

The Rufford Small Grants Foundation

Final Report

Congratulations on the completion of your project that was supported by The Rufford Small Grants 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	Maria Specht
Project title	Burning for sustainability: Determinants of firewood consumption in a hyper-fragmented landscape of tropical forest in North-eastern Brazil
RSG reference	9708-1
Reporting period	March 2011-March2012
Amount of grant	5618 £
Your email address	joanaspecht@gmail.com
Date of this report	12/04/2012

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

Objective	Not achieved	Partially achieved	Fully achieved	Comments
Apply semi-structured interviews to 20 communities in 4 states of North-eastern Brazil.		X		We interviewed 12 communities located in six landscapes March to September 2011 in three states. Moreover, there are six communities in four landscapes to be visited for the application of interviews.
Identify the socioeconomic determinant factors of firewood consumption on a regional scale.			X	Based on the interviews, we identified a pattern for the determinant factors of firewood consumption in the region, although there are still some places to be collected. However, due to the robustness of data acquired, these patterns probably remain.
Correlate socioeconomic variables with firewood consumption		X		Correlations were performed between the socioeconomic variables of the population and the firewood consumption. We diagnosed that the per capita income is the variable that better correlates with the firewood consumption. Other variables such as total income, number of persons per household and the duration of the gas cylinder are also correlated.
Characterise the environmental conditions surrounding the villages		X		The villages were characterised by their socioeconomic factors through interviews with residents. The environmental conditions such as accessibility through roads, the distances to nearest forest fragments, highways, urban centers, landscape forest, were intended to use them to correlate with the consumption of wood. But yet haven't been characterised due to the difficulties of obtaining satellite images at this level of resolution for the villages sampled. Most roads are local roads only captured in the finest images. The high resolution images will be acquired in partnership with the Center for Environmental Research in the Northeast-CEPAN, a local NGO and will be analysed as soon as possible.

Experiment inside the forest to evaluate the impacts of biomass removal in 30 areas of extraction and 30 areas for control			X	The experiment was conducted with 25 extraction sites visited and 25 control areas. Given the amount of seedling individuals collected in 25 plots, was not necessary to collect more in five areas of control and treatment. In this experiment, were diagnosed impacts of forest structure with selective removal of trees for domestic supply. We have diagnosed an increase in light and an opening in the forest canopy, reducing the biomass of young trees and increasing the damage to the plants in the areas of selective logging.
Quantify the amount of firewood consumption by the rural population			X	About 65% of firewood consumed in these areas, is directly arising from remnants of forests that, are historically influenced by edge effects and habitat loss. The firewood consumption in each month is on average 233 kg of firewood per family, which has an average of 5.3 people.
Identify the tree species use for firewood			X	We identified 67 species of trees that are used as firewood. The most used native species are also the most abundant at the regional level. These species are benefiting from the process that was diagnosed to cause the drive tropical forest fragments towards an early-successional system. Thus we believe that selective logging can control these populations or contribute to the increases.
Creation of pressure indicator map on forest reminiscent			X	Two maps were created for guideline policies on each municipality: Sustainability of forestall biomass harvesting and the amount of population most susceptible to harvesting firewood.
Assistance in the Implementation of 40 eco-efficient firewood stoves			X	In March 2011, we approved a project in partnership with a local NGO and an environmental-social found of a national bank that financed the implementation of efficient stoves in two 80 low-income rural communities. We

				received a proposal from the Itau Bank to double the amount of stoves provided for the project as well as gain greater visibility. In this way, two communities we have expanded the efforts of visits. Talks were given on conservation of biodiversity, importance of forests, damage associated with the use of firewood on open stoves. These environmental education activities were carried out in partnership with a local NGO (Association for Protection of the Northeast Atlantic Forest - Amane).
Assist creation of public policies	X			We are still coordinating with the NGOs and governmental agencies the opportunity to spread the implementation of stoves as a tool for improving quality of life associated with avoided deforestation.

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

The project is still being finalised due to some few changes during the implementation process that despite the delay, brought benefits. The access to rural communities is very difficult in the rainy season, because many of the roads are only accessed by tractor and the rainy season was pretty intense last year. From the preliminary data obtained through the project, managed in partnership with a local NGO and a national bank, another project was approved. This project is having a great impact at regional level and so we need to invest more time in meetings with the two communities that received the stoves. Initially the intention was to install 40 stoves, but for a better scope of the project over the bank funded 80. For this reason, the all 20 communities initially planned were not visited and the remaining will be visited by up to two months but our results have proven quite solid and will change only the numbers but not the patterns found.

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

This project allowed the identification of socioeconomic factors which are decisive for the use of firewood by rural communities who live in municipalities that have a remaining portion of the Atlantic forest hyper-fragmented and extremely rich in biodiversity on Brazil's North-eastern. The interview results, show that the per capita income is the variable that most relates to the consumption of firewood, and families who earn up to ¼ per capita income are more susceptible to use firewood. And more than 65% of all wood consumed according to respondents, is removed directly from the forests reminiscent. According to our projections, in about 83 of the 271 municipalities inserted on this portion of Atlantic forest, the wood extraction are unsustainable in terms of removal of biomass and in the short run may lose their forest remaining by the logging

activity by domestic use. This result was published in the form of maps to guide actions and strategies for conservation of forest remnants associated with improved quality of life of rural people. Still, in the experiment carried out, was identified that the selective harvesting in the forest causes damage to the structure of the forest because of the increase of sun light due the opening canopy, reducing the biomass of young trees and increase the plant damage. Finally, the result of this project enabled 80 families (most of 400 people) to received efficient stoves that reduce on average 50% of firewood consumption and eliminate the indoor pollution.

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

This project has the direct involvement of leaders of the communities where the research was performed, it was through them, that the survey was conducted and allowed to reach the results of interviews with a high level of confidence and strengthening their role as community leaders. With the Implementation project of 80 efficient stoves, meetings were held monthly during the second half of 2011 with the aim to educate families about the importance of forests and the hazards of the use of wood in the open stoves on environment and human health. Thus, with these steps we intend to strengthen our bond with the community through research and achieve the implementation of practical solutions to problems involving conservation of biodiversity and quality of life of rural populations living adjacent to forests.

5. Are there any plans to continue this work?

Firewood is one of the environmental goods purchased directly from the forest. Our scenario of forest is in a stage of intense degradation despite being considered a global hotspot for biodiversity conservation and in addition the timber, other environmental goods are purchased by rural adjacent populations of this region. Are still unknown the impacts and patterns of use of forest resources in our region. I intended to expand the analysis in this project for use of forest resources in general, not just timber, concomitantly with the execution of a PhD project on this topic that will be launched early next year.

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

This project has already been released by the national media (link: <http://g1.globo.com/economia/globo-rural/videos/v/familias-participam-de-programa-que-pretende-reduzir-o-uso-da-lenha-na-hora-de-cozinhar/1802891/>). In an oral presentation at the 4th World Conference on Ecological Restoration, August 2011, in Merida, Mexico, were published the main results of the project and discussed with experts. Also, through the defence of the author's Master's degree thesis project in the Federal University of Pernambuco, Brazil. It is being made a video / documentary that aims at spreading the initiative to implement efficient wood stoves to government institutions and local NGOs in order to reduce the impacts of biomass removal in the forest (link: <http://www.cepan.org.br/noticia-detalle.php?id=134>). Still, the results will be disseminated through publication in high quality scientific journals with international circulation.

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

The grant started to be used in March 2011, for trips to collect data on field activities. Due the project of efficient cooking stove are more complex and need more attention, the field activities programmed are late and will be concluded in the next months, the grant was not completely spent yet. See below for details.

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	Actual Amount	Difference	Comments
Field assistant 12 months	2481	481	-2000	We use part of this amount to travel to Mexico, to present our firsts results in 4th World Conference on Ecological Restoration, and discuss with important group of National Autonomous University of Mexico. The actual amount will be used in the next field trips to pay field assistant.
Fuel	752	100	-652	Not fully spent. The CEPAN, help us paying part of the fuel of this project. We will use the actual amount in the next months in field trips.
Digital Camera	150	0	-150	Fully spent
Notebook	564	0	-564	Fully spent
GPS	620	0	-620	Fully spent
Satellite Images	752	602	-150	Not fully spent, Part of this amount was used to pay for the services of a consultant to perform the GIS maps.
Books	299	0	-299	Fully spent, and we buy a printer that stay in laboratory of ecology of Federal University of Pernambuco.
Total	5618	+1183	-4435	

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

Considering the project is still under execution, we intend to continue the sampling of more than four landscapes (initially planned in the project) over the next two months. Then, in the medium term, make disclosure of the data obtained through scientific articles and government institutions of local environment in partnership with local NGO (CEPAN where I contribute as an associate researcher) in order to establish public policies to avoid deforestation and associated them with improvements in quality of life of rural populations of the endangered Atlantic Forest in North-eastern Brazil.

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

In all instances where it was made a public presentation of results, the RSGF logo was used (presentations at the Federal University of Pernambuco (Brazil), the 4th World Conference on Ecological Restoration, August 2011, in Merida, Mexico, in meetings with the video documentation of the project). And all the permanent use of equipment purchased with the grant of RSGF has the logo of the institution. Also, whenever possible, the opportunity offered by the institution disclose to researchers who have contact and work with biodiversity conservation.

11. Any other comments?

I would like to thank again to the Rufford Small Grants Foundation for the donation and apologise for the delay, but the slight delay was for an important cause that would bring more disclosure and applicability to the project. I can guarantee that all of objectives proposed in the begging of this project will be completed in the upcoming months.