

Project Update: November 2022

Until now, I declare that we have fulfilled one third of the project time and one third of my working plan. Regarding the organisation of spatial data, we have defined the study cover regions and the experiment setup (including the bee release spots in the landscape). The pilot experiments were essential, as they showed some methodological changes that were critical to ensure the statistical relevance of the survey. The first phase of the field data collection is currently being held. Data obtained with the pilot experiments are currently being organised and analysed in an original research article, which is scheduled for publication by the beginning of next semester.

Year	2022												2023												2024											
Semester	1°						2°						1°						2°						1°						2°					
Month	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
Bibliographic survey	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Pilot Experiments																																				
Experiment setup																																				
- Selection of mellonaries	x	x	x																																	
- Nest monitoring				x	x	x	x	x																												
Field data collection																																				
- Bee release									x		x				x																					
- Honev collection															x																					
Collection and organization of vehicle flow data									x	x	x				x																					
Organization of spatial data																																				
- Definition of study cover regions	x	x																																		
- Vectorization of cover regions			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
Analysis																																				
- Honev analysis															x	x	x	x																		
- Data analysis																		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
Presentation at conferences																																				
- Presentation at conferences															x																					
Writing and submission of articles															x	x	x	x																		
- Writing and submission of articles															x	x	x	x																		
Qualification and Thesis																																				
- Thesis writing															x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
- Qualification exam																																				
- Thesis defense																																				
Production of publicity material (booklets and folders)																																				
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Conducting workshops																																				
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Objectives:

- Pilot experiments – Fully achieved.
- Experiment setup – Fully achieved.
- Field data collection (1st Phase) – Partially achieved - Delayed due to external difficulties.
- Organisation of spatial data - Fully achieved.
- Presentation at conferences - Fully achieved.

Difficulties:

Field data collection is taking a little more time than we foresaw due to the COVID 19 difficulties in contacting and visiting people and because of atypical weather conditions (rain). However, we are still on schedule and the unforeseen events experienced, despite being unscheduled, were expected adversities. We are adapting the agenda as possible, and we guarantee that all steps will be fulfilled.

Outcomes so far:

So far, we found that: 1) bees are able to return to the nests after being released far from their hives in an urban environment, 2) to better sample the landscape representativity, it is important to release fewer bees in more disperse spots than more bees in less spots, and 3) apparently, bees take longer times to return to the hives when there is a larger proportion of vegetation land cover.

Best achievement:

Apparently, bees take longer times to return to the hives when there is a larger proportion of vegetation land cover.

Community involvement:

The project's partner beekeepers were very happy and excited to be able to participate. We are exchanging very rich experiences both regarding the maintenance and care of bees in meliponary, as well as the biology and ecology of the species.

Sharing results:

The results obtained will be published in scientific journals and presented in congresses and meetings. The products will be made available in pdf files for public management entities, to ensure that the results will not be limited only to the scientific community, but will be effectively converted to the population in the form of public policies. To disseminate the importance of stingless bees, meliponiculture and the conservation of urban biodiversity, results will also be converted into environmental education booklets in simplified and illustrated language, to be distributed to schools, NGOs, and newspapers.

Timescale:

So far, we have used the budget for monitoring and analysis equipment: Notebook and Webcam. On a next phase, we are going to acquire items for the laboratory honey analysis.

Budget:

We started the project with the value converted to the Brazilian currency of R\$ 30,215.25. Some adaptations were made. We decided to use a higher part of the budget to guarantee better computer and webcam, as they are key items to the data collection and analysis. As we got volunteer beekeepers, we didn't need to buy new mandaçaia nests, and the external HD and gas were also removed from the list so we can keep close to our budget limits.

Next steps:

Finish and publish the first original article, continue the field data collection, and start the vectorisation of the cover regions.

Use of logo:

Yes, I used the logo in the production of maps for the project and the foundation will be thanked in the acknowledgements section of the scientific article.

Your team:

- MSc Mariana Victorino Nicolosi Arena – Doctorate student and head of the project. Prof. Dr. Isabel Alves-dos-Santos – Supervisor professor.
- Prof. Dr. Rogério Hartung Toppa – Co-supervisor professor. Prof. Dr. Marcos Roberto Martines – Statistical analyst.

Comments:

I would like to thank The Rufford Foundation again for their trust and support for our project. I would especially like to thank Trust Administrator Jane Raymond for all the assistance she has given me since the beginning of the process.