



Darwin Initiative Annual Report



Department
for Environment
Food & Rural Affairs

Important note: To be completed with reference to the Reporting Guidance Notes for Project Leaders:

it is expected that this report will be about 10 pages in length, excluding annexes

Submission Deadline: 30 April

Darwin Project Information

Project Reference	19-018
Project Title	Agroforests: a critical resource of sustaining megadiversity in Guatemala
Host Country/ies	Guatemala
Contract Holder Institution	Natural Resources Institute, University of Greenwich
Partner institutions	ANACAFE (National Coffee Association), University of Valle Guatemala (UVG), Fundacion Defensores de la Naturaleza (FDN).
Darwin Grant Value	£250,256
Start/end dates of project	April 2012 - March 2015
Reporting period	Annual Report 2
Project Leader name	Jeremy Haggar
Project website	
Report author(s) and date	Jeremy Haggar (NRI), Rosa Maria Aguilar (ANACAFE), Laura Saenz & Margarita Vides (UVG), Cesar Tot & Eldin Sierra (FDN)

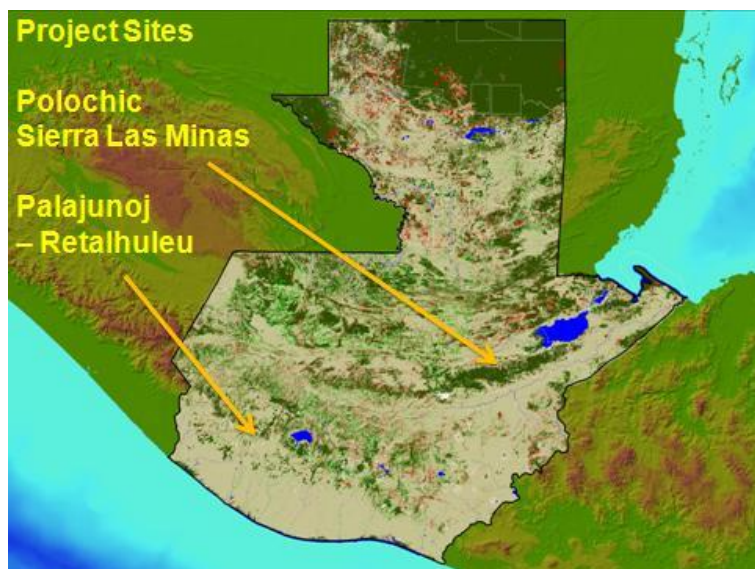
1. Project Rationale

Protected areas tend to be concentrated in areas of lowland forest (e.g. Peten) or high montane areas of difficult access; there is little protection for the biodiverse rich lower montane forests which tend to be highly fragmented. Agroforests of coffee, cocoa and other crops shaded with diverse assemblages of native species provide forest-like habitat in the lower montane areas of Guatemala and much of Mesoamerica. Previous research by the project partners has shown that economically these agroforestry systems are not the most productive systems for the main crops, and especially when prices fall tend to be converted to other less biodiverse production systems (Haggar et al 2013, Environmental Management 51: 811-823). The project aims to evaluate the role of these agroforests in the landscape mosaic to improving connectivity for biodiversity between forest patches, identify and facilitate access to incentives and markets that promote biodiversity by farmers managing agroforest systems, and inform public and private policies on how they can be more effective in providing those incentives.

The project is implemented in two contrasting areas of Guatemala the first Palajunoj is on the southern slope of the Pacific volcanic chain between the departments of Retahuleu and Quetzaltenango, the second site Polochic is on the east on the northern slope of the Sierra Las Minas Biosphere Reserve (the reserve is administered by project partner FDN). In Palajunoj the project works with the Palajunoj Producers Association – an association of about 32 medium to large scale farms with interests in conserving biodiversity and two small-scale organic producers associations (Loma Linda Cooperative and Nueva Alianza Association) with

about 150 members between them. In Polochic the project works with the Polochic Organic Producers Association (APODIP), which has about 500 members, focussing activities in 6 indigenous Q'eqchi communities with about 120 organic coffee producers.

In both regions the communities living on the edge of the high-montane remnant forests are small-scale indigenous farms some of whom have formed organic-Fairtrade certified organizations. Despite these certifications educational, technical and geographic limitations mean these groups have poor ability to meet the challenges of new outbreaks of pests and diseases and demanding and variable markets for their products. At the same time the biodiversity benefits of being organic are not directly recognized, while being in the buffer zone of a protected area places restrictions on how they manage their land. The main role of Fundacion Defensores de la Naturaleza is to enable local communities improve their livelihoods while conserving the landscape of the Biosphere Reserve.



2. Project Partnerships

The collaborators are the Environmental Coordinator of ANACAFE Rosa Maria Aguilar and ANACAFE field staff based in Retalhuleu; the Sierra Las Minas Biosphere Reserve Director Cesar Tot and his staff of FDN and Margarita Vides and Laura Saenz of the Centre for Environmental Studies and Biodiversity of the UVG. These partners were all involved in the design of the project based on previous collaborative work between these institutions and the project leader. Formal subcontracts have been established between these partners and NRI, and between they administer 70% of the funds of the project and are responsible for the day to day execution of the project. Project meetings are held every six months to review progress against agreed activities and products, and revise and plan the next periods' activities; we hold skype meetings at least once between these meetings, local partners meet periodically between themselves (at least once or twice between six-monthly meetings) and are in frequent e-mail communication for follow-up. We have also hold at least one formal meeting each semester with each of the farmer associations in Palajunoj and the Polochic Organic Producers Association (APODIP) to review advances of the project against previously agreed objectives and activities.

One the main challenges has been changes in personnel, the collaborating researchers from the University have changed over the past year, and the dedicated field technician from FDN also changed at the beginning of the year. Nevertheless, the partners managed the handing over of responsibilities well with some overlap between personnel and there have been no major set-backs. Changes in personnel have affected our collaboration with the National Biodiversity Office - OTECBIO but we have now established regular contact and exchanges with the new Director, Jose Luis Echeverria, who has also facilitated contacts with other Directors within the Council for Protected Areas (CONAP).

3. Project Progress

The second year of the project has been a transition from primarily biodiversity research activities under Output 1 “Demonstrating the importance of agroforests for biodiversity conservation” to activities associated with identifying and accessing incentives for farmers to conserve biodiversity under Outputs 2 “Support for land-users to conserve biodiversity” and 3 “Market incentives for biodiversity conservation”. Together these provide a growing basis for Output 4 – “Providing recommendations on policies that support biodiversity conservation in agroforestry landscapes”.

3.1 Progress in carrying out project activities

Activity 1.1 Integrated maps of coffee, agroforests, and forests to evaluate ecosystem connectivity for two study sites

This activity is led by the GIS lab of the Centre for Environmental and Biodiversity Studies at UVG. They have now developed a final land use map for the two project study zones (Palajunoj 26,000 ha and Polochic 12,000 ha) separating the different agroforestry systems and forest cover (copies of the maps are provided in the supporting documents). This has enabled an evaluation of forest fragmentation, which is extremely high i.e. there are multiple small forest fragments and few large forest blocks. The next stage of the evaluation is to use the biodiversity data (see below) to estimate the degree to which the different agroforestry land uses may provide connectivity between the forest fragments. This activity is behind schedule as it was foreseen to be completed by this date, but it was delayed by waiting for access to up to date images from 2012 which were only available in early-2013; subsequently substantial ground truthing (over 100 points verified) was conducted with support from the field staff of ANACAFE and FDN before final maps could be generated.

Activities 1.2 Synthesize and complement comparative studies of biodiversity in agroforests (coffee, cocoa and cardamom) and forests for key groups (birds & macroinverts) and **Activity 1.3** Tree populations dynamics between agroforests and forests

These activities were also led between the Centre for Environmental and Biodiversity Studies at UVG and NRI, but with support from the field staff of ANACAFE and FDN (who were taught in the biodiversity sampling methods and undertook the majority of the field sampling). These two activities have been combined into one integrated biodiversity study to facilitate an integrated analysis of the relationship between tree and faunal diversity. After review of previous research and the land use mosaics of the study sites it was decided to concentrate the project research on insect diversity. Plant and insect diversity were evaluated in the 4 to 5 main land uses at each site. The land uses in Palajunoj were forest (secondary or disturbed), simple-shade coffee, complex shade coffee and Rubber or Macadamia; and in Polochic forest, coffee, cardamom, and fallow (some of which were converted to maize in the second evaluation). It was decided to sample leaf-litter and herbaceous vegetation to quantify diversity of ants and cicadellidae (a Hemipteran order) insects respectively; although total arthropod morphospecies diversity was also estimated from the herbs. In additional tree, shrub and herb diversity and abundance were measured. The four main land uses were sampled on ten farms across an altitudinal gradient of 600-1200 m above sea level in each zone with one sampling in the wet season and one in the dry season. Each sampling generates 240 samples for each insect group. Two entomologists specialists in these groups have been contracted to identify the ants (Laura Saenz) and cicadellidae (Pablo Bolanos); additionally other arthropods were classified by order and the number of morphospecies counted. In the case of the cicadellidae the insects collected are the first reference collection for this group in Guatemala, while the ants collected complement the existing collection of the University of Valle. Initial analyses of the data have been completed comparing species richness, diversity and composition between the different land uses and are presented in the supporting documents. Overall 94 species of trees, 84 species of ants and 68 species of cicadellidae were found in Palajunoj, and 86, 90 and 64 species respectively in Polochic (Sierra Las Minas). The next stage is to analyse the relationship between plant and insect diversity and integrate the biodiversity evaluations with the land-use mapping to evaluate landscape connectivity for biodiversity. It was foreseen that this activity would be completed by the end of the second year of the project, nevertheless all field and laboratory work has been completed, the work remaining is higher level analyses and formal publication.

During this year a supplementary study was conducted in Polochic to evaluate relative biodiversity of rubber plantations versus agroforestry land uses. This was a particular concern to Defensores de la Naturaleza as rubber plantations are expanding into the multi-zone of the Sierra Las Minas Biosphere Reserve, and some of the communities that the project is working with wish to plant rubber. FDN and CONAP wish to have scientific information to make a decision on whether to allow the expansion of rubber. 160 samples were taken for ant and cicadellidae diversity by FDN staff and the samples are currently being classified and quantified by the specialists.

Activity 2.1 Determination of the drivers affecting farmer decision making in managing agroforests

A study was conducted on the “Role of Private Nature Reserves and associated eco-tourism in biodiversity conservation in Guatemala” led by NRI economist Diego Naziri, in collaboration with FDN and ANACAFE. The study compared the functioning of Private Nature Reserves in Palajunoj with the Cloud Forest Biological Corridor of Purulha (adjacent to the Sierra Las Minas Biosphere Reserve). The aim was to evaluate the value of Private Nature Reserves and eco-tourism to land-owners and whether they recognized farmers who conserve biodiversity and what the incentives and disincentives are associated with them. While there were incentives there were also some strong disincentives for coffee farmers to become Private Nature Reserves due to restrictions of the management of the shade trees in the coffee. At the same time Private Reserves formed the basis of a successful eco-tourism business for farms in Purulha, which could serve as an example for Palajunoj where such initiatives are only starting. The results and lessons from this study were shared with the Association of Private Nature Reserves, CONAP, project partners and the land-owners (copy of the report in supporting documents). They have provided a basis for negotiations between ANACAFE, the Private Reserve Association and CONAP on the rules for private reserves (see Output 4).

Activity 2.2 Training of producer organizations in management to promote biodiversity

In both project sites coffee leaf rust has led to large reductions in production. The organic organizations reported that some members were threatening to leave so they could apply pesticides to try to control the rust. The project partners considered this the greatest threat to on-farm biodiversity (as well as severely affecting household income) and a priority to address. Therefore the project decided to provide training of trainers and inputs to organic farmers to control rust within the norms of organic production. Training and application of products with farmers was undertaken in Polochic by APODIP and in Palajunoj between ANACAFE and Cooperative Loma Linda and Association of Nueva Alianza. Training events are detailed in supporting information. Spray and protective equipment plus organically approved fungicides were bought equivalent to £2792 for Loma Linda Coop, and £1560 for APODIP. Applications to control rust were undertaken on 45 ha of coffee in Loma Linda (75% of the organic coffee) in November 2013, and on farms in two communities of APODIP that were most affected by rust in March/April 2014. Applications to control coffee rust will continue into year 3 with the inputs and equipment bought and aim to support more farmers.

Activity 2.3 Participatory development of conservation strategies with producer associations to enhance biodiversity in their agroforestry systems

Through joint planning with the managers and board of APODIP it was decided the reforestation incentives could be an important option to maintain forest cover in the communities. FDN have held workshops with 4 indigenous communities to analyse the option of presenting an application for reforestation incentives to the national Programme for Forestry Incentives for Small Producers (PINPEP). So far one community had initiated its application with 7 farmers opting for reforestation and 7 for agroforestry options. FDN are waiting for a formal response from the other communities and will offer this option to the other communities in the area. FDN is providing support in developing the application and supporting documentation, as most of the farmers speak little Spanish this is not something they could do for themselves.

In Palajunoj the Private Nature Reserve and Ecotourism study have led to a demand for training in attending tourists and help with promotion. One strategy to support this would be to

develop the concept of establishing a biological corridor, in which some local farmers are interested. A specialist from FDN, who helped develop the Purulha Cloud Forest Corridor, has worked with ANACAFE and UVG to analyse this option with local stakeholders. However it was concluded that to be viable the concept would require buy in from local institutions and a larger number of land-owners. Given the limited time remaining for the project it has been decided to concentrate on promoting the farms through the existing Palajunoj Private Nature Reserve group. This activity is behind in its implementation and will need to continue through the 3rd year.

Activity 2.4 Evaluation of changes in farmer management of biodiversity and access to support policies

A base-line survey to characterise the farmers in the association of each zone has been conducted (summary included in supporting documents). This includes information on land-use change of the past 5 years; productivity, prices and certification of agricultural production; and participation and access to incentives for biodiversity conservation. This covered 30 farmers from the Palajunoj region (covering 20 of the 24 medium-scale farms members of the association, plus 10 farmers from the small-scale producer Coop Loma Linda – 10% of members) and 50 farmers from the Polochic zone (10% of the membership of APODIP). A summary of the base-line project indicators is given in supporting information. Annual monitoring of production and sales is being conducted.

Activity 3.1 Development of marketing materials to promote agroforest coffee as biodiversity friendly

This activity has been suspended until it is clear whether there is potential market demand for biodiversity friendly coffee (beyond the standard sustainability certifications – see 3.2 and 3.4). It is likely that promotional materials for eco-tourism based on the biodiversity value of the farms in Palajunoj will be developed in the coming year.

Activity 3.2 Discussion with sustainability standards on recognition of biodiversity

The main input for this activity is the results of study of the economic and environmental performance of coffee farms under different certifications in Guatemala, Costa Rica and Nicaragua under a previous EU funded project in which ANACAFE and the project leader were collaborators. A publication has now been prepared and submitted to the journal Biodiversity and Conservation comparing tree biodiversity on organic and conventional farms. A further publication is under preparation comparing economic and environmental trade-offs on certified farms in Nicaragua. Unfortunately, we were not able to obtain the full data-set to conduct the same analyses for Guatemala, although we have been able to make a general economic comparison. Thus we are close to having sufficient inputs to enter into a discussion with sustainability standards, although the environmental data is less complete than we would have liked.

Activity 3.3 Support producers associations in complying with sustainability standards

The above information has been presented to farmers in the associations we are working with to help them in deciding whether they are interested in opting for one of the sustainability certifications. Also a workshop was conducted where certification agencies presented the conditions of the main certifications (Rainforest Alliance, Utz Certified, and Organic). Amongst the larger-scale farms in Palajunoj three farms have expressed interest, and the project has committed to supporting a diagnostic evaluation of their compliance with the Rainforest Alliance standard.

The small-scale producers association are all already organic and Fairtrade certified. In these cases the critical issue has been to prevent members from abandoning organic status (due to the limitations on control of coffee rust – see 2.2 above) and to reinforce the performance of the Board of Directors of the Association of Organic Producers of Polochic. In the later case the project has provided training to the members of the Board on their roles, and in understanding market dynamics. The later is important as many indigenous farmers don't understand the reasons for the fluctuations in price and believe that the association is not effective. This leads to lower sales of coffee and threatens the economic viability of the organization. This training will continue into 2014/15.

Activity 3.4 Promotion of biodiversity friendly agroforest coffee with UK roasters and traders such as Forest Trade and Twin Trading

Our previous report indicated that our consultations with alternative coffee roasters and traders had indicated a lack of interest or demand in a differentiated biodiversity friendly coffee. Recently we have had contact with RSPB and we understand they are considering developing a Bird-friendly coffee concept similar to that in the USA. We hope to pursue collaboration with RSPB on this in 2014/15.

Activity 4.1 Engage CONAP/Biodiversity Office in discussion on the value of agroforests for biodiversity

Since the appointment of a new director of the Biodiversity Office (OTECBIO) in mid-2013, we have been able to maintain engagement. The new director has helped the project partners to engage with the other Directors of the Council for Protected Areas (CONAP). Also the project organized joint workshops with OTECBIO to present the National Biodiversity Strategy in Alta and Baja Verapaz and Guatemala City (early May 2014); another is planned for Retalhuleu in 2014/15.

Activity 4.2 Field visits to coffee agroforests with CONAP decision makers

Although no field visits have been undertaken meetings have been held with the Regional Directors of CONAP for Retalhuleu and Quetzaltenango, and the Retalhuleu Department for Wildlife on the restrictions in Private Nature Reserves for extraction of wood products from the shade trees over the coffee, and general restrictions in the use of certain tree species considered threatened. The later results in part from a confusion in common names, there being some threatened species that share the same common name with more common ones; but also in some cases species threatened in natural forest can be locally common on coffee farms (and of value for timber). Considerable tension had developed between local farmers and the CONAP authorities over these issues. Although not fully resolved the project has at least been able to generate a better understanding of the issues between both sides.

The project (ANACAFE) has also had meetings with INAB (National Forestry Institute) as to the forestry regulations for shaded coffee. They have reached agreement that shaded coffee should be registered as forestry areas to facilitate adequate management of the trees.

For the Sierra Las Minas Biosphere Reserve (that is managed between CONAP and project partner Fundacion Defensores de la Naturaleza) a particular concern is the expansion of rubber plantations in the multi-use buffer zone of the reserve. FDN require the biodiversity assessments from the project to evaluate with CONAP whether there is justification for restricting rubber plantations in this area (a topic that has been discussed in the CONAP Directors meetings).

Activities 4.3 Publication of policy brief on value of agroforests for biodiversity
Pending for 2014/15

Activity 4.4 Support CONAP/Biodiversity office in recognition of biodiversity in Agroforests in national biodiversity plan

Related to the issues discussed in 4.2 there is currently an opportunity to reform the regulations of the law on Protected Areas (which are applied to the Private Nature Reserves) and a revision of the list of threatened tree species. ANACAFE and the Association of Private Nature Reserves have engaged with CONAP nationally to review the issues of the regulations pertaining to shade trees in coffee and to propose to differentiate the rules for private nature reserves from those for public protected areas. These negotiations are on-going through 2014, but we believe that it has been accepted that Private Nature Reserves should come under different rules from National Parks (which was not previously the case).

3.2 Progress towards project outputs

Output 1. Demonstrate the importance of agroforests in the conservation of biodiversity in lower montane areas of Guatemala

- i. Quantitative assessment of extent of agroforests
- ii. Landscape biodynamics between agroforests and forests determined

Mapping of the main land-use elements – including agroforests – and their biodiversity have been completed (see supporting documents). These will be integrated in 2014/15 to develop and understanding of the landscape biodiversity relationships.

Output 2. Identify effective support mechanisms for communities and land-owners to conserve biodiverse agroforest systems

- i. Incentives for farmers to conserve biodiversity identified
- ii. Two producer's associations with strategies to conserve biodiversity
- iii. Number of producers accessing policies that support on-farm biodiversity

Incentives to conserve biodiversity have been identified (study of Private Nature Reserves and Eco-tourism). Producer associations have identified key actions to support biodiversity (Reforestation incentives in Polochic and Eco-tourism in Palajunoj). Current activities are directed at supporting producers in accessing these incentive processes.

Output 3. Private policies and markets provide greater recognition of biodiversity value of agroforest coffee

- i. Private policies/Sustainable certifications reinforce criteria that recognize biodiversity
- ii. Number of farms with sustainable certification
- iii. Increased sales of sustainably certified products (Rainforest Alliance, Bird Friendly etc.)

Initial consultations indicated limited demand for biodiversity-friendly products and little evidence of the benefits of sustainable certifications; for the same reasons there is little incentive for certifications to reinforce this area. Data from an earlier project has now been analysed that supports the biodiversity value of sustainable certifications, and it may still be possible to discuss this theme with certification bodies. At the same time falls in coffee prices and appearance of coffee rust led to the threat of organic producers abandoning coffee, and priority was given to addressing this threat. Thus, indicator ii and iii have shifted emphasis from increasing the number of sustainably certified farms and sales of products to maintaining the initial status. Although we hope that new farms may enter certification in 2014, it is unlikely they will be able to sell under that certification within the time frame of the project.

Output 4. Recommendations for public policies that support agroforests as a biodiverse land-use

- i. Policy brief on supporting biodiversity in agroforests
- ii. Public policy makers informed of lessons from research

Policy makers have been informed on the lessons from research on Private Nature Reserves and biodiversity studies that highlight disincentives in conservation policies for private land-owners to engage in conservation; these have supported changes in the regulations for Protected Areas. We have not yet developed a policy brief.

3.3 Progress towards the project Purpose/Outcome

Purpose Improved *access for farming families* to public and private policies that recognize the role of agroforests in meeting the objectives of the CBD

- i. Public and private policies with greater recognition of the contribution of agroforests to biodiversity conservation
- ii. Number of farming families accessing and implementing public and private incentives to conserve biodiversity

Public policies have maintained a commitment to the conservation of biodiversity with the Presidential signing of the National Biodiversity Strategy in 2012. Project actions have identified disincentives in the Protected Areas regulations for Private Nature Reserves, a general revision of these regulations is allowing for these disincentives to be revised. Changes in private policies (certification standards) is less likely as there is insufficient demand for biodiversity differentiated products. Within the areas of intervention the project is assisting farmers in accessing specific incentives for biodiversity conservation, and addressing negative market and pest impacts on sustaining participation in private sustainability standards. The outcome of

these actions is unlikely to be clear by the end of the project due to the timeframe associated with their implementation and for them to become effective (e.g. for the approval of a sustainable certification or reforestation incentive to translate to a sale of product or receipt of incentive payment).

3.4 Goal/ Impact: achievement of positive impact on biodiversity and poverty alleviation

Goal: Improved policies on sustainable use and equitable benefits in the implementation of the objectives of the CBD Guatemala

Indicator: Biodiversity policy recognizes semi-natural systems and has strengthened elements for sustainable management, and generation of equitable benefits from those systems

Guatemala in 2014 ratified the Nagoya Protocol, it will now undertake the development of a policy for Sustainable Use and Equitable Benefits from biodiversity in line with the protocol. The project should be in a timely position to contribute to this process.

Although no indicators were established as regards poverty alleviation, the change in strategy of the project to support organic-Fairtrade producers combat the impacts of coffee rust also has human development benefits. The combined impacts of falls in coffee prices and falls in production due to rust have led to a decline in income from coffee from US\$1200 in 2010/11 to \$300 per household in 2013/14. Coffee represents 60% of household income. It may prove difficult to evaluate the impacts of the projects interventions in this area as the project is due to close in March 2015, and the benefits of the support to farmers likely to take longer to take effect.

4. Project support to the Conventions (CBD, CMS and/or CITES)

As indicated the project is collaborating with the Biodiversity Office (OTECBIO) of CONAP who is responsible for the implementation of the CBD commitments for Guatemala. In early May 2014 we conducted joint events (2) with OTECBIO to disseminate the National Biodiversity Strategy and share the results of the project. The project contributes directly to two of the Strategic objectives of the Guatemalan Strategic Action Plan for Biological Diversity namely: Strategy 2 Knowledge and evaluation of biological diversity, and Strategy 3 Sustainable Productive Landscapes with territorial planning for conservation. Similarly the project contributes primarily to Aichi targets 7 on sustainable agricultural management conserving biodiversity, and target 19 improving the knowledge and science base for biodiversity conservation. We have agreed to collaborate with OTECBIO with events to develop regional processes for the implementation of the action plan.

5. Project support to poverty alleviation

The change in emphasis of part of the project to support small-scale organic farmers, most of whom are indigenous, was not only based on the biodiversity impacts if farmers were obliged to use pesticides, but also the income loss to farmers from crop losses and falling prices. In 2010/11 organic farmers from Loma Linda had a gross income from coffee production of \$1200 in 2013/14 this declined to just \$300 (due to 60% drop in productivity and 35% fall in price), a very significant loss as these families gain 60% of their cash income from coffee. The indigenous producers affiliated to APODIP had an additional impact from the Cardamom, a source of income as important as coffee, but due to the damage from the thrip pest. The price of their Cardamom in 2013 fell to 30% of the value in 2010 due to damage from the pest. At the same time it is important for these farmers to remain organic-Fairtrade certified as that guarantees them a minimum price. Without this certification the price fall would have been even greater (farm gate price difference in 2012/13 was US\$0.93/lb conventional versus US\$1.13/lb for organic-Fairtrade). This has been the rationale to provide training and inputs to these farmers. The total number of farmers expected to benefit directly are the 120 members of APODIP in the communities the project attends, plus the 60 organic producers of Loma Linda. Nevertheless, the whole membership of both organizations (150 Loma Linda and 500 APODIP) benefit from training and capacity building of the Board of Directors and technical staff that affect the whole organization. As the impacts of improved coffee management, and organizational capacity take several years to result in improved incomes of members, we

cannot expect to see the impacts within the timeframe of this project. The problems of organic coffee producers impacted by coffee rust is general across Guatemala and much of Latin America, if the project can demonstrate an effective strategy to address this, then lessons can be shared to a wider audience through the project leader and partners association with the Latin American Coordinator for Fairtrade.

We would like to note that we have not been informed whether the project is DEFRA or DFID financed so we are not aware to what extent we are obliged to report on poverty alleviation. Nevertheless, it is part of our strategy to improved livelihoods.

6. Monitoring, evaluation and lessons

If not covered in previous sections, discuss methods employed internally to monitor and evaluate the project this year. How can you demonstrate that the outputs and activities of the project actually contribute to the project Purpose/Outcome? What are the indicators of achievements (both qualitative and quantitative) and how are you measuring these? Have there been any changes made to the M&E plan over the reporting period?

What lessons have you learned from this year's work, and can you build this learning into future plans?

Measuring Outputs, Purpose/Outcome and final Goal/Impact indicators can entail additional work, which is often overlooked both in project workplans and budgets (sometimes considered at 10% of total budget). Monitoring and evaluation is an important component of a project to help indicate its success and provide the detail you need to revise your approach accordingly. It should not however, significantly reduce efforts towards meeting project objectives.

Monitoring and evaluation field tasks are undertaken under activity 2.4, a summary of the baseline is provided in the supporting information. Evaluation of project outputs are reviewed at each six-monthly meeting and assessed as to whether they are contributing to the outcomes and goal indicators. Priorities are reviewed and adjustments and activities proposed if we consider outcomes may not be achieved but could be.

Given the importance of the price and disease impacts on organic coffee producers, we have established annual monitoring of production, price and gross income for the organic coffee producers with which the project works. These are the same farmers as were surveyed in the baseline and will be evaluated at the end of the project. One point of concern is that the end-date of the project coincides with the end of the coffee harvest making it logistically difficult to evaluate that harvest before the end project. End-of project evaluation is planned for Feb-March 2015, but it may be difficult to get good data on harvest and especially income (if the coffee has not yet been paid for).

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

The review of the previous annual report requested consideration of whether Output 3 "Private policies and markets provide greater recognition of biodiversity value of agroforest coffee" may require revision given the lack of apparent demand for differentiation based on biodiversity and the new threat to sustainable coffee production from price falls and disease. As explained in Output 3 the strategy has changed to supporting organic farmers to avoid desertion from organic production. The indicators to monitor this are the same as proposed originally: "Number of farms with sustainable certification" and "Increased sales of sustainably certified products," but the "expectation" is to maintain previous levels rather than increase at least in the short-term. In the medium term there is potential to increase sales as demand is high but productivity lacking, but it takes at least 3 to 5 years to increase productivity of organic coffee.

In relation to the first indicator for Output 3, "Private policies/Sustainable certifications reinforce criteria that recognize biodiversity" this may be difficult to achieve given the overall lack of demand for greater biodiversity differentiation from markets, and thus lack of incentive for the certifications to reinforce these criteria. Nevertheless, as also indicated under objective 3, there is now the possibility of the development of a biodiversity differentiated market through RSPB, but it is doubtful this will be established within the timeframe of the project.

Other general recommendations from the reviewers have been incorporated into this report.

8. Other comments on progress not covered elsewhere

As discussed above the main change has been to support organic producers facing impacts of disease and falling prices. Requests for changes to budget lines (for the ANACAFE and FDN budgets) were made to release funds for purchase of organic inputs and equipment for farmers, the requests were approved although one with some delay. Although we believe this is critical, we also acknowledge that the human resources at the disposal of the partners and producer organizations collaborating are not sufficient to reach all farmers who would benefit from such support. In Polochic/Sierra Las Minas FDN are coordinating alliances across institutions and projects to share capacity and try to reach more farmers.

9. Sustainability

Discuss the profile of the project within the country and what efforts have been made during the year to promote the work. What evidence is there for increasing interest and capacity for biodiversity resulting from the project? Is there a satisfactory exit strategy for the project in place and how likely are project outputs, purpose/outcome and impacts to be sustained? What is the exit strategy?

A number of events have been held with the participation of CONAP/OTECBIO and Ministry of Environment. Both institutions have initiatives in planning that may build upon the project actions; OTECBIO the development of a Nagoya strategy and Ministry of Environment are interested in developing the concept of a Coffee Biological Corridor along the Southern Volcanic chain (of which Palajunoj is part). Equally the project actions are integrated into the national partners continuing work-plans: ANACAFE environment plan and general support to coffee producers and their organizations, and FDN management plan for the Sierra Las Minas Biosphere Reserve and latest initiative to develop a REDD project to provide a more sustainable income source for conservation and development actions. We will be engaging with these actors during the last year of the project to ensure we pass on the lessons and outcomes of the project, identifying where they are relevant or contribute to these new initiatives.

10. Darwin Identity

The Darwin logo is always used in presentations given by the project, and the objectives of the initiative explained. Indeed the project is known as the “Darwin Project” among project partners and collaborators and is a distinct project, although related to partner’s strategic aims. All project documents carry the logo, including reports, letters of agreement etc. Also all press notices recognise the support given by the Darwin Initiative; press engagement of the project is provided by the press office of project partner ANACAFE.

The Darwin Initiative is well known in OTECBIO and CONAP and amongst the project partner organizations and collaborators. Those who have read the press releases some of which have appeared in the national papers or on TV will become aware of the Initiative.

11. Project Expenditure

Table 1 project expenditure during the reporting period (1 April 2013 – 31 March 2014)

Project spend since last annual report	2013/14 Grant (£)	2013/14 Total actual Darwin Costs (£)	Variance %	Comments (please explain significant variances)
Staff costs (see below)			+2.0%	Reduced from £59,613 to release funds for support to organic farmers
Consultancy costs				
Overhead Costs			0%	N/A
Travel and subsistence			-1.8%	Reduced from

				£17,500 to release funds for support to organic farmers
Operating Costs			0%	Reduced from £5000 to release funds for support to organic farmers
Capital items (see below)			0%	N/A
Others (see below)			0%	Increased from £3,500 to release funds for support to organic farmers, and purchase of materials for field staff
TOTAL				

Changes were within budgets for ANACAFE and FDN; approval was requested before changes were implemented.

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

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

Annex 1: Report of progress and achievements against Logical Framework for Financial Year 2013-2014

Project summary	Measurable Indicators	Progress and Achievements April 2013 - March 2014	Actions required/planned for next period
<p>Goal: Improved policies on sustainable use and equitable benefits in the implementation of the objectives of the CBD Guatemala</p> <p>⇒</p>		<p>Information base improved as to importance of agroforest systems for biodiversity providing basis for revision of environmental regulations to remove disincentives for conservation of these systems.</p>	
<p>Purpose Improved access for farming families to public and private policies that recognize the role of agroforests in meeting the objectives of the CBD</p>	<p>Public and private policies with greater recognition of the contribution of agroforests to biodiversity conservation</p> <p>Number of farming families accessing and implementing public and private incentives to conserve biodiversity</p>	<p>Project has engaged in revision of Protected Areas regulations to differentiate rules for Private Protected Areas and make them more compatible with farm management</p> <p>Actions are underway to support farmers to access different incentives for biodiversity conservation (e.g. reforestation incentives, ecotourism)</p>	<p>Increase engagement with CONAP supporting the implementation of the National Biodiversity Strategy Action Plan.</p> <p>Continue support to farmers to access incentives for biodiversity, and contribute to the revision of the existing programmes to improve access (e.g. for private nature reserves and reforestation incentives).</p>
<p>Output 1. Demonstrate the importance of agroforests in the conservation of biodiversity in lower montane areas of Guatemala</p>	<p>iii. Quantitative assessment of extent of agroforests</p> <p>iv. Landscape biodynamics between agroforests and forests determined</p>	<p>Agroforest land uses mapped for the two project zones</p> <p>Pending integration of biodiversity and land-use data to determine landscape biodiversity relationships.</p>	
<p>Activity 1.1 Integrated maps of coffee, agroforests, and forests to <i>evaluate ecosystem connectivity</i> for two study sites</p>		<p>Land-use map completed for two zones and analysis of forest fragmentation started</p>	
<p>Activity 1.2 Synthesize and complement comparative studies of biodiversity in agroforests (coffee, cocoa and cardamom) and forests for key groups (birds & macroinverts)</p>		<p>Insect biodiversity in forest and agroforest land uses data analysed for two zones</p> <p>Pending correlation between insect and vegetation data.</p>	

Activity 1.3 Tree populations dynamics between agroforests and forests (NRI, Univ Valle)		Tree, shrub and herb diversity analyzed for forest and agroforest systems in two study zones
Output 2. 2. Identify effective support mechanisms for communities and land-owners to conserve biodiverse agroforest systems	<ul style="list-style-type: none"> iv. Incentives for farmers to conserve biodiversity identified v. Two producer's associations with strategies to conserve biodiversity vi. Number of producers accessing policies that support on-farm biodiversity 	<p>Incentives identified (Private reserves, Ecotourism, Certification and reforestation incentives), and benefits and limitations identified.</p> <p>Producer associations have identified actions that will contribute to biodiversity conservation and economically (eco-tourism, sustain organic certification and reforestation incentives)</p> <p>Actions to support access to incentives initiated for both producer organizations.</p>
Activity 2.1. Determination of the drivers affecting farmer decision making in managing agroforests		Study of role of Private Nature Reserves and Ecotourism in providing incentives for biodiversity conservation completed
Activity 2.2 Training of producer organizations in management to promote biodiversity		Organic coffee producers given training and inputs to enable organic management of coffee rust (and avoid use of pesticides)
Activity 2.3 Participatory development of conservation strategies with producer associations to enhance biodiversity in their agroforestry systems		Indigenous producers of Polochic supported to apply for reforestation incentives Private Nature Reserves (individual and communal) in Palajunoj analyze interest in biological corridor to promote eco-tourism
Activity 2.4 Evaluation of changes in farmer management of biodiversity and access to support policies		Base line study completed and annual monitoring in progress
Output 3. Private policies and markets provide greater recognition of biodiversity value of agroforest coffee	<ul style="list-style-type: none"> iv. Private policies/Sustainable certifications reinforce criteria that recognize biodiversity v. Number of farms with sustainable certification vi. Increased sales of sustainably certified products (Rainforest Alliance, Bird Friendly etc) 	<p>Publications on effectiveness of certifications prepared, their impact on standard criteria cannot be ensured</p> <p>Organic Producers main aim is to maintain or increase members through strengthening organization and increasing productivity (actually have more demand than they can supply)</p> <p>Larger farms are uncertain about real demand or financial benefit for certified coffee but some have expressed interest</p>
Activity 3.1 Development of marketing materials to promote agroforest coffee as biodiversity friendly (ANACAFE, NRI, Univ Valle)		Not a priority until there is a clear demand for certified coffee and/or eco-tourism services
Activity 3.2 Discussion with sustainability standards on recognition of biodiversity		Publications on impacts of certification prepared for dissemination. Discussion of conclusions with standards pending
Activity 3.3 Support producers associations in complying with sustainability standards		Organic Producers Organization is receiving training for Board of Directors to improve their capacity to manage the organization Limited number of larger farms identified to receive support for Rainforest Alliance

		certification
Activities 3.4 Promotion of biodiversity friendly agroforest coffee with UK roasters and traders such as Forest Trade and Twin Trading		Aim to have discussions with RSPB on bird-friendly coffee for UK market
Output 4. Recommendations for public policies that support agroforests as a biodiverse land-use	<i>iii.</i> Policy brief on supporting biodiversity in agroforests <i>iv.</i> Public policy makers informed of lessons from research	There is an opportunity to contribute to review of Protected Areas Regulations and List of Endangered Species and remove disincentives for conservation
Activity 4.1 Engage CONAP/Biodiversity Office in discussion on the value of agroforests for biodiversity		Regular meeting established with OTECBIO and CONAP national and regional directors
Activity 4.2 Field visits to coffee agroforests with CONAP decision makers		Joint presentations of National Biodiversity Strategy and Darwin Project Results agreed for Departments where project works
Activities 4.3 Publication of policy brief on value of agroforests for biodiversity		Pending last year of project
Activity 4.4 Support CONAP/Biodiversity office in recognition of biodiversity in Agroforests in national biodiversity plan		Project has engaged with National and Regional CONAP directors and INAB to enable management of agroforests by farmers within Private Nature Reserves

Annex 2 Project's full current log frame

Project summary	Measurable Indicators	Means of verification	Important Assumptions
Goal: Effective contribution in support of the implementation of the objectives of the Convention on Biological Diversity (CBD), the Convention on Trade in Endangered Species (CITES), and the Convention on the Conservation of Migratory Species (CMS), as well as related targets set by countries rich in biodiversity but constrained in resources.			
Sub-Goal: Improved policies on sustainable use and equitable benefits in the implementation of the objectives of the CBD Guatemala	Biodiversity policy recognizes semi-natural systems and has strengthened elements for sustainable management, and generation of equitable benefits from those systems	Periodic reports from Biodiversity Office of National Protected Areas Council of Guatemala on implementation of CBD	
Purpose: Improved access for farming families to public and private policies that recognize the role of agroforests in meeting the objectives of the CBD	Recognition of Agroforests as biodiverse system in national biodiversity plan of Guatemala Adjustment to private policies on sustainability to reinforce biodiversity aspects	Annual Biodiversity report from Biodiversity Office of National Protected Areas Council of Guatemala Content and access to public policies that support biodiversity on farms Criteria of sustainability certifications for products	Change in government could affect importance of biodiversity in national policy Willingness of private certification agencies to engage in discussions on criteria
Outputs 1. Demonstrate the importance of agroforests in the conservation of biodiversity in lower montane areas of Guatemala	v. Quantitative assessment of extent of agroforests vi. Landscape biodynamics between agroforests and forests determined	Report to stakeholders Draft scientific publication or thesis	Access to existing mapping data allowed Logistics not affected by natural disasters

<p>2. Identify effective support mechanisms for communities and land-owners to conserve biodiverse agroforest systems</p>	<p>vii. Incentives for farmers to conserve biodiversity identified viii. Two producer's associations with strategies to conserve biodiversity ix. Number of producers accessing policies that support on-farm biodiversity</p>	<p>Report of study on farmer decision making Minutes of producer association directors meetings End of project survey of producer adoption</p>	<p>Producer's associations maintain interest in collaboration High coffee prices (or price crash) could create disincentives for maintaining environmental management</p>
<p>3. Private policies and markets provide greater recognition of biodiversity value of agroforest coffee</p>	<p>vii. Private policies/Sustainable certifications reinforce criteria that recognize biodiversity viii. Number of farms with sustainable certification ix. Increased sales of sustainably certified products (Rainforest Alliance, Bird Friendly etc)</p>	<p>Certification criteria of sustainable standards Sales figures from farms in associations</p>	<p>Willingness of certification bodies to consider adjustment of standards Economic and market conditions provide incentives for biodiversity friendly products</p>
<p>4. Recommendations for public policies that support agroforests as a biodiverse land-use</p>	<p>x. Policy brief on supporting biodiversity in agroforests xi. Public policy makers informed of lessons from research</p>	<p>Publication of policy brief Minutes of CONAP discussions consider support for agroforests as a biodiverse land-use</p>	

Activities (details in workplan)

- 1.1 Integrated map of coffee, agroforests, and forests for two study sites (Univ Valle, Defensores, ANACAFE)
- 1.2 Comparative study of biodiversity in agroforests (coffee, cocoa and cardamom) and forests for key groups (birds & macroinverts) (Univ Valle, Defensores)
- 1.3 Tree populations dynamics between agroforests and forests (NRI, Univ Valle)
- 2.1 Determination of the drivers affecting farmer decision making in managing agroforests (NRI, Univ Valle)
- 2.2 Training of producer organizations in management to promote biodiversity (Univ Valle, Defensores)
- 2.3 Participatory development of conservation strategies with producer associations to enhance biodiversity in their agroforestry systems (ANACAFE, Defensores with support from Univ Valle & NRI)
- 2.4 Evaluation of changes in farmer management of biodiversity and access to support policies (ANACAFE, Defensores)
- 3.1 Development of marketing materials to promote agroforest coffee (and other products) as biodiversity friendly (ANACAFE, NRI, Univ Valle)
- 3.2 Discussion with sustainability standards on recognition of biodiversity (ANACAFE, Univ Valle, NRI)
- 3.3. Support producers associations in complying with sustainability standards (ANACAFE)
- 3.3 Promotion of biodiversity friendly agroforest coffee with UK roasters and traders such as Forest Trade and Twin Trading (NRI)
- 4.1 Engage CONAP/Biodiversity Office on discussion of value of agroforests for biodiversity (Univ Valle, Defensores, ANACAFE)
- 4.2 Field visits to coffee agroforests with CONAP decision makers (ANACAFE, Univ Valle, Defensores)
- 4.3 Publication of policy brief on value of agroforests for biodiversity (All)
- 4.4 Support CONAP/Biodiversity office in recognition of biodiversity in Agroforests in national biodiversity plan (Univ Valle, Defensores)

Annex 3 Standard Measures

Table 1 Project Standard Output Measures

Code No.	Description	Year 1 Total	Year 2 Total	Year 3 Total	Year 4 Total	Total to date	Number planned for reporting period	Total planned during the project
4C	Number of postgraduate students to receive training	2					2	2
4D	Number of training weeks to be provided	2					2	4
5	Number of people to receive at least one year of training (which does not fall into categories 1-4 above)	0					0	2
6A	Number of people to receive other forms of education/training (which does not fall into categories 1-5 above): Farmers Technicians		230 10				230 10	200 20
6B	Number of training weeks to be provided		0.5				0.5	2
7	Number of different types of training materials to be produced for use by host country	0					0	3
8	Number of weeks to be spent by UK project staff on project work in the host country	5	8				13	24
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	0					0	2
11B	Number of papers to be submitted to peer reviewed journals	0	1				1	3
12A	Number of computer based databases to be established and handed over to host country	0						1
13A	Number of species reference collections to be	1					1	0

	established and handed over to the host country(ies)							
13B	Number of species reference collections to be enhanced and handed over to the host country(ies)	1					1	0
14A	Number of conferences/seminars/workshops to be organised to present/disseminate findings	1	6				7	8
14B	Number of conferences/seminars/workshops attended at which findings from Darwin project work will be presented/disseminated.	2					2	4
15A	Number of national press releases in host country(ies)	1					1	1
15C	Number of national press releases in UK	1					1	1
16A	Number of newsletters to be produced (incl policy briefs and marketing material)	1					1	5
16B	Estimated circulation of each newsletter in the host country(ies)	500					500	500
16C	Estimated circulation of each newsletter in the UK	600					600	200
17B	Number of dissemination networks to be enhanced/ extended						0	2
18A0	Number of national TV programmes/features in host country(ies)	2					2	0
19C	Number of local radio interviews/features in host country(ies)	0					0	3
22	Number of permanent field plots to be established during the project and continued after Darwin funding has ceased	80					80	80

Table 2 **Publications**

Type (eg journals, manual, CDs)	Detail (title, author, year)	Publishers (name, city)	Available from (eg contact address, website)	Cost £
Biodiversity and Conservation (journal)	Tree diversity on sustainably certified and conventional coffee farms in Central America. Haggar, Jeremy; Asigbaase, Michael; Bonilla, Glenda; Pico, Jose; Quillo, Alma; Under review	Springer		

Annex 4 Onwards – supplementary material (optional but encouraged as evidence of project achievement)

This may include outputs of the project, but need not necessarily include all project documentation. For example, the abstract of a conference would be adequate, as would be a summary of a thesis rather than the full document. If we feel that reviewing the full document would be useful, we will contact you again to ask for it to be submitted.

It is important, however, that you include enough evidence of project achievement to allow reassurance that the project is continuing to work towards its objectives. Evidence can be provided in many formats (photos, copies of presentations/press releases/press cuttings, publications, minutes of meetings, reports, questionnaires, reports etc) and you should ensure you include some of these materials to support the annual report text.

Supplementary material included:

- i. Land use mapping and forest fragmentation for the two sites; Margarita Vides, UVG
- ii. Biodiversity research results
- iii. Private Nature Reserves and associated Ecotourism role in providing incentives for biodiversity conservation
- iv. ANACAFE report on training, workshops and meetings
- v. FDN report on training workshops and meetings
- vi. Base-line summary

Material available upon request (in Spanish)

- i. Training reports from ANACAFE and FDN
- ii. Letters of receipt of equipment and inputs from producer organizations