



Darwin Initiative Main Project Annual Report

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

Project Reference	21-009
Project Title	Biodiversity conservation through poverty alleviation: enabling sustainable forestry in Belize
Host Country/ies	Belize
Contract Holder Institution	University of Oxford
Partner institutions	Belize Forest Department; University of Belize – Environmental Research Institute
Darwin Grant Value	£288,813
Funder (DFID/Defra)	DFID
Start/end dates of project	June 2014/March 2017
Reporting period (e.g., Apr 2015 – Mar 2016) and number (e.g., Annual Report 1, 2, 3)	April 2015 to March 2016 Annual Report 2
Project Leader name	Prof. Yadvinder Malhi
Project website/blog/Twitter	https://www.youtube.com/channel/UCRYsdpeA9VxPr0qinZ7sZEQ/feed
Report author(s) and date	Percival Cho Research Associate, Oxford University April 2016

Darwin Project Information

1. **Project Rationale**

This project is addressing the problem of over-harvesting of CITES-listed tropical timber species in Belize, namely *Swietenia macrophylla* and *Dalbergia stevensonii* by introducing the necessary training and tools to the Forest Department, CITES authorities, industry, and local communities to implement sustainable forestry. The over harvesting of high-value timber trees in tropical forests leads to other major problems such as biodiversity degradation and reduces forest value which ultimately contributes to increasing vulnerability to deforestation. Another major derivative problem resulting from over harvesting is an overall increase in poverty over the long-term. The rapid short-term income gains from over harvesting are soon followed by a drastic and prolonged shortage in income opportunity for forest dependent people as the stocks of timber and other forest goods and services rapidly decline.

The two timber species in Belize listed on CITES Appendix II, Swietenia macrophylla and Dalbergia stevensonii, provide economic benefits for two different sectors of the population due to their occurrence in geographically distinct sub-regions of the country. Swietenia macrophylla occurs mostly in the limestone forests of the northern half of the country and is exploited on an industrial scale by large timber companies, while Dalbergia stevensonii occurs mainly in the wet, sedimentary soils of the south and is exploited mainly by indigenous forest-dependent communities. Despite the economic benefits provided by these two species, there were no concrete, science-based management protocols to prevent over-harvesting. The Belize Forest Department and other stakeholders have recognized the need to initiate controls on harvesting that are science-based and provide options for continued income generation for industry as well as indigenous forest-dependent communities. This project is focused on improving the management practices for Swientenia macrophylla and Dalbergia stevensonii, and is contributing to the alleviation of poverty among forest dependent people through the building of capacity for sustainable timber management and the development of new forest management plans and annual plans for these communities.

2. Project Partnerships

Oxford University (lead institution) is the scientific lead on the project as well as the administrative lead in terms of the management of DI funds. The university works closely with the Belize Forest Department and the University of Belize – Environmental Research Institute in carrying out project activities. The relationship is particularly solidified through the secondment of a Forestry Officer from the Belize Forest Department to the project as a Post-doctoral Research Associate employed by Oxford University. This post was not filled until December 2014.

The University of Belize – Environmental Research Institute is partnering with Oxford University and the Forest Department to assist in carrying out elements of the project involving monitoring of long-term forest plots and taxonomical research for the purposes of building capacity to identify forest tree species and was provided with a Darwin Forest Biologist under the project to work on project activities. Due to shortcomings in finding suitably qualified candidates, the position was not filled until year 2 of the project when a short term contract was issued for the position and filled from April 2015 to September 2015 by a candidate with a BSc (the position called for an MSc). The position became vacant again from October 2015 to January 2016, when it was again filled with another BSc candidate. The lack of a Forest Biologist on the project has caused several delays in year 1 and 2, but it is expected that the current candidate will hold the position until the end of the project, providing more long-term stability in carrying out the remainder of the project activities.

Project partnerships were forged out of a demand originating from the issues with lack of technical expertise and general knowledge concerning tropical timber species management, tree species taxonomy, and forest productivity in Belize. Each institution is particularly focused on one of these three issues but broadly focused on all three, and all institutions were to some extent involved in the planning the different components of the project. The Belize Forest Department is furthermore also heavily focused on leveraging the contribution of all institutions on the improvement of compliance with the Convention on International Trade in Endangered Species and the Convention on Biological Diversity.

3. Project Progress

3.1 **Progress in carrying out project activities**

Overall progress in implementing the project activities for the year 2015/16 has been quite successful with respect to some activities but slow with other activities which were dependent on the Forest Biologist position. During the reporting period, the Forest Biologist position was filled only between April 2015 and September 2015 in the first instance, and January 2015 to March 2015 in the second instance, by different candidates. Because of the changeover in candidates there was a turnover time lag caused by necessary re-training of the second employee and so in effect the Forest Biologist post was only effectively filled from April to September 2015. It is expected that in the third and final year of the project, the shortfalls in

some activities will be remedied, but a budget realignment will be necessary to carry over unspent funds.

The progress report below is organized by outputs, with a paragraphed summary of the progress of activities under each output.

Output 1 – Training courses in sustainable forestry, yield models, making non-detriment findings and sharing and reporting forest information effectively.

Activity 1.1 - Training of private sector/community forest managers in (a) sustainable forestry standards, (b) forest survey techniques, (c) use of yield models, (d) long-term forest monitoring, and (e) effective reporting and publication of forest research/data.

This activity spans the entire project period, with planned trainings in each year.

During the reporting period, several informal training sessions related to (a), (b) and (c) were held with members of the logging cooperative from the indigenous community of Boom Creek. The training sessions were held over several weeks between April and June 2015 and were aimed at giving the community members the skills needed to survey the population of *D. stevensonii* within their logging concession, mapping the trees, and numbering each one so that it could be entered into the yield model to determine a sustainable harvest. Photos are attached in Annex 4.

A formal training workshop was held in October 2015 in relation to (a) and (c) above for Forest Department and private sector stakeholders to provide the training in standards and procedures for setting annual export quotas in order to be CITES compliant. This had the participation of 17 individuals. See sign-up sheet and agenda in Annex 5.

A formal training workshop specifically aimed at the Forest Department staff was held in February 2016. This was in relation to (a) and (c) above and was geared toward giving the staff members the necessary skills in forestry standards so that they can review annual plans submitted by the industry for compliance with CITES. A total of 15 Forest Department staff members participated. See sign-up sheet and agenda in Annex 6.

A formal training workshop aimed at private sector partners and the Forest Department in relation to (a) was held in March 2016 to familiarize participants with the results framework of the Post-harvest Audits. This had the participation of 16 individuals from the private sector, CITES SA, and Forest Department. See sign-up sheet and agenda in Annex 7.

In relation to (e) above, a regular informal lunch meeting involving Forest Department staff, Environmental Research Institute staff and students involved in forest related research was initiated by the Darwin post-doc in February 2016 as a pre-cursor to the Forest Research Committee under activity 1.4. Typically around 5 to 8 people participated weekly or bi-weekly, depending on people's schedule. This 'brown bag' meeting is aimed at reviewing current literature of interest to all with the eventual formalization into a more structured group focusing on collaborating and sharing experiences with current forest research work in Belize. The idea is to plant the seed of scientific thinking and writing in young people working in forest related research. See powerpoint presentation in Annex 8 given by the Darwin post-doc at the first sitting of the 'brown bag'.

Activity 1.3 – Training of CITES MA and SA in (a) use of yield models, (b) making nondetrimental findings.

A training workshop was held in early April 2016 specifically designed for the CITES management authority and scientific authority in how to use the yield models developed for *S. macrophylla* and *D. stevensonii* and how to develop and carry out non-detriment findings with respect to these species. This workshop was originally planned for March 2016 so is reported here and will not be reported again in year 3. The workshop saw the participation of 9 members of the CITES MA and SA. See Annex 9 for sign-up sheet and agenda.

Activity 1.4 - Engage stakeholders and set up committee for the sharing of forest information in support of sustainable forest management.

This activity is planned as a continuous process throughout the span of the project. Thus far, discussions have begun at the individual level with local researchers, industry stakeholders and technicians about the composition and function of this committee. Discussions are developing and interest has led to the formation of a weekly 'brown bag' of young and experienced researchers. It is envisioned that this 'brown bag' will attract wider interest in time and more industry and private sector stakeholders will become involved in discussing current research in relation to sustainable forest management.

Activity 1.5 – Production of videos of training events for dissemination and public awareness.

This activity has been much delayed due to the down time surrounding the Forest Biologist position. But footage have been recorded to be used in developing these short training videos. It is envisioned that the short training videos will be produced in the third year.

Output 2 – A package for improved forest management including: completed population surveys; upgraded forest monitoring network and database; taxonomic manuals; growth and yield models; yield tools; allometric models; carbon flux models; carbon stocks of different forest types.

Activity 2.1 - Conduct population surveys of target species in protected areas, and provide technical input to Belize Forest Department inventory.

The data from population censuses carried out by timber companies have been collected and are entered into a growing database on *S. macrophylla* and *D. stevensonii* populations in Belize. Review of population survey data for *S. macrophylla* from recent inventories is ongoing.

Activity 2.2 - Re-measure and restore 15 long-term forest monitoring plots.

Progress on this activity includes the re-measurement of two additional plots so far, these are BZ-8 and BZ-19. This activity is speeding up rapidly since the hiring of the second Forest Biologist and is expected to be completed in time by year 3. See example photos from field work in BZ-8 and BZ-19 in Annex 10.

Activity 2.3 - Intensively measure 6 long-term forest monitoring plots to estimate carbon flux.

This activity is scheduled as a continuous activity through the life of the project. Work continues to measure carbon flux through the respiration of fine roots, stem and soil from the intensive plots. The delay and gap in filling the Forest Biologist post has caused some delays in completing the last 2 plots. But work on the first 4 plots are on-going. Data are collected on a monthly rotational basis. See example photos in Annex 11.

Activity 2.4 - Produce taxonomic guide of timber tree species of Belize.

The work is mostly covered by a consultancy to a botanist with expert knowledge of Belize flora. In the reporting period, the review of the taxonomy of the trees in the final 3 of 6 target intensive plots have been completed with digital photographs and herbarium specimens collected for the production of the tree ID manual. See <u>Annex</u> 12 for final determinations from the consultant.

Activity 2.5 – Develop growth and yield models and spreadsheet tool.

The growth and yield model and spreadsheet tool has been developed and is in use by all timber companies. See Annex 13 for tool.

Activity 2.6 – Develop local allometric model for carbon stock estimation and re-analyse nationwide forest inventory data to estimate forest carbon stocks.

The fieldwork for this activity has been delayed to the gaps in the tenure of the Forest Biologist. But work recently resumed in January 2016 during which the biomass of 3 large trees were measured and added to the growing database to be used to parameterize the allometric model. Additional data will be collected.

Activity 2.7 – Produce report on population assessment and forest carbon stocks.

This activity is due to be completed within this month. A draft report of the first of 3 sections of the population assessment as part of the non-detriment finding process for *D. stevensonii* is attached in Annex 14. Due to the delay in the data collection for the allometric model, the carbon stock reporting is also delayed and will have to continue in year 3.

Output 3 – Reinforcement of CITES compliance regarding trade in *S. macrophylla* and *D. stevensonii*.

Activity 3.1 - Provide technical input for the revision of community forestry harvesting plans.

The new revised 2016 forestry harvesting plan of Boom Creek was successfully developed on behalf of the community. See Annex 15 for the revised harvesting plan. It was passed by the Forest Department and harvesting based on this plan is currently underway. After some delay caused by community internal affairs, two other target indigenous communities namely Santa Theresa and Conejo have signed on to receiving support from the SUSFOR project to revise their harvesting plans. See Annex 16 for letter from the Conejo community. Work is underway with these two communities. All communities possess *D. stevensonii* stocks in their forests and are required to demonstrate that they are harvesting the species sustainably in order to continue to benefit economically from the species.

Activity 3.2 – Provide technical input into the CITES country report, section on *S. macrophylla* and *D. stevensonii.*

The CITES country report is currently being prepared by the Forest Department and input is being given where requested.

Activity 3.3 – Develop and promote non-competitive export facilitation between privatesector and indigenous community forestry operations.

During the reporting period, contact was made with two exporters of *D. stevensonii*, namely the Orange Gallery and New River Enterprises, to provide them with dimensions and quantities of *D. stevensonii* available from the indigenous concession of Boom Creek village. The objective is to ensure a fair price for community producers. A third individual was also contacted on behalf of the Boom Creek community. The 2016 harvest is underway with exporters already lined up.

Output 4 – Improvement in livelihoods of poor indigenous Maya communities involved in community forestry.

Activity 4.1 – Develop database of indigenous Maya para-technicians.

The database has been developed in the form of an Excel spreadsheet with names and contact locations of indigenous para-technicians who have received training thus far under the SUSFOR project. See Annex 17. Additional individuals will be added from Conejo and Santa Theresa. At the end of the project these individuals will be presented with a certificate detailing their area of expertise.

Activity 4.2 - Community-based workshops in sustainable forestry and organizational capacity building for forest management.

A workshop is taking place in April 2016 with the villages of Conejo and Santa Theresa to introduce them to the concepts of sustainable forestry as it relates to CITES and with the requirements for organizational capacity to effectively manage forests.

3.2 **Progress towards project outputs**

The SUSFOR project has achieved the majority of its planned objectives in year 2 despite administrative delays in employment of key personnel. The project is moving at a pace and with a momentum that will lead to the successful completion of project outputs at the close of the project in 2017, with some budgetary realignments. The momentum behind the project comes from an in-country demand for the types of data, know-how, and technical capacity that the project offers stakeholders.

Output 1

A total of 5 training courses involving 61 trainees over the course of 8 days was carried during this reporting period. Photographs of trainees and agendas for the courses are provided as evidence of the progress toward achieving this output. Trainings have thus far touched on 5 out of 5 topical training themes, and it is envisioned that over the last year of the project other training courses will be executed.

Output 2

The indicators which measure progress towards achieving output 2 include the quantification of population and demographics of target species. Thus far the known population of *D. stevensonii* has been characterised and a draft report prepared (Annex 14). *Swietiena macrophylla* population assessment has commenced and the report is being prepared.

Another means of verification of the progress toward achieving output 2 is the existence of database from remeasurements in long-term plots. Data from the intensive plots are being compiled in standard databases.

The consultancy for the preparation of a taxonomic manual has started and means of verification is be the consultant's final tree list (Annex 12).

Output 3

The indicators which measure progress towards achieving output 3 include the achievement of CITES compliant timber yields and exports. This indicator can be verified by communications from the CITES Scientific Authority in Belize which issues the notice of approval of export quotas. If contacted the CITES Scientific Authority of Belize may be willing to share the communication regarding the compliance of the 2015 timber yields and export guotas for Swietenia macrophylla. Dr. Elma Kay (ekay@ub.edu.bz) is the current chair of the Mahogany Sub-committee and is the contact person. This indicator can also be verified by reports of meetings held with indigenous communities concerning the revision of management plans and implementation of sustainable yield systems to make them CITES-compliant. For evidence of meetings and discussions held thus far, contact can be made with Froyla Salam, Executive Director of the Sarstoon-Temash Institute for Indigenous Management, or Martin Cus, Community Mobilizer (communitymobilizer@satiim.org.bz), whose organization is acting as a liaison between the SUSFOR project and two communities for work to revise their management plans. Also the local Forest Department office in Toledo can be contacted as verification of the work being done in the communities of Boom Creek, Conejo and Santa Theresa under the SUSFOR project. Contact person is Officer-in-charge, Raul Chun (toledo.oic@forest.gov.bz).

Output 4

The indicators which measure progress towards achieving output 4 include a comparison between baseline and end of project employment surveys. The baseline situation in the indigenous communities of Conejo and Santa Theresa to which the SUSFOR project will provide technical assistance, is currently being assessed and a workshop is planned with community members to receive formal input by them. Another means of verification are the new community forestry plans which the SUSFOR project is assisting with preparing. Evidence of this is presented in Annex 15.

3.3 **Progress towards the project Outcome**

The outcome of the SUSFOR project is the advancement of institutional and communal knowledge and technical capacity in forest management which supports a shift to sustainable forestry, thereby reducing overharvesting and forest degradation, and promotes long-term economic welfare. The indicators used to measure progress towards achieving this outcome include: (i) by year two there will be a measurable increase in technical capacity for sustainable forestry in the context of CITES in industry and community enterprises as well as the CITES Management and Scientific Authorities; (ii) by year two, logging concessions in Belize begin to calculate CITES-compliant timber yields; (iii) by the end of year two, indigenous Maya communities and private sector enterprise are able to produce CITES-compliant wood for export; (iv) by the end of year two, there are improvements in livelihoods of indigenous Maya

communities as it pertains to timber harvesting through diversification of income sources, reduction in overhead costs of logging, and more stable income flow over the long term. The number of indigenous Maya villagers conducting forest surveys as a source of income in their community increases from zero to 18 or more. A new indigenous community is engaged successfully in community forestry.

These four indicators which measure progress toward achieving the outcome can be verified through tangible material. Evidence for progress toward indicator (i) above, is that community and industry enterprises shift toward using yield models for harvest planning and that harvest is monitored through post-harvest audits. The yield model is used to calculate the sustainable yield for *S. macrophylla* and the CITES SA is able to efficiently and transparently review data present in annual plans of operations against sustainability criteria in the guidelines for making non-detriment findings. Prior to the SUSFOR project providing technical assistance to the CITES SA, quotas were reviewed superficially because of a lack of tools and models and criteria against which to measure sustainability, and quotas were simply assigned to different companies. This year for the second time the CITES SA was able to produce a report on the quota setting process with specific recommendations made to the CITES MA regarding corrective measures for onward application to logging operations.

Evidence for progress toward indicator (ii) above, include the application of the *S. macrophylla* and *D. stevensonii* yield models for the calculation of sustainable yields by all logging operations.

Evidence for the progress toward indicator (iii) above, which also spans to year two, include an improvement in the management of CITES export permits which demonstrate the continued ability of community and private sector enterprises to sell their wood products for the export market.

Evidence for the progress toward indicator (iv) above, which also spans to year two, include end of project employment surveys to demonstrate an increase in diversification of income opportunities relating to the forestry sector in communities. Also there will be a revised forestry harvesting plan generated for three communities. One is already generated (Annex 15)

3.4 Monitoring of assumptions

Outcome level assumptions still hold true up to this point in the project and are not expected to change. For example, although the Darwin Forest Biologist post was filled then vacated for a while it is now filled again and is expected to remain filled until the end of the project. Target indigenous communities, although currently influenced by heavy market pressure for as much wood as can be produced, still remain open to working with the project to ensure their products remain CITES-compliant and eligible for export as is evidenced by the letter from the Conejo village (Annex 16). There have been no hurricanes hitting Belize in 2014 and an average hurricane season is expected for 2016.

Output level assumptions are also still holding and are not expected to change. Stakeholders have been participating in trainings and are willing to communicate more frequently regarding forest management research. The two target species have not been black listed by the CITES Secretariat, and are not expected to be in danger if all other project activities continue as planned.

It is however important for the completion of project activities that a budgetary realignment is made.

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

The SUSFOR project is building Belizean capacity from within to improve the way forests are managed in Belize. A good indicator of this is the successful hiring of two Belizean project staff, one Post-doctoral Researcher and a Forest Biologist. These two project staff are working fulltime on the project to carry the activities forward in conjunction with scientists from Oxford University, government agents from the Forest Department and local researchers from the

University of Belize - Environmental Research Institute. Stakeholders are receiving the project well and especially the CITES SA and MA are open to working closely with the project to improve compliance with CITES regulations, as is evident from the recent trainings and technical assistance provided by the SUSFOR project to the CITES MA and SA. In year three the project is anticipated to further intensify and broaden its impact as additional activities are executed.

4. Contribution to SDGs

This project is contributing to goals 1, 8, and 15. The project is addressing goal 1 by assisting indigenous poverty stricken communities to be self sufficient in planning and managing the sustainable harvesting of wood from their forests. Goal 8 is being addressed through the creation of conditions that allow indigenous people to have the skills to be gainfully employed in their own business so as to stimulate economy while not harming the environment. The project's largest contribution to the SDGs is to goal 15, the improvement of sustainable forest management in Belize.

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

The SUSFOR project is aimed at providing the technical and scientific support to the Belize Forest Department (CITES Management Authority) and the CITES Scientific Authority to enable them to more effectively implement the CITES convention with respect to the management of *S. macrophylla* and *D. stevensonii*, especially concerning Article IV of CITES. In compliance with CoP14 Doc. 64 (Rev. 1), a full species status report and revised set of guidelines for carrying out non-detriment findings are being developed for use by the CITES SA and MA (see Annex 14) and an online database has been created for managing *S. macrophylla* exports in a transparent manner (see http://datahost.eriub.org/export/index).

CBD Articles 7, 8, 10 and 12 speaks to biodiversity identification and monitoring, protection of threatened natural populations, encouragement of sustainable customary use and promotion of public/private sector cooperation in sustainable management. Thus far this project has completed the data collection for the creation of a taxonomic guide for tree species identification in the long-term permanent sample plots. The re-measurement of long-term plots have commenced and intensive carbon measurements are underway. Threatened populations of *D. stevensonii* have been surveyed and delimited and recommendations have been drafted for their management and conservation. Two additional indigenous community forestry enterprises are being promoted and supported by technical advice by the SUSFOR project.

The SUSFOR project is based at the Forest Department, the focal point for both the CITES and CBD conventions. Contact is made with the Department head and deputy head frequently and with other staff members on a daily basis.

6. Project support to poverty alleviation

There are two dimensions of poverty in indigenous forest-dependent communities that the SUSFOR project addresses. First there is the creation of new income opportunities that will result from the work of the SUSFOR project, and there will be greater income stability for communities involved in producing timber as a source of income.

Community members have been trained in a sustainable approach to harvesting trees that ensures future harvests of equal size and value are obtainable. This approach involves building capacity in communities to carry out their own pre-harvest surveys, representing a savings of \$7,000 BZD based on experience relayed to us by the Boom Creek Loggers Association this year. The Forest Department southern office in Toledo can be contacted to verify these statements at toledo.fd@ffsd.gov.bz, attn: officer-in-charge Raul Chun. Two other indigenous communities, having seen the progress made in Boom Creek and the benefits, are now engaging the SUSFOR project for technical assistance in revising their management plan and training them to carry out sustainable forestry. The savings made by building capacity within the villages to carry out survey work represent a direct injection of income into the communities. In terms of more stable and longer-term income for the indigenous forest-dependent communities, the SUSFOR project, through the establishment of a sustainable yield system and quota for the communities via their revised forest management plans, will assist in alleviating the hand-to-mouth style of income generation presently plaguing communities which causes short-term gains but promotes poverty in the long-term.

7. Project support to Gender equity issues

There is continued involvement of female participants from several organizations including officers of the Forest Department, the Environmental Research Institute. In carrying out the remeasurements of permanent sample plots, both male and female field assistants were hired on a ratio of 1 female to 2 males. In the promotion of indigenous forestry community enterprises, the involvement of female community members is encouraged. This project does not have any direct gender equality impacts but indirect impacts will include above mentioned effects.

8. Monitoring and evaluation

The SUSFOR project uses its partners as a means of peer-review of its activities to monitor and evaluate the project. To a certain extent, the CITES SA, acts one of the first backstops to project monitoring and accountability as many of the actions of the project relate to the supporting the work of the CITES SA. Based on their successful implementation of the new QSETS manual and the issuance of Mahogany quotas for 2016, the project can be said to have made good achievements this year.

9. Lessons learnt

The major challenge this year was the noted absence of a Forest Biologist for 3 months and the delays it caused in field work. An additional 3 months was spent training the new Forest Biologist, which meant the pace of doing field work was very slow. This caused a delay in most but not all activities and the need to initiate a change request to reflect the late hirings and adjusted start dates to some of the activities. An important lesson learned from this experience is that the contribution and commitment of other project partners to fulfilling project tasks and adapting to unforeseen delays is critical for project success. All project partners played important roles in achieving progress toward project outputs this year.

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

N/A

11. Other comments on progress not covered elsewhere

Already discussed elsewhere in the report is the challenged faced by the gaps in the position of the Darwin Forest Biologist and the delay this caused. What was beneficial to ensuring the project activities were still carried out was the fact that the desire for the project outputs originates internally from project partners and beneficiaries and thus are seen as very important to complete.

The project doesn't face any particularly great risks this coming year, and so there has been no need to enhance the design of the project over the last year, other than to submit a change request for the upcoming final year.

12. Sustainability and legacy

The legacy of the SUSFOR project has been an important consideration from conception stage, and it was decided that all technical staff members of the project would be Belizean - and that

there would be a very strong component of capacity building not from non-Belizean experts but from the Belizean staff members to other Belizean stakeholders and beneficiaries. The SUSFOR project has already made a name for itself among stakeholders in the industry and among the community forestry groups. The project has developed several tools and manuals that will long outlive the project as they now form integral parts of the process of sustainable forest management in Belize. The project has also re-ignited the interest of industry, government and other stakeholders in the long-term monitoring of forest through the restoration and re-measurement of the long-term forest monitoring plots. The project has built a name for itself as the entity providing the technical support to project stakeholders in long-term forest monitoring.

13. Darwin Identity

The Darwin logo has appeared on all presentations made by project staff domestically and abroad. Also the Darwin Initiative programme and logo was publicised and promoted at the 'brown bag' meetings held involving up and coming forest researchers.

Shortly there will be videos uploaded to the project's Youtube channel (https://www.youtube.com/channel/UCRYsdpeA9VxPr0qinZ7sZEQ/feed) promoting different aspects of the SUSFOR project and the Darwin Initiative. These videos will take a demonstrative approach to show methodology and results so that they attract a wide audience including students, researchers and conservation NGOs. The first video constructed shows the methodology to create dendrobands for measuring tree increment. Another video is being made which shows the process of using the yield model.

Also, all communication including emails bear the Darwin Initiative logo in the signature content at the end of the email message.

14. Project Expenditure

Project spend (indicative) since last annual report	2015/16 Grant (£)	2015/16 Total Darwin Costs (£)	Variance %	Comments (please explain significant variances)
Staff costs (see below)				
Consultancy costs				
Overhead Costs				
Travel and subsistence				
Operating Costs				
Capital items (see below)	0			
Others (see below)				Auditing expenses haven't yet been incurred.
TOTAL				A change request will be submitted to plan for improved spending.

Table 1 Project expenditure during the reporting period (1 April 2015 – 31 March 2016)

15. 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)

An outstanding achievement of the SUSFOR project during this reporting period has been the successful collaboration created between the CITES Management Authority and Scientific Authority and private sector entities to rally together to improve the management of Belize's forests and its threatened timber species.

Project summary	Measurable Indicators	Progress and Achievements April 2015 - March 2016	Actions required/planned for next period
<i>Impact</i> Compliance with CITES and CBD is inc strengthening of sustainable forest for the carbon role of forests and in people.	creased in Belize through the management, with greater recognition creased benefits for forest-dependent	The project has assisted the CITES MA and SA with technical advice for carrying out non-detriment findings for CITES-listed timber species and has begun work to develop capacity within indigenous communities for sustainable forest management. Belizean researchers are leading the project activities, demonstrating a building of national capacity from within the project.	
Outcome	Indicator 1 - By the end of year one,	A more comprehensive format for	
The advancement of institutional and communal knowledge and technical capacity in forest management supports a shift to sustainable forestry which reduced overharvesting and forest degradation and promotes long- term economic welfare.	rechnical capacity is increased in private-sector and community forest management organizations as well as CITES MA and SA to carry out sustainable forestry and non- detrimental findings, respectively. Cross-sectoral/institutional knowledge and data sharing in support of sustainable forest management.	concessions was developed by the SUSFOR project for use by logging companies, and which simplifies the review process by the CITES MA and SA. The new <i>S. macrophylla</i> yield model was demonstrated to logging companies, Forest Department, and the CITES SA, and is now used in the drafting of annual plans of operations. A set of guidelines for carrying out non- detriment findings for <i>S. macrophylla</i> was prepared and is in use by the CITES MA and SA.	
	Indicator 2 - By year two, logging concessions in Belize begin to calculate CITES-compliant annual sustainable yields and estimate carbon footprint of annual logging. New timber yields reflect an improvement (possible reduction) from pre-project state.	This year, logging concessions have used the yield models to calculate CITES-compliant annual sustainable yields for <i>S. macrophylla</i> and <i>D.</i> <i>stevensonii</i> and companies have successfully been assigned export quotas. Post-harvest audits successfully carried out.	

Annex 1: Report of progress and achievements against Logical Framework for Financial Year 2015-2016

	Indicator 3 - By end of year two, indigenous Maya communities and private-sector companies are able to produce CITES-compliant wood for export, with export arrangements between private- sector and community producers in place by year three.	The indigenous community of Boom Creek was aided by the project in revising their management plan and are now able to produce CITES- compliant wood for export. Two exporters are in line to purchase the material for export.	Two additional communities are currently being assisted in the same way as Boom Creek.
	Indicator 4 - By end of year two, livelihoods of poor indigenous Maya communities improves through additional income generation opportunities, reduction of overhead costs and income security. The number of indigenous Maya villagers conducting forest surveys independently in their communal concessions increases from zero to 18 or more. A new indigenous community is engaged successfully in community forestry.	6 indigenous community members were trained in Boom Creek and are able to seek employment within their communal forests. They were employed by the community logging group this year in the stock survey and successfully completed all the data collection needed to develop their harvesting plan.	With the two additional communities being assisted the number of communit members employed in their own businesses will increase to 18.
Output 1. Training courses in	Indicator 1 - Number of training	Five training courses involving 61 particip	pants have been carried out.
sustainable forestry, yield models, making non-detrimental findings	courses and number of attendees.	Weekly 'brown bag' meetings involving yo	oung researchers in forest related work
and sharing and reporting forest information effectively. Operational committee of stakeholders for the sharing of forest information in support of sustainable forest management.	Indicator 2 - Number of meetings and attendees at stakeholder committee meetings.	nave been ongoing since February 2016.	
Activity 1.1. Training of private sector/community forest managers in (a) sustainable forestry standards, (b) forest survey techniques, (c) use of yield models, (d) long-term forest monitoring, and (e) effective reporting and publication of forest research/data.		5 separate trainings were held for stakeholders including the CITES Scientific Authority, the CITES Management Authority, private sector companies and community groups.	

Activity 1.2. Develop guidelines, fitted non-detrimental findings.	into the national context, for making	A latter draft of the non-detriment finding process and results for <i>D. stevensonii</i> is being drafted.
Activity 1.3. Training of CITES MA and making non-detrimental findings.	I SA in (a) use of yield models, (b)	Training carried out this month.
Activity 1.4. Engage stakeholders and forest information in support of sustai	set up committee for the sharing of nable forest management.	Preliminary informal meetings of young forest researchers to discuss latest forest- related research has been ongoing.
Activity 1.5. Production of videos of tra public awareness.	ining events for dissemination and	Video footage collected. Videos to be produced during the next period.
Output 2. A package for improved forest management including: completed population surveys; upgraded forest monitoring network and database; taxonomic manuals; growth and yield models; yield tools; allometric models; carbon flux 		The known populations of <i>D. stevensonii</i> has been surveyed and quantified. Data to quantify and describe <i>S. macrophylla</i> populations have been compiled. A general yield model has been developed for all timber species. The first set of corrected species determinations have been submitted. The protocol to measure carbon stocks and fluxes from different forest types is being implemented in the 6 intensive plots - with 4 plots completed thus far. Planned work for the next phase includes continued work on the intensive plots, re-measurement of more long-term plots, and the production of the taxonomic manual.
Activity 2.1. Conduct population survey areas.	ys of target species in protected	Population survey of <i>D. stevensonii</i> completed. <i>S. macrophylla</i> data analysis underway.
Activity 2.2. Re-measure and restore 1	5 long-term forest monitoring plots.	Two additional plots have been re-measured in the past month for a total of 4 to date. More plots are currently being worked on simultaneously.
Activity 2.3. Intensively measure 6 long estimate carbon flux.	g-term forest monitoring plots to	Continuous measurements are being taken in the 4 plots established to date.
Activity 2.4. Produce taxonomic guide	of timber tree species of Belize.	The first year's species list have been submitted. Photographs and guide to follow.
Activity 2.5. Develop growth and yield	models and spreadsheet tool.	Growth and yield model and spreadsheet tool complete.
Activity 2.6. Develop local allometric model for carbon stock estimation and re-analyse nationwide forest inventory data to estimate forest carbon stocks.		Work on the allometric model is underway
Activity 2.7. Produce report on populat stocks.	ion assessment and forest carbon	Scheduled for the next period.
Activity 2.8. Production of film showing companies conducting own forest sur	methods used by communities and veys and yield calculation.	Scheduled for the next period.

Output 3. Reinforcement of CITES compliance regarding trade in <i>S. macrophylla</i> and <i>D. stevensonii</i> .	Indicator 1 - Timber yields and exports comply with CITES.	CITES compliant yields for <i>S. macrophylla</i> were successfully developed for 2016 and were approved by the CITES SA. Ground work toward the revision of indigenous community forestry plans has been carried out in the form of planning meetings with indigenous community representatives including an NGO (SATIIM) which represents two indigenous communities involved in community forestry.
Activity 3.1. Provide technical input for harvesting plans.	the revision of community forestry	Discussions have been held with two additional indigenous communities, work is underway in these communities.
Activity 3.2. Provide technical input int on <i>S. macrophylla</i> and <i>D. stevensoni</i>	o the CITES country report, section	Input is provided as requested.
Activity 3.3. Develop and promote non between private-sector and indigenor	-competitive export facilitation us community forestry operations.	Two private sector firms have been approached and are in sales agreement with the community of Boom Creek.
Output 4. Improvement in livelihoods of poor indigenous Maya communities involved in community forestry.	Indicator 1 - Baseline and end of project employment surveys compared and analysed. New community forestry plan.	New community forestry harvesting plan written for Boom Creek and approved by the Forest Department. Two other communities are being assisted.
Activity 4.1. Develop database of indig	enous Maya para-technicians.	Database developed. Being populated.
Activity 4.2. Community-based worksh organizational capacity building for fo	ops in sustainable forestry and prest management.	Workshops are continuing in the two communities of Santa Theresa and Conejo. One workshop scheduled for April 27, 2016.
Activity 4.3. Production of film showing community forestry and carbon conse	y social and ecological benefits of ervation.	Scheduled for the next period.

Annex 2 Project's full current logframe

Project summary	Measurable Indicators	Means of verification	Important Assumptions					
Goal: Compliance with CITES and CBD is increa and increased benefits for forest-depende	Goal: Compliance with CITES and CBD is increased in Belize through the strengthening of sustainable forest management, with greater recognition for the carbon role of forests and increased benefits for forest-dependent people.							
Outcome: The advancement of institutional and communal knowledge and technical capacity in forest management supports a shift to sustainable forestry which reduced overharvesting and forest degradation and promotes long-term economic welfare.	Indicator 1 - By the end of year one, technical capacity is increased in private-sector and community forest management organizations as well as CITES MA and SA to carry out sustainable forestry and non- detrimental findings, respectively. Cross-sectoral/institutional knowledge and data sharing in support of sustainable forest	Indicator 1 - Baseline and end of project Annual plan of operations compared and analysed. Baseline and end of project non-detrimental reports from CITES MA/SA compared and analysed. Committee meeting minutes.	Assumption 1 - Project partners and stakeholders are able to work together and communicate effectively.					
	management. Indicator 2 - By year two, logging concessions in Belize begin to calculate CITES-compliant annual sustainable yields and estimate carbon footprint of annual logging. New timber yields reflect an improvement (possible reduction) from pre-project state. Indicator 3 - By end of year two, indigenous Maya communities and private-sector companies are able to produce CITES-compliant wood for export, with export arrangements between private sector and	Indicator 2 - Film available for dissemination showing communities and companies conducting own forest surveys and yield calculation. Annual plan of operations reflecting sustainable yield and carbon footprint of logging. Peer-reviewed publications. Baseline and end of project timber yield compared and analysed. Post-harvest assessments. Indicator 3 - Baseline and end of project CITES export permits compared and analysed. Committee meeting minutes	Assumption 2 - Project manager is able to be seconded to the project. Assumption 3 - Target indigenous communities remain open to working with the project.					
	community producers in place by year three. Indicator 4 - By end of year two, livelihoods of poor indigenous Maya communities improves through	Indicator 4 - Baseline and end of project employment surveys	Assumption 4 - The government remains a committed signatory to					

	additional income generation opportunities, reduction of overhead costs and income security. The number of indigenous Maya villagers conducting forest surveys independently in their communal concessions increases from zero to 18 or more. A new indigenous community is engaged successfully in community forestry.	compared and analysed. New community forestry plan.	CITES and CBD and continues to support forest research. Assumption 5 - Natural disasters such as hurricanes do not impact long- term plots and forest management areas during the project.
Outputs: 1. Training courses in sustainable forestry, yield models, making non- detrimental findings and sharing and reporting forest information effectively. Operational committee of stakeholders for the sharing of forest information in support of sustainable forest management.	Indicator 1 - Number of training courses and number of attendees. Indicator 2 - Number of meetings and attendees at stakeholder committee meetings.	Reports, attendance sheets and videos from training workshops. Published report on making non- detrimental findings in Belize.	Stakeholders are willing to participate in trainings and can communicate effectively and willing to share data.
2. A package for improved forest management including: completed population surveys; upgraded forest monitoring network and database; taxonomic manuals; growth and yield models; yield tools; allometric models; carbon flux models; carbon stocks of different forest types.	Indicator 1 - Population and demographics of target species are quantified. Indicator 2 - Carbon stocks and fluxes of different forest types are quantified.	Databases, reports, spreadsheet tools, allometric models.	<i>S. macrophylla</i> and <i>D. stevensonii</i> are not black-listed before project outputs are realized.
3. Reinforcement of CITES compliance regarding trade in <i>S. macrophylla</i> and <i>D. stevensonii</i> .	Indicator 1 - Timber yields and exports comply with CITES.	CITES country report. Revised harvesting plans. Communications from the CITES secretariat.	Same as above.
4. Improvement in livelihoods of poor indigenous Maya communities involved in community forestry.	Indicator 1 - Baseline and end of project employment surveys compared and analysed. New community forestry plan.	Database of para-technicians. Interview reports. Short videos.	Indigenous communities remain committed to sustainable forest management and are willing to participate in the project.

Activities (each activity is numbered according to the output that it will contribute towards, for example 1.1, 1.2 and 1.3 are contributing to Output 1)

Activity 1.1. Training of private sector/community forest managers in (a) sustainable forestry standards, (b) forest survey techniques, (c) use of yield models, (d) long-term forest monitoring, and (e) effective reporting and publication of forest research/data.

Activity 1.2. Develop guidelines, fitted into the national context, for making non-detrimental findings.

Activity 1.3. Training of CITES MA and SA in (a) use of yield models, (b) making non-detrimental findings.

Activity 1.4. Engage stakeholders and set up committee for the sharing of forest information in support of sustainable forest management.

Activity 1.5. Production of videos of training events for dissemination and public awareness.

Activity 2.1. Conduct population surveys of target species in protected areas.

Activity 2.2. Re-measure and restore 15 long-term forest monitoring plots.

Activity 2.3. Intensively measure 6 long-term forest monitoring plots to estimate carbon flux.

Activity 2.4. Produce taxonomic guide of timber tree species of Belize.

Activity 2.5. Develop growth and yield models and spreadsheet tool.

Activity 2.6. Develop local allometric model for carbon stock estimation and re-analyse nationwide forest inventory data to estimate forest carbon stocks.

Activity 2.7. Produce report on population assessment and forest carbon stocks.

Activity 2.8. Production of film showing methods used by communities and companies conducting own forest surveys and yield calculation.

Activity 3.1. Provide technical input for the revision of community forestry harvesting plans.

Activity 3.2. Provide technical input into the CITES country report, section on S. macrophylla and D. stevensonii.

Activity 3.3. Develop and promote non-competitive export facilitation between private-sector and indigenous community forestry operations.

Activity 4.1. Develop database of indigenous Maya para-technicians.

Activity 4.2. Community-based workshops in sustainable forestry and organizational capacity building for forest management.

Activity 4.3. Production of film showing social and ecological benefits of community forestry and carbon conservation.

Annex 3 Standard Measures

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
6A	No. people to receive training (61 people)	7 females 54 males	Belizean	21	61		82	c. 40
6B	No. training days provided			1	10		11	24
7	Training material inc videos, manuals, guides, tool kits			4	4		8	13
9	Report on species population assessment; community forestry management plans				2		2	5
10	Tree identification guide.							1
11B	Carbon flux; species population assessment; growth and yield				2		2	3
12A	Database of parataxonomists				1		1	1
12B	Database of long-term forest monitoring				1		1	1
13A	Annual collection of botanical vouchers of unknown species			1	1		2	3
14A	Forest Research and Management Committee workshops							5
14B	Darwin Initiative Seminar Series for the SUSFOR project			1	4		5	10
20	4x4 truck; carbon flux			1			1	£42,873

 Table 1
 Project Standard Output Measures

	equipment					
17	Forest research and management committee		1			1
22	Permanent forest sample plots		2	2	4	17
23	In-kind from local partners in host country		£79,034	£15,433	£94,467	£108,506

Table 2

Publications

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.website link or publisher)
Non- detriment finding for <i>D.</i> stevensonii	Manual	Percival Cho, 2016	Male	Belizean	Not published (draft)	*













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DARWIN INITIATIVE SUSTAINABLE FORESTRY (SUSFOR) PROJECT

WORKSHOP/TRAINING SIGN-UP SHEET

Workshop on the Quota Setting and Tracking System for Mahogany and preparation of APOs for 2016

October 15, 2015, George Price Centre, Belmopan

Name	Position	Organization	Signature
Corman Hevely	Forest Officer	Farert Department	Kall to
Hanrah Martinez	forest officer	torest dept	Blantan
Shartir Quan	Forest Ranger	forest Dept.	Cal
Denham Chuc	reclinical Condinator (919)	DEP Gragname to bela	1000
haven failing	Admin Manager (PPD)	PAB -	- De-
Dominique Kuiz	Treast Consultant	EN	Alles
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F (CR)	Garriel Manas	YBECHLSE	adel
Jett Dobenen	Marager	Bullvidge.	1 st
Tanthe Sandres	Admin Assistant	Bull Ridge	Tartus.
Andria Rosado	Forest Management Intern	YRCC	toppe
Ozulla Sabile	Consulting Topester		ATV alos
Elma Kan	Adam Die May UBER	UB ERI	Em
Victoria Caurch	Follest officer	FD	Carl
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	DARWIN INITIATIVE SUSTAINA	BLE FORESTRY (SUSFOR) PROJECT	
	WORKSHOP/TR/	AINING SIGN+UP SHEET	
	Workshop Training on	the Review of APOs for 2016	
	February 8, 2016, Fore	ist Department, Belmapan	
Name	Position	Organization	Signature
Oscar yllga	Forestry	Forestry, beforeenstyleyatus	- Digita
Tiene Quindero	Torest Diologist	Forest Depadement	- Harris
Tan Armstron	Fulester	F-D.	1 de la
Gogman Norelo	Forest Officer	Douglas D' Silva/FD	RAP
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Jorothy Thompson	SFM Clerk	- o. Standpert	1 miles
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DARWIN INITIATIVE SUSTAINABLE FORESTRY (SUSFOR) PROJECT

WORKSHOP/TRAINING SIGN-UP SHEET

Workshop Training on the Review of Post-harvest Audit Results

March 4	2016	George	Price	Center,	Belmopan	
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Name	Position	Organization	Signature
July Jeff Roberton	manager	Yalbac Kayuma Secon	Albert
O'ENERAN AVARCE	FICLD SUPERWIENS	YALSACK/ (AGUNA SECT	Carter
Earl Green		CITES S.A. Hember	and going
Ramon Pachen	Managh	Programme for Boline	æ
Derhans Chuc	rechnical Condinator	Trocramme for Belize	QQ
Jake Kreh	Carbada	OPLA	21
Lizandop Quiss	Forest affect	Forest Dept	- 1 Vin
Edwardo Pot	Forst Ranger	Forest Dept.	AT C
Garman Nevel.	Force Dept Officer	Forest Deve / Douglas	TOQ D
Joursthe Sphapings	Admin Assistant	Bull Ridge UNA	to the
Usudda Idala	Consutting JOISTY	Trust Prot	1 ANals
Raul Chun,	Sorever Spier	toledo. Dis fotolest. gorbe	120
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Elma Kan	Chaiperom Balls MAY	CITES PA	ST
Janua Santos Neal	Forest Mant + Policy Coordinator	PLC/Bull Ridge	Jourto
Denver Cayeston			V
Percival Cho			
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Annex 8

See file.

Annex 9







DARWIN INITIATIVE SUSTAINABLE FORESTRY (SUSFOR) PROJECT

WORKSHOP/TRAINING SIGN-UP SHEET

Training Workshop for the CITES MA and SA on the Non-detriment Finding process and Quota Setting for Mahogany and Rosewood in Belize

George Price Centre, Belmopan

Thursday, April 14, 2016 - 9 am to 4 pm

Name	Position	Organization	Signature
Mercedes Valdez	Forester	F.D.	Mercidia Valda
Gorman Lopez	Faryt Other	F.D.	- XIII
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Annual Report template with notes 2016



Annual Report template with notes 2016





Annex 12 See file.

Annex 13 See file.

Annex 14 See file.

Annex 15 See file.

Annex 16

March 30th, 2016

Dr. Percival Cho Director Darwin Initiative Project Forest Department Belmopan

Dear Dr. Cho,

The newly elected members of Rax Mu Qiche made a collective decision to work with the Darwin Initiative Project. Therefore, through this medium, the Rax Mu Qiche express their interest and support in the Darwin Initiative Project.

We look forward to see your technical support and continue to work with Community Forestry Group of Conejo.



Annex 17 See file.

	Check
Is the report less than 10MB? If so, please email to <u>Darwin-Projects@ltsi.co.uk</u> putting the project number in the Subject line.	x
Is your report more than 10MB? If so, please discuss with <u>Darwin-</u> <u>Projects@ltsi.co.uk</u> about the best way to deliver the report, putting the project number in the Subject line.	
Have you included means of verification? You need not submit every project document, but the main outputs and a selection of the others would strengthen the report.	x
Do you have hard copies of material you want to submit with the report? If so, please make this clear in the covering email and ensure all material is marked with the project number.	
Have you involved your partners in preparation of the report and named the main contributors	x
Have you completed the Project Expenditure table fully?	
Do not include claim forms or other communications with this report.	1