

## Final Evaluation Report

---

Your Details	
<b>Full Name</b>	Guelmy Anilú Chan Mutul
<b>Project Title</b>	Promote the conservation of meliponicultures knowledge and stingless bees of Tenosique, Tabasco, Mexico
<b>Application ID</b>	37345-1
<b>Date of this Report</b>	25 September 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
Improve the habitat of stingless bees doing a complex project, combining the various elements that integrate the meliponicultures, such as vegetation and local knowledge.				<p>A level of investigation, the violence context has been an important factor that has influenced in the realisation of project.</p> <p>In the community there are situations of violence by criminal groups. This context prevented people from regularly participating in project activities.</p> <p>But I was always in contact with meliponiculturists, and the activities were scheduled according to appropriate and safe times for everyone.</p>
To Learn about the local vegetation that <i>Melipona beecheii</i> is using to promote its integration into local meliponaries.			x	<p>Environmental conditions influence the flowering period. Therefore, it has been modified compared to previous years.</p> <p>The diversity of bees are shown during the project. More bees will be seen in the local flowering than <i>Melipona beecheii</i>.</p>
To perform workshops that address the main problems surrounding the cultivation of meliponinos.			x	<p>The COVID and situations of violence meant that the workshops could not be held on consecutive dates. However, they were scheduled according to people's availability.</p>

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

**a) Listado de flora melífera para *Melipona beecheii* y trigoniformes**

During August 2022 to July 2023, a visit was made to the meliponaries and the main transects that contain large spaces in the community. In addition, interviews were carried out with meliponiculturists.

The people identify 61 vegetation species where *Melipona beecheii* feeds. The most mentioned are lemon (*Citrus x limon*), cocoite (*Gliricidia sepium*), anona (*Annona muricata*), cedar (*Cedrela odorata*), mango (*Mangifera indica*), guaya (*Melicoccus bijugatus*) and *Melicoccus oliviformis*.

In the visits, we observe seven species of meliponines: *Melipona beecheii*, *Melipona solani*, *Nannotrigona perilampoides*, *Trigona fulviventris*, *Tetragonisca angustula*, *Trigona corvina* and *Trigona fuscipennis*.

However, the main species where we observe that *M. beecheii* was foraged are: gold rain (*Cassia fistula*), annatto (*Bixa orellana*), Huaya (*Melicoccus oliviformis*) and sleepyhead (*Mimosa pudica*).

The stingless bees that have main presence in the flowers of meliponarios are: *Trigona fulviventris*, *Nannotrigona perilampoides* and *Trigona fuscipennis*.

*Trigona fulviventris* is the stingless bee that is most present in meliponaries, it takes advantage of herbaceous and shrubby plants.

However, the main use of this resource in meliponaries is not for bees, but rather they fulfill other functions such as medicinal, nutritional and ornamental.

Some grasses are even pruned from time to time because they are considered unnecessary, or they give the land a dirty appearance. Some cases where this trigoniforme is present are in Altamisa (*Parthenium hysterophorus*), a common herb in home gardens, fruit bushes such as Noni (*Morinda citrifolia*) and medicinal bushes such as coralillo (*Hamelia patens*).

#### **b) Talleres en torno al cultivo de *Melipona beecheii***

From May 2022 to September 2023, workshops focused on the problems identified by meliponiculturists. The main topics addressed were:

- Problemas y retos de las meliponiculturas: Esta sesión se reflexionó en las dificultades que tienen los meliponicultores en su labor. Todo mediante un diálogo.
- Design of the work plan: Sessions in which we talk about the topics that they would like to address in other workshops.
- General features of meliponiculturas: In this session we talk about the cultural and biological importance of bees. They shared their story of how they met bees and why they would like to have them in the future.
- Harvesting from trunk and box hives: In this session, they shared how they harvest honey in trunk hives. In addition, they were taught how to do it in the boxes.
- Honey vegetation: in this session we talk about the importance of bees and vegetation. Changes in the landscape, practices that harm bees. They talked about the main plants that we have found in the field and their experiences.
- Uses of honey: People shared the main uses they give to bees and honey. If there is a sale or what medicinal remedies, they make.

- Bee Day: This day was not a workshop. It was an exhibition for the community and local students, where meliponiculturists and academics presented the work carried out in meliponiculture and beekeeping.
- Making honey soaps: They were taught how to make honey soaps. They integrated the community's local medicinal plants. They shared what they use these plants for and what conditions they could be used for.
- Making bee attractant: in this session they were taught how to make the attractant to make bee traps. This would help prevent people from cutting down trees to get wild nests.
- Preparation of medicinal syrup: people commented that they would like to learn how to make syrup so they can consume it with their family or sell it in the future. Therefore, a session was held to make this product, and combine it with local plants.
- Evaluation: people reflected on what they learned during the year of field work.

**c) Dialogue between the different meliponiculturists present in the community.**

Although the work was done in a small community, the people did not know each other. When asked if they knew other people who had the same bees, they said no. From the meetings, people learned and shared their knowledge about bees. This helped them share strategies for caring for their bees.

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

We had two main problems in the execution of the work, which were administrative and security.

In the first point, the institution that received the money placed many limitations on being able to use the money and purchase materials. That delayed the purchase of some equipment we needed during fieldwork. The foundation was requested to change this item to a scholarship so that the equipment could be purchased without limitations.

In the case of security, the community is far from the municipal seat, so the police do not respond as quickly to any situation. In recent months there have been situations of violence and extortion against families in the community, so it was not possible to attend regularly.

At the same time, the pandemic caused people to get sick and some workshops to be delayed.

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

The meliponiculturists were the main actors in the design of workshops, since they reflected on the main problems. Then, they designed the work plan and chose the topics they wanted to address in the workshops.

They were accompanied in processes such as harvesting and dividing hives, since they were interested in increasing their hives or extracting honey to use in their homes.

At the same time, all the information that was obtained was with the intention that they could apply it in their meliponaries. Which was done in each session of the workshops.

In the case of the by-product production workshops, the materials were divided among each of the participants.

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

There is an interest in continuing to work with the environmental part where meliponicultures are carried out. Considering doing honey analysis to know the species that bees use and making a dissemination book that is distributed among meliponiculturists.

In the case of meliponiculture in general, it would be good to continue working with meliponiculturists and continue supporting them in their work. Learn more about them so they can have their bees for many years to come. Perhaps in the future I can create a community meliponary where the entire community can interact with the bees and learn about them and the environment.

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

The results of this project will be shared with the scientific community through conferences and journal publications. Currently, a document was sent to a Mexican journal and the second, which considers the vegetation part, is intended to be submitted to a journal in November 2023.

In addition, we have participated in national and international conferences, where we have presented the results of this project. These are:

- VII Latin American Congress of Ethnobiology and XII Mexican Congress of Ethnobiology in Tlaxcala, Mexico, held on 27 October 2022 with conferences "Bees and flowers: relationship between traditional medicine and *Melipona beecheii* in Redención del Campesino, Tenosique, Tabasco" and "An approach the knowledges of the meliponicultures of Redención del Campesino, Tenosique, Tabasco".

- PreCongress AMER (Mexican Association of Rural Studies A.C). The rural territories of the South-Southeast region of Mexico: resistences y adaptations, October 28, 2022. Conference “Local reconfigurations? Knowledge of the meliponicultures of Redención del Campesino, Tenosique, Tabasco”.
- VIII Colloquium National Autonomous University of Mexico in the Peninsula. Visions and imaginaries around the Yucatan Peninsula: representations, practices, and discourses about and from the region, November 16, 2022. Merida, Yucatan, Mexico. Conference “Mayan meliponicultures of the Yucatan Peninsula, as resistance to the capitalist vision.”
- First Forestal Congress. China Institute of Technology, Campeche, Mexico. November 18, 2022. Conference “Meliponiculture for the future: Tabasco experiences around to the relationship between of vegetation and meliponines”.
- 14 National Congress AMER The rural territories of Mexico in suspense. Contradictions and processes facing the Capitalocene, June 18, 2023, Saltillo, Coahuila. Conference “Tabasco meliponicultures: guardians of knowledge and the bees. A vision from ecofeminism”.
- First International Colloquium about Gender and Sexuality in the Mayan area history, UNAM, September 19, 2023. Conference “Guardians of knowledge and bees: Mayan women dedicated to the care of native bees”.

In addition, posters have been made and given to people in the community.

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

We have recently concluded the workshops with the meliponiculturists. However, I consider that a monitoring project could be necessary to see the stability of the hives, possible new meliponiculturists or if they have integrated new species of meliponines into their home gardens.

To evaluate progress and see what problems have changed and check if there is new species vegetation needed by bees.

## **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, in the conferences in which I participated, the Rufford logo was used in the presentations.

These were also placed on posters that were distributed in the community, where information about the vegetation and meliponiculture of Tabasco was presented.

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

En el proyecto han participado varias personas. El equipo de investigación conformado por 4 personas:

**Guelmy Anilú Chan Mutul.** She is the main person who was in the fieldwork conducting interviews, collecting vegetation and working in the communities.

**Miriam Aldasoro Maya.** Main labor advisor. Support in project design, advice in field work.

**Amada Rubio Herrera.** Support in project design and advice in field work. He contributed to the progress of the project and the methodological design of the social part.

**Luciana Porter Bolland.** Support in the design of the project, advice on fieldwork and the vegetation part.

**Remy Vandame.** Support in project design, advice on field work.

The main members of this project are the meliponiculturists, who designed the work and shared their knowledge to improve the context of the bees.

They are:

LOCALITY	NAME/NAMES
REDENCIÓN DEL CAMPESINO	Angélica
	Gladys/ José Luis
	Antonio Palomares
	María Cruz
	Victoria/Rosendo Ramírez Gómez
	Vicente Ramírez Gómez
	Eduardo
	Ernesto
	Patricia
	Arturo Mendoza Gómez
	Fátima Rico
	Carmen
	Adrián
	Ermila
	Carmelo
	Miguel
Rosa	

Students from the Autonomous University of Tabasco also participated to support the collection of vegetation, each one used a botanical press and the appropriate material for their work.

On Bee Day they participated by explaining to students and meliponiculturists the importance of knowing the vegetation and taught people how to make botanical collections. The participants were Juan Carlos Contreras Monzón, Emilio Rubén Sánchez Méndez, Alicia Curiel Cornelio and José Guadalupe Barahona.

#### **10. Any other comments?**

The contribution they make to the projects of new researchers is very important. There are not always the resources to meet the objectives of the proposed projects, or not everyone wants to fund researchers with little experience.

Through this support we can contribute to the implementation of projects focused on nature conservation. In addition, this helps young people continue in the academy. Generates experience and empowerment in new generations.