Final Evaluation Report

Your Details	
Full Name	Paola Alberti
Project Title	Addressing of the impact of the sugar industry on rivers of Tucuman Province as a socio-ecological problem.
Application ID	27543-1
Grant Amount	£5000
Email Address	palberti78@gmail.com
Date of this Report	June 2021

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
1. Social Evaluation				
1.1 Local community surveys				We carried out 401 surveys in four localities from August 2019 to December 2019 to understand the perceptions and opinions about threats to and benefits of rivers, and social relationship with these ecosystems.
1.2 Social database updated				An updated database was created with the uses, perceptions, opinions and motivations that people have about the local rivers that flow through four localities associated with the sugar industry.
2. Ecological Evaluation				
2.1. Field trips				The physico-chemical and biotic data collection was carried out in four rivers of four localities located in the south of Tucuman, each associated with the sugar industry during October 2019. This objective was partially completed because we were only able to collect data from one period (harvest- or "*zafra*"-), then the Covid-19 pandemic started (March 2020), and we could not return to the field.
2.2. Macroinvertebrate's identification				The identification of biotic samples (benthic macro-invertebrates) from the harvest season was completed in the laboratory. However, since it was not possible to collect samples from inter-harvest ("*interzafra*") season, the identification of macro-invertebrates for that time has not yet been carried out.
3. Socio-ecological Integration				Although we have results from the social evaluation obtained through the surveys conducted with the

				local community, we could not obtain all the ecological results due to the COVID-19 pandemic. Therefore, the socio-ecological integration has not yet been completed.
4. Scientific manuscript				We are currently working on a manuscript on social perceptions about rivers in Tucuman, Argentina, with the data obtained in the surveys.
5. Argentine Ecology Meeting presentation				The Argentine Ecology Meeting (initially planned for July 2020) was reprogrammed for August 2021. We will present there the most important results about social perceptions and motivations on local rivers.

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

There were no unforeseen events during 2019, and it was possible to carry out the design, development and application of surveys of the community in the four chosen study sites. Physico-chemical and biotic samples were also collected in the study rivers during the harvest season, for later laboratory analysis. However, in March 2020 the COVID-19 pandemic arrived in Argentina, and a total lockdown was decreed. Therefore, the other activities that we had planned for that year were affected and have not yet been completed.

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

- Creation of the first database on community perceptions and opinions about local rivers in Tucuman Province.

- Knowledge about the benefits and impacts that rivers contribute to people as well as information about the uses that the community makes of these environments. This information is valuable since it takes into account the diversity of values perceived by the community and its relationship with these environments, which provides opportunities for more informed watershed management by decision makers, and their conservation in the medium and long term.

- Creation of an interdisciplinary group of advanced students from different university careers capable of carrying out specific surveys in different places.

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

Although the project is not completely finished, the four localities have benefited from their communities voicing their opinions on these issues through the surveys. This allows new opportunities for engagement based on these findings, which are derived from social perceptions and not just 'expert' opinion of biologists. The experience also provides the team from IBN and collaborators a platform to further engage community members directly (e.g., participatory workshops) after the pandemic conditions abate.

5. **Are there any plans to continue this work?**

There will be continuation of this work on individual and institutional levels. Paola Alberti will continue to conduct her PhD on this topic, and she also plans to develop her line of inquiry and action via future aspects of her career (e.g., postdoc). In the short-term, there will also be new field work to take remaining physico-chemical and biotic samples for the inter-harvest season, and thus be able to analyse and compare the samples with the results obtained for the harvest season and with social data.

Also, as mentioned before, the idea is to continue working with the community in workshops and talks to propose joint solutions with specialists that can contribute to just, effective and equitable solutions to socio-ecological problems and social conflicts.

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

These results will be shared through publications in academic journals (e.g., currently we are working on a manuscript of social perceptions about impacted rivers in the province of Tucuman, Argentina). In addition, the most important results of my project will be shared though virtual Argentine Ecology Meeting in August 2021. At the same time, IBN has been developing MOUs with government agencies, such as the provincial health authorities, to better link research and decision-making outcomes. At present all of these initiatives are on 'pause' due to the pandemic.

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

The Rufford Foundation grant was used during the period May 2019 – May 2021. Currently, this project is longer than the one featured at Rufford. Despite this, the planned activities would have been carried out within two years, if the pandemic had not arrived, which made it impossible to continue several of the planned activities in the original timeline. However, these remaining items will be carried out in 2021-2022, pending changes in the public health situation.

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
Field supplies	530	530		
GPS Garmin	500	500		
Lab analysis	105	500	+395	In the last years, Argentina is undergoing a high inflation period for which prices change in a daily basis.
Food	300	500	+200	
Posters and scientific events	600	600		
Audio recorder	314	0	-314	The surveys were designed on paper and were conducted face-to-face without the need for an audio recorder
Statistic software	40	40		
Santa Fe-Tucuman Road trip (x1)	547	100	-447	
Tucumán-Ushuaia y Ushuaia-Tucumán trip + accommodation	1000	1000		
Books and other materials fields	50	200	+150	As the surveys were on paper, more was spent on these inputs (e.g., block sheets, printer ink)
Tucuman-study area (fuel)	376	612	+236	
Catering	118	118		
Workshops and Coffee breaks	300	300		
Total	**4780**	**5000**	**220**	

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

I believe that one of the next important steps is to consolidate this first socio-ecological research project to provide new input for both academic and political decisions. These data and this experience will also be valuable to achieve more

active participation of local communities and industries present in that area (e.g., citrus, sugar, textile industries). This could result in a great benefit for the development measures that better manage and conserve the environment, communities and production. On the other hand, also it is important that we achieve effective communication of these results as they become available, reaching governmental entities involved in making decisions concerning the environment, especially in the watersheds.

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?

The Rufford Foundation logo was used in the poster presented in the Brazilian course: "*Sao Paulo School of advanced Science on Scenarios and Modelling on Biodiversity and Ecosystem services to support Human well-being*" in July 2019. In addition, the logo will be used in the presentation of the most important results of the project at the Argentine ecology Meeting in August 2021, and in the acknowledgements sections of the publications produced.

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

Project leader:

Lic. Paola Alberti

Scientific advisors:

Dr. Christopher Anderson (Socio-ecological issues)

Dr. Eduardo Dominguez (Ecological issues)

Dra. Lourdes Gultemirian (Chemical limnology)

Collaborators:

Mg. Sebastian Albanesi, Antonella Alberti, Patricia Lizarraga, Luciano Grosso, Maria Florencia Diaz & Julieta Salazar.

12. Any other comments?

This project could not have been developed without the support of The Rufford Foundation. We are grateful that this grant has helped to generate valuable information about perceptions, motivations and uses that community makes of the rivers and their relationship with these environments. This type of social assessment, together with ecological information, is essential for correct decision making and for an efficient application of public policies. In this way, it not only contributes to the conservation of the watersheds, but also to the life quality and human wellbeing.

Figure1. Physicochemical data collection in the Seco River from the harvest season.

Figure 2. Biotic samples collection in the Gastona River from the harvest season.