The Rufford Foundation
Final Report

Congratulations on the completion of your project that was supported by The Rufford Foundation.

We ask all grant recipients to complete a Final Report Form that helps us to gauge the success of our grant giving. The Final Report must be sent in **word format** and not PDF format or any other format. We understand that projects often do not follow the predicted course but knowledge of your experiences is valuable to us and others who may be undertaking similar work. Please be as honest as you can in answering the questions – remember that negative experiences are just as valuable as positive ones if they help others to learn from them.

Please complete the form in English and be as clear and concise as you can. Please note that the information may be edited for clarity. We will ask for further information if required. If you have any other materials produced by the project, particularly a few relevant photographs, please send these to us separately.

Please submit your final report to jane@rufford.org.

Thank you for your help.

Josh Cole, Grants Director

Grant Recipient Details	
Your name	Campbell Plowden
Project title	Sustainable harvest and marketing of non-timber forest products (NTPFs) with native communities in the northern Peruvian Amazon
RSG reference	15961-B
Reporting period	Sept. 1, 2014 – December 31, 2015
Amount of grant	£10,000
Your email address	cplowden@amazonecology.org
Date of this report	April 20, 2016

1. Please indicate the level of achievement of the project's original objectives and include any relevant comments on factors affecting this.

Objective summary	Not achieved	Partially achieved	Fully achieved	Comments
1. Use copal research data to develop a sustainable harvest system.		XXXX		We completed the intensive phase of monitoring copal resin lump growth at Jenaro Herrera in December 2014 that involved taking digital photos of hundreds of resin lumps since 2007. We finished compiling and classifying measurements of these data by the end of 2015. We are now analysing these data with statistical methods to determine the growth rate of resin lumps associated with resin weevil development and estimating the recovery rate of resin lumps on harvested trees. We have continued to monitor resin lump growth patterns on study trees by classifying resin lump size and type and copal tree health and phenology with simple visual criteria. Based on preliminary results of these studies, we are proposing a draft management plan for copal resin harvest to Loreto regional authorities that will feature dividing a section of primary forest into seven zones. Copal resin will be harvested in one zone per year according to a harvest protocol (based on resin lump size) for 6 years. Harvesting can be repeated in zone 1 if a pre-harvest survey determines that resin lump abundance has recovered sufficiently to absorb a second round of harvesting. Zone 7 will be kept as a control area to monitor natural changes in copal resin abundance.
2. Continue tracking the survival and growth of rosewood trees planted at Brillo Nuevo			XXXX	We organised regular visits to the five fields at Brillo Nuevo with the plot owners to measure the growth and survival of rosewood trees planted there in early 2013. While half of the trees had died by the end of 2015, enough of the surviving trees had grown well enough to sustain the first round of pruning with our colleague Robin van Loon from Camino Verde in February, 2016. We distilled about 45 kg of these leaves and branches into essential oil with our equipment in Iquitos.
3. Collect, distil and sell batches of essential oil made from copal resin and rosewood branches		XXXX		We collected samples of copal resin near two Maijuna native villages in the Napo River region and one Matses native village along the Ucayali River (near the base of our copal research at Jenaro Herrera) to explore expanding partnerships with other

and leaves harvested with native communities and families from Tamshiyacu.				communities potentially interested in collaborating with us in this venture. We distilled these resin lumps into essential oil to determine yield and are now having the composition of these samples assessed by GC-MS in collaboration with a chemistry lab at Penn State University. We conducted a survey of all rosewood trees in the field of one family of farmers in Tamshiyacu and now have an agreement to regularly harvest about 50 kg of branches and leaves from these trees. Initial samples have been harvested and distilled to measure yield. We will conduct an inventory of copal trees and resin in the Ampiyacu-Apayacu Regional Conservation Area with the Loreto government natural resource agency in May 2016 as the next step toward developing a formal management plan to harvest copal with people from the Ampiyacu native villages. We are collaborating with our partner NGO Camino Verde to research and obtain proper permits for the export of essential oil from copal, rosewood, and other aromatic species.
4. Continue increasing the quality, quantity, and sales of Ampiyacu handicrafts			XXXX	The Ampiyacu artisans have significantly increased the number and quality of handicrafts they have made working with CACE. The number of crafts made by Ampiyacu artisans that CACE has sold has gone from 607 in 2013 to 568 in 2014 to 1,121 in 2015. The total retail value of these sales has increased from US$ 6,854 in 2013 to $8,330 in 2014 to $15,574 in 2015. These improvements have been largely due to skill-sharing workshops that we organized in the Ampiyacu to expand the number of artisans able to make our distinct models of woven and carved crafts and encouraging the artisans to fill orders by working in small groups. We conducted video sessions with 28 artisans showing and explaining how they make 48 models of belts, guitar straps, bottle carriers, bags, hair barrettes and ornaments. These will now be compiled on a DVD to share with artisans. We have made good progress developing an illustrated manual to show exact dimensions and patterns that will be given to artisans as an additional training resource.
5. Use chambira palm studies to minimize harvest impact, use resource efficiently and encourage reforestation to meet larger demand			XXXX	Almost every artisan in Brillo Nuevo now use a pruning saw to harvest chambira leaf spears instead of machetes which reduces unintentional damage to adjacent leaves. We have started to expand the distribution of these saws to artisans in other partner villages. We used the results of our chambira palm yield study to calculate the ratio of harvested chambira leaf spears

for craft production in the future.				to the weight of dry fibre. We combined this figure with the weights and prices paid for different types of woven crafts to calculate the average number of leaf spears needed per craft type and the value earned per leaf spear for each craft type. For example, this analysis showed that an artisan would typically be paid about £9.70 for making both a guitar strap for CACE and a hammock sold to tourist shops in the city. The artisan earns £8.50 per leaf spear making the guitar strap, while she only earns £0.80 per leaf spear making the hammock without including her extra cost to the travel to the city to sell it. While most artisans know how to make hammocks, artisan recognition that they can earn as much or more income making CACE products with much less chambira is increasing artisan interest to learn how to make these new kinds of products. We conducted a socio-economic survey with over 30 artisans from Brillo Nuevo and Puca Urquillo that helped them and CACE gauge their current amounts of income and expenses, the role that selling crafts to CACE and other vendors plays in their family finances, and how many more crafts they would like to sell to meet short and medium term goals for themselves and their families. We used these numbers to help them estimate the amount of chambira palm they would need to plant now to expand their craft production in the future. Parallel to this exercise was supporting chambira reforestation in three villages by providing food for 38 work parties through our social rebate from craft sales.
6. Continue collecting photos, videos, and stories about the people, plants, and places involved in making these essential oils and crafts in the Ampiyacu to share with our partners in the region and show others how these efforts can support forest conservation and native peoples in the Amazon.			xxxx	During this recent grant period, I took a large number of photos of our partners involved with craft-making and activities related to the harvest and processing of aromatic plants. In addition to recording artisans explaining how they make specific crafts, we greatly expanded our production and use of videos as tools to share information and stories between artisans in the Ampiyacu and others outside the region via the internet. We recently found that promoting exchange between artisans from the Ampiyacu and our other partner communities in Loreto can also produce significant benefits for both. In March, 2016, we brought two artisan leaders from the Ampiyacu to visit the campesino village of Chino on the Tahuayo River. The Ampiyacu artisans got to see first-hand how the Chino artisan cooperative was able to receive a large order

				for baskets, distribute them equitably among their members, and exercise internal quality control without rancor. When the Chino artisans saw photos of the crafts made by the Ampiyacu artisans, they were both impressed by the diversity of crafts they were making with CACE and inspired to try to create some new models of their own to sell to tourists who visit them from a jungle lodge.

2. Please explain any unforeseen difficulties that arose during the project and how these were tackled (if relevant).

a. Challenges working with artisan groups

While the joint artisan workshops that we led with the Field Museum (of Chicago) in 2014 emphasised the value of working with small artisan groups (usually made up of extended family members), most of these groups became dysfunctional in early 2015 due to personality conflicts and inconsistent methods used to distribute orders. While the skill-sharing workshops held in 2015 increased the number of artisans able to make new kinds of crafts, our craft-buying practices devolved back to working with individual artisans for most of the year. During my visits to Peru in September 2015 and February 2016, we began integrating team-building exercises into our meetings with the artisans. Building the level of trust between the artisans and explaining that CACE could not continue buying crafts from dozens of artisans on an individual basis has allowed us to relaunch a system of only placing orders for crafts to groups of artisans willing to work together to complete those orders in a timely way with internal responsibility for quality control. So far this system seems to working better.

b. Analysis of copal study data and formulation of management plans

We had expected that by the end of this project period we would have been able to compile and analyse the data from our multi-year copal resin study at Jenaro Herrera and use it to create and test a management plan for the sustainable harvest of copal resin around one or more of our partner communities. This process clearly took much longer than hoped since it took a full year for the investigator who had manged the copal study there to measure resin lump size from photos taken in the principal study site make additional observations of the resin lump type and colour, and then link these data to other pieces of information about the weight of resin lumps that were harvested and the taxa and developmental stage of the weevils or other insects found in harvested lumps. We have now just begun to analyse these data to statistically describe relationship between resin lump size and characteristics and the development of the resin weevils that provoke formation of these lumps. The next phase will be to use the data set to compare the abundance and recovery rate of resin lumps on trees where resin lumps were harvested with a control group of unharvested trees.

c. Lessons from planting rosewood trees

In early 2013, Camino Verde and CACE planted 900 rosewood seedlings in five fields at Brillo Nuevo. Two years later, almost one half of these seedlings had died. This seemed like drastically low survival until we learned that other efforts to promote the reforestation of this endangered species had suffered mortality rates of 90 to 100%. Monitoring how our rosewood seedlings created from different sources responded to the different environments and management techniques of the five farmers has given us some important indicators of how we can improve rosewood establishment and health next time around. The first major point will be to try to secure seeds from sources we

can find to start seedlings if possible since the few of these we received from the nursery were clearly hardier to begin with. If we can't find seeds (which is difficult considering the scarcity of this depleted species), we will need to allow seedlings created from cuttings more time to grow before transplanting them since the small seedlings did not fare as well as the large ones. Second, it is important to recognise that rosewood is a slow growing primary forest tree. While all trees need light to grow, rosewood seedlings seem to easily succumb to full days of direct sunlight – particularly in the dry season when less water is available to rehydrate the plants. It's important to clear enough plants around rosewood seedlings to preclude stifling competition, but rosewood plants growing near another tree in the middle of the field or ones growing near the edge of the plot where the adjacent forest shaded the rosewood trees for at least part of the day seemed to do better than ones growing isolated in the middle of an unshaded field. This suggests that growing rosewood in horizontal plots and/or planting them in conjunction with other faster growing trees in a mixed agroforestry system could be preferable to planting only rosewood trees in open square plots.

d. Legal procedures for commercially harvesting aromatic plant parts and exporting essential oils
We have made some progress in learning the procedures that will be needed to legally harvest copal resin and rosewood vegetative material to make essential oils for commercial purposes. In both cases this will involve preparing an overall management plan that governs the harvesting system that will be used for the authorised collectors (in our case, a specific community) to collect the raw materials from a designated area. Once approved, this plan will then be the basis to prepare an operational management plan that will set a quota for the amount of material to be collected in a specific part of that area during a given year. Once collected, the harvesters would need a permit to transport these raw materials to another site for processing. At this point, other regulations come into play that govern the sanitary state and worker safety conditions where the materials are processed. Once processed, there are other permits that are required to deal with the sale and export of the finished products. We know of two companies that have apparently been successful in navigating through the bureaucratic maze to legally export essential oil from cultivated rosewood trees. While both of these companies were willing to discuss acting as a broker for us, neither of them was willing to simply explain these procedures to us. Further complicating this challenge has been the relatively recent adoption of a new forestry law in Peru which local government officials are still learning how to implement. Another factor that has slowed down our ability to move forward on the procedural front is that the natural resource agency in Loreto responsible for regulating the harvest of both timber and non-timber products in regional conservation areas has just gone through a major organisational restructuring. Some of the leaders of the new department are the same, but they are still figuring out their roles and responsibilities dealing with these type of issues. CACE is proceeding with our efforts to discern the proper permits relating to harvest and local transportation at the harvest end of the process, but we are collaborating closely with our partner NGO Camino Verde to understand the procedures needed to process the aromatic products, and to sell and transport the finished essential oils both in Peru and abroad. They have contracted a law firm in Lima to describe these procedures – a process that involve volunteer assistance of consultants from the German aide agency GTZ.

e. Analysing chambira palm inventory and study data
While we were able to make good use of the chambira yield studies as described above, we have not yet been able to analyse and use the data collected from the chambira abundance studies or dye plant studies. We felt fortunate to work with two very capable students at the National University of the Peruvian Amazon (UNAP) in Iquitos to conduct these studies with us to fulfil their undergraduate thesis requirements in forestry and ecology. In one student's case, her advisors had her refocus her

thesis around an extra traditional inventory method that left the data we collected about chambira abundance in artisan fields unanalysed. The second intern ran into financial problems and suspended her studies before she finished analysing data she collected quantifying the use of various dye plants with chambira. We know that all artisans need to be making more efficient use of the chambira they have and plant more for the future, but we still wish to be able to use the data from those studies that were done to understand the actual range of abundance and condition of chambira in artisan fields. We will do this by committing current project staff time to the task.

3. Briefly describe the three most important outcomes of your project.

a. Ampiyacu artisans are making and selling more crafts with consistent quality
As described above, we have succeeded in growing the ability of Ampiyacu artisans to make more crafts with more consistent quality. This has been achieved by patiently working with artisans from our core project village and hosting skill-sharing workshops that bring veteran artisans together with others that want to learn. We have made significant process developing a series of 10-20 minute long videos that feature select artisans showing and explaining how they make specific crafts. Draft versions are now being shown to artisans to get their feedback before they are finalised and put onto DVDs which artisans will be able to watch in their homes to help them learn to make new models. We have also made good progress creating a manual for artisans that will include detailed illustrations of each craft type and model showing the exact dimensions, patterns, and colours for each model. All of these tools will help artisan group's work together more effectively to fulfil larger orders for crafts with consistent quality first assessed by their own members. The project starting working with about 12 artisans from one village in 2008; we are now working with over 100 artisans from eight villages in the Ampiyacu.

We have been able to buy an increasing amount of crafts from the Ampiyacu artisans because we have also greatly expanded our ability to sell these crafts in the U.S. Up until 2014, most of our craft sales were made at informal gatherings at progressive churches (mostly Quaker meetings), Christmas season craft fairs in central Pennsylvania and a one friendly Christmas tree seller. Last year, we also had booths at two major green expos in New York City and Washington, D.C., three street fairs and cultural gatherings in New Jersey, and four music festivals in Massachusetts, Rhode Island and Pennsylvania. These experiences have helped us determine the type of audience and events that are most receptive to our crafts and mission. We are proud that our accomplishments to date allowed us to apply and win approval of membership in the Fair Trade Federation.

b. The rosewood project is becoming a reality
After watching hundreds rosewood plants wither and die from the heat or smothered by competing weeds, it was wonderful to realise that having half of the 900 seedlings still alive 3 years after they were planted is very good news. It was far from a controlled experiment, but we have, nonetheless, learned a lot about the conditions that favour rosewood vigour by monitoring their growth and survival in plots managed in distinct ways by five Bora farmers. These owners have become a team that are keen to learn with each other, CACE project staff and Robin van Loon from Camino Verde who has been a vital backer and advisor of this project from the start. We made an important transition from "watch and wait" to showing the plot owners how to carefully prune the best-growing trees so we could collect enough branches and leaves to distil and encourage the tree to keep growing tall and strong. Learning how to prune these trees and receive some cash for the branches and leaves that were removed showed these farmers that their investment of time to care for these trees can actually help them generate income – hopefully for many years to come.

We have also established a trusting relationship with the one family left in Tamshiyacu who did not sell the rights to manage their 11 year old rosewood trees to a new enterprise that has cut their trunks down to a height of 30 cm with the hope they will resprout. Miguel and his wife Celestina are more comfortable working with us to establish a less drastic pruning regimen that will focus on removing lower lateral branches and encourage the growth of healthy trees that will produce fruits in the future. Working with this couple also gave us a positive vision for oil production at Brillo Nuevo and other communities since we only needed to collect branches and leaves from four large trees at Tamshiyacu to gather 45 kg of material while we needed to prune over 40 small trees at Brillo Nuevo to accumulate this amount sufficient to distil two batches into essential oil.

While we still need to work out obtaining permits that will be needed to produce and export the oil, we know this is possible and are taking steps to do so with our partner Camino Verde which now has full legal status as an NGO in Peru. We have also established firm relationships with companies in the U.S. that buy essential oils that have promised to buy rosewood oil from us at twice the current market price so they can be assured of getting a product that has been produced with great care for the social and environmental care that went into its production.

c. The copal project is getting closer to reality

Although our copal resin work has not progressed as quickly as we had hoped, we have, nonetheless, made significant progress by conducting the research needed to design the first management plan to guide the sustainable harvest of this unique non-timber forest product. Most management plans are based around reducing the impact of harvesting on a population of plants or a population of animals. It seems rare that developing a viable system for harvesting a wild plant resource requires developing protocols that will conserve healthy populations of bark-boring insects needed to profitably harvest that resource from diverse host trees. We have shown that harvesting and distilling fresh resin can produce good yields of a novel essential oil which has attracted strong interest from a number of companies that make fragrances and products for aromatherapy. Regional government authorities in Loreto are keenly interested to cooperate with us to develop this resource in the Ampiyacu-Apayacu Regional Conservation Area as their first case to demonstrate that it is possible to generate economic benefits for local communities near this reserve through careful harvesting of a non-timber resource as an alternative to logging operations which pose significant threats to the area's high biodiversity and environmental services to the entire watershed.

4. Briefly describe the involvement of local communities and how they have benefitted from the project (if relevant).

Local communities have been integrally involved with almost every aspect of this project. All project activities related to handicrafts have focused on building the capacity of native artisans to make and sell innovative crafts. Veteran artisans have been teachers in skill-sharing workshops with other artisans. They have also been contracted to demonstrate how to make specific craft models in training videos to be shared with other artisans. An economic survey we conducted with 28 artisans from two villages showed that selling crafts to CACE represented an average of 10% and as much as 56% of their total family income. Beyond increasing their income, CACE is offering artisans tools and choices to use chambira palm trees in more efficient ways and facilitate community-wide reforestation of this critical economic resource. While women have been the main direct beneficiaries of this expanding craft enterprise, an increasing number of men have also begun to

either assist their wives making woven crafts or develop their talent for carving attractive ornaments. This trend has a positive impact on conservation as well since other ways that men have often earned income in the villages have been hunting and selling game meat and being labourers in unregulated logging operations.

Community members have also been intimately involved with activities related to the harvest of aromatic plant products such as copal resin and rosewood. So far most of the benefits from these activities have been daily wage opportunities to participate in surveying and monitoring these resources. This year, five farmers from Brillo Nuevo received their first payment for rosewood branches and leaves collected from trees planted there in 2013. We also worked with one family in Tamshiyacu to manage and collect material from their rosewood trees planted around 2005. While the main beneficiary of our copal research at Jenaro Herrera has been our principal field assistant (and his family), we have conducted initial surveys of copal resin with two Maijuna native communities in the Napo River region and one Matses native community near the Ucayali River. Five person teams from each village received stipends for participating in these surveys, but we expect that we will be able to organize more extensive harvests in the future in these and/or other communities in the region once the legal pathways have been established to process and export copal essential oil.

5. Are there any plans to continue this work?

Yes, this project is ongoing. In the next few years, we will continue to focus on developing the capacity of artisan groups in the Ampiyacu to make and sell more crafts based on orders for specific models by conducting additional skill-sharing workshops supplemented by the training videos and artisan resource manual we are producing. Brillo Nuevo will remain an important place to develop new craft and organizational models, but we are now able to start building the basic capacities of people in other villages to get involved in the project by learning how to make at least a few types of popular crafts.

We are also expanding our outreach beyond the Ampiyacu so we can stimulate the creative talents and economic opportunities for communities with different cultural traditions and natural resources. Our priorities will be to support both handicraft and essential oil work with several Maijuna native communities in the Napo River region with the NGO OnePlanet (founded by CACE board member Michael Gilmore) since they are part of the newest and biologically significant Maijuna Kichwa Regional Conservation Area. We will also increase our efforts to support artisans from the village of Chino and others along the Tahuayo River with the NGO Rainforest Conservation Fund since they are located at the gateway to the Tamshiyacu-Tahuayo Regional Conservation Area. We are exploring opportunities to work with artisans in other villages where we can partner with and complement the work of other NGOs that have well-grounded programmes focused on creating sustainable livelihoods and/or improving health, education and conservation. One potential partnership we are exploring is with the NGO Minga Peru which works with several dozen communities in the Maranon River area – a few of which border the Pacaya-Samiria national park.

As we expand our engagement with other communities, we are realising that beyond building the capacity of artisans to make crafts, we also have to support their ability to organize independent organisations so they will be well equipped to sell to other craft buyers beyond CACE. The Ampiyacu artisans can teach each other a lot about making crafts, but they need to learn from others how to get to this next level. We have, therefore, started consulting with artisan partners from the

Ampiyacu and elsewhere about creating a multiple stage artisan leadership course that would bring together artisans from across the region to discuss and learn skills such as how to forming a community enterprise, how to build trust and resolve conflicts, how to manage quality control, how to handle accounting tasks, how to tell their stories (i.e. marketing), and how to handle legal aspects related to resource management, sales, and craft export.

Beyond the work we do in Peru, CACE is continuing to build our capacity to sell crafts in the U.S. We have recently purchased a plan to set up an online store on the Shopify platform that we expect to be launched in May or June 2016. This will give us a broader vehicle to increase our retail sales. CACE has recently been accepted as a member of the Fair Trade Federation. This will embed us in a network of wholesale and retail businesses and non-profit organisations that are committed to operating in ways that place great emphasis on fair treatment of producers and strong consideration for environmental impacts related to their enterprises. Significantly support forest conservation. We hope that becoming active with FTF will create new opportunities for CACE to order larger quantities of crafts from our partners that we can sell to fair trade retail shops.

As we move toward creating management plans for the harvest of copal resin and further cultivation of rosewood and related aromatic species, we will continue working with our ally Camino Verde to distil and market their essential oils to both wholesale and retail buyers in Peru and abroad.

6. How do you plan to share the results of your work with others?

CACE shares results of our work with our project partners in the communities during meetings with the artisans, community assemblies, and meetings with both the leaders and full congresses of FECONA – the federation that represents the 15 native villages in the Ampiyacu-Apayacu watersheds.

We also share updates, images and videos related to our work with others beyond our project partners on a regular basis through many platforms. These include the CACE website, the CACE electronic newsletter (sent to about 1100 supporters), Facebook organisation page (1,346 likes), GlobalGiving site (about 200 donors), Facebook group page (143 members), YouTube channel, Twitter (108 followers) and the Rufford Small Grant Fund page. Joint CACE-Camino Verde activities are also reported in Camino Verde's website and electronic newsletter. We write guest articles for other online sites. Research results will be prepared and submitted for publication to scientific journals such as Forest Ecology and Management, Economic Botany, and Conservation Biology.

7. Timescale: Over what period was The Rufford Foundation grant used? How does this compare to the anticipated or actual length of the project?

Funds from the Rufford Foundation grant were used between September 2014 and December 2015. This 16 month period is the same as specified in the grant proposal. Please note that some activities described in this report carried out in February and March 2016 (particularly the harvesting of rosewood material from Brillo Nuevo in February) did not use Rufford grant funds, but they were activities included in our project goals that were made possible with Rufford support from this booster grant during the reporting period.

8. Budget: Please provide a breakdown of budgeted versus actual expenditure and the reasons for any differences. All figures should be in £ sterling, indicating the local exchange rate used.

Item	Budgeted Amount from RSG	Budgeted Amount from other sources	Total budgeted Amount	Actual Amount used from RSG	Actual Amount used from other sources	Actual Amount Total	Difference between budgeted and actual totals
Communication	193	968	1160	193	4950	5142	3982
Equipment	1064	1007	2071	1064	106	1170	-901
Fees & Services	268	1072	1340	268	789	1057	-283
Stipends	5438	5080	10518	5438	6058	11496	978
Travel	3037	2825	5862	3037	4910	7948	2086
Total	10000	10951	20951	10000	16812	26812	5861

Most expenses were made in Peruvian New Soles and converted to $USD through the exchange rate at the time of the transaction. British pound equivalents were calculated for this report using the exchange rate of $US 1.00 = £ 0.5982 that was prevalent at the time of grant disbursement so budgeted and actual expenses can be compared at the same exchange rate.

Comments on differences between budgeted and actual project expenses

1. Communication expenses were larger than budgeted primarily due to the contracting of Tulio Davila to videotape and edit handicraft training videos with Ampiyacu artisans. Davila also took on major responsibility for compiling the handicraft manual and interviewed artisans to conduct the economic survey. These additional costs were largely covered through grants from the New England Biolabs Foundation and GlobalGiving.

2. Equipment expenses were lower than budgeted since delays in obtaining permits to harvest copal resin for commercial purposes reduced the need for extensive materials related to collecting and processing resin samples. While we are set up to collect rosewood material on a more regular basis, there was less activity on this front than anticipated during the period of this grant which also reduced equipment related expenses.

3. Expenses for fees and services were almost on target. They were less than expected since we did not need to invest in legal research related to permit acquisition since we have an agreement with Camino Verde to share information gathered by both groups related to procedures for harvesting, processing and exporting essential oils.

4. Stipends for this period were different than anticipated for two principal reasons. The major reason is that we needed to extend the contract for our previous copal project manager to the end of 2015 so he could finish compiling the dataset for copal resin lump research conducted at Jenaro Herrera from 2007 through 2014. This additional expense was offset in the other direction to some extent by the dissolution of the local project coordinator position at Brillo Nuevo. This action was

taken in consultation with the community to avoid jealous tension that had arisen between many members of the community and whatever man was filling this role – tension that often extended to this coordinator's wife who was perceived as receiving an unfair benefit for hosting our project manager during visits to the community. One of the original principle roles of this position was to coordinate a rotation of field assistants from the village when we were routinely conducting copal surveys around the village. This need no longer exists. We have resolved the other two sources of potential conflict by contracting individuals to provide transportation to our project manager for her monthly trips to the village and building our own house in the village that now serves as a secure and permanent location for CACE project staff and guests visiting Brillo Nuevo and a nice neutral meeting space for meetings with community artisans and others.

5. Travel expenses were higher than anticipated for two main reasons. First, the two trips I took to Peru during the grant period as project leader were longer than the amounts budgeted for in the original proposal. Second, travel costs associated with conducting the skill-sharing workshops were higher than anticipated because more artisans came to these trainings from more villages than we expected. This result was good news for the project but did generate additional expense to bring people from more villages to the workshop site and feed them. A third factor was that transportation costs in general were higher than budgeted because the cost of gasoline rose significantly during most of the period of the grant. As the world price of oil has declined, this cost is also going down in Peru but this decline did not influence travel costs during most of the period of this grant.

9. Looking ahead, what do you feel are the important next steps?

a. Handicraft development and sales
Continue building artisan capacity in the Ampiyacu to make quality crafts with consistent quality with increasing attention to support the well-functioning artisan groups within villages and village-wide artisan associations that will gradually take responsibility for quality control and other aspects of running a self-sufficient enterprise. This will involve continuing to host skill-sharing workshops within the Ampiyacu, complete the production of training videos and resource manual and integrate these learning tools into our interactions with artisans. Focus more attention on building artisan capacity in Ampiyacu villages which are new to the project. Work on creating an Artisan Leadership course to facilitate skill-sharing between artisans from a range of communities in Loreto (particularly ones adjacent to regional conservation areas and national parks) to promote the growth of their organization and exposure to a wider range of craft-making techniques and types. Continue to work with artisans to establish careful harvesting and reforestation of chambira palm fiber as a routine practice based on realistic medium-term (3-5 year) projections of craft production. Continue to expand CACE capacity to sell crafts made by our partner artisans through direct retail sales at festivals, launching an online store, and establishing wholesale accounts to sell larger volumes of crafts to fair trade and other interested outlets. While we already have the ability to measure CACE craft purchases and sales, we plan to refine and repeat the economic survey we conducted in 2015 once a year so we can also track the impact that our efforts are having on total family income and lifestyles. See Section 5 above for more details.

b. Essential oil production and sales
As mentioned above, our clear next steps to advance our development and sale of copal essential oil will be to complete the analysis of data from copal research, develop a management plan for sustainable copal resin harvest – initially in the Ampiyacu-Apayacu Regional Conservation Area and

then build on this experience to adapt this plan to harvests in other promising areas. We will continue monitoring the growth and survival of rosewood trees planted at Brillo Nuevo and work with both those farmers and one family in Tamshiyacu to harvest batches of 45 kg of leaves and branches on as regular a basis with pruning techniques that favour healthy tree growth. These materials will be distilled to measure essential oil yield as the ratio of branch to leaf weight increases as the trees grows. Essential oil composition will also be determined in cooperation with Camino Verde and the Natural Products Laboratory at Cayetano Heredia University. Continue to cooperate with Camino Verde to determine proper legal steps needed to process and export essential oil to expectant buyers in the U.S. See Section 5 above for more details.

10. Did you use The Rufford Foundation logo in any materials produced in relation to this project? Did the RSGF receive any publicity during the course of your work?

We acknowledge the generous contribution of the Rufford Foundation to our project work in Peru at various times in multiple ways. Whenever we do a public presentation, I verbally acknowledge Rufford as a major project sponsor and display the Rufford logo in the final slide. When we do workshops with artisans in the community, we always mention Rufford as a major project sponsor. We will display the Rufford logo in both the DVD compilation of training videos and handicraft model resource manual we are producing for the artisans. We will also name Rufford as a project sponsor in scientific publications being produced from project related research.

11. Any other comments?

We very much appreciate that Rufford and associates organised a meeting of foundation grantees in Lima, Peru in January, 2016. This provided a valuable opportunity for our project manager Yully Rojas to present a summary of our work where she received positive feedback and suggestions from other people working on diverse conservation issues in Latin America.

I apologise for the delay in submitting this report. Although our project period officially ended in December 2015, I felt that it was important to be able to share some of the concrete progress we achieved in early 2016 with the Trustees that were direct extensions of work conducted during the grant period with Rufford financial support. These actions included our first harvest and distillation of leaves and branches from rosewood trees planted in Brillo Nuevo, significant progress in working with the Ampiyacu artisans on a more collective organized basis, and concrete plans to advance our copal work by conducting a copal tree and resin survey in the Ampiyacu-Apayacu Regional Conservation Area in cooperation with regional government authorities as the next step toward creating a formal management plan to regulate the commercial harvest of this aromatic resource.

I also apologise that we have not provided project updates to Rufford on as regular a basis as we had hoped. I would like to offer a suggestion that if it would not impose significant demand on foundation staff time, we would welcome receiving a periodic request (at whatever interval you deem appropriate) to submit a project update. I have found such requests from other funding sources to be very effective catalysts for promptly sharing progress and images.

Once our plans for the next phases of the project are more clarified, I plan to submit a proposal to Rufford to renew its funding for this project. We will appreciate your continued interest and support for this work.