Final Project Evaluation Report

Your Details	
Full Name	Dante Ernesto Loto
Project Title	Monitoring and establishment of new areas for the forest restoration studies along gradient of land-uses in Dry Chaco region
Application ID	26107-1
Grant Amount	£ 4,985
Email Address	danteloto87@gmail.com
Date of this Report	1st November 2019

1. 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
Establishment of forest permanent plots			X	We installed 20 new forest permanent plots, covering more study area to the south of Chaco region.
Re-measure forest permanent plots installed 10 years ago		X		We re-measured 39 of 50 installed permanent forest plots. Field accessibility and land tenure context hindered the logistic to re-measure remaining plots.
Characterization of disturbances on forest plots		X		We continue analysing the field data of disturbance with satellite methodology. The new approach needs field and spectral training.

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

Our study area contains many land tenure situations. Currently, land tenures have hardened their property probably due to changing context in Argentine Chaco region. Thus, aboriginal communities, national parks, and "puesto" enhanced their visit protocols. Many times, to visit permanent plots in our study area, I used more days to access. It was explained more clearly my fieldwork and objectives to the people of these situations.

Other difficulties in the fieldwork was the accessibility to the permanent plots. The advance of agriculture in Chaco mobilise heavy machines and destroys many roads. Therefore, sites such as "La fidelidad" (Formosa Province), or "Santa Victoria Este" (Salta province) have impassable roads, even to 4 x 4 vehicles. The solutions to destroyed roads depends on vial community and require months for. This provoked that I decided re measure some permanent plots, and others no.

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

1. New 20 installed permanent forest plots in Chaco region rising to 70 forest plots with available information. This generates a data set with more information in the south of our study area. Also, it includes new forest cover and disturbance conditions. It establishes the baseline about how are and what quality have the Argentine forests Chaco.

2. Partial remeasurement of permanent plots. We highlight this outcome because collected tree growth data of >15 native species of Chaco region. It will allow distinguishing dynamics of forest. With the data set collected, we

identify the Chaco forest areas with more or less growth. With this, also monitoring the areas with forest recovery.

3. Disturbance information in permanent plots. We have forest logging, livestock grazing, and fire data collected in the field. The methodology is novel and will develop. Because, satellite analysis is the other complement in this outcome. However, we will allow to learn the effects on native forests and their role during forest recovery.

4. Briefly describe the involvement of local communities and how they have benefited from the project.

Currently, 26.331 national law establishes a minimum budget of environment protection for richness, restoration, conservation and management of native forest. In the study area there are aboriginal communities, "puesto" of local people and national parks. Their works and incomes depend on of many activities coming from forests and surroundings. The national law attempts to regularise and sort with a minimum incentive to forest conservation and forest management principally. It implies activities such as threatened species, forest cover retention, wood extraction, market of non-forests products, etc. At first, to access to national budget, the communities need a report of forest state. We facilitate our forest inventory to the interested communities from the permanent plots installed in their field. During the travel, certain aboriginal and "puesto" communities showed participation to generate more data and to enhance their own forest inventories.

5. Are there any plans to continue this work?

This work will continue with sporadic trips for check certain permanent plots. The activities will be during the day principally. It will concentrate in non-measured remaining forest plots.

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

I hope to publish the results in scientific journals. I sent a manuscript under revision "Above-ground biomass stock in Dry Chaco forests: Diversity and structure analysis" to *Forest Ecology and Management Journal.* This is a baseline description and the first academic mention of 70 permanent plots in Chaco region. Also, in April 2020 I'm invited to local conferences, principally national parks. I plan to communicate the importance of permanent plots to evaluate forest dynamics. Finally, the inventory data set is open access to local communities. I will participate in their projects from forest structure information.

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

Rufford Foundation grant was used during 1st October 2018 to 25 October 2019 for 12 months. The real duration of project involves more than 12 months, principally due to difficulties of the fieldwork and the outcomes proposed. However, the principal objectives proposed in this Rufford Small Grant were completed. It allowed me to

have field units to monitoring forests in future projects. Also, to dispose of equipment to continue with the activities.

8. Budget: 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. It is important that you retain the management accounts and all paid invoices relating to the project for at least 2 years as these may be required for inspection at our discretion.

Item	Budgeted Amount	Actual Amount	Difference	Comments
Subsistence payments: *Camping*	100	190	+90	New camping elements for assistants
Subsistence payments: *Lodging*	235	260	+25	Places with few offer
Subsistence payments: *Sites access*	200	100	-100	Easy logistic
Subsistence payments: *Field assistants' salaries*	300	200	-100	Few assistants
Food and field equipment: *Forestry instrument*	400	300	-100	Remaining instruments covered with other sources
Food and field equipment: *Tools and clothing*	100	100		
Food and field equipment: *Food*	200	250	+50	More days used
Institutional rental vehicle:	1500	2000	+500	Rental and maintenance after the trips
Fuel to southern study area:	350	450	+100	More kilometers used to cover all southern study area
Fuel to eastern study area:	800	550	-250	No access road in certain places
Fuel to western study area:	800	550	-250	No access road in certain places
Communications		35	+35	Not contemplated
Total	**4,985**	**4,985**		**The exchange rate of £ to $ in Argentina was 36.5 in 01/10/2018**

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

The installed permanent plots are a valuable data set in the study area. It covered a huge geographical gap in the Chaco forests. I believe that with outcomes coming

from analysis and the new disturbance approach might have greats impacts. The next step will be to define forest recovery criteria in Chaco region. Moreover, monitoring the forests of permanents plots with an enhanced methodology, with lower cost and realised by local communities.

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

Rufford Foundation logo was used in Wichi and Toba communities to link me with the activities in the project. "Puesto" people also have the contact with a presentation card and Rufford Small Grant information to monitoring forest. Academic communications that I prepared such as "Chaco forest dynamic from permanent plots" conference and reports have a Rufford Foundation logo and Institutional affiliation. Also, the prepared manuscripts have Rufford Foundation acknowledged section.

11. Please provide a full list of all the members of your team and briefly what was their role in the project.

Dr. Ignacio Gasparri: Assessor of experiences in the study area

Dr. Priscilla Powell: Collaborator in satellite analysis that continue in developed

Micaela Starck (student): Field assistant.

Walter Banegas (student): Field assistant.

12. Any other comments?

I'm thankful to Rufford Foundation in my RSG to support the project Monitoring and establishment of new areas for the forest restoration studies along gradient of land-uses in Dry Chaco region. This a great achieve to research the Chaco forests and value it. Also, a huge opportunity to my career in environment and forest research.