

Final Evaluation Report

Your Details	
Full Name	Barbara Rani Borges
Project Title	Microplastics in surface water of the Itupararanga Reservoir, an Environmental protection area (São Paulo – Brazil)
Application ID	32839-1
Date of this Report	23/08/2023

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
To analyse water samples from the Itupararanga Reservoir and identified microplastics particles and characterized according to size, colour and type and according to chemical nature of the polymers.				The Itupararanga reservoir showed contamination by microplastics at all sampled locations, with the sampling station near the dam demonstrating higher contamination levels when compared to all other points.
To investigate microplastic pollution levels in surface waters from the Itupararanga Reservoir and identify whether the environmental protection area is ensuring the quality and safety o				In general, we can state that the measures in place to safeguard the area are insufficient in preventing the infiltration of microplastics. Given the pollution levels recorded (an average of 0.04 ± 0.02 particles l ⁻¹), it can be deduced that these concentrations are lower than those observed in bodies of water situated outside of environmental protection areas. Nevertheless, there is a discernible upward trend in microplastic concentration over time. Consequently, the current levels may become worrisome when contemplating scenarios in the immediate future. It is worth noting that our study did not encompass an analysis of the local biota; nonetheless, based on previous studies from our group and based on scientific literature, we can reasonably infer that wildlife is ingesting these particles. Therefore, the environmental protection area appears to be effective but highly sensitive in the long term.
To promote awareness in local communities about the microplastic pollution in the region				We have dispatched notifications to representatives of local NGOs as well as political leaders, apprising them of the discoveries from our study. Please

				find the content of the letter (translated to English) attached for your reference. (The original letters were sent in Portuguese, the official language of Brazil).
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2. Describe the three most important outcomes of your project.

The project successfully identified and documented the presence of microplastic contamination in the Itupararanga reservoir. This crucial finding highlights the environmental challenge faced by the area.

Also, the project revealed that the existing measures in place for protecting the area from microplastic pollution are insufficient. This realisation underscores the need for enhanced protection strategies and policies to safeguard the ecosystem effectively.

Finally, the project's findings suggest that while the environmental protection area demonstrates short-term effectiveness, it is highly sensitive to long-term threats, such as the increasing concentration of microplastics. This insight emphasises the importance of continued monitoring and proactive measures to ensure the area's long-term ecological health.

The most significant achievement of our work is undoubtedly the identification of microplastic contamination in the Itupararanga reservoir. This discovery not only raises awareness about the environmental challenges in the area but also serves as a foundation for future conservation efforts. It underscores the urgency of addressing microplastic pollution and emphasises the need for enhanced protective measures to ensure the long-term health of this vital ecosystem.

3. Explain any unforeseen difficulties that arose during the project and how these were tackled.

The main difficulty was the Covid-19 pandemic. Our awareness campaigns had to be postponed because face-to-face meetings were not allowed. Everything else was done following the safety protocols against COVID-19.

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

The local communities have gained a deeper understanding of the environmental challenges facing their area and the role they can play in addressing them.

Due to the pandemic issue, we could not have face to face interaction with the community members. But we communicate with stakeholders through online letters.

5. Are there any plans to continue this work?

Yes, there are. We intend to continue our work with microplastics in vulnerable areas and species.

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

In addition to informing local NGOs and political representatives as mentioned, we plan to share the results through scientific papers available in public repositories, seminars, and interviews.

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

Given that we have detected microplastics in all the samples collected from the reservoir, it is of paramount importance to ascertain whether these pollutants are directly harming the local biota. Additionally, we aim to evaluate the effectiveness of protected areas in safeguarding the biota from such threats. Furthermore, we intend to propose a new project to study the presence of microplastics and nano-plastics in vulnerable species of mammals. This extended research initiative will provide a more comprehensive understanding of the ecological impacts of microplastic pollution on aquatic ecosystems.

8. 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?

Yes, we used the Rufford Foundation logo in banners and presentations at conferences, and in the article we submitted.

9. Provide a full list of all the members of your team and their role in the project.

Bárbara Rani Borges (PI) – Principal responsible for the project, experimental design, sample collection, processing, and analysis, data dissemination.

Marcelo Pompêo – Sample collection, responsible for laboratory infrastructure, sample processing and analysis.

New members:

Lucas Gonçalves Queiroz - Sample collection, processing, and analysis.

10. Any other comments?

At the 2022 conference in Recife, project presentations took place, and my project received the honour of being awarded as the best presentation.







