

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. 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. 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	Estefania Ruiz de los Llanos
Project title	Regeneration of <i>Amburana cearensis</i> – a valuable and endangered timber species: research and proactive for conservation.
RSG reference	12444-1
Reporting period	Final report
Amount of grant	£5990
Your email address	estefaniardll@gmail.com
Date of this report	28 th January 2014



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

	Not	Partially	Fully	
Objective	achieved	achieved	achieved	Comments
Develop an awareness raising campaign		X		We wrote a media article about <i>Amburana</i> <i>cearensis</i> conservation and distributed posters. In workshops more than 40 farm workers participated. The dialogue with local people is very important to maintain their interest. We will continue with this strategy in the future.
Enrich forest with native Oak			X	The seedlings available in February 2013 were very small, so we did a pilot test with thirty seedlings. We monitored survival in January 2014 and found that 10 of 30 seedlings were still alive. We are now planting 200 seedlings. We have at the nurseries 800 seedlings.
Generate information about natural regeneration			X	We determined relative trees seed production and measured their diameter at breast height (DBH). We also monitored seedling density from natural regeneration in wet season (January 2013 and 2014) and their survival in the dry season (April 2013). The mortality was very high after one year: from 0.42 seedlings/m ² to 0.002 seedlings/m ² . Currently 30 seedlings in the forest have stakes and GPS points to continue monitoring.
Train forest stakeholders		X		Training forest stakeholders needs that information from more than 1 year is available, at least one complete cycle from seed production to seedlings establishment. We have good dialogue and have trained staff and administrative from logging companies and sugar cane companies to transfer the information we have gathered.

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

The seedlings that we had at the beginning of the project (February 2013) were too small most of them of less than 20 cm in height and with very little root development. We maintained seedlings in a nursery for another year. We selected 200 seedlings of more than 40 cm in height to plant. We are finishing planting them in the forest (February 2014). Of the



30 seedlings planted in February 2013 only 10 were still alive in January 2014, so for this new phase of enrichment will improve some factors to achieved a better survival of seedlings.

Due to the lack of seedlings in local nurseries we had to set the nurseries to obtain seedlings.
Therefore, we had to replace the booklet that was to be printed with an online version that will be available through a webpage.

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

The most important outcomes from the project are:

- 1) We have gathered novel information about the species natural regeneration that is essential for the species management and conservation plan. For example the seed production in relation with DBH will serve to determinate the minimum cut diameter. The survival and seedling density are important to determine the adult replacement rate.
- 2) The experience in enrichment with seedlings. The seedling monitoring indicate that after enrichment activities it is necessary to water at least twice after planting if it does not rain immediately. Probably the seedlings planted need some protection. We tested with and without wire net protection and the survival was better with net protection. We have 1000 *Amburana cearensis* seedling of more than 1-year old in the nursery. We are finishing to plant 200 seedlings from the nursery in the forest.
- 3) The workshops have enable local people and foresters to become involved with the conservation problem that the species and native forests face.
- 4) Our project has been able to pinpoint the lack of nurseries with local threatened tree species and the need to promote and support these initiatives. With the information gathered through our project in the nursery we will be able to transfer and facilitate the establishment of private nurseries.
- 5) We have added economic and ecological value to degraded forests.

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

Local communities and foresters have been involved in the workshops carried out and by receiving the posters and brochures that we have elaborated with information about the species and the Southern Yungas. Additionally, they have been involved in taking care of seedling in the nursery and planting them in the forest. With the information gathered through this project we are able to enrich degraded forests therefore improving their life quality and ensuring that a valuable timber continues to be available in the Southern Yungas forest. Having guidelines from the results of our project will ensure that local efforts made with this species can have the best turn out.

5. Are there any plans to continue this work?

The general project that frames this particular work have a goal that is far away yet. The 200 seedlings that are planted in February 2014 need to be monitored and their survival determined. We will install 20 camera traps to determine if predation by mammals is responsible for the low survival of seedlings. With the experience gathered from seedlings of 2013 and 2014 we hope to plant the 800 seedlings that we still have in the nursery. We will continue monitoring seedlings from natural regeneration and enrichment activities. We will refine the results obtained until now as new



information is available and present them to stakeholders. We hope to carry out the conservation and management action plan for the species in north-western Argentina.

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

We have shared the results through a newsletter of Fundación CEBio that is available for the general public and it is uploaded in the NGOs webpage. We are finishing to write an update of the newsletter with the new information gathered. We are finishing to write a technical document that summarises our results that will be delivered to environmental agencies and companies of Salta and Jujuy. This document will replace the proposed booklet that we had planned to elaborate and it will be available in the webpage until we are able to print it. We participated in 2013 in the V Binational Congress of Ecology (Chile and Argentina) where we made a poster presentation with the results obtained. Now we are preparing a scientific manuscript to be sent for publication in the Journal of Forest Ecology and Management.

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

RSG was used from February 2013 to February 2014. In general the anticipated length of the project and the timeline was similar to the actual length. The projects that are focused in a tree species, in dry forest a need minimum of 1-year cycle. This has delayed some the start of some activities, because during the dry period this species halts growth and loses its leaves. Therefore only after the rainy season is advance can survival of seedlings be assessed.

Item	Budgeted	Actual	Difference	Comments
	Amount	Expenditure		
		Amount		
Tent	200	200		
Food	1000	1000		
Miscellaneous	150	250		Batteries, stove, insect repellent, stakes for marking seedlings, net for seedlings
4-wheel vehicle rental	2000	2500		
Vehicle fuel	800	1300		
Accommodations	200	100		In general we camped at the sites.
Brochure for campaign	140	140		
Talks in municipalities	500			Due to the lack of seedlings in nurseries we had to set the nurseries to obtain seedlings.
Workshop	500	500		
Booklet	500			Due to the lack of seedlings in nurseries we had to set the nurseries to obtain seedlings. We will compile the

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.



			information in a booklet that
			will be available through the
			webpage and hopefully in the
			next project we can print the
			brochure to distribute among
			stakeholders.
TOTAL	5990	5990	

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

We need to develop a conservation and management plan for the species. Currently the extraction mode for *Amburana cearensis* is not sustainable. We need to continue working with local stakeholders to gain their support in the implementation of activities that prone to ensure the long-term conservation of the species. We need to continue monitoring the fate of natural regeneration and enriched seedlings to refine the guidelines that we are proposing for the species. It is necessary to promote nurseries of this valuable timber species and other native threatened species that can be a source of enrichment activities. Finally, the most challenging step would be to promote legislation that accompanies the conservation and management action plan for the species. This step will only be achieved through more awareness raising of stakeholders.

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?

The RSGF logo was used in brochures with information about the project and we invited people to participate with us.

11. Any other comments?

The Foundation contacted with another research group that works in genetic variation of native tree species in the Southern Yungas forests we hope to work together since the information that can be obtained from determining the genetic variability of the species will allow us to determine where the appropriate source from seedlings to enrich degraded forests is.