



Department  
for Environment  
Food & Rural Affairs



## Darwin Initiative Main Project Annual Report

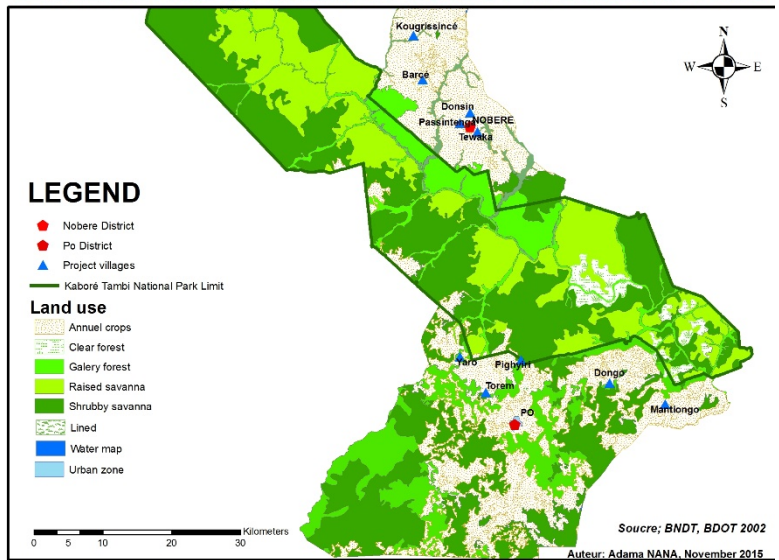
### Darwin Project Information

Project reference	23-017
Project title	Building resilient landscapes and livelihoods in Burkina Faso's shea parklands.
Host country/ies	Burkina Faso
Contract holder institution	BirdLife International
Partner institution(s)	Naturama, RSPB, Trinity College Dublin, Global Shea Alliance, Vogelbescherming Nederland (VBN), and University of Ouagadougou.
Darwin grant value	£302,996.
Start/end dates of project	1 <sup>st</sup> May 2016 – 30 <sup>th</sup> April 2019.
Reporting period (e.g., Apr 2017 – Mar 2018) and number (e.g., Annual Report 1, 2, 3)	April 2018 – April 2019 (final project activity June). Annual Report 3
Project Leader name	Elaine Marshall.
Project website/blog/Twitter	<a href="http://www.naturama.bf/web/index.php/component/k2/item/111-la-strategie-arbres-insectes-oiseaux-un-moyen-d-assurer-la-perennite-du-karite-des-insectes-pollinisateurs-et-la-survie-des-oiseaux-migrateurs">www.naturama.bf/web/index.php/component/k2/item/111-la-strategie-arbres-insectes-oiseaux-un-moyen-d-assurer-la-perennite-du-karite-des-insectes-pollinisateurs-et-la-survie-des-oiseaux-migrateurs</a>  <a href="http://www.birdlife.org/worldwide/news/concrete-partnership-nature-conservation-burkina-faso">http://www.birdlife.org/worldwide/news/concrete-partnership-nature-conservation-burkina-faso</a>  <a href="https://campusbuzz.blog/2017/11/17/birds-bees-and-butter-pollination-services-in-shea-parklands-of-burkina-faso/">https://campusbuzz.blog/2017/11/17/birds-bees-and-butter-pollination-services-in-shea-parklands-of-burkina-faso/</a>  <a href="http://www.BirdLife.org/news/tag/shea">http://www.BirdLife.org/news/tag/shea</a>  <a href="http://www.birdlife.org/africa/news/learning-about-birds-and-bees-west-africa">http://www.birdlife.org/africa/news/learning-about-birds-and-bees-west-africa</a> <a href="https://ww2.rspb.org.uk/our-work/conservation/projects/ecology-of-migrant-birds-in-africa/">https://ww2.rspb.org.uk/our-work/conservation/projects/ecology-of-migrant-birds-in-africa/</a>
Report author(s) and date	Elaine Marshall, Adama Nana, Assita Dembele July 2019

## 1. Project rationale

Almost half of Africa's Sub-Saharan region is a fragile dryland habitat, much of which has become degraded and fragmented. The shea parklands form part of this critically threatened ecosystem - which plays an important role in buffering the shocks and stresses associated with the effects of climate change - for the millions of rural habitants who reside throughout the 21 range countries. This parkland ecosystem is traditionally a food and fuelwood production system- founded on shifting agriculture with extended periods of fallow – which historically has provided a vital seedbank of biodiversity, from which shea and other native trees and shrubs could naturally regenerate. Increased population pressure arising from immigration and agricultural intensification during the last 40 years, has been a key driver of land use change, notably towards permanent agriculture associated with reduced biodiversity.

### LOCALISATION OF DARWIN PROJECT IN BURKINA FASO



Shea (*Vitellaria paradoxa*) - found in 21 sub-Saharan countries - is largely dependent on insects for pollination, primarily by honey (*Apis mellifera adansonii*) and stingless bees (*Hypotrigona sp.*). An estimated 16-18 million people (almost exclusively women) collect shea fruit, which provides the primary edible oil for over 100 million people. The fruit-pulp is vital food during the 'hungry season', and rural women rely on the income generated by the sale of butter and associated value added goods, such as shea butter soap. Burkina Faso is one of the poorest countries in the world, with 1:10 children suffering from acute malnutrition<sup>1</sup>. Rural communities rely heavily on parkland resources including shea, parkia ('nere'), and tamarind among others, for nutritional security and income generation.

With the introduction of the tractor into the landscape some 4 decades ago, management practices of 'cleaning out' natural regeneration, along with low cultural association of tree planting, has greatly reduced plant diversity. This loss of landscape biodiversity has directly contributed to a decline in insect pollinators and the provision of pollination services, and we believe that this threatens longer term food security and rural livelihoods. This shea monoculture of low plant diversity is unlikely to maintain the pollinator richness required for optimal pollination services (Stout *et al.*, 2018<sup>2</sup>). Sharp declines in migrant bird populations in Europe over the last two decades - suspected to be partly linked to landscape change in the non-breeding grounds – has caused increasing concern among bird conservationists. Upon investigation habitat loss in the wintering grounds of West Africa was identified: scrub and forests cleared for agriculture, fallow areas reduced in size and rotation, and often absent from the landscape completely, and only the fruit-bearing shea trees remaining dotted through the fields. Such trends have been associated with wildlife losses elsewhere, and they are difficult to reverse because farmers need to make a living. However, if conservation friendly land-uses which enhance biodiversity on farm are shown to benefit local farmers, it may be possible to manage land better for people and for nature.

To meet these challenges the project has developed an integrated agricultural land management approach that takes into account the issue of habitat diversification and the improvement of productivity and producers' incomes through the "Trees, Bees and Birds Strategy" strategy (see Section 3.1 Output 2). This approach has been accompanied by capacity building for adaptation to activities (in terms of farmers' knowledge of

<sup>1</sup> <http://www1.wfp.org/countries/burkina-faso> Accessed April 2018.

<sup>2</sup> Stout J., Delaney A., Marshall E., et al. (2018). *Insect pollination improves yield of Shea (Vitellariaparadoxa subsp. paradoxa) in the agroforestry parklands of West Africa*. Journal of Pollination Ecology.

agroforestry techniques, environmental education) and adaptation to responsibilities (in terms of informing and sensitizing local decision-makers, developing and implementing an advocacy strategy).

Following three years of project implementation we have observed significant contributions made towards developing an evidence base around understanding how landscape structure and composition can influence pollination services in the shea parklands. This new knowledge has been used to refine the development of the “Trees, Bees and Birds” (TBB) strategy (See Section 3.1 Output 2), which encourages farmers to mainstream biodiversity on-farm. On a large scale, this has the potential to increase landscape resilience through diverse mosaics of parkland, thereby contributing to the long-term sustainability of the ecosystem and its shea goods. These findings have also been finalised and promoted and disseminated in a policy and advocacy brief (*Building resilient Landscapes and Livelihoods in Burkina Faso’s Shea Parklands*: Section 3.1 Output 4), in order to target other stakeholder groups, decision-makers and development organizations working in the locality, and at a National level in Burkina, to highlight the importance of best practice for biodiversity conservation and sustainable livelihoods.

## 2. Project partnerships

Responsible for overall project management BirdLife International (Secretariat) has worked closely with Naturama (project implementation and impact assessment) Trinity College Dublin (peer reviewed publication) and the RSPB (policy briefing paper) during the final project year to ensure delivery of all activities. The Project Leader has visited the region twice during this final project year (in Q1 to Burkina Faso), and Q4 to the Global Shea Alliance Sustainable African Congress, Ghana. She met with the Burkinabe project and field work managers and further strengthened collaboration with the GSA through a presentation on the importance of mainstreaming biodiversity in the parklands through farmer-led adaptive management, to the 500 strong participants at the GSA meeting "unveiling shea value" (See 3.1 Output 4).

At the National policy level the partnership has been further strengthened by promoting the project's results in several meetings and development plans, in particular with the Forest Investment Project (FIP) where the TBB strategy has been taken into account in the elaboration of integrated development projects for REDD+ (PDIC/REDD+) in five municipalities. The partnership was also extended to schools in the project area through school facilitation sessions, production and dissemination of information tools (poster posters). A total of 20 school-level facilitation sessions were held with the participation of 1616 students (757 boys and 859 girls).

The project also worked to connect women's butter and soap production groups with a DEWEYE Union - a union of women's groups active in the production and marketing of organic butter. A partnership to work with and further develop the community groups supported by the Darwin project, as part of this Union has been initiated.

The BirdLife Partner RSPB (UK) has continued lead on implementation of 6 bird surveys during the project implementation in the TBB intervention plots, having established the baseline in Year 1. (See 3.1, Activity 1.3; Annex 4, J Mallord, Final Monitoring Report).



The Trinity College Dublin (TCD) scientists submitted a research publication to the *Journal of Applied Ecology*. The Pollinator Committee met for the last time in Q4 PY3 when Prof. Stout and Dr Delaney travelled to the David Attenborough Building in Cambridge to participate in a seminar the Project Leader organised for the Cambridge Conservation Initiative. The event was designed to show-case the Darwin projects and their roles in mainstreaming biodiversity in forest and agricultural landscapes (see Annex 1, Output 4, Darwin LEEP sharing event).

The Darwin project has continued to foster close collaboration with VBN (BirdLife Netherlands), with the PL traveling in Q2 and Q4 of the project, invited by the Dutch Postcode Lottery project 'Birds, Bees and Business'. The first meeting included key personnel from Naturama to discuss



PRESENTATION DU PROJET DARWIN PAR LE PROJECT LEADER (Elaine Marshall) AU PAYS-BAS EN PRÉSENCE DE L'ÉQUIPE VBN ET NC-UICN) LE 03 OCTOBRE 2018

trans-boundary habitat management between Burkina and Ghana, and at the second meeting, a small group of stakeholders came together to work through a Theory of Change for the Parkland landscape. The legacy of Darwin will live on in the implementation of the 'BBB project' (VBN, ICCO, and Naturama 2019-2022), and initiatives around Burkina - Ghana biological corridors, taking into account the project's intervention sites to strengthen protected areas (Kabore Tambi National park) and peripheral villages.

A major achievement in PY3 for project partner Naturama has been the development of a new partnership with Nitidae (formerly RONGEAD, <https://www.nitidae.org/>, the NGO working with

L'Occitane) as part of the USAID funded GSA public: private partnerships project. This partnership has enabled the mapping of shea trees within the parklands, thereby securing them for the benefit of local women's groups. This approach could be the subject of a future initiative and will make it possible to promote, strengthen and duplicate the project's results and lessons learned across other sites also. The Bobo Dioulasso area (Upper Basin region, Wertern Burkina), which also has a high potential for shea butter and well-organized women's organizations, could be targeted by a new programme of work.

### 3. Project progress

#### Project management and staffing

Project personnel has remained constant during the final project year. In spite of the difficulties linked to the ongoing security situation, which ultimately curtailed a final field visit to Burkina prior to the end of the project, the project was able to implement all the activities on time and had a very positive final year achieving its objectives through effective engagement across all its stakeholder partnerships.

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

**Output 1: Research outputs completed and used to educate the shea-growing community around KTNP via pollination demonstration sites. The entire evidence base reviewed and used to inform development of the "trees, bees and birds" agri-environment strategy.**

**Activity 1.4** The peer reviewed pollination paper has been submitted to the Journal of Applied Ecology and is in Press. Pollinator education activities (activity 1.7) In Q1 PY3, in order to give a global voice to the involvement of young people in the Darwin project area in the sustainable management of shea parks in Burkina Faso, an article on youth and biodiversity conservation was prepared by Naturama for the Darwin newsletter, in recognition of the International Youth Day commemorated on August 12. In Q2, text was produced for publication on the Naturama website, presenting the project's objectives and activities along with key results to date providing increased visibility of the project and the TBB strategy, to a wider audience ([www.naturama.bf/web/index.php/component/k2/item/111-la-strategie-arbres-insectes-oiseaux-un-moyen-d-assurer-la-perennite-du-karite-des-insectes-pollinisateurs-et-la-survie-des-oiseaux-migrateurs](http://www.naturama.bf/web/index.php/component/k2/item/111-la-strategie-arbres-insectes-oiseaux-un-moyen-d-assurer-la-perennite-du-karite-des-insectes-pollinisateurs-et-la-survie-des-oiseaux-migrateurs)). In addition, a poster on the TBB strategy was produced to accompany the awareness activities, and provide information to local stakeholders (communities, NGOs, researchers, and policy makers) on pollination; the importance of pollinating insects; threats to pollinators, and means of protecting pollinators. See Appendix 4, Output 1. The posters, in hard copy, were distributed to all relevant local authorities, prefectures, and technical services, in the municipalities around the Kabore Tambi National Park. An electronic version of the document will be available on the NATURAMA website to reach a wider audience.

**Activity 1.7** The project established a working group on pollination to work on experiments and the development of the TBB strategy (Indicator 1.1); identified and materialized 20 demonstration sites that were used to pilot the strategy; and in collaboration with the University of Dublin and the University of Ouagadougou

grew capacity in country to research pollination and highlighted the importance of effective pollination (Indicator 1.2) <https://campusbuzz.blog/2017/11/17/birds-bees-and-butter-pollination-services-in-sheep-parklands-of-burkina-faso/>

**OUTPUT 2: 500 people from 10 communities around KTNP have implemented the “trees, bees and birds” parkland management strategy, while another 1000 via farmer-to-farmer education have the knowledge and capacity to do so. Access to market and potential revenue streams have increased through product diversification and training to improve butter quality**

**Activity 2.2** In Q1, an initial assessment of income from bee keeping was undertaken with the 20 ambassadors (received training in modern beekeeping techniques), and 3 months post hive installation, the sale of honey had generated revenues ranging from CFA 3000 to CFA105,000 (an average equivalent of £42 per ambassador (£42). The variation is attributable to how much honey was consumed versus sold, and also the volume of production per se. Hives located close to cotton production had associated reduced foraging access to flowering trees (as a result of ‘extensive and uncontrolled use of pesticides’, and upon reflection, the affected hives were moved to better locations.



In Q2, monitoring of the production and use of organic manure was carried out during the month of July at the time of the field work with the 100 beneficiaries of the training activity. It confirmed the number of manure pits constructed to date, and allowed refining of production techniques for quality organic manure. In the municipality of Nobéré (North of the National Park) three quarters of pits were dug and stabilised, just under half of them filled, and 1 in 10 farmers had already begun using organic manure in their fields. In Po (south of KTNP) the results showed all holes / pits had been dug, the vast majority constructed (lined with cement) and over 1 third had been filled. The observed delays in composting production are attributable to the soil being very hard to dig (rock parent material), a lack of available building material (rubble, etc), insufficient agricultural residues built up / collected, to compost, and the low unavailability of water, all contrived to make it difficult for ambassadors to build pits in fields that are often far from villages and without a nearby water source and the lack of labour to dig pits.

The monitoring also revealed that maize was the only crop to have benefited to date from the organic manure, to date). Activity monitoring has shown that in Po, 98% digging, 87.8% construction and 38% filling has taken place, and in Nobéré, 74% of the work was carried out, 68% of which was stabilized manure pits and 48% filled manure pits. Strategically, NATURAMA will continue to promote the activity on a larger scale through projects such as BBB with heap composting models that are less painful to implement. Preliminary costs savings would indicate that the activity is worth pursuing, as the use of organic manure instead of the expense of fertilizers, has also enabled the ambassadors to make considerable savings estimated at around 37,500 CFA francs (USD 65 per hectare).



**Activity 2.5** The TBB strategy document was revised in Q1PY3 at an exchange meeting with all twenty



pollination ambassadors, making it possible to reflect upon and take into account certain difficulties encountered in its implementation, in particular the availability of water, the facilitation of the transport of organic manure and the strengthening of field protection measures (see Annex 4, Output 2, Atelier de la Revision de la Strategie). As such Naturama have been working directly with ambassadors to strengthen the implementation of the TBB techniques through additional advisory and technical support (see photo making compost).

Education and awareness campaigns on pollination and pollinating insect - assisted by the project ambassadors - have continued throughout the final project year engaging the personnel from the technical services of the Environment, Agriculture, and Livestock Ministries, the district education centres, prefectures, primary schools, and local partner associations. A total of 807 beneficiaries from the wider communes of Po and Nobere received the education and awareness training (see Annex 4, Output 1 Posters – ‘Affiche Darwin Pollinisation’ and ‘Affiche Champ modele’, and Output 2, *Séances de sensibilisation et de remise des affiches sur la stratégie TBB ....*)

The assessment undertaken on community pollination knowledge was achieved through the delivery of a capacity development plan (PY1 Q2), which defined two main components of capacity building. The empowerment of communities and the promotion of good practices highlights the project's positive impact on improving knowledge around both the pollination process, and pollinating insects. The evaluation noted:

- a significant improvement in the diversity of species maintained in the fields thanks to reforestation actions and natural regeneration assisted by producers;
- a 15% decrease in the use of chemicals following the technical and material support provided by the project;
- an improvement in the number of people aware of pollination from 28% before the project to 100% following the project and its activities to promote optimal landscape conditions for pollinator development (see Appendix 4, Output 2, Rapport enquête d'impact);

A total of 370 farmers (350 producers and 20 pollination ambassadors) from 10 project intervention villages directly implemented the full TBB strategy (Indicator 2.2).

An additional 20 demonstration sites have been identified and georeferenced for future work with BBB project, and TBB activities were implemented at these sites (mulching and composting, natural regeneration, tree planting, and beekeeping) and site visits between farmers and with external partners were organised to highlight the importance of the TBB strategy in relation to traditional field management (Indicator 2.3).



VISITE TERRAIN DES SITES DE DEMONSTRATION DE LA STRATEGIE TBB DU PROJET DARWIN  
PAR L'EQUIPE NATURAMA/VBN/ICCO, Novembre 2019

Under the Darwin project a total of 1596 people, including 587 women (36%) received training and information on the TBB strategy, and went onto implemented this either partially or fully (see Section 7, Table 4; Indicator 2.4).

Farmer-to-farmer exchange visits were carried out with the support of the DAWEYE Union, providing an opportunity to connect pollination ambassadors and women's groups with other women's butter producers' organizations. In addition, the capacities of actors and producers were strengthened through the production of various training and capacity building materials and events (indicator 1.3)

<http://www.naturama.bf/web/index.php/component/k2/item/111-la-strategie-arbres-insectes-oiseaux-un-moyen-d-assurer-la-perennite-du-karite-des-insectes-pollinisateurs-et-la-survie-des-oiseaux-migrateurs>



**Activity 2.7** Research with women's groups in the 8 villages benefitting from the soap production equipment showed that 3 months after acquiring the equipment, women were producing between 2 - 20 times the income they had previously (with an average of CFA 47,144 (£65)! Women consider the activity to be very profitable, as the soap sells well locally for personal and laundry cleaning. Production is expected to increase after the resolution of technical problems in the manufacture of the moulds, corrected with the help of the trainer.

To increase market access and increase the sources of income of women's groups in the project area, a link was established between them and a Federation of Shea Butter Production Unions (Appendix 4, Output 2, Session de mise

en relation-Darwin-Danyewè; Indicator 2.5).

**Output 3. Capacity of the host country for pollination research, long-term impact monitoring, and pollination education has been developed via mentoring by in-country and international pollination experts. Naturama have the capacity for ongoing development and monitoring of the "Trees, bees and birds" strategy.**

**Activities 3.1 and 3.5** Trinity College researchers (Dr Aoife Delaney and Prof. Jane Stout) travelled to the DAB, Cambridge in Q1 of Year3, to give a presentation with the PL, on the scope of the Darwin project, the key pollination findings, and the implications of these for policy, and in relation to knowledge gaps and priority areas for future work, and again in Q4 of PY3. **Activity 3.3** Identification of additional field sites for the collection of data around suitable bee refuge locations has begun as part of ongoing pollination work undertaken between Naturama and the University of Ouagadougou, with new students under Prof. Nombre. Vegetative species of importance to shea pollinators post shea flowering period (1 month / year), include *Piliostigma reticulatum*, *Piliostigma tiningii*, *Acacia nilotica*, *Acacia gourmaensis*.



The Burkinabe team now have the requisite understanding of pollination services and the capacity to produce educational materials for training (see Annex 4, Output 3 Pollination poster). Continued monitoring contact from RSPB scientists have ensured that Naturama staff have been supported in the continued implementation of their ongoing bird survey work (see Annex 4, J Mallord bird survey report). For **Activity 3.4** the Masters student Mariam Konaté continued her research on the identification of insect refuges, supported by the University of Ouagadougou. Fieldwork on the implementation of the research protocol was carried out (see Annex 4, Output 1, Rapport Synthese sur les oiseaux....)

Several ongoing initiatives have further consolidated and expanded the TBB strategy: primarily to develop the "Bees-Birds-Business" project in collaboration with VBN and ICCO Cooperation. The TBB strategy has also been promoted within the framework of Burkina Faso's Forest Investment Programme (FIP) where NATURAMA has been involved in the development of integrated communal development projects for REDD+. The results of the project were evaluated within the framework of the EU call for projects (Reference: EuropeAid/161807/DD/ACT/Multi through the submission of the concept note of a project entitled "Project to support the preservation of the Po, Nazinga, Sissili complex (PAP/PONASI)" in consortium with the German NGO Deutsche Welthungerhilfe. (**Activity 3.6**)

## **Output 4: An advocacy programme for integration of the ‘trees, bees and birds’ management strategy into policy and practice leading to the integration of TBB advice into GSA sustainability guidelines**

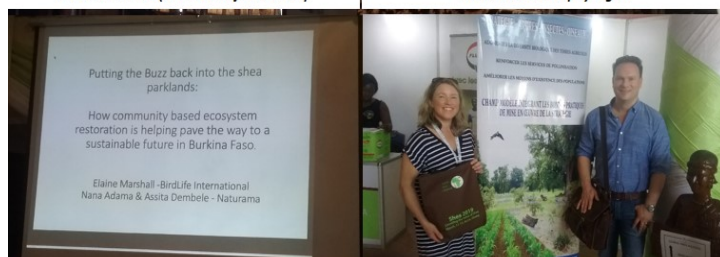
**Activity 4.1** PL met with policy strategists from the RSPB in Q2, to agree how best to take forwards the development of the Policy Briefing Paper, and strategies to best support Naturama in their advocacy work in the region. It was agreed to work through CBD focal points, and to secure the integration of the TBB findings into regional policy avenues, including the Burkinabe National government, and district authorities. The Project Leader delivered the advocacy and policy brief (see Annex 4, Output 4, Policy Briefing Paper) summarising the implications of project findings, and providing recommendations for development assistance. In addition to this and the GSA Parkland Management component of the project advocacy work, Naturama have implemented their advocacy strategy via community level activities, and in schools and at national and international meetings (PY3 QR3). **Activity 2.2** The PL and Assita Dembele contributed extensively to GSA workshops and meetings, presenting the TBB strategy on workshop panels in Ghana and also the Netherlands. In Q2, the Director of Ghana Wildlife Society (Birdlife’s partner in Ghana) participated on behalf of the Darwin team in the Sustainable Working Group of the GSA, at their annual meeting in Tamale, Ghana (November 18). The project team very much hopes to secure future funding to facilitate the extension of the TBB work into Northern Ghana, by way of a transboundary project, helping GWS benefit from Naturama’s capacity, given the extension of the shea zone into Northern Ghana, and also building on the initial pilot project work undertaken by the pollination scientists, in 2015 / 16. (see section 9, Lessons Learned and successful EU funding).

### **DARWIN PROJECT IN GSA ANNUAL MEETING (Acrra, Ghana, March 2019)**



Présentation des résultats du projet Darwin par Elaine Marshall (Darwin Project Leader)

Vue des panelistes du panel 4: innovations pour la restauration des paysages



Vue partielle de la présentation de Elaine Marshall

Exposition du poster TBB pendant l'atelier GSA

**Activities 4.4 to 4.6** are relevant to Year 3 but notable progress has been made towards these in the wider advocacy and dissemination of the “TBB strategy” and general project approach. The final meeting of the UK and Burkinabe team was during participation in the 2019 GSA annual meeting on the theme “Unveiling the value of shea”, 12-15 March 2019, Ghana, and disseminated the Policy Briefing Paper (Annex 4, Output 4; see indicator 4.1 below). During this meeting of 500 participants from all over the world, including representatives of the shea industry, NGOs and women’s groups producing butter and associated products, international institutions, etc., the Darwin project was invited to present its work, under the theme ‘Innovations for Landscape restoration’.

[https://globalshea.com/uploads/files/shea\\_2019\\_1544092197/shea\\_2019\\_agenda\\_963.pdf](https://globalshea.com/uploads/files/shea_2019_1544092197/shea_2019_agenda_963.pdf)

## **3.2 Outcome**

**Project Outcome:** “Understanding of the relationship between tree diversity, pollination, shea yields, agricultural land use and migratory birds in Burkina Faso, informs management of 500 parkland smallholdings, and sector-wide guidance, promoting livelihood resilience and biodiversity.”

**Indicator 0.1** measures progress towards better understanding (and quantification) of the role and importance of insect pollinators for resilient shea production; establishment of the habitat requirements for healthy populations of pollinators and birds; and building capacity for pollinator and bird research and monitoring in Burkina Faso. The baseline was: “The status of insect pollinators in West African agro-ecosystems poorly understood; in particular, only limited information on their role in the pollination and yield of shea trees”.

Field research on pollination, pollinators and shea production was completed by the end of PY2 but during the course of PY3, the pollination team finalised and submitted the peer review paper, which is now In Press (see Appendix 4, Output 1, Delaney et al). **Indicator 0.2** is focussed on awareness-raising of the value of pollination services and diverse on-farm habitats to sustainable agriculture, among target communities. The



workplan during Year 3 has worked continuously to raise awareness behind the logic of the TBB, and is on track to deliver against EOP targets (numbers of men, women, school children, NGOs and government stakeholders). The project baseline was “*little to no appreciation amongst shea-growing communities of the importance and value of pollination services*”. The impact assessment (see Appendix 4, Output 2, Rapport d’enquête d’impact du projet) shows a change in behaviour in the management of agroforestry parks at the project intervention sites. As detailed in 3.2 (Output 2), a total of 3211 people (1616 élèves et 1595 adultes) have received a combination of direct and indirect influence regarding how the TBB strategy works, what it is set to achieve, and why this is important. The ongoing advocacy and communication work of the entire project team, in Burkina Faso and Internationally, via training, awareness, demonstrations, meeting and workshop presentations and other means of outreach - as to the importance of biodiversity in the shea parkland system and the importance of ecosystem services, in particular pollination – to all project stakeholders, has been an integral component of the Year 3 work plan. The Policy Briefing Paper documents the key science findings and recommendations for a wider policy and practice audience (See Appendix 4, output 4).

**Indicator 0.3** relates to testing and implementation of the pilot “trees, bees, and birds (TBB) strategy”, with EOP targets for increased diversity and enhanced shea parkland habitats producing benefits for biodiversity and sustainable livelihoods: ‘biodiversity intact, resilient ecosystems able to provide a sustained shea supply, fuelwood and other crops and NTFPs’. By project close some **1595** shea producers and farmers **including 587 women’s (37%)** have received capacity building and awareness training relating to the ecosystem management interventions promoted by the TBB strategy, and shea production training to strengthen women’s capacity for enhanced income generation (See 3.1, 3.2: Output 2, and supporting documents in Annex 4). Research findings demonstrate that those farms who have a more established implementation of the TBB strategy, are already associated with reduced levels of pollination limitation resulting from increased levels of vegetation diversity on farm (Annex 4, Output 1, Delaney *et al.*, In press.)

**Indicator 0.4** is designed to monitor increases in both shea yields and household income, derived from the benefits of NTFP diversification and sustainable fuelwood sources, and also women’s empowerment. Project impact targets include % increases in shea yield on those farms implementing the TBB strategy (relative to control farms); increases in incomes through improved prices and access to new markets from the ability to trade new products as a result of training (improved shea butter and both liquid and solid soap); increases in diversity of NTFPs and sustainable sources of fuelwood, and a measure of women’s involvement in on-farm decision making. Year 3 progress continued to record changes in shea yield, income from all trade in butter and soap, and other benefits - as set out against project baselines established in Year 1 (see Appendix 4 Output 2, revenue spreadsheets).

**Indicator 0.5.** The project close target for incorporation of biodiversity guidance (to optimise pollination services in the shea parklands) based on the TBB strategy, has already been met through formal adoption by the GSA Sustainability Working Group of the project Biodiversity Guidelines and recommendations Continued participation in panel presentations at 2 international GSA meetings (Ghana and Netherlands) to increase awareness amongst the 400+ members of the GSA has generated significant interest, and L’Occitane and the Body Shop are both exploring the feasibility of Naturama training the communities which they source from. The Policy Briefing Paper (Annex 4, Output 4) was intended to be a vehicle for dissemination and promotion of project based recommendations, emerging from our research findings, communicated in a less-scientific way, for non-academic audiences. These findings via the briefing paper were presented at the GSA Global Conference, Ghana, and also promoted at the Darwin event convened at the David Attenborough Building, which engaged various organisations within the Cambridge Conservation Initiative.



### 3.3 Impact: achievement of positive impact on biodiversity and poverty alleviation

The full enjoyment of human rights depends on the services provided by ecosystems: indeed *biodiversity is the foundation of these goods and services, and food security depends on biodiversity: raising any single crop involves a multitude of species including microbes, insects, worms and small vertebrates in the soil, and a host of species above ground which control pests, fertilise soil, and pollinate flowers*<sup>3</sup>. The project has actively worked to increase tree diversity within the shea landscape around Kabore Tambi National Park. In line with our findings of higher plant diversity improving pollination services, The Trees Bees and Birds strategy promotes different techniques to enable farmers to increase 'levels of nature', or 'mainstream biodiversity' on-farm.



These include: allowing areas of fallow and on-farm natural regeneration of diverse trees and shrubs, planting multi benefit native tree species (good for people, livestock, insects and birds); replacing agro-chemical inputs with locally produced mulch and compost; and introducing apiculture for pollination and food/income. This improvement in on-farm biodiversity has been associated with improved pollination rates in shea, and most likely many other food and cash crops. Whilst this has not been measured, it is well recognised that flowering plants in the tropics rely almost exclusively upon animal or insect pollination.

Globally, “the growing threats to pollinators - which play an important role in food security - provides another compelling example of how connected people are to our environment, and how deeply entwined our fate is with that of the natural world” and indeed, working towards global food security it is important to approach the challenge with a consideration of the environmental impacts that drive the issue of pollinator decline<sup>4</sup>.” Should many of the less profitable native trees and shrubs remain in the fields but not produce flowers because they are cut back or browsed frequently, their potential to provide pollinator resources in the landscape will be limited. Ensuring that the wild bee pollinators have access to a continuous supply of food and adequate nest sites in the landscape, is an important component of securing pollination services. Nature in West Africa is under pressure as climate change and human population growth make themselves felt, but this project is already helping to show case how the conservation of natural habitats can benefit agricultural communities around the KTNP. Through the promotion of farming methods which are good for people and the planet, we can promote food and nutritional security.

Enhancing pollinator services is a key component in achieving the Sustainable Development Goals, as well as for helping family farmers adapt to climate change” (José Graziano da Silva Director-General, Food and Agriculture Organization of the United Nations, FAO). The TBB interventions are actively changing the landscape for the better, and some 1500 farmers are already understanding how pollination services are an 'agricultural input' that ensures the sustained production of their crops. As one of our research results show, where the mix of plants is greatest, there is less pollination limitation<sup>5</sup>. This affirms that the interventions associated with the TBB strategy, which supporting plant diversity, would appear to also directly support pollination services. This in turn enhances livelihood security, and farmers are already understanding the food security benefits from multi-cropping and trees on farm. This agroforestry approach not only offers a way to utilise land more effectively, but also creates resilient landscapes for Parkland farmers (see Annex 4, Output 4, Policy Briefing Paper). Furthermore, in addition to the pollination services offered by bees, the sale of beekeeping products allows ambassadors to have additional income of up to 200,000 CFA (USD 350) per year for the most efficient and 5,000 CFA francs for the least efficient.



<sup>3</sup> Millennium Ecosystem Assessment, ecosystems and Human well-being: Biodiversity Synthesis (WRI, Washington, D.C. 2005), p18.

<sup>4</sup> <https://www.ipbes.net/assessment-reports/pollinators>. Online access July 2019.

<sup>5</sup> Delaney A., Marshall E., Stout J., et al. (In Press). Local tree and shrub diversity improves pollination services to shea *Vitellaria paradoxa* subsp. *paradoxa* in West African agroforestry parklands. *Journal of Applied Ecology*

Furthermore, the use of organic manure instead of fertilizers has also enabled the ambassadors to make considerable savings estimated at around 37,500 CFA francs (USD 65 per hectare), which is a notable cost savings, with incremental soil health benefits to boot.

Furthermore, the results of the various bird and habitat inventories show a significant improvement in biodiversity at the project's intervention sites (see Annex 4, Output 1, J Mallord bird survey). On farms where the TBB has been implemented in full (the intervention sites), there is an abundance of species in general compared to all the species inventoried across all sites. Overall, of the 100 bird species encountered in February 2017, 83 were found at the intervention sites. This trend was confirmed in February 2018 with 78 species found at the intervention sites compared to 86 recorded and 72 species out of 82 recorded in February 2019. For migratory species, out of the 14 migratory species encountered, 11 species (79%) were observed in the intervention sites. This trend continued in February 2018 with 7 species out of 9 encountered (78%) and in February 2019 with 4 species out of 6 encountered (67%) (See Annex 4, Output 1, Rapport synthese de oiseaux....)

#### 4. Contribution to the Global Goals for Sustainable Development (SDGs)

Collectively, the TBB strategy contributes to improved food security and reduced vulnerability through diversified livelihoods and gender empowerment (Sustainable Development Goals 2 and 5), and in shaping more diverse, resilient, and productive landscapes (SDGs 13 and 15). This work demonstrates the potential for Ecosystem Restoration for enhanced pollination services, to be a core component of successful development aid strategy. The protection of pollination services, and pollinator density and diversity will have



a direct positive impact on crop yields, promoting food and nutrition security and ultimately achieving the SDGs<sup>6</sup>. But we cannot achieve this without protecting biodiversity at a landscape level. As such there is an urgent need to protect ecosystem resilience in order to maintain the productivity of natural habits to sustain livelihoods millions of small holder farmers, and to adapt to the effects and impacts of climate change. During the implementation of the project, various activities contributed towards the achievement of certain SDGs, as summarised in Table 3.



<sup>6</sup> <https://www.ipbes.net/assessment-reports/pollinators>. Online access July 2019.

**Table 3. Project contributions towards relevant Sustainable Development Goals**

<p>GOAL 1 No Poverty.</p>	<ul style="list-style-type: none"> <li>Improving stocks of natural capital with improved information and awareness sessions for the communities around PNKT area on the sustainable management of natural resources and the promotion of the TBB strategy</li> <li>Women empowered through analysis of their contribution to decision-making around NTFPs and resource management;</li> <li>Improving equity and reducing vulnerability through diversification of income generation opportunities (beekeeping, production and marketing of quality butter and soap).</li> </ul>
<p>GOAL 2 Eradicate hunger, ensure food security, improve nutrition &amp; promote sustainable agriculture.</p>	<ul style="list-style-type: none"> <li>Reinforcement of food security for 250 producers through the improvement of field productivity (80 hectares farmed by ambassadors as full TBB model farms, and 478.5 hectares for producers who have adopted elements of the TBB strategy).</li> </ul>
<p>GOAL 5 Achieving gender equality, and empowering all women and girls.</p>	<ul style="list-style-type: none"> <li>Promotion of gender equality in the planning and implementation of activities: 318 women out of 815 people (39%) were positively impacted by training etc, during the project.</li> </ul>
<p>GOAL 12 Establishing sustainable consumption and production patterns.</p>	<ul style="list-style-type: none"> <li>Education and awareness activities around the TBB strategy and practices associated with it, and through promotion of pollinator-friendly activities; reduction of chemical use in the parklands, and instead the promotion of organic manure; training in good practice of harvesting shea nuts, and processing methods to obtain butter.</li> </ul>
<p>GOAL 13 Urgent action to combat climate change and its impacts.</p>	<ul style="list-style-type: none"> <li>Improving local farmer and other stakeholder decision-maker knowledge on good practices for strengthening the resilience of the parkland landscape. Through promotion of reforestation, assisted natural regeneration, and composting and mulching techniques, helping ensure the longer term ecosystem productivity and create more diverse agroforestry habitats to spread risk and improve soils.</li> </ul>
<p>GOAL 15 Preserve and restore terrestrial ecosystems, ensuring their sustainable use, sustainably manage forests, combat desertification, halt and reverse land degradation and halt biodiversity loss.</p>	<ul style="list-style-type: none"> <li>As above. The implementation of the TBB strategy by growing numbers of farmer, so larger swathes of the parkland landscape are beginning to benefit from increased floristic diversity and other improvements for pollinator management. Increased pollinator services from modern beekeeping, ongoing research on landscape change dynamics, and bird abundance and diversity, through inventories and ongoing monitoring of flora and fauna.</li> </ul>
<p>GOAL 17 Strengthen the capacity to implement and revitalize the Global Partnership for Sustainable Development</p>	<ul style="list-style-type: none"> <li>The project developed and strengthened several partnerships notably at the national level with local elected officials, the CBD focal point, the Forest Investment Programme, and at the international level with the Sustainable Working Group of the GSA, with VBN and ICCO for the extension of project activities to other villages in the Kabore Tambi National Park area, and Birdlife Europe for the additional private sector support for Darwin project activities.</li> </ul>

## 5. Project support to the Conventions, Treaties or Agreements

At the National policy level the partnership has been further strengthened by promoting the project's results in several meetings and development plans, in particular with the Forest Investment Project (FIP) where the TBB strategy has been taken into account in the elaboration of integrated development projects for REDD+ (PDIC/REDD+) in five municipalities. The partnership was also extended to schools in the project area through school facilitation sessions, production and dissemination of information tools (poster posters). A total of 20 school-level facilitation sessions were held with the participation of 1616 students (757 boys and 859 girls).



Naturama is a member of IUCN (International Union for Conservation of Nature) and of several national consultation frameworks on environmental and development issues in Burkina Faso. Naturama maintains a close working relationship with the CBD focal point, Mr Sonmanagre, with whom quarterly reports are shared, facilitating a closer engagement in project activities and outputs, and highlighting how they are supporting the achievement of Burkina's National Biodiversity Strategy and Action Plan (NBSAP).

The Policy Briefing Paper was produced in French and English, primarily for electronic dissemination. It has been shared across the GSA member network, throughout the BirdLife and partner networks, in West Africa and Europe, with the CBD focal point in Burkina, with the UNDP GEF offices in West Africa, and directly during the BirdLife Local Engagement and Empowerment Programme 'LEEP' event on 'Mainstreaming Biodiversity in Agricultural and Forest landscapes', Cambridge.

## **Recommendations for In Country Action and Development Assistance through CBD National Focal Points, and Agriculture and Environment Ministries**

*The shea parklands are a transboundary habitat that stretch across large parts of West Africa. To truly build resilient landscape mosaics and sustainable livelihoods, we recommend considering the following:*

Incorporation of a diverse range of tree and shrub species within shea parklands supports production of shea fruits and nuts and yields of other shrubs and trees. In many cases natural regeneration from the seed bank within fields may be enough to restore diversity. Where tree planting is appropriate, consideration should be given to the species planted so that they are capable of supporting pollinating species. Supporting the maintenance of the fallowing system by sustainable exploitation of fallows for NTFP (potentially including beekeeping), coppicing for firewood, and potentially improvement by facilitating the regeneration of valuable species within fallows. The success of management practices to increase tree and shrub diversity will depend heavily on the diverse stakeholders across the landscape.

**Satoyama Initiative:** In its NBSAP Burkina Faso commits to contribute to the Satoyama Initiative<sup>7</sup>, a partnership formed around consolidating expertise on socio-ecological production land and sea scapes. The TBB strategy developed with communities in this applied research project could be used to exemplify how practical farmer-led innovation can provide synergetic and productive solutions for nature and people.

**Abuja declaration:** Applying the findings of this work also demonstrates a way for Burkina Faso to implement the recommendations under the "Abuja Declaration on Sustainable Land Use for People and Biodiversity including migratory birds in West Africa (Nov 2016)" of the Convention on Migratory Species (CMS). Recommendation is particularly pertinent and commits to "integrate sustainable land management practices and approaches (particularly around native tree restoration) that will support birds and people in West Africa".

### **Aichi targets:**

*Strategic Goal A: Addressing the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society.*

- The project has used empirical evidence to support the case for the TBB strategy, and successfully influenced the GSA Sustainability Programme to adopt these recommendations as the biodiversity component of the Parkland Management Guidelines. These serve for voluntary member uptake across the 450+ member network, of shea industry stakeholders. Naturama led tree-planting programmes and local government engagement, will continue to address the underlying causes of biodiversity loss around the KTNP area. Specifically Targets 1 (biodiversity value), 2 (incorporation into national and local biodiversity and poverty strategies, and 4 (government and business stakeholder plans for sustainable production and consumption). See Annex 4, Policy Briefing Paper.

*Strategic Goal B: Reduce the direct pressures on biodiversity and promote sustainable use.*

- The Biodiversity guidelines based on Darwin project evidence are incorporated within the GSA's Parkland Management Strategy, thereby helping them in their sustainability advocacy work. We hope that this will ultimately provide a mechanism for influencing policy, from local to international levels, in conjunction with the Burkinabe advocacy work to be undertaken by Naturama (see sections 3.4; Annex 4, Output 4). Specifically Target 7 (sustainable agriculture), 8 (pollution and excess nutrient load brought to sustainable levels through organic mulching and composting in favour of external agro chemical input), and 13 (maintaining plant genetic diversity), 14 and 15.

*Strategic Goal D: Enhance implementation through participatory planning, knowledge management, and capacity building.*

- Specifically Targets 14 (ecosystem services restored and safeguarded) – in particular pollination services, and 15 (ecosystem resilience).

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<sup>7</sup> <https://satoyama-initiative.org/>

## 6. Project support to poverty alleviation

The World Food Programme's Human Development Index ranks Burkina Faso 183 out of 188, making it amongst the poorest countries in the world <http://hdr.undp.org/en/countries/profiles/BFA>

The average citizen in Pô and Nobéré districts survives on US\$0.41 a day. The project interventions to improve shea butter quality, and also diversify shea processing resulted in increased household incomes



from the sale of soap, allowing women to benefit from the trade in their second grade shea kernels which process into perfectly good soap (see Annex 4, Output 2 Revenue spreadsheets, and Rapport inquete d'impact). In addition to the pollination services offered by bees, the sale of beekeeping products allows ambassadors to have additional income of up to 200,000 CFA (USD 350) per year for the most efficient and 5,000 CFA francs for the least efficient. The use of organic manure at the expense of fertilizers has also enabled the ambassadors to make considerable savings estimated at around 37,500 CFA francs per hectare (see Appendix 4, Output 2, Version

finale de l'article à publier sur le projet et ses résultats).

The positive effects of knowledge and awareness resulting in improved land management for increased natural capital and enhanced food security, are keenly anticipated. In the longer term, a biodiverse shea agro-ecosystem will help regenerate dryland habitat and protect ecosystem services (including pollination), and make a sustainable contribution to livelihood resilience. Indirect contributions to poverty alleviation through interventions to reduce vulnerability have been made directly via a series of education and capacity building interventions, around the 5 strands of TBB activities. Extension Services are an effective way to deliver practical site support to resource poor farmers, and mainstream biodiversity. A total of **1595** shea producers and farmers around the Kabore Tambi National Park - of whom **587 (37%)** are female - have participated in awareness and training activities. Together with the number trained in Year 1 year 2, this total has exceeded the envisaged total of 1500 (see Output 2). These support services have been effectively rolled out through direct training and implementation, and indirectly through ambassadors, who have gone on to train others, around interventions to enhance on-farm plant diversity. The result of these interventions is that farms are already implementing more resilient land management strategies which is reducing their vulnerability, and active community engagement in the project continues to enhance decision-making participation, especially of women.

## 7. Project support to gender equality issues

The project worked consistently to achieve joint positive impact upon both men and women, through their equal access to capacity building, training, and employment opportunities, including model farmers and pollination ambassadors, of which 3 are women. Naturama works hard to achieve equality in the impact of their work, and actively encourages the involvement of women. Indeed the women pollination ambassadors have spoken about their ability to reach out to other women and encourage more uptake around training in the TBB strategy, in a way that may not have been possible with only male ambassadors. The processing training given to improve shea butter quality, and the involvement of women in all other TBB training courses (see Section 3.2, Output 2) specifically recognises the value they must make to natural resource management, and has helped reinforce the capacity for women and men to work together. Naturama is also working however to reduce the risks associated with harvesting nuts in the shea parklands. Women and children can be exposed to scorpions and snakes and other dangers, when harvesting nuts from this hot, hostile habitat, and this remains a concern.

Table 4 shows how the project fully supports equal opportunities for training and capacity building, and is committed to supporting women's engagement in resource management. Indeed, some 40% of the total training recipients were women (including shea processing training), and almost one-quarter of the recipients in the TBB intervention training alone. The true definition of a "gender focus" is to recognize why or how interventions may have different impacts on men and women, and one of the real successes of Naturama's

work in that men and women community members work very well together. Indeed, in some communities men have played key roles in supporting women's participation and empowerment, for example in relation to organisation to facilitate trade, and accessing markets and negotiating prices. This is really important when it comes to long-term sustainability of any project intervention.

**Table 4: Participation in capacity building activities by gender.**

<b>TBB STRATEGY</b>	<b>Women trained</b>	<b>% Women of TOTAL</b>	<b>Men trained</b>	<b>TOTAL</b>
Apiculture	3	15%	17	20
Assisted Natural Regeneration (ANR)	61	24%	189	250
Tree Planting	107	32%	225	332
Composting & Mulching	23	23%	77	100
<b>Sub Total Trained</b>	<b>194</b>	<b>28%</b>	<b>508</b>	<b>702</b>
<b>TBB ACTIVITIES</b>	<b>146</b>	<b>23%</b>	<b>495</b>	<b>641</b>
Shea butter processing & Soap making	212	99%	2	214
Exchange visit (in collaboration with DAWEYE Union).	35	92%	3	38
<b>TOTAL TRAINING RECEIVED</b>	<b>587</b>	<b>37%</b>	<b>1008</b>	<b>1595</b>

## 8. Monitoring and evaluation

### *Operational management:*

The Project Leader oversees the project reporting and production of outputs, and technical assistance required by Naturama is limited due to the experience and dedication of the team. The PL predominantly supports project communication and visibility: networking with industry and within a wider group of private and public sector actors, and also within the context of Conventions and International agreements - IPBES, CBD, etc. The planning and monitoring framework established at project launch is centred on Naturama's quarterly activities and outputs reporting (logframe), and when they are scheduled (gant chart). Operational communication and management is achieved with email and what's app. Partners are usually prompt to respond to questions and additional detail and evidence of meetings, workshop participants, photos, and training sessions etc, is provided as annexes to this report. In addition to technical reporting quarterly financial reporting is undertaken on a standard template, and a spreadsheet detailing all transactions and rolling balance is submitted prior to approval of subsequent tranches of money. Original receipts are posted or collected in country, and held by the PL at BirdLife, for future auditing purposes.

*Output 1:* Pollinator data collection and analysis complete. The peer-reviewed journal paper is in Press (see Annex 4, Output 1, Delaney et al.). The Stout et al paper (2018) confirmed that the shea tree is insect pollinated, and the experimental design from this 'pilot project' helped inform the Darwin work and improve fieldwork efficiency to ensure timely delivery of planned and additional data collection and analysis. The wider species identification of insect pollinators netted during the data collection was additional to the original project plan, but an important component to the assessment of who was using what resources in the landscape and when.

*Output 2:* TBB Targets (1500) exceeded planned with a total of **1595** shea producers and farmers - of whom **587 (37%)** are female – have received training across the 5 TBB intervention themes (see Section 3.1).

*Output 3:* Naturama's capacity to raise awareness of the importance of pollination and how to strengthen pollination services has been strengthened by the project: the impact of education and awareness has increased with the development of educational materials on pollination (see Annex 4, Output 3 Pollination poster), and through the direct TBB training to nearly 1600 farmers. Burkinabe partners have made valuable contributions to the journal paper.

*Output 4:* Success of the advocacy programme will be evaluated by the change in knowledge of, and willingness to incorporate, management approaches which *promote and protect biodiversity and consider pollination services in policy, industry sustainability guidelines, and tree-planting programs*. Just prior to the end of this project, the PL worked with some key actors in the landscape, including VBN who are implementing the BBB project, to work through a Theory of Change for the shea parkland landscape, to try and identify the 'business case' for future engagement and interventions, which likely centres around food security. The biodiversity dialogue with the Global Shea Association and Industry players will continue, with the BBB / ICCO project continuing to lobby hard for the recognition of natural capital underpinning resilient landscapes and livelihoods.

## 9. Lessons learned

All partners have a good understanding of how to work together as a team, and whilst Naturama has engaged well in this reporting phase, the benefits of technical and management support from BirdLife International has enabled Naturama to both keep on track with ongoing activities, and to build its organisational capacity and presence in the region. To this end, they are now effectively collaborating around new partnerships in the landscape. The international project team remain committed and keen to mobilize additional resources to scale up the application of project methodology and of project findings, to achieve greater impact and a larger project legacy, and the BirdLife partner in Ghana, GWS, have just been awarded a EU (PSPBio) funding for PONASI (Mole area in Northern Ghana, towards Nazinga and Burkina Faso) to implement an ecosystem restoration project, and so it is hoped that this will develop into a transboundary initiative (see 3.1, Output 3).

Naturama have reflected on the important of securing further investments for future projects, in order to respond to the physical and financial demands of implementing the TBB strategy. The question of additional person power to support and oversee implementation efforts, given the effective implementation of the TBB strategy requires additional human resources to deliver new additional 'maintenance' activities (manure pit management, hive maintenance, tree maintenance, etc.). The implementation of the project strongly demonstrated the importance of involving women in decision-making around natural resource management on-farm. In addition to trees with high economic value for the household, specific species with multiple uses (medicinal, food, forage) are also important for women in household management, highlighting the need for real ongoing participation of women in parkland management decision-making. Naturama is also working to increase the safety of shea tree parks in which women harvest nuts – in a hot, hostile habitat, with scorpions and snakes - remains a concern for the sustainability of shea parkland management.

### Specific lessons and recommendations from pollinator field work, and suggestions for future studies

**Pollinators:** The finding of this study supports the recommendations made by the IPBES Pollinators, Pollination, and Food Production assessment report<sup>8</sup>. Within Burkina Faso and the wider shea belt we encourage the implementation of the following recommendations from the assessment in particular:

- Maintaining or creating greater plant diversity in agricultural landscapes for pollinators;
- Supporting traditional practices that manage habitat mosaics, and coproduction between science and local knowledge;
- Education and exchange of knowledge among farmers, scientists, industry, communities, and the public.

**Trees and pollinators:** Retaining a diverse array of woody species within cultivated areas in shea parklands is likely to support fruit production by releasing shea trees from pollen limitation. Traditional management of the shea parklands as multifunctional ecosystems, increases their capacity to support a

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<sup>8</sup> [www.ipbes.net/assessment-reports/pollinators](http://www.ipbes.net/assessment-reports/pollinators)



wide range of ecosystem services and general biodiversity. Management approaches which encourage diversity across the landscape should be considered throughout the Shea belt.

**Capacity building:** Local scientific expertise in ‘beneficial insects and pollinators in particular’ is lacking in Burkina Faso. Training to increase local NGO and academic capacity in methods for studying pollination ecology and identifying pollinating insects, would improve knowledge around the status of West African pollinators. Development of links between educational institutions in West Africa and European universities with strong pollination ecology research basis, would be a positive move.

**National Biodiversity Strategy:** The National Biodiversity Strategy and Action Plan for Burkina Faso calls for better analysis of production systems and their benefits in particular for Shea systems. Suggested areas for further research on a larger scale include:

- How much shea should be harvested? Shea may be a keystone fruit as it provides for bats, birds, mammals and insects as well as humans. With increasing demand from international traders, a sage limit for exploitation that does not destabilise the local diet or ecological networks should be established to avoid over-exploitation.
- Identification of flora which supports shea pollinators outside of shea flowering season, to ensure year-round provision of pollinator resources.
- Diversity of pollinators in shea parklands in comparison to natural areas? Movement of pollinators from natural areas to shea parklands, or a different suite of species found in the parklands?
- How much does tree and shrub diversity, and amount of fallow land, impact on pollinator diversity or composition?

## Biodiversity Mainstreaming

This project is a glowing example of the potential mechanisms and benefits for successful biodiversity mainstreaming. It supports the implementation of the Cancun Declaration<sup>9</sup> under the CBD which calls for “diversified agro-ecological systems, promotion of the use of biodiversity in agricultural systems, and effective management and conservation of pollinators”. We warmly encourage other countries within West Africa to have a stronger voice in demonstrating how such initiatives and interventions can have positive impacts for mainstreaming biodiversity and restoring ecosystems. Such projects can help champion integrated, local to global solutions, in line with the CBD and towards the implementation of the post-2020 agenda.

## The Importance of Transboundary Cooperation

We call for transboundary cooperation, whereby Burkina Faso should use this research to work with neighbouring shea producing countries to ensure an integrated, sustainable, landscape-scale approach. The potential for this approach to contribute to multiple international agreements should encourage CBD National Focal Points to work together, to implement the findings and showcase how West Africa can be a leading light on mainstreaming biodiversity into agricultural systems.

To date much sectoral investment has been private. National and transnational funding opportunities also exist to scale up the necessary interventions across the shea parkland, such as the Global Environment Facility. National focal points working with relevant stakeholders can identify how financing mechanisms, including REDD+, could be used to scale up sustainable practices across the shea belt. This approach to shea management also contributes to the transboundary Action Plan for Migratory Land Birds in the African-Eurasian Region<sup>10</sup> (AEMLAP) under the CMS. We encourage further implementation of the commitments to ‘promote the importance of sustainable land use for migratory birds, with relevant UN agencies and other international institutions and to seek opportunities for collaborative action to encourage sustainable land use for migratory species and people’.

## 10. Actions taken in response to previous reviews

Not applicable.

<sup>9</sup> <https://www.cbd.int/cop/cop-13/hls/cancun%20declaration-en.pdf>

<sup>10</sup> Decision 12.22 and 12.24 and 12.25

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

None

## **12. Sustainability and legacy**

Promotion of the project has been undertaken in many ways and at different levels since the involvement of project stakeholders. Decision-makers and partners in the launch workshop; the promotion and endorsement of the project approach and the TBB strategy in the development of new partnerships; negotiation of additional resources to strengthen the project and extend the activities and impact to other villages. Specifically, the collaboration with VBN (the Netherlands BirdLife partner) and the NGO ICCO, will strengthen the activities of the Darwin Project in the 10 intervention communities, and double the outreach to an additional 10 intervention villages, located in two other communes in the KTNP area. The activities of this 4-year project (BBB - Birds, Bees and Business) should contribute to the sustainability of actions and the promotion of the TBB strategy at regional, national and international levels. Naturama's increased capacity, and enhanced profile as a nature conservation organisation within Burkina Faso will strengthen its national and international advocacy in relation to mainstreaming biodiversity and ecosystem services into landscape management. The PL has also participated in meetings and discussions around the shea landscape with IUCN Netherlands, GWS (Ghana BirdLife partner), Tree Aid, and UNDP GEF West Africa, and more recently, to promote the recommendations laid out in the Policy Briefing Paper from this Darwin work. It has been a pleasure to be part of this Darwin project team.

## **13. Darwin identity**

The Darwin Initiative logo is used on all documents and presentations produced/given by the project, and is also as a stamp on bars of shea butter soap! Naturama continues to reiterate the purpose of the Darwin project with the stakeholder communities and other beneficiaries, the logo is on Naturama's website where partnership work is promoted ([www.naturama.bf](http://www.naturama.bf)), and the project is recognized as a distinct research initiative financed by the UK Government. Social media based opportunities (including Twitter) are also used for sharing key project findings and progress [https://twitter.com/BirdLife\\_News](https://twitter.com/BirdLife_News). The Project Leader follows the Darwin Initiative on Twitter, and tweets about key project outputs @ Darwin Initiative.

## **14. Project expenditure during reporting period (30 April 2019).**

Waiting for Finance

## Annex 1: Report of progress and achievements against Logical Framework for Financial Year 2018-2019

Project summary	Measurable Indicators	Progress and Achievements April 2018 - March 2019	Actions required/planned for next period
<b>Impact</b>			
Shea parklands in sub-Saharan Africa are managed for improved tree diversity and pollination, enhancing food and livelihood security for 80 million people, and enhancing habitat for wintering Afro-Palearctic migrant birds.		<p>It is very difficult to attribute direct measures of impact in on biodiversity, food and livelihood security, but the development, piloting and refining of the working farm-model / “TBB” strategy for Parkland Management has made very good progress and considered robust enough to be rolled out and scaled up (see BBB project). Research results show that increases in on-farm habitat diversity and improved management of the Shea Parklands for biodiversity and pollination services can reduce “pollination limitation” and increase yields (and hence benefits). The uptake and interest in adopting the biodiversity guidelines and best practice at all levels (local, national and international) have exceeded project targets.</p> <p>Progress made by end of project against all Outcome indicator targets suggests that the development of a working model will be adopted and successfully implemented by communities and stakeholders across the Shea Parklands. If sustainable financing can be achieved to support this in the longer-term, the approach will make a valuable and timely contribution to the restoration of the parkland ecosystem (UN decade on ecosystem Restoration 2021-2030), with anticipated positive impacts on biodiversity and livelihoods, for resilience and capacity to adapt to climate change shocks and stresses.</p>	
<b>Outcome</b> Understanding of the relationship between tree	<b>0.1</b> By the mid-point of the project, the role and importance of insect pollinators for resilient shea production has been quantified, and habitat requirements for healthy populations of pollinators and	Significant advances have been made in understanding the relationship between habitat diversity, pollinators and Shea production. See Output 1 for key research findings on pollination, pollinators, Shea yields and consequent recommendations for	Research findings are being fed into the management guidelines for biodiversity in the Shea Parklands and are being widely disseminated/ advocated (Output 4).

<p>diversity, pollination, shea yields, agricultural land use and migratory birds in Burkina Faso, informs management of 500 parkland smallholdings, and sector-wide guidance, promoting livelihood resilience and biodiversity</p>	<p>birds established, through field research undertaken at 10 pairs of sites in habitats of differing tree diversity around KTNP. Capacity for pollinator and bird research and monitoring in Burkina Faso will have increased</p> <p><i>Baseline: The status of insect pollinators in West African agro-ecosystems poorly understood; in particular, only limited information on their role in the pollination and yield of shea trees.</i></p>	<p>habitat management for biodiversity and Shea production in Burkina Faso Parklands</p> <p>Capacity of national researchers and field workers has been built through “learning by doing” – Naturama staff, University staff and students and local pollination “ambassadors” carrying out field work and dissemination of best practice, while also learning from mentors (the project team and external advisors and experts).</p>	<p>Peer-reviewed scientific paper on the impact of vegetation on pollinators. In Press.</p> <p>Policy Briefing Paper</p>
	<p><b>0.2</b> By the end of the project, awareness of the value of pollination services and diverse on-farm habitats to sustainable agriculture and availability of non-timber forest products (NTFP) has increased from a baseline assessment in year one, amongst: 1800 adults (800 men and 1000 women); 900 school children in the 10 target communities<sup>11</sup>; 20 agroforestry NGOs; 3 certification schemes; regional and national government stakeholders as defined in the project’s advocacy plan.</p> <p><i>Baseline: Pilot socio-economic work highlighted little to no appreciation amongst shea-growing communities of</i></p>	<p>Messages about the importance of pollination, pollinators and pollination services and the need for appropriate management in the Shea Parklands to maintain biodiversity and pollination services continue to be effectively disseminated in all project activities. A total of 1596 people have now received direct and indirect training on the TBB strategy (mainstreaming biodiversity on-farm to support resilient landscapes and livelihoods). In addition, over 800 have also received a combination of education and awareness training around pollination and pollinators, totalling 2400 people. Nationally and internationally the research findings and evidence base for the TBB and best practice continue to be widely promoted and advocated to GSA and other stakeholders, through attendance at meetings (GSA Sustainability Working Group),</p>	<p>Wider project education and awareness plan was rolled out in PY3, reaching over an additional 800 people directly.</p>

<sup>11</sup> Calculations are based on 60 adults attending each dissemination event, 1 held each year in each village, and 30 schoolchildren attending each education event, 1 held in each village each year.

	<p><i>the importance and value of pollination services.</i></p>	<p>presentations, publications, and the advocacy programme (Output 4)</p>	
	<p><b>0.3</b> By the end of the project, 500 smallholdings within 10 villages in the KTNP region are being managed under the pilot 'trees, bees, and birds' strategy, optimising tree diversity for pollination, increasing supply of sustainable fuelwood, NTFP and habitat for migrant birds. Sapling removal will have halved, while migrant bird densities and pollinator levels will remain steady or improved relative to the year one baseline.</p>	<p>In addition to the 1596 farmers who are implementing in part the TBB model, a further 370 farmers are implementing the model in full, totalling overall TBB outreach at 1966. The pollination research findings demonstrate that diversity of vegetation is associated with better pollination. Indeed farms with well-established implementation of the TBB strategy are already seeming less pollination limitation, which is a strong predictor of yield (Delaney <i>et al</i>, In press).</p> <p>The TBB Strategy review (See appendix 4, Output 2) provided feedback from all 20 pollination ambassadors to evaluate implementation progress in both target communities (See Activity 1.6). This provided additional data relating to on-farm experience of implementing the TBB strategy and the needs for additional support or refinement of the model (e.g. challenges of finding space for fallow land and need for easier access to the volumes of water needed for mulching and compost on-farm).</p>	<p>Year 3 M+E programme will assess the total capacity building delivered across the case study communities, directly by the project staff, and also indirectly via the pollination ambassadors, across the different elements of the TBB strategy. In addition, the increases in on-farm implementation, in relation to baselines, will be measured.</p> <p>Bird monitoring will continue for the next 5 years; early results correlate greater bird abundance (or resident and migrant birds) in farms with higher levels of plant diversity. (See Annex 4, Output 1, Rapport synthese de oiseaux, and J Mallord).</p>
	<p><b>0.4</b> By the end of the project 100 household incomes will have increased via a combination of increased shea yields (10% increase) on farms implementing TBB and through better prices and market access resulting from training in processing techniques to improve butter quality (20% price premium, increasing total household cash incomes by 5%). Livelihood benefits generated through a more diverse supply of NTFP (at least 3 extra</p>	<p>Capacity building support continued in Year 3 with follow-up and additional training to women's groups in improved processing quality. 8 'TBB' villages and 194 women received additional training for improved butter processing, and also donations of soap making equipment. See Revenue spreadsheets in appendix 4.</p>	

	products) and sustainable fuelwood on 100 farms. 200 female shea producers will be empowered to contribute to on-farm decision making.		
	<p><b>0.5</b> By the end of the project, guidance on optimising pollination for shea yields and sustainable habitat diversity, informed by the “trees, bees and birds” strategy pilot, incorporated into GSA sustainability programme<sup>12</sup> and awareness and willingness to implement raised amongst at least half of GSA’s 380 members – compared to baseline survey in year one.</p> <p><i>Baseline: Current GSA sustainability guidelines do not include guidance in relation to improving pollination services or negating biodiversity loss.</i></p>	<p>The project target for incorporation of biodiversity and pollination guidance was met in Year 2 through formal adoption by the GSA Sustainability Working Group of the project TBB strategy/ Biodiversity Guidelines and recommendations</p> <p><a href="https://globalshea.com/uploads/files/parkland_management_manual/parkland_management_guideline_906.pdf">https://globalshea.com/uploads/files/parkland_management_manual/parkland_management_guideline_906.pdf</a></p> <p>Use of the guidelines by GSA members is voluntary. Other means of promotion of the TBB strategy and guidelines continued with GSA partners, including L’Occitane and Body Shop (via naturama delivering TBB training to the communities from which they source Shea.</p>	Continued input to GSA meetings/ sustainability discussions and promotion of Biodiversity Guidelines for management of the Shea Parklands by VBN Birds Bees and Business (BBB) project.
<b>Output 1. Research outputs completed and used to educate the shea-growing community around KTNP via pollination demonstration sites. The entire evidence base reviewed and used to inform</b>	<p>1.1. A working group formed, and workshop held in Quarter 1 of Year 1, bringing together key stakeholders and experts to draft a “trees, bees and birds” shea parkland management strategy.</p>	<p><i>Activity completed Yr 1</i></p> <p>Strategy implementation, refinement, capacity building and dissemination/ advocacy reported under other indicators, Outputs 1, 2, 3 and 4</p>	
	<p>1.2 By the mid-point of the project, a study of the impact of pollination on shea yields and optimum diversity of tree species for pollinators, planned and carried out at 10 degraded and 10 non-degraded sites around KTNP</p>	<p>Field work completed (including research on pollinators/ pollination, fruit set and Shea yield; species identification (trees, insects); habitat/ site characteristics and mapping. Results have been presented (at the Cambridge Conservation Initiative HQ in Cambridge) in May 2018, and June 2019, and a peer reviewed paper is In Press. Key results plus recommendations for policy and practice include: Shea is very dependent on pollinators (stingless and honey bees); there are more stingless bees (and a smaller “pollination gap”) in more diverse sites/ habitats; the pollination “gap” can be reduced and Shea yields increased by manual pollination and improved management (fewer chemical inputs, increased habitat plant diversity, bee-keeping/ enhancing bee populations in Shea parklands).</p>	

<sup>12</sup> Current GSA sustainability guidelines for shea do not include any specific guidance in relation to improving pollination services or negating biodiversity loss.

<p><b>development of the “trees, bees and birds” agri-environment strategy.</b></p>		<p>Migrant Bird Surveys continued at intervention and control sites. Species abundance and diversity data were collected by Naturama ornithologists. Of the 100 bird species encountered in February 2017, 83 were found at the intervention sites (with greater vegetation diversity). This trend was confirmed in February 2018 with 78 species found at the intervention sites compared to 86 recorded and 72 species out of 82 recorded in February 2019. For migratory species, out of the 14 migratory species encountered, 11 species (79%) were observed in the intervention sites. This trend continued in February 2018 with 7 species out of 9 encountered (78%) and in February 2019 with 4 species out of 6 encountered (67%). (see Appendix 4, Output 1, Rapport synthese).</p>
	<p>1.3 By end of Quarter 2 Year 2, 20 “pollination ambassadors” (2 per village, including at least 10 women) from the shea farming community, along with at least 2 local government officials, will have visited an experimental pollination plot leading to increased awareness of the link between pollinators and yield. Pollinator ambassador network established.</p>	<p>20 pollination ambassadors were recruited (from 10 villages), trained and working with their communities in Year 1, continuing into Year 2.</p> <p>A workshop was convened (delayed into April 2018), attended by all 20 ambassadors at the Nobéré field office of Naturama, to evaluate implementation progress with feedback from the ambassadors (<b>See Activity 1.6</b>). Feedback was very positive, but also mentioned challenges of space for fallow land in the TBB model and a need for easier access to the volumes of water needed for mulching and compost on-farm instead of away from the fields near houses.</p> <p>See Appendix 4, Output 2.</p>
	<p>1.4 By the beginning of Quarter 3 in Year 2, a “Trees, bees and birds” strategy revised and finalised incorporating updated information from pilot implementation and pollination research and feedback from the wider shea industry</p>	<p><i>Activity completed Year 2</i></p>
	<p>1.5 A final assessment of the efficacy of the TBB strategy is completed in the final Quarter of the project and the strategy published.</p>	<p><i>Activity completed Year 3</i></p> <p>Policy Briefing Paper disseminated at GSA Meeting in Ghana, March 2019. Unfortunately due to security and budget, it was not possible to make a final visit to the field in Burkina Faso.</p>
<p>Activity 1.1 Form TBB working group and hold a workshop to draft a preliminary strategy.</p>	<p><i>Activity completed year 1. Year 2: Implementation and testing/ refinement of the strategy (see Activity 1.9 and Output 2).</i></p>	

<p>Activity 1.2 Plan fieldwork, including site selection and GIS analysis of habitat degradation and tree density.</p>	<p><i>Activity completed year 1</i></p> <p>Year 2: implementation of fieldwork and habitat improvement activities completed. (Assisted Natural Regeneration; tree planting); site monitoring (habitats and tree and shrub species diversity); diversification of production/ livelihoods activities.</p>
<p>Activity 1.3 Fieldwork to determine pollinators, tree species and fruit set. Taxonomic identification, data analysis.</p>	<p><i>Activity completed year 2</i></p>
<p>Activity 1.4 Write scientific papers on shea pollination and habitat management.</p>	<p>Peer Review Paper in Press, Journal of Applied Ecology (see Appendix 4, Output 1, Delaney et al).</p>
<p>Activity1.5 Recruit pollination ambassadors and facilitate visits to pollination research sites. Establish ambassador network.</p>	<p><i>Activity completed Year 1</i></p>
<p>Activity 1.6 Hold workshop to refine “trees, bees and birds” strategy and publish document.</p>	<p>Completed in Year 2 – a workshop was convened (delayed into April 2018), attended by all 20 ambassadors from Pô and Nobéré, at the Nobéré field office of Naturama, to evaluate implementation progress. Feedback from ambassadors on their experience of implementing the TBB strategy on their farms was very positive, but also mentioned challenges of space for fallow land in the TBB model and a need for easier access to the volumes of water needed for mulching and compost on-farm instead of away from the fields (near houses).</p>
<p>Activity 1.7 Pollinator education activities– one public meeting a year in each of the ten villages.</p>	<p>A pollination information poster was finalized by the Naturama team for use by the ambassadors and others as a farmer training aid. It has also been used in 10 ‘primary’ schools (6 – 15 years) across the project outreach zone to support pollination awareness and education work.</p> <p>The education and awareness programme has reached an additional 807 people from the two communes.</p>
<p>Activity1.8 Surveys to establish knowledge of pollinators.</p>	<p><i>Activity completed Year 1</i></p>
<p>Activity1.9 Final assessment of TBB efficacy.</p>	<p><i>No activities Year 2</i></p>
<p>Activity 1.10 Publication of TBB, launch event and social media campaign.</p>	<p><i>No activities Year 2</i></p>



<b>Output 2. 500 people from 10 communities around KTNP have implemented the “trees, bees and birds” parkland management strategy, while another 1000 via farmer-to-farmer education have the knowledge and capacity to do so. Access to market and potential revenue streams have increased through product diversification and training to improve butter quality.</b>	<b>2.1</b> Development of a training and capacity building plan for the wider KTNP region for the “trees, bees and birds” strategy completed by the end of Quarter 1 in Year 1.	<i>Activity completed Year 1</i>
	<b>2.2</b> 100 small-holders (including 40 women) from the pilot region will have attended “trees, bees and birds” training sessions led by Naturama, will have implemented key on-farm management measures (tree retention, fallow, shrub) in the strategy by the end of year 1 and a further 400 (including 160 women) from the KTNP region will have undergone direct training by Naturama by the end of year 2. Women who participate in TBB training increase their contribution to on-farm decision making.	<p>In total, 1596 farmers / shea producers (587 women) received training in various aspects of the TBB strategy and then implemented this on their farms with support from pollination ambassadors and project teams (significantly exceeding the training targets for numbers of trainees). See also indicator 2.4 below.</p> <p>Training covered 5 themes and various techniques relating to the 4 axes of the TBB strategy: Assisted Natural Regeneration (RNA); Tree Planting; Mulching and Composting, Apiculture, and Income generating (training to establish soap making). See Appendix 4, Output 2 supporting documentation, Section 3 for more details; and spreadsheets for revenue figures.</p>
	<b>2.3</b> 10 “trees, bees, birds” demonstration sites (1 per village) drawn from the initial 100 pilot farms used to illustrate the “trees, bees and birds” strategy during open-days for farmer-to-farmer education and training purposes by the beginning of year 2.	<i>Activity completed Year 1</i>
	<b>2.4</b> By the end of the project, the 500 who have received direct training have participated in farmer-to-farmer education, each trained individual	<p>End of project progress towards this target was very good. See Indicator 2.2 (In total, 1595 farmers / shea producers (587 women) received training in various aspects of the TBB strategy and then implemented this on their farms with support from pollination ambassadors and project</p>

	<p>disseminating information to 2 more<sup>13</sup>, educating a further 1000 people in the TBB strategy. Knowledge will be reinforced through a mix of community training sessions, and visits to pilot site open days. Women in the project area show an increase in their empowerment to contribute to farm management decisions.</p>	<p>teams). The increase in women’s contribution to on-farm decision making will be measured in Yr3 against Yr 1 baseline.</p>
	<p><b>2.5</b> By the end of Year 2, 100 women from 10 producer groups have received training in improving the quality of shea butter and obtaining access to market. By the end of the project at least 5 of the communities have women producer groups that have improved their market access.</p>	<p>PY3 the project continued to support women’s groups in improved processing quality. In PY2 8 ‘TBB’ villages and 194 women received additional training for improved butter processing and product quality and also soap making equipment. An additional 35 women also participated in an exchange visit in PY3, with an organic butter production Union (Union Dayiwè) (see Annex 4, Output 2 Session de mise en relation-Darwin-Danyewè).</p>
<p>Activity 2.1. Develop the training and capacity building plan for education of KTNP stakeholders on “trees, bees and birds”</p>	<p><i>Activity completed year 1</i> Capacity building plan implemented during PY 2 and 3.</p>	
<p>Activity 2.2. Hold “trees, bees and birds” farmer training sessions for 100 stakeholders in the KTNP region initially, followed by 400 after revision of the strategy.</p>	<p>Technical support for TBB implementation and adoption continued in Year 3, across the 5 themes of the TBB strategy: Assisted Natural Regeneration (RNA); Tree Planting; Mulching and Composting, Apiculture, and Income generating (training to establish soap making). In total, 1596 farmers / shea producers have received training and are implementing components of the TBB and farm model (36% whom are women) and an additional 370 farmers are implementing the TBB in full!</p>	
<p>Activity 2.3. Surveys to monitor shea yields, socio-economics, biodiversity, habitat, including a review of the 100 pilot sites to inform TBB revision.</p>	<p><i>Activity completed year 2</i></p>	
<p>Activity 2.4. Identify 10 suitable “trees, bees and birds” demonstration sites.</p>	<p><i>Activity completed year 1</i></p>	

<sup>13</sup> A dissemination reach of two people is based on work by Naturama for the ‘Living on the Edge’ project which trained famers in natural regeneration techniques and tree-planting.

Activity 2.5. Provide support to stakeholders who have attended training session to facilitate farmer-to-farmer communication.	Regular support and advice has continued to be given to farmers implementing the TBB strategies during the final project year.	
Activity 2.6. Surveys to monitor capacity of community empowerment and ability to implement TBB, including mid-point review of pilot.	<i>Activity completed in Year 2</i>	
Activity 2.7. Provide processing training in improving butter quality and access to markets.	See (Year 1) <b>change of wording to Output Indicator 2.5 above.</b> <i>Activities completed in Year 2.</i> In year 1, women producers received training on improvement to quality of shea butter and soap and initiation to certification). In Year 2, this capacity building support continued with a revision and additional training in improved processing quality, and a total of 8 ‘TBB’ villages and 194 women received additional training for improved butter processing, and also soap making equipment. Technical support was sustained during Year 3. See Annex 4, Output 2: <i>Spreadsheets for ‘revenue du savon’</i>	
<b>Output 3. Capacity of the host country for pollination research, long-term impact monitoring, and pollination education has been developed via mentoring by in-country and international pollination experts. Naturama have the capacity for ongoing development and monitoring of the “Trees,</b>	3.1 Pollination advisory team formed by the end of the first quarter, consisting of local expert (Issa Nombéré), international expert (Jane Stout). Expert recruited for Conservation Scientist research role, plus student recruited for local Masters project.	<i>Activities completed in Year 1</i>  The student recruited in Year 1 was unable to complete validation of his University academic year. A second student, Mariam Konaté, was recruited in Year 2.
	3.2 By the end of Year 1, 4 Naturama staff, involved in pollination education, via mentoring via the Pollination advisor team, have an understanding of pollination services that allows them to develop and lead an educational program.	<i>Activities completed in Year 1</i> See awareness activities and pollination poster, and farm model poster (Appendix 4, Output 3)
	3.3 By the end of Year 1, a Naturama research assistant trained in methods for surveying of pollinators and birds.	<i>Activity completed in Year 1</i> Naturama staff trained and implementing field work; continued mentoring by project staff and research advisors
	3.4 By the end of Year 3, 1 Masters student gains training in pollination fieldwork, contributing to degree.	<i>Activity to be completed Year 3</i>

<b>bees and birds” strategy.</b>	3.5 Monitoring protocols for surveys of pollinators, bird populations, tree diversity and shea yields by the end of Quarter 2 Year 1.	<i>Activities completed in Year 1. Surveys ongoing Year 2 (Output 1)</i>
	3.6 Strategy for continued support of monitoring and development of “Trees, bees and birds” by the end of Year 3.	A stakeholder mapping exercise was carried out (Activity 3.7) to identify beneficiaries who will benefit from the new knowledge and understanding in the locality, nationally and regionally throughout the Shea belt. The project team promoted and disseminated the TBB model in first half of year 3 (reaching a total of over 1600 people who are in part implementing the TBB, and a further 370 who are entirely implementing the TBB). The PL finalised the Policy Briefing Paper in second half Year 3 (See also Output 4).
Activity 3.1 Form pollination advisory committee.		<i>Activity completed in Year 1</i>
Activity 3.2 Recruit Pollination Scientist and Masters Student.		<i>Activities completed in Year 1/ 2</i>
Activity 3.3 Education of Naturama staff about the role of insect pollinators.		<i>Activity completed in Year 1</i>
Activity 3.4 Training of Naturama research assistant in survey methods for pollinators and birds.		<i>Activity completed in Year 1</i>
Activity 3.5 Training of Masters student in pollination research.		<i>Activity completed Year 3. Replacement MSc student, Konaté Mariama, recruited in Year 2 and finished data collection for Naturama and the University of Ouagadougou, on the impact of TBB strategy.</i>
Activity 3.6 Monitoring protocols for pollinators, birds, tree diversity and shea yields developed in collaboration with bird and pollinator experts.		All monitoring protocols developed (Year 1) and under implementation. See Output Indicator 1.2 above and Activities 1.3 for details and sources of results/ evidence (pollinators, birds, trees, shea yields).
Activity 3.7 Legacy strategy developed for on-going monitoring of the efficacy of the TBB strategy.		A mapping exercise was carried out, of key stakeholders who would benefit from the new knowledge and understanding in the locality, at national level, and regionally throughout the Shea belt. Naturama and Project Leader will finalise the promotion and dissemination of the TBB model recommendations in first half of year 3 and finalise the Darwin project advocacy and policy action plan in second half Year 3, to work towards EOP targets and measurement of project impacts. Naturama has identified a series of relevant events for dissemination of project findings in Year 3.
<b>Output 4 An advocacy programme for integration of the ‘trees, bees and</b>	<b>4.1.</b> By end of Quarter 3, Year 1, a policy and advocacy plan prepared by BirdLife, under guidance from the RSPB and Naturama, identifying key sector-wide	A Policy Briefing Paper was finalised in PY3 Q4, and an event by way of a Darwin project launch was held at The David Attenborough Building in Cambridge, in June, to promote the key research findings from the project, and disseminate the Policy Briefing Paper. Colleagues from Trinity participated as did the PL from the other Darwin Initiative project coming to a close (Yerba Mate). As such this was an opportunity for reflection and lessons learned from mainstreaming biodiversity

<b>birds' management strategy into policy and practice leading to the integration of TBB advice into GSA sustainability guidelines.</b>	organisations and decision-makers and advocacy channels.	across agricultural and forest landscapes (see Appendix 4, Output 4, LEEP poster event, and Policy Briefing Paper).
	<b>4.2</b> Presentations at the AGM of the Global Shea Alliance in 2017 and 2018. Participation in the GSA working groups from 2016 onwards.	In Year 3, Naturama and the PL participated in and presented at the Global Shea Alliance Conference in Q4 March 2019. In Q3, the Director of Ghana Wildlife Society (BirdLife partner, West Africa) Eric Lartey, represented the project in the GSA Sustainable Working Group meeting held in Tamale, Northern Ghana.
	<b>4.3</b> Presentations at the annual AEMLAP meetings from 2016 onwards. And discussed within the sustainable land use working group.	No AEMLAP Meeting in 2019 but the project presented at various international meetings, See 4.1 above
	<b>4.4</b> Advocacy workshops held in Years 2 and 3 of the project in collaboration with the GSA with the aim of disseminating the results of the "Trees, bees and birds" more widely throughout the shea industry and receiving stakeholder feedback.	See 4.2 above
	<b>4.5</b> By end of Year 2 policy brief prepared that include executive summaries following completion of the "trees, bees and birds" strategy development.	<i>See Appendix 4 for final Policy Briefing Paper</i>
	<b>4.6</b> An end of project advocacy workshop with the aim of integrating the "Trees, bees and birds" into policy held for government, NGOs and certification standards.	<i>Yr 3 activities.</i> Representation and participation at the GSA meeting in Accra, March 2019, to promote and disseminate the final advocacy, policy and practice recommendations (see activity 4.4). PL had hoped to visit Burkina Faso to support Naturama in an in-country project launch in June, but the security situation was unclear, and the remaining project budget deemed insufficient, so this trip was cancelled.
Activity 4.1 Develop a policy and advocacy plan.		See Policy Briefing Paper (Appendix 4, Output 4). Available in French and English. Disseminated across global BirdLife networks, and through the 500 strong GSA membership network also.
Activity 4.2 Hold advocacy workshops for Shea Industry.		See Activity 4.1 and 4.4

Activity 4.3 Prepare and distribute policy briefs.	See Activity 4.1
Activity 4.4 Participation at the Global Shea Alliance AGMs.	Naturama participated in the Global Shea Alliance Conference in Ghana, March 2019, where they presented the Darwin posters (see appendix 4, output 3, Pollination and Farm Model poster)
Activity 4.5 Participation at annual AEMLAP meetings.	No formal meeting of AEMLAP, but other opportunistic meetings made it possible to present the results of the project, see Indicator 4.1, above.
Activity 4.6 Advocacy workshop for government, NGOs and certification schemes.	<i>No activities Yr 2.</i>
Activity 4.7 Participation in GSA working groups.	BirdLife was an active member of the GSA – participating in the Sustainability Working group (SWG), and presenting in the GSA AGM / global conference (see activities 4.4).

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

Project summary	Measurable Indicators	Means of verification	Important Assumptions
<p>Outcome: (Max 30 words)</p> <p>Understanding of the relationship between tree diversity, pollination, shea yields, agricultural land use and migratory birds in Burkina Faso, informs management of 500 parkland smallholdings, and sector-wide guidance, promoting livelihood resilience and biodiversity.</p>	<p><b>0.1.</b> By the mid-point of the project, the role and importance of insect pollinators for resilient shea production has been quantified, and habitat requirements for healthy populations of pollinators and birds established, through field research undertaken at 10 pairs of sites in habitats of differing tree diversity around KNTF. Capacity for pollinator and bird research and monitoring in Burkina Faso will have increased.</p> <p>Baseline: The status of insect pollinators in West African agro-ecosystems poorly understood; in particular, only limited information on their role in the pollination and yield of shea trees.</p> <p><b>0.2.</b> By the end of the project, awareness of the value of pollination services and diverse on-farm habitats to sustainable agriculture and availability of non-timber forest products (NTFP) has increased from a baseline assessment in year one, amongst: 1800 adults (800 men and 1000 women); 900 school children in the 10 target</p>	<p><b>0.1.1</b> Two open-access peer-reviewed scientific papers on pollinators and habitat management co-authored by Naturama and University of Ouagadougou employees.</p> <p>Executive lay summary of research</p> <p>Update to the CBD Pollination Information Management System.</p> <p><b>0.1.2</b> Baseline and end of project survey of the communities to examine the change in understanding and valuation of pollination services and NTFPs (Gender</p>	<p>Political stability in the project area does not decline.</p> <p>The production and processing of shea remains a high priority for regional development</p> <p>Communities and the wider shea industry find the sustainability arguments convincing.</p> <p>There are no extreme or unseasonal weather patterns (drought, floods) that affect research results or the level of interest and uptake of management recommendations.</p> <p>Demand for certified shea remains high.</p>

	<p>communities<sup>14</sup>; 20 agroforestry NGOs; 3 certification schemes; regional and national government stakeholders as defined in the project's advocacy plan.</p> <p>Baseline: Our pilot socio-economic work highlighted little to no appreciation amongst shea-growing communities of the importance and value of pollination services.</p> <p><b>0.3.</b> By the end of the project, 500 smallholdings within 10 villages in the KTNP region are being managed under the pilot 'trees, bees, and birds' strategy, optimising tree diversity for pollination, increasing supply of sustainable fuelwood, NTFP and habitat for migrant birds. Sapling removal will have halved, while migrant bird densities and pollinator levels will remain steady or improved relative to the year one baseline.</p> <p><b>0.4</b> By the end of the project 100 household incomes will have increased via a combination of increased shea yields (10% increase) on farms implementing TBB and through better prices and market access resulting from training in processing</p>	<p>disaggregated statistics collected).</p> <p>Baseline and end of project surveys of attitudes to sapling removal, fallows and tree-planting on farms.</p> <p>Quarterly training reports and materials</p> <p><b>0.1.3</b> Baseline and end of project participatory surveys within the pilot region measuring willingness and capacity to implement "trees, bees and birds", uptake of the scheme.</p> <p>Baseline and end of project measures of on-farm tree diversity and density, including number of coppice and NTFP species.</p> <p>Baseline and end of project measures of habitat diversity, pollinator and bird abundance.</p>	
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<sup>14</sup> Calculations are based on 60 adults attending each dissemination event, 1 held each year in each village, and 30 schoolchildren attending each education event, 1 held in each village each year.



	<p>techniques to improve butter quality (20% price premium, increasing total household cash incomes by 5%). Livelihood benefits generated through a more diverse supply of NTFP (at least 3 extra products) and sustainable fuelwood on 100 farms. 200 female shea producers will be empowered to contribute to on-farm decision making.</p> <p>and through better prices and improved market access achieved by training in processing to improve butter quality</p>	<p><b>0.1.4</b> Baseline and end of project measures of shea yield on TBB sites relative to control sites.</p> <p>Baseline and end of project measures of cash income generated by shea.</p> <p>Baseline and end of project measures of firewood sourced sustainably from on-farm. % of firewood sourced sustainably</p> <p>Baseline and end of project measures of community use of NTFP.</p> <p>Baseline and end of project participatory surveys of women's contribution to on-farm decision making.</p> <p>Quarterly reports and maps of pilot scheme implementation and demonstration sites.</p> <p>Training materials and records of attendance at training and demonstration site open days.</p>	
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	<p><b>0.5</b> By the end of the project, guidance on optimising pollination for shea yields and sustainable habitat diversity, informed by the “trees, bees and birds” strategy pilot, incorporated into GSA sustainability programme<sup>15</sup> and awareness and willingness to implement raised amongst at least half of GSA’s 380 members – compared to baseline survey in year one.</p> <p>Baseline: Current GSA sustainability guidelines do not include guidance in relation to improving pollination services or negating biodiversity loss.</p>	<p><b>0.1.5</b> GSA sustainability guidelines and best practice manual.</p> <p>Copies of minutes and presentation from GSA AGM</p> <p>Results from baseline and end of project questionnaires directed at relevant NGOs and Development agencies on the awareness and importance of pollination.</p> <p>Presentations and attendance records from end of project workshop.</p>	
<p>Outputs:</p> <p>1 Research outputs completed and used to educate the shea-growing community around KTNP via pollination demonstration sites. The entire evidence base reviewed and used to inform development of the “trees, bees and birds” agri-environment strategy.</p>	<p><b>1.1.</b>A working group formed and workshop held in Quarter 1 of Year 1, bringing together key stakeholders and experts to draft a “trees, bees and birds” shea parkland management strategy.</p> <p><b>1.2.</b>By the mid-point of the project, a study of the impact of pollination on shea yields and optimum diversity of tree species for pollinators, planned and carried out at 10 degraded and 10 non-degraded sites around KTNP.</p> <p><b>1.3.</b>By end of Quarter 2 Year 2, 20 “pollination ambassadors” (2 per village, including at least 10 women) from the shea farming community, along with at least 2 local</p>	<p><b>1.1.1</b> List of working group members Minutes from workshop meetings Draft TBB strategy, including list of trees with justifications.</p> <p><b>1.1.2</b> Research strategy and field-work plan. Map of experimental sites Report from field-work component</p>	<p>Experimental work is not adversely affected by weather conditions.</p> <p>Availability of government staff and pollination ambassadors can be timed to coincide with fruiting periods of the shea trees.</p>

<sup>15</sup> Current GSA sustainability guidelines for shea do not include any specific guidance in relation to improving pollination services or negating biodiversity loss.

	<p>government officials, will have visited an experimental pollination plot leading to increased awareness of the link between pollinators and yield. A pollinator ambassadors network established.</p> <p><b>1.4.</b> By the beginning of Quarter 3 in Year 2, a “Trees, bees and birds” strategy revised and finalised incorporating updated information from pilot implementation and pollination research and feedback from the wider shea industry.</p> <p><b>1.5.</b> A final assessment of the efficacy of the TBB strategy is completed in the final Quarter of the project and the strategy published. A launch event will be timed to coincide with a GSA meeting. Social media campaign to promote the strategy.</p>	<p><b>1.1.3</b> Reports and photos from visits to the pollination sites.</p> <p>Notes of meetings from the pollination ambassadors network.</p> <p><b>1.1.4</b> Notes from stakeholder consultations.</p> <p>Final TBB strategy document published.</p> <p><b>1.1.5</b> Assessment of the TBB strategy.</p> <p>Reports from the launch event. Details from social media campaign, including ‘audience reached’</p>	
<p><b>2</b> 500 people from 10 communities around KTNP have implemented the “trees, bees and birds” parkland management strategy, while another 1000 via farmer-to-farmer education have the knowledge and capacity to do so. Access to market and potential revenue streams have increased through product diversification and training to improve butter quality.</p>	<p><b>2.1</b> Development of a training and capacity building plan for the wider KTNP region for the “trees, bees and birds” strategy completed by the end of Quarter 1 in Year 1.</p> <p><b>2.2</b> 100 small-holders (including 40 women) from the pilot region will have attended “trees, bees and birds” training sessions led by Naturama, will have implemented key on-farm management measures (tree retention, fallow, shrub) in the strategy by the end of year 1 and a further 400 (including 160 women) from</p>	<p><b>2.1.1</b> Training and development plan.</p> <p><b>2.1.2</b> Training materials attendance reports, and feedback.</p> <p>Maps and records from implementing farms.</p> <p>Reports of baseline and end of project surveys of women’s contribution to decision making.</p>	<p>Those farmers trained and supported to do so implement TBB strategies.</p> <p>Those attending training sessions are able to disseminate the findings to a further two people.</p>

	<p>the KTNP region will have undergone direct training by Naturama by the end of year 2. Women who participate in TBB training increase their contribution to on-farm decision making.</p> <p>2.3 10 “trees, bees, birds” demonstration sites (1 per village) drawn from the initial 100 pilot farms used to illustrate the “trees, bees and birds” strategy during open-days for farmer-to-farmer education and training purposes by the beginning of year 2.</p> <p>2.4 By the end of the project, the 500 who have received direct training have participated in farmer-to-farmer education, each trained individual disseminating information to 2 more<sup>16</sup>, educating a further 1000 people in the TBB strategy. Knowledge will be reinforced through a mix of community training sessions, and visits to pilot site open days. Women in the project area show an increase in their empowerment to contribute to farm management decisions.</p> <p>2.5 By the end of Year 2, 100 women from 10 producer groups, have received training in improving the quality of shea butter and obtaining access to market. By the end of the project at least 5 of the communities have women producer groups that have improved their market access.</p>	<p><b>2.1.3</b> Photos, maps and reports from demonstration sites. Reports of education events held on sites.</p> <p><b>2.1.4</b> End of project survey of community understanding, desire and capacity to implement “trees, bees and birds” strategy.</p> <p>Reports of baseline and end of project measures of empowerment.</p> <p><b>2.1.5</b> Training report and photos</p>	
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<sup>16</sup> A dissemination reach of two people is based on work by Naturama for the ‘Living on the Edge’ project which trained famers in natural regeneration techniques and tree-planting.

<p><b>3</b> Capacity of the host country for pollination research, long-term impact monitoring, and pollination education has been developed via mentoring by in-country and international pollination experts. Naturama have the capacity for ongoing development and monitoring of the “Trees, bees and birds” strategy.</p>	<p>3.1 Pollination advisory team formed by the end of the first quarter, consisting of local expert (Issa Nombéré), international expert (Jane Stout). Expert recruited for Conservation Scientist research role, plus student recruited for local Master’s project.</p> <p>3.2 By the end of Year 1, 4 Naturama staff, involved in pollination education, via mentoring via the Pollination advisor team, have an understanding of pollination services that allows them to develop and lead an educational program.</p> <p>3.3 By the end of Year 1, a Naturama research assistant trained in methods for surveying of pollinators and birds.</p> <p>3.4 By the end of Year 3, 1 Masters student gains training in pollination fieldwork, contributing to degree.</p> <p>3.5 Monitoring protocols for surveys of pollinators, bird populations, tree diversity and shea yields by the end of Quarter 2 Year 1..</p> <p>3.6 Strategy for continued support of monitoring and development of “Trees, bees and birds” by the end of Year 3.</p>	<p><b>3.1.1</b> CV’s for recruited Conservation Scientist and Master’s student.</p> <p>Minutes /ToRs of advisory team meetings</p> <p><b>3.1.2</b> Copies of education materials produced for the community by Naturama about pollination.</p> <p><b>3.1.3</b> Records of Naturama assistants that have received training. Naturama capacity statement.</p> <p><b>3.1.4</b> Masters theses</p> <p><b>3.1.5</b> Records of survey protocols and reporting strategy.</p> <p><b>3.1.6</b> Strategy document.</p>	<p>.</p>
<p><b>4</b> An advocacy programme for integration of the ‘trees, bees and birds’ management strategy into policy and practice leading to the integration of TBB</p>	<p><b>4.1</b> By end of Quarter 3, Year 1, a policy and advocacy plan prepared by BirdLife, under guidance from the RSPB and Naturama, identifying key sector-wide organisations</p>	<p><b>4.1.1</b> Policy and advocacy strategy document.</p>	<p>Industry and policy makers see value in supporting and participating in the scheme.</p>

<p>5 . advice into GSA sustainability guidelines..</p>	<p>and decision-makers and advocacy channels.</p> <p><b>4.2</b> Presentations at the AGM of the Global Shea Alliance in 2017 and 2018. Participation in the GSA working groups from 2016 onwards.</p> <p><b>4.3</b> Presentations at the annual AEMLAP meetings . from 2016 onwards. And discussed within the sustainable land use working group.</p> <p><b>4.4</b> Advocacy workshops held in Years 2 and 3 of the project in collaboration with the GSA with the aim of disseminating the results of the “Trees, bees and birds” more widely throughout the shea industry, and receiving stakeholder feedback.</p> <p><b>4.5</b> By end of Year 2 policy briefs prepared that include executive summaries following completion of the “trees, bees and birds” strategy development.</p> <p><b>4.6</b> An end of project advocacy workshop with the aim of integrating the “Trees, bees and birds” into policy held for government, NGOs and certification standards.</p>	<p><b>4.1.2</b> Global Shea Alliance policy documents, minutes from AGM and working group meetings. Presentations.</p> <p><b>4.1.3</b> Minutes from working group meetings. Presentations.</p> <p><b>4.1.4</b> Workshop reports and list of attendees. Presentation detailing “trees, bees and birds” (will be openly available on FigShare).Feedback reports from participants.</p> <p><b>4.1.5</b> Policy briefs and list of recipients.</p> <p><b>4.1.6</b> Workshop reports and list of attendees. Meeting feedback reports from participants.</p>	
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**Output 1 Research outputs completed and used to educate the shea-growing community around KTNP via pollination demonstration sites. The entire evidence base reviewed and used to inform development of the “trees, bees and birds” agri-environment strategy.**

- 1.1 Form TBB working group and hold a workshop to draft a preliminary strategy
- 1.2 Plan fieldwork, including site selection and GIS analysis of habitat degradation and tree density
- 1.3 Fieldwork to determine pollinators, tree species and fruit set. Taxonomic identification, data analysis.
- 1.4 Write scientific papers on shea pollination and habitat management.
- 1.5 Recruit pollination ambassadors and facilitate visits to pollination research sites. Establish ambassador network.
- 1.6 Hold workshop to refine “trees, bees and birds” strategy and publish document
- 1.7 Pollinator education activities– one public meeting a year in each of the ten villages
- 1.8 Surveys to establish knowledge of pollinators
- 1.9 Final assessment of TBB efficacy
- 1.10 Publication of TBB, launch event and social media campaign

**Output 2 500 people from 10 communities around KTNP have implemented the “trees, bees and birds” parkland management strategy, while another 1000 via farmer-to-farmer education have the knowledge and capacity to do so. Access to market and potential revenue streams have increased via better knowledge of certification**

- 2.1 Develop the training and capacity building plan for education of KTNP stakeholders on “trees, bees and birds”
- 2.2 Hold “trees, bees and birds” farmer training sessions for 100 stakeholders in the KTNP region initially, followed by 400 after revision of the strategy.
- 2.3 Surveys to monitor shea yields, socio-economics, biodiversity, habitat, including a review of the 100 pilot sites to inform TBB revision.
- 2.4 Identify 10 suitable “trees, bees and birds” demonstration sites
- 2.5 Provide support to stakeholders who have attended training session in order to facilitate farmer-to-farmer communication.
- 2.6 Surveys to monitor capacity of community empowerment and ability to implement TBB, including mid-point review of pilot.
- 2.7 Provide training in processing to improve butter quality and access to market (as per change request: 3.10.16).

**Output 3 Capacity of the host country for pollination research, long-term impact monitoring, and pollination education has been developed via mentoring by in-country and international pollination experts. Naturama have the capacity for ongoing development and monitoring of the “Trees, bees and birds” strategy.**

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|--|---|
|  | <ul style="list-style-type: none"><li>3.1 Form pollination advisory committee</li><li>3.2 Recruit Pollination Scientist and Masters Student.</li><li>3.3 Education of Naturama staff about the role of insect pollinators.</li><li>3.4 Training of Naturama research assistant in survey methods for pollinators and birds.</li><li>3.5 Training of Masters student in pollination research.</li><li>3.6 Monitoring protocols for pollinators, birds, tree diversity and shea yields developed in collaboration with bird and pollinator experts.</li><li>3.7 Legacy strategy developed for on-going monitoring of the efficacy of the TBB strategy.</li></ul> <p><b>Output 4 An advocacy programme for integration of the ‘trees, bees and birds’ management strategy into policy and practice leading to the integration of TBB advice into GSA sustainability guidelines.</b></p> <ul style="list-style-type: none"><li>4.1 Develop a policy and advocacy plan</li><li>4.2 Hold advocacy workshops for Shea Industry</li><li>4.3 Prepare and distribute policy briefs</li><li>4.4 Participation at the Global Shea Alliance AGMs</li><li>4.5 Participation at annual AEMLAP meetings.</li><li>4.6 Advocacy workshop for government, NGOs and certification schemes</li><li>4.7 Participation in GSA working groups</li></ul> |
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### Annex 3: Standard Measures

**Table 2** Publications (not applicable for Project Year 2).

Title	Type (e.g. journals, manual, CDs)	Detail (authors, year)	Gender of Lead Author	Nationality of Lead Author	Publishers (name, city)	Available from (e.g. weblink or publisher if not available online)
	Peer reviewed Journal	2018	Female	British	Journal of Pollination Ecology	(see Annex 4, for pdf)

Code No.	Description	Gender of people (if relevant)	Nationality of people (if relevant)	Year 1 Total	Year 2 Total	Year 3 Total	Total to date	Total planned during the project
2	Number of people to attain Masters qualification (MSc MPhil etc.) *		Burkinabe	1 MSC student	1 (replacement master student)		1	1
6A 6B	Number of people to receive other forms of education/training (which does not fall into categories 1-5 above) * Number of training weeks to be provided	75 women <sup>17</sup> 166 men  107 women 225 men	Burkinabe	241 shea producers training on TBB  332 producers - ANR training	815 shea producers, training in TBB components (318 women; 497 men) – see breakdown of training below:  250 producers 2-day training in ANR	539  00	1595  582	TBB training only <sup>18</sup> - 500 people from 10 communities while another

<sup>17</sup> Year 1 totals only. Gender breakdown in subsequent years shown in year total column.

<sup>18</sup> Training relating to ANR, reforestation, apiculture etc. forms part of the TBB strategy to improve yields, and achieve habitat/biodiversity objectives.

Code No.	Description	Gender of people (if relevant)	Nationality of people (if relevant)	Year 1 Total	Year 2 Total	Year 3 Total	Total to date	Total planned during the project
		40 women		40 shea producers (22 enterprise groups) – training in improving shea butter/soap quality	training: (61 women; 189 men); -	37	77	1000 via farmer-to-farmer education
					271 producers – 2-day training in Reforestation techniques (59 women; 212 men)	00	271	100 smallholders trained in techniques that deliver increase in income of 10% (target is 100 farms demonstrating this increase)
					100 producers – 3-day training in set up & management of manure pits (33 women; 77 men)	00	100	
					20 people – 5-day training in modern apiculture (3 women; 17 men)	00	20	
		X (staff numbers and genders)		4 Naturama staff trained in on pollination,	174 people 6-days training in soap production (172 women; 2 men)	20	194	

Code No.	Description	Gender of people (if relevant)	Nationality of people (if relevant)	Year 1 Total	Year 2 Total	Year 3 Total	Total to date	Total planned during the project
				surveying and producing education materials	-	-	4 (staff total)	
7	Number of (i.e., different types - not volume - of material produced) training materials to be produced for use by host country			4 different types: TBB training materials; Shea quality improvement training materials; Pollination training and awareness (for staff & MSC student); Community education materials produced by Naturama	3: TBB poster to promote wider implementation GSA biodiversity guidelines and TBB recommendations for integration into GSA's best practice manual Advocacy plan – for use by Naturama in advocating for wider adoption of TBB to improve pollination services across shea producing area of Burkina Faso.	25 dispensers designed and used for environmental education  102 posters on the TBBB strategy	134	
9	Number of species/habitat management plans (or action plans) to be produced for Governments, public authorities, or other implementing agencies in the host country				2 TBB Strategy GSA Biodiversity Guidelines	00	2	2
10	Number of individual field guides/manuals to be produced to assist work related				1 Pollinator survey manuals	00	1	1

Code No.	Description	Gender of people (if relevant)	Nationality of people (if relevant)	Year 1 Total	Year 2 Total	Year 3 Total	Total to date	Total planned during the project
	to species identification, classification and recording							
11A 11B	Number of papers to be published in peer reviewed journals Number of papers to be submitted to peer reviewed journals				2 in draft  2	00		2
14A 14B	Number of conferences/seminars/workshops to be <b>organised</b> to present/disseminate findings Number of conferences/seminars/workshops <b>attended</b> at which findings from Darwin project work will be presented/disseminated.			7  5 GSA meetings; 1 AEMLAP; 1 Pan-African Ornithological Congress	4 workshops <b>attended</b> 1 GSA meeting  Project coordinator (Adama NANA): 02-07 April 2018 (World Bank workshop) Project assistant (Assita Dembélé) workshop on best practice (19 April 2018 in Koudougou) Naturama communication officer (Saidou Nacro): 23-29 2018 Abu Dabi Flyway Summit	3 Workshop attended (Netherlands, TBB workshop, Ramses project (IRD) 1 GSA meeting	15	
20	Estimated value (£'s) of physical assets to be handed over to host country(ies)			Bee hives? Tree seedlings or saplings?	Bee-making equipment – leveraged by the project, but funded	00		

Code No.	Description	Gender of people (if relevant)	Nationality of people (if relevant)	Year 1 Total	Year 2 Total	Year 3 Total	Total to date	Total planned during the project
					by IUCN(not Darwin funded)  Soap making equipment - leveraged by the project (not Darwin funded)			
21	Number of permanent educational/training/research facilities, structures, or organisations to be established and then continued after Darwin funding has ceased			1 x 20 Pollination Ambassadors network		00	1	1
22	Number of permanent field plots and sites to be established during the project and continued after Darwin funding has ceased			20 pollination research sites to be continuously monitored for bird species, habitat quality and insect diversity			20	20
23	Value of resources raised from other sources (i.e., in addition to Darwin funding) for project work				27,228 Euro has been raised through Birdlife Europe to support the Darwin Project in KTNP area.	34 666 raised through NITIDEA collaboration to support TBB activities around safety for women in the shea parklands.	£58,666	

**Annex 4 - supplementary material included as evidence of project achievement**

Referenced in	Title	EN/ FR Word unless stated
<b>Outputs</b>	<b>Yr. 3 Quarterly progress reports (QR) 1, 2, 3, 4 relevant to Outputs 1, 2, 3, and 4.</b> With annexed reports (as detailed below):	FR
<b>Output 1</b>	RAPPORT SYNTHÈSE SUR LES OISEAUX ET HABITATS PROJET DARWIN 10 AVRIL 2019	FR
	Delaney et al Shea Pollination (In Press J. Applied Ecology) & Stout et al (2018)	FR pdf
	Posters – ‘Affiche Darwin Pollinisation’ and ‘Affiche Champ modele’	FR pdf
	J Mallord final report Monitoring birds in Shea parklands	EN
<b>Output 2</b>	Rapport de remise des dérouleurs sur la stratégie « arbres, insectes et oiseaux » et sur la pollinisation et les insectes pollinisateurs	FR
	Rapport d’enquête d’impact du projet	FR
	Rapport de la session de mise en relation-Darwin-Danyewè	FR
	Revenu de l’apiculture & Revenu de savon	FR & EXCEL
	Séances de sensibilisation et de remise des affiches sur la stratégie TBB et des posters sur la pollinisation et les pollinisateurs.	FR
	Version finale de l’article à publier sur le projet et ses résultats	FR
<b>Output 3</b>	Darwin Education and Awareness Posters: Pollination and Model Farm (see Output 1)	FR pdf
<b>Output 4</b>	Policy Briefing Paper – Building Resilient Landscapes and Livelihoods in Burkina Faso’s Shea Parklands	EN & FR pdf
	Darwin-LEEP sharing event - poster	

## Checklist for submission

	Check
<b>Is the report less than 10MB?</b> If so, please email to <a href="mailto:Darwin-Projects@ltsi.co.uk">Darwin-Projects@ltsi.co.uk</a> putting the project number in the Subject line.	Report and annexed information emailed separately.
<b>Is your report more than 10MB?</b> If so, please discuss with <a href="mailto:Darwin-Projects@ltsi.co.uk">Darwin-Projects@ltsi.co.uk</a> about the best way to deliver the report, putting the project number in the Subject line.	
<b>Have you included means of verification?</b> You need not submit every project document, but the main outputs and a selection of the others would strengthen the report.	Yes
<b>Do you have hard copies of material you want to submit with the report?</b> If so, please make this clear in the covering email and ensure all material is marked with the project number.	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.	