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	Clay Plager-Unger
Project title	Dry Tropical Forest Revegetation Project
RSG reference	15205-B
Reporting period	9 May 2014 to 9 May 2015
Amount of grant	£12,000
Your email address	planetdrumecuador@yahoo.com
Date of this report	16th May 2015

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
Greenhouse operation and native plant propagation, production of 15,000 native trees, including 500 *Libidibia glabrata*.		X		14,279 trees were produced at the greenhouse, representing 49 different native tree species (26 fruit-producing and 23 forest). 560 *Libidibia glabrata* were produced. Slightly fewer trees were produced than projected due to lower productivity of greenhouse workshops (see the first paragraph of section 2 for more details).
Design, prepare, plant, and maintain 3-5 revegetation sites with 2,000 trees total.			X	2,145 trees were planted at 14 different sites that were designed, prepared, planted and maintained with direct oversight by Planet Drum. More sites, with fewer trees at each site, were created than anticipated in order to achieve a wider distribution of trees.
Host 20 revegetation workshops at the greenhouse.			X	26 workshops were held at the greenhouse with 850 Ecuadorian students and 100 international students participating.
Donate 13,000 trees to communities, alliance organisations and strategic partners.		X		12,134 trees were donated to 79 different communities throughout 18 of the 22 different counties in Manabí province. Approximately 3,500 different families benefited from tree donation campaigns.
Conduct 10 bioregional community education events.			X	12 community-based bioregional education events and presentations were held in 11 different communities with approximately 745 participants.
Maintain active role in Eco-Bahía activities.			X	Planet Drum was involved in several Eco-Bahía events, including the 16th Anniversary Celebration of the Eco-city, the International Day of the Environment, provincial and national tree-planting campaigns, various city

				planning meetings to improve the city's ecological impact, as well as strategic coordination meetings of the Cordillera del Bálsamo biological corridor, which borders on Bahía de Caráquez.
Distribute 1,000 copies of the "Planet Drum Dry Tropical Forest Revegetation Manual."		X		Only 500 copies of the Revegetation Manual were distributed, but a new eco-city flyer was created, and 500 copies of it were distributed to local residents. In total, 1000 pieces of environmental education material were successfully distributed.
Develop new educational materials			X	A new flyer that provides an overview of bioregional principals, Planet Drum's ecological restoration work, and 5 specific strategies directly related to urban ecological issues in Eco-Bahía was developed and published. 500 copies were distributed.

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

Several unforeseen difficulties arose during the Project. One involved tree production levels during educational workshops held at the greenhouse. While highly popular and successful from a participatory and educational perspective, the workshops did not create the high level of tree production that was anticipated, particularly with groups of local school children. Many of the groups had a limited amount of time to visit and it was divided between teaching about greenhouse operation, ecological restoration practices, and hands-on participation in transplanting saplings from the seedbeds into reutilized plastic bottles. Due to the amount of time needed for the teaching portion of the workshop, not much was available for transplanting trees. Six additional workshops were held in order to make up for the low tree production. A welcome benefit of this unforeseen difficulty was that many more students visited the greenhouse and participated in the project than was originally planned.

Another difficulty was that interest in the Revegetation Manual was not as wide-spread as originally anticipated. The information in the manual is too technical for the average casual reader, especially younger audiences. As a result, it did not make sense to distribute 1,000 copies when many of the recipients would not have benefited from its information. Realistically, the Revegetation Manual is more appropriate for a smaller, more targeted audience of people who are seriously interested in exploring revegetation methods and techniques. In order to adjust to this change, only 500 new copies of the Revegetation

Manual were distributed, and a new educational flyer was prepared entitled *"Bahía Eco-Ciudad: Una Visión Bioregional"* ("Bahía Eco-City: A Bioregional Vision"). It provides a brief overview of bioregional principles and five strategies related to food, water, shelter, energy, and transportation with practical recommendations specific to Bahía de Caráquez. 500 copies of this new publication have been distributed to residents and city officials.

A final difficulty that arose during the project was our inability to keep up with the demand for trees. Once again, interest in tree planting significantly outpaced greenhouse tree production, despite a nearly 100% increase from 2013-14 to 2014-15. Unfortunately many land-owners and participants in the Project will have to wait for future tree production in order to receive the trees they requested.

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

The three most important outcomes of the project are ecosystem restoration, environmental conservation, and bioregional education.

Ecosystem Restoration:
Native forest and fruit trees produced at the greenhouse are planted at strategic revegetation sites in order to restore the extremely fragile and over-exploited dry tropical forest ecosystem. Degraded land is being slowly converted into forest habitat for the numerous endemic species in the region. Every tree planted in the field contributes a small fraction to the recovery of this ecosystem. Indigenous fruit trees also provide future sources of food and income in the mid- to long-term along with being visible and tangible reminders of what it means to actively restore the environment. Each tree is a reminder to the person who planted it of the effort it required and the important place their tree plays within the whole ecosystem. It inspires an increased interest in restoration and motivates new participation in the project.

Environmental Conservation:
Many of the revegetation sites are within or connected to nature reserves and protected areas. Additional sites are selected based on a landowner's proven interest in ecological conservation. Nature preservation is a relatively new concept to this region and the project promotes, nurtures, and facilitates the growth of this movement by introducing new landowners and properties to the process.

Despite growing interest in environmental conservation and restoration, technical expertise and practical knowledge in these areas is incredibly lacking. Many local residents are acutely aware of the imminent dangers that wide-spread biological degradation poses, but they have neither the ability nor the means to change their situation. Three straight years of drought and heavy agricultural losses in the region have exacerbated the grave predicament. As a result, residents welcome and often seek out assistance in restoring the surrounding ecosystems.

Bioregional Education:
The project's open houses, workshops at the greenhouse or in the field, presentations, and media events educate local communities, schools, and government and non-government organisations on bioregional practices. Educational outreach teaches local residents how to better align life's daily activities with the capacity of the natural resources around them. By participating in the project, they learn how to engage in activities which benefit themselves as well as the environment. Ultimately, interested parties are trained in all aspects of ecological restoration techniques and processes so that they have the capacity to continue these activities independently.

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

The growth and success of the project is directly dependent on increasing the scope and depth of community participation. The project continues to provide the means, such as greenhouse infrastructure, materials, expertise, and transportation, for revegetation work and bioregional education to occur. Community residents, students, and volunteers are becoming involved by committing their attention, time, land, water, and other in-kind contributions. In return, they receive trees, revegetation technical assistance, and instruction in ecosystem restoration practices. The project is raising awareness of the ecological problems in the region, providing sustainable solutions, and encouraging participation. Having a working example of ecosystem restoration with visible results is causing more local residents to participate. Often times, after hosting a tree donation or planting campaign in one area, neighbouring residents will inquire about participating as well, and the project's impact spreads. While the project facilitates the ecological restoration process, local communities are the real actors in terms of achieving its goals. Community involvement is the driving force behind the project!

5. Are there any plans to continue this work?

The Dry Tropical Forest Revegetation Project began in 1999, has been ongoing for 16 years, and is expected to continue well into the future. At the present time, there is no set end date.

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

There are numerous outlets for sharing information: ongoing field reports are published on the Planet Drum Foundation website (www.planetdrum.org). Articles on the progress of the Dry Tropical Forest Revegetation Project are also published in the foundation's semi-annual newsletter, the PULSE, which has a worldwide distribution of 500-1,000 copies.

Since December 2014, Ecuador Program Director, Clay Plager-Unger, has made reports and presentations at regional workshops, open houses, and conferences, to audiences of government officials, employees and contractors, as well as community members. An 11-

minute interview with Mr Plager-Unger about the Project was aired on the local radio station (La Voz de Los Caras FM) on February 24, 2015. The project has often been featured in the regional newspaper "El Diario", which has a daily distribution of 23,000. The most recent article appeared on March 10, 2015.

The Revegetation Manual remains available on the Planet Drum website and the new eco-city flyer has been published there as well.

Looking ahead, Mr Plager-Unger will be presenting the history and accomplishments of the project in San Francisco, California, USA on June 10, 2015 at Fort Mason Center in the General's Residence. The event will be promoted throughout the San Francisco Bay Area.

Planet Drum also hosts university study abroad programs in Ecuador, and the University of Oregon will be sending students accompanied by a professor to study the methods, impacts, and results of the project in August-September 2015.

Dissemination of the results of the project is an integral aspect of Planet Drum's mission, and the foundation will continue to actively pursue outlets for publicising the impact of the Dry Tropical Forest Revegetation Project.

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

As anticipated, the Rufford Foundation grant funded the Project for 12 months—from May 9th 2014 to May 9th 2015. The funds were integral to the successful operation and expansion of the project during that time.

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
Greenhouse Labourers	2,985	2,985	0	
Greenhouse Planting Materials	1,625	1,625	0	
Greenhouse Tools	360	360	0	
Greenhouse Infrastructure	330	350	20	The maintenance and expansion of greenhouse infrastructure was slightly more expensive than was projected.

Revegetation Site Labourers	2,135	2,135	0	
Revegetation Site Transportation	600	570	-30	In-kind donations of revegetation site transportation assistance helped to keep this expense under-budget, despite a dramatic increase in the scope of tree distribution and revegetation site work.
Revegetation Site Tools	440	440	0	
Revegetation Site Supplies	235	235	0	
First-Aid Supplies	75	120	45	A significant increase in the number of participants in the Project required the purchase of more first-aid supplies than was budgeted.
Education Workshop Teachers	1,865	1,865	0	
Education Workshop Transportation	600	630	30	Six additional workshops were held causing related transportation expenses to go over-budget.
Revegetation Manual Printing	300	240	-60	Fewer manuals were printed than anticipated, and the printing costs of the new Eco-city Flyer were less than for the Revegetation Manual. See section 2 for more details.
Education Workshop Refreshments	300	300	0	
Education Workshop Supplies	150	150	0	
Total	**12,000**	**12,005**	**5**	

Exchange rate: £1 (GBP) = $1.67 (USD) on 02/14/2014.

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

There are several important next steps for the project so that it can become increasingly effective at restoring the dry tropical forest ecosystem and improving the relationship between local residents and their surrounding environment through bioregional education.

<u>Dry Tropical Forest Ecosystem Restoration</u>

The project needs to develop a more comprehensive seed collection strategy, and to propagate an ever wider variety of native forest and fruit species. In the past 12 months, the greenhouse produced 49 different species, but there are an estimated 180 different tree species that are native to the dry tropical forest.

Diversity of propagated species is particularly relevant to native forest species which are threatened by excessive logging and may even face extinction. Many of these species are not even registered as threatened or endangered due to the lack of research, investigations, and scientific knowledge of this forest ecosystem. Due to growing up in the country-side and his previous career as a logger, Planet Drum Field Foreman, Orlando Arias, has a wealth of dry tropical forest knowledge and suspects that the following species could be facing extinction, even though they are not registered as such: Berrugo, Lengua de Vaca, Cacique, Chaschajo, Tillo, Jigua, Bruja Blanca/Negra, Bálsamo, Guayavo de Monte, Moral Fino, Moral Bobo, Seca, Paipai, Jaile, and Amarillo, among others. Additionally, there are indigenous fruit-producing trees that face extinction due to low marketability, such as Marañon, Pumarosa, Nispero, Zapote, Mamey Miparo, and Cauge. Finally, many residents request specific fruit species which we don't have in sufficient quantities. Increasing seed collection capacity would help bridge these gaps.

Creating satellite greenhouses in the neighbourhoods, schools, and communities that currently participate the most actively and/or require the most immediate forest ecosystem restoration would significantly increase community integration at strategic locations. The implementation of more greenhouses would encourage residents to become even more involved and responsible for the restoration of their environment.

Bioregional Education Expansion

In terms of education, it is important to continue developing educational materials for school children and to strengthen collaboration with regional schools. A classroom-based bioregional educational programme could be developed that would accompany greenhouse and field workshops. By complementing revegetation activities with a classroom program, students would gain a more complete perspective of how to restore the ecosystem and how to live more harmoniously with nature.

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?

The Rufford logo is prominently displayed on the "Ecuador Projects" section of the Planet Drum website, which was redesigned in early 2015. The logo is also featured in the educational materials that are distributed locally (The Revegetation Manual and the Eco-City Flyer).

Credit is given to the Rufford Foundation for funding the project in conversations, presentations, and workshops with national and international volunteers, students, and visitors.

The Rufford Foundation logo will be used in all promotional materials for Mr Plager-Unger's presentation of the Project in San Francisco, California, USA on June 10th 2015 and Rufford Foundation will be thanked and credited during the event.

11. Any other comments?

Planet Drum would like to take this opportunity to graciously thank Rufford Small Grants Foundation for its continued support of the Dry Tropical Forest Revegetation Project on behalf of all of its beneficiaries. Thousands of local residents, landowners, students, and international volunteers and students have been involved in the project either as recipients of native fruit-bearing and forest trees, as volunteers doing revegetation work, or as students in educational campaigns. Rufford funding has been a major factor in Planet Drum's ability to steadily expand the impact of the project.

Many of the local high school students who have been involved with the project are now in universities working on environmental and ecological degrees. International volunteers, interns, and students return to their home countries to share their experiences and create initiatives related to the grass-roots, bioregional activities in which they participated. As the project's results permeate through the Ecuadorian and international community, Planet Drum continues to improve its local strategies in order to efficiently execute its core principles of ecological restoration and bioregional education.