

Final Evaluation Report

Your Details	
Full Name	Matheus Yuri Halmenschlager
Project Title	Can agroforest systems effectively harbour high diversities of key pollinators?
Application ID	28847-1
Date of this Report	May 2022

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
Observe the occurrence of euglossine bees in forest fragments and cacao plantations in southern Bahia				With the results of this project, we can assess about the occurrence of this group of bees in forest fragments and different cacao plantations in Bahia, especially regarding the abundance and richness of each landscape surveyed.
Assess if characters like landscape features and/or local vegetation structure are predictors of orchid bee diversity when compared with forest fragments.				Characters like forest and agroforest sites amount (or percentage) are yet to be compared with the richness and abundance of orchid bees in each landscape surveyed; the results are going to be discussed in the future manuscript.
Identify which specific characters of agroforest cacao systems and forest patches can favour the maintenance of richest bee communities.				Although features like tree counting and diameter at breast height were measured in the survey landscapes, the data analysis involving these features with the orchid bees sampled in the study are yet to be fully performed. These features will be presented and compared in the future manuscript.

2. Describe the three most important outcomes of your project.

a). We can assess the occurrence of orchid bee communities in agricultural and natural sites in the southern region of Bahia with more details, contributing with the knowledge about this group in one of the most important sites for preservation in the Brazilian Atlantic Forest.

b). Considering the results regarding the abundance and richness of orchid bees in the selected study sites, it is possible to reaffirm the importance of the maintenance of the most traditional methods of cocoa plantation for the preservation of local and the Atlantic Forest biodiversity.

c). Along with the agroforest cacao system, it is possible to stress more the urgent need and importance of maintaining the integrity of remaining Atlantic Forest patches, once analysed the composition and the richness of orchid bees in the fragments surveyed in this project.

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

The main difficulties of the project execution are directly related to Covid-19 pandemic; once the initial outbreak occurred at the field research period of the project, some incursions were delayed due to quarantine restrictions enforced by the state at that time.

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

The involvement of local communities in this project can be explained by the concession of access to different properties by local farmers, as well as the social projects promoted by the Applied Ecology Lab, as well as UESC and partner institutions.

5. Are there any plans to continue this work?

The work initiated with this project was one of the first initiatives of analyses by the Applied Ecology Lab regarding arthropods in agricultural and forest sites in the southern region of Bahia. This initiative will be continued with the inclusion of more insect and other arthropod groups to the ecological analyses, broadening the knowledge about the role of this group in the biodiversity conservation, as well as possible ecological services made by arthropods.

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

The results will be shared with the scientific community by a manuscript, to be sent to review and publication soon. And, in order to fulfil the social motivations of the project, the results are going to be incorporated in "Eco-nomia das cabruças" project, as well as other scientific divulgations and citizen science incentive actions, intending to emphasise the importance of the agroforest systems to preserve the local biodiversity not only in a scientific and natural ways, but also in social and economic ones.

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

The most important next steps can be divided in two fronts: the scientific and the social ones. In the scientific wing, as already said before, the project gives the possibility of making more studies about other insect and arthropod groups; this is important to assess about two of the most neglected, but also essential, ecosystem main actors. Regarding the social issues to be addressed, the performing of this project can serve as an incentive to know more about the ecological processes that occurs in forest and agroforest sites in a smaller scale, thus giving the importance of conservation of different fragments in the region, to sustain the economy and the welfare of the people of southern Bahia region.

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?

No publicity was done at the moment of the execution of the project, but it is planned to use the Foundation's name in the future manuscript and other publications, when demanded.

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

Matheus Yuri Halmenschlager, Universidade Estadual de Santa Cruz (UESC), MSc. candidate – Responsible for applying of methodology, mounting of specimens, first taxonomic ID of bees, and elaboration of reports.

Dr. José Carlos Morante-Filho, Universidade Estadual de Santa Cruz (UESC), tutor – Main advisor of the project, made reviews of reports, gave academic support and field monitoring.

Dr. Maíra Benchimol, Universidade Estadual de Santa Cruz (UESC), co-tutor – Advisor of the project, made reviews of reports and gave academic support.

Dr. Danielle Storck-Tonon, Universidade do Estado do Mato Grosso (UNEMAT), co-tutor and advisor – Designing of the methodology used in this project, especially the collecting method; taxonomy revision of the specimens collected, and determination of sending of some mounted specimens to analysis by other professionals.

Sueli Damasceno, Universidade Estadual de Santa Cruz (UESC) - Field incursions and transportation support.

Júlia Cabral, Universidade Estadual de Santa Cruz (UESC) - Field incursions support.

10. Any other comments?

We really appreciate the support and trust from The Rufford Foundation, and we expect to have more detailed results and publications soon.