Project Update: August 2022

I. Introduction

The stingless beekeeping is the activity that has many problems, such as environmental and social. To know the characteristics of stingless beekeeping' elements we are undertkaing interviews and collecting vegetation. This activity was undertaken from May to July 2022.

II. Fieldwork

We visited Redención del Campesino, Tenosique, Mexico. On May 11 2022 the team travelled to the community and recorded the knowledge of meliponiculturists: the management of bees, what species are cultivated, vegetation importance for bees, and problems in meliponicultures.

There have been two field trips per month, where we interviewed the meliponiculturists. We made a photographic record, audio record, and kept a field diary. On these visits we also collected vegetation. We asked people which flowers they have seen bees in, and we also observed which bees are present in the flowers of the home gardens.

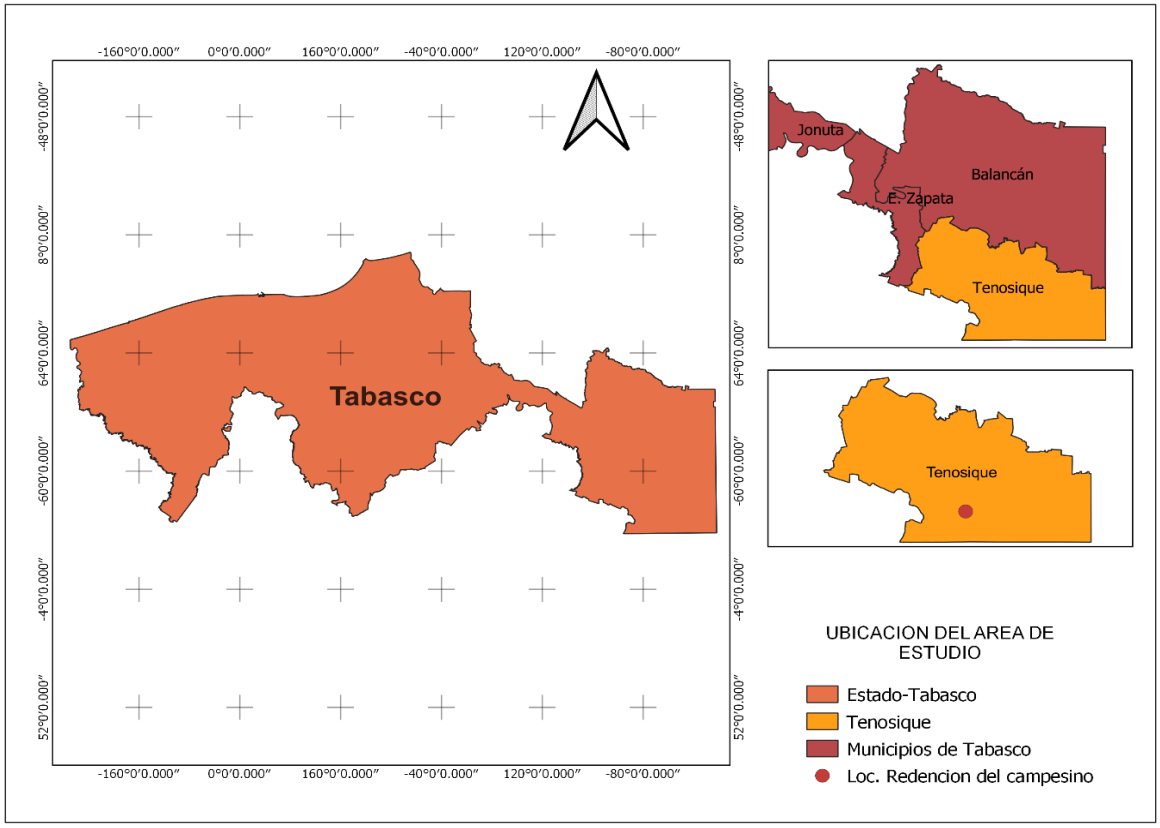

Image 1. Location of the Redención del campesino community, Tenosique, Tabasco, Mexico.

III. Previous results

The community has 16 meliponiculturists and they cultivate two species, *Melipona beecheii* and *Melipona solani*. They are considered the largest bees in the Meliponini family. Honey production is 1-6 litres per hive. Also, females and males have their hive for 1-20 years. (Table 1).

REGION	SUBREGIÓ	MUNICIPA	LOCALITY	#	MELIPONI CULTURIST	GENDER	SPECIE BEE	HIVE TYPE	# HIVES	HIVE [illegible]	USE HONEY	DIVISION
USUMACINTA	RIOS	TENOSIQUE	REDENCIÓN DEL CAMPESINO	**1**	Vicente	M	*Melipona beecheii*	Boxhive	1	1	Household consumption, sale	No
				2	Victoria/Rosendo	F and M	*Melipona beecheii*	Boxhive	2	5	Household consumption, sale	No
				3	Arturo	M	*Melipona beecheii*	Boxhive /Loghive	3	5	Household consumption	Yes
				4	María	F	*Melipona beecheii*	Loghive	2	40	Household consumption	No
				5	Antonio	M	*Melipona beecheii*	Loghive	3	7	Household consumption	No
				6	Angélica	F	*Melipona beecheii*	Boxhive	1	20	Household consumption, sale	Yes
				7	Fatima	F	*Melipona beecheii, M. solani*	Cajas/ Loghive	12	6	Sale	Yes
				8	Patricia/ Fernanda	F	*Melipona beecheii*	Boxhive	1	5	Household consumption	No
				9	Ermila	F	*Melipona beecheii*	Loghive	1	5	Household consumption, sale	No
				10	Carmen	F	*Melipona beecheii*	Loghive	1	8	Household consumption	No
				11	Marcelo	M	*Melipona beecheii*	Boxhive	1	1	Household consumption	No
				12	Ernesto	M	*Melipona beecheii*	Boxhive	1	5	Household consumption	No

				13	Adrián	M	*Melipona beecheii*	Loghive	1	15	Household consumption	No
				14	Eduardo	M	*Melipona beecheii*	Boxhive	1	8	Household consumption	No
				15	Gladys/ José Luis	F/ M	*Melipona beecheii*	Boxhive	1	5	Household consumption	No
				16	Miguel	M	*Melipona beecheii, M. solani*	Loghive, Boxhive	2	1	Has not harvested honey	No

Meliponiculturists have two hive types: long hive and box hive. These hives are in the garden of the house. Stingless bees don't sting, and meliponiculturists don't need to transport their hives long distances.

The meliponiculturists profile is typically women and men 29 to 80 years old. Their primary activities are farming and housewives. Eighty percent are tabasqueña people but there people of of other estates of Mexico, such as Campeche, Michoacan and Chiapas.

The condition of the meliponines hive is good. The meliponiculturists harvest them in April and May. Honey is the main product that people use. The wax and propolis are kept in the hive. The uses of honey are domestic consumption and sale. But meliponiculturists do not sell to other communities. At home, meliponiculturists use honey in traditional medicine. They make remedies to treat colds, deep wounds, Covid symptoms, eye problems and dermatological care. In addition, these remedies are prepared by mixing the flora of the home gardens and honey.

Inside the meliponario it is also a topic of interest as it allows us to know the vegetation that bees are foraging on. The general composition of the home gardens where the hives are located is diverse; it is made up of 56 families and 128 species. The most represented families were Fabaceae (14), Lamiaceae (7), Bignonaceae (5), Anacardiaceae (4), Malvaceae (4), Meliaceae (4), Moreaceae (4), Poaceae (4) and Rutaceae (6). Each of which have different uses: medicinal, ornamental and food.

This family garden is not only a space for the Melipona, but other native bees such as the *Trigona* are taking advantage of the available flowers. When we are visit the house, we have observed the presence of *Trigona fulviventris*, which is not cultivated.

Meliponiculturists note differences in preferences. Not all flowers have seen the presence of bees. They have observed the presence of bees in their home gardens, but do not belong to *Melipona* and they point out that these bees tend to travel further for resources unlike the *Trigonas* that take advantage of their ornamental flowers.

Image 2. Boxhive of Redención del Campesino, Tenosique, Tabasco, Mexico. © Guelmy Chan.

Image 3. *Trigona sp*. visit *Adonidia merrillii.* © Germain López Santiago.

Image 4. Interview to meliponiculturist Carmen. © Germain López Santiago.

Image 5. *Trigona fulviventris* foraging pomegranate flower (*Punica granatum*). © Germain López Santiago.

Image 6. *Melipona beecheii* work in the hive. ©Germain López Santiago.

Image 7. Guardian bee Melipona beecheii care the hive. © Germain López Santiago.

Image 8. Honey of *Melipona beecheii* harvested in April 2022. © Germain López Santiago.