators to track project progress. We convened project partners routine meetings to evaluation of project implementation progress based on the project workplan. Overall, we have recorded good progress towards the project Impact, Outcome and Output. Baseline surveys were carried out on biodiversity surveys (Annex 26-27), GIS mapping land use land cover mapping (Annex 31), and socio-economic assessment (Annex 22); which will support evaluation of project interventions.

8. Lessons learnt

Based on recently published work ([Obunga et al 2022](#)), Nature Kenya and partners are exploring replication of the use of GIS and satellite imagery for habitat assessment based on the methodology and modelling to assess and identify suitable Taita Apalis habitats across Taita Hill Forest. This technical support will be strengthened in Y2 and Y3.

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

N/A

10. Other comments on progress not covered elsewhere

N/A

11. Sustainability and legacy

The involvement of project partners in supporting the development of a policy framework and formulation of county forest legislation for Taita Taveta County around sustainable forest restoration in Taita Hills Forest (see Annex 30) is an important step towards ensuring project sustainability and legacy. Such policy and legislation should simplify the mainstreaming of restoration programs in the county.

Furthermore, restoration information and results will also contribute and inform national forest and landscape restoration action plan responding to AFRI 100 and Bonn Challenge, that Kenya has target to restore 5.1million ha of degraded landscapes. Capacity enhancement of community forest associations will ensure sustainable exit strategy is in place with strong community institutions in place.

As well as sensitising the local administrative bodies and communities around the project and its intended objectives, Nature Kenya have publicised the project via their assorted social media channels (see section 12) and all project partners have taken every opportunity to publicise the project when engaging with the relevant local and national authorities or within relevant scientific and conservation networks.

12. Darwin identity

We ensured that Darwin Initiative identity was publicised and promoted throughout the project implementation phase. In all presentations done, at community, county, national and global level, Darwin Initiative logo was present. In all published documents, Darwin Initiative was branded (see [Link](#)). In Nature Kenya's website- Darwin Initiative is included as support to Nature Kenya's conservation program ([Link](#)). In all social media communication, involving the project activities, Darwin Initiative was tagged (see [Link](#))

13. Impact of COVID-19 on project delivery

As the project only started in September implementation has not suffered from any major disruptions as a result of the Covid-19 pandemic that couldn't be addressed through suitable mitigation measures.

Beyond the disruption caused by office closures and movement restrictions which limited the opportunities for face-to-face planning, the main Covid related issues faced by the project thus far were actually the delays in Darwin approving the project and then transferring funds. These delays resulted in the first year of the project being shortened by 2 months and a delay in payments being made to partners who luckily were able to absorb costs until transfers of funds were possible.

Kenya instigated thorough measures to limit the transmission of Covid 19 and as a result public awareness of appropriate social distancing and mitigation measures is generally good. All scheduled field activities were for the most part unaffected with all community meetings and trainings taking place outside with appropriate social distancing and hygiene measures in place

The opportunity for members of the international project team from the RSPB and the project water monitoring consultancy Arctium has been negatively impacted by the difficulties in international travel and a 'back log' of other international work obligations. As such it has not been possible for planned visits to occur during Year 1 of the project, but this has not negatively impacted the project with all focus of the Kenyan teams being on making up time to deliver against the original work schedule in a reduced time frame.

14. Safeguarding

Please tick this box if any safeguarding or human rights violations have occurred during this financial year.

Both the RSPB and Nature Kenya have specific Safeguarding policies and staff codes of conduct as well as procedures for reporting safeguarding issues which adhere to the terms and conditions of the Darwin grant. All staff, volunteers, consultants, and partners have been made aware of these requirements and systems. During the reporting period no safeguarding issues were raised with either Nature Kenya or the RSPB.

The RSPB has made no changes to its approach to Safeguarding over the past year but work is ongoing within the organisation to strengthen capacity in this area to both improve internal practise and also support partner development in this important area.

15. Project expenditure

Table 1: Project expenditure during the reporting period (1 April 2021 – 31 March 2022)

Project spend (indicative) since last Annual Report	2021/22 Grant (£)	2021/22 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)	██████████	██████████	██████████	Not all required water flow & climate monitoring equipment was available at time of purchase (made directly by RSPB. Additional equipment will be purchased in Yr2) and costs for project motorbike have been shared with another funding source/project.
Monitoring & Evaluation (M&E)	██████████	██████████	██████████	
Others (see below)	██████████	██████████	██████████	
TOTAL	██████████	██████████	██████████	

16. OPTIONAL: Outstanding achievements of your project during the reporting period (300-400 words maximum). This section may be used for publicity purposes

I agree for the Darwin Initiative Secretariat to publish the content of this section (please leave this line in to indicate your agreement to use any material you provide here).

N/A

Checklist for submission

	Check
Different reporting templates have different questions, and it is important you use the correct one. Have you checked you have used the correct template (checking fund, type of report (i.e. Annual or Final), and year) and deleted the blue guidance text before submission?	Yes
Is the report less than 10MB? If so, please email to Darwin-Projects@itsi.co.uk putting the project number in the Subject line.	No
Is your report more than 10MB? If so, please discuss with Darwin-Projects@itsi.co.uk about the best way to deliver the report, putting the project number in the Subject line.	Yes
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.	Yes
Do you have hard copies of material you need to submit with the report? If so, please make this clear in the covering email and ensure all material is marked with the project number. However, we would expect that most material will now be electronic.	No
Have you involved your partners in preparation of the report and named the main contributors	Yes
Have you completed the Project Expenditure table fully?	Yes
Do not include claim forms or other communications with this report.	