Apiarian school for communities of the Maya Biosphere Reserve

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Project Rationale

EXECUTIVE SUMMARY

The center for apiarian teaching is a project designed to be executed in the department of Peten, Guatemala. The project consists of three phases for its implementation: pilot apiary, apiarian teaching center, and honey collection center. The first phase, the pilot apiary, has already begun in September of 2020 in the municipality of San Francisco, in Peten.

This project arises from the economic needs of the 18 indigenous communities living in the Maya Biosphere Reserve. The mentioned natural reserve consists of an area of 21, 602 km^2 in which it is prohibited any agricultural activity that disrupts the ecosystem. This prohibition results in the members of the indigenous communities going out of the reserve to obtain a source of income. As a result of such situation, one of the main objectives of the apiarian teaching center is to provide free-of-charge instruction to community leaders to establish apiaries inside the Maya Biosphere Reserve. Since apiaries would live harmoniously with the environment and provide an extra source of income to the communities living inside the reserve, this project results in an ideal way to positively impact the quality of life of the communities.

Regarding the handling and care of the beehives, they are relatively simple activities that do not require significant amounts of labor. This aspect results convenient to the communities and the project itself, since the hives could be handled/cared for by an instructor and an assistant. Thus, a minimum of 2 instructed people is required to operate each apiary. And in order to get them trained, the municipalities (local government) will be contacted to facilitate their transportation to the apiarian teaching center.

For phase 2, which is the establishing of the apiarian teaching center, a budget of $2,928.21 is needed. This money would be used primarily to buy personal protective equipment and working utensils needed to work with bees, which could then later be sold to the students for their own future use, contributing to the sustainability of the project. Moreover, as part of the next phase, the leaders would be provided with access to a honey collection center that results a key facility by providing a safe and reliable place in which they can store and sell the honey collected and honey-related products to later be sold and exported to European markets.

At present there is already a pilot apiary that consists of 38 beehives that have been worked since November of last year (2020). This apiary will make possible to provide practice material to the apiarian teaching center in the future. At the same time, the apiary has been and continues to grow as an extra source of income resulting from the selling of honey to local markets.

General Background

Peten is the largest department of Guatemala and has the largest forest area in the country. Within the department is the Maya Biosphere Reserve, which covers an area of 21,602.04 km^2. This reserve was established to protect the fauna and flora, and, as a result, agricultural exploitations and commercial activities are mostly prohibited inside the reserve. Such measures are positive in regard to conservation efforts, but troublesome to the approximately 20 indigenous communities that live in the reserve. As a result, many of the members of these communities live under poverty or extreme poverty conditions as they struggle to find sources of income due to the restrictions on the kind of economic activities allowed within the reserve.

To address the mentioned situation, the project presents apiaries as an eco-friendly solution that is viable thanks to the existing high biodiversity in the zone. The reserve also provides favorable conditions to the development of apiaries that do not harm the ecosystem and that could become a source of income that would improve the quality of life of the communities.

Problem Description

The Maya Biosphere Reserve is a zone designated to the protection of the native fauna and flora. As a result, economic activities that disrupt the ecosystem are prohibited. This situation prevents the communities that live in the reserve from having access to traditional sources of income. Thus, these communities go to “buffer” zones in which only certain economical activities are allowed. And to get to such zones these communities need to travel long distances to access sources of income that allow them to bring food to their relatives.

The communities that live within the Maya Biosphere Reserve belong to the indigenous ethnic group, which, according to the National Institute of Statistics (INE), in the department of Peten 81.2% of them live under poverty conditions. Additionally, most of the children and adults of the mentioned zone are malnourished as a result of precarious food security.

Project Objectives

General Objective

To develop a model apiarian school to instruct community leaders on the management and making of apiarian products as an ecofriendly alternative that could be implemented inside the reserve to later on provide them with a market for their products, given that quality parameters are met.

Specific Objectives

- To establish a model apiary to function as a teaching center
- To design an apiarian course comprehensible to all public
- To better market honey extracted from virgin forests of the Maya Biosphere

Description and size of targeted population

The objective population for the apiarian school is the community leaders of the settlements that exist in the Maya Biosphere Reserve. Inside the reserve there are approximately 20 communities. However, the exact number of people living there is unknown since most of these settlements are geographically isolated and possess low importance in politics. It is estimated that a population of 2,300 people live in the mentioned region.

The objective people for the production of honey and its derivatives are those living in the settlements of the Maya Biosphere Reserve that are economically active and that do not present an allergic reaction to apitoxin, since health complications in such zones could be lethal.

Reach and Expected Impact of the Project

This project brings an alternative source of income to members of the communities located in the Maya Biosphere Reserve. Importantly, the apiary project is allowed inside the reserve since it does not negatively impact the existing flora and fauna. This is a key aspect since it means that members of the communities would have an alternative to traveling to far-away “buffer” zones as their only source of income, resulting in an access to a better quality of life and an increase in food security. And because of the predominance of subsistence agriculture, in which people rely on their harvests for their own consumption, having an additional income like that coming from the honey would give them additional financial means to safeguard their food safety.

It is expected to have an association between the leaders of the communities to incentivize the population to achieve the economic potential of honey production in the communities of the reserve. Additionally, the project wants to raise awareness in the communities about the possible byproducts of apiaries that could be used for local consumption and that possess medicinal properties that could be used as an alternative to or to complement traditional medicine.

The apiarian school is also meant to function as a honey collection center to later on expand and become a processing center of apiarian products. These multiple purposes would provide honey producers with a reliable physical market for their products, which would be of great value since producers are located in a zone in which commerce operates on a small scale. In the future, the apiarian school could become the first step towards obtaining “Fair Trade” certifications.

Project Innovation

Honey and other byproducts from the beehives are commonly known as commodities because they do not possess any kind of processing and/or differentiation. In the Maya Biosphere Reserve, the virgin forests provide a multifloral environment that allows for honey, pollen, propolis, and other byproducts to come from a source with ample variety of flowers. This variety nourishes the mentioned honey products with special characteristics that differentiate them in a good way from beehives located within monofloral crops. And the certifications that will be later on applied for will allow producers to access a market with better prices as a result of the “Fair Trade” and/or “Organic Honey Certification.”

The establishing of an apiarian school will allow for transmission of knowledge and technology to and between producers. By objective and technical instruction, the mentioned certifications will be more easily achieved thanks to following good agricultural practices. This proposal allows to reach the producer from the beginning of the production process and to provide guidance towards the agricultural practices that are necessary to become a certificated producer. Thus, the producers that are part of this project will enjoy more economic benefits compared to other producers of honey.

The apiarian school will teach them the variety of products that can be obtained from beehives and the multiple benefits that they can bring to human health. Finally, producers will be taught the processing that raw materials such as honey could undergo in order to add value to them.

<table>
<tr><th colspan="5">Mission</th></tr>
<tr><td colspan="5">To become an apiarian teaching center that could contribute to the economic development of the communities in the Maya Biosphere Reserve and an apiarian collection center for the purchase and export of honey under the USDA Organic and/or Fair-Trade certifications.</td></tr>
<tr><th>Key Partners</th><th>Key Activities</th><th>Value Proposal</th><th>Relationship with Clients</th><th>Segment of Clients</th></tr>
<tr><td>Municipalities located inside the zone of the Maya Biosphere Reserve (MBR)</td><td>Transportation logistics from the MBR to the apiarian teaching center</td><td>Apiarian school for the communities of the “Maya Biosphere Reserve</td><td>Direct relationship with an approach from the teaching of apiarian activities to posteriorly make them providers of raw materials</td><td>Community leaders inside the Maya Biosphere Reserve</td></tr>
<tr><td>Community leaders inside the MBR</td><td>Production of didactic material about apiarian activities for people with low/no schooling</td><td>Fair trade and USDA ORGANIC certificates</td><td>Export of honey through European channels that are the ones who possess the most economic agreements in Guatemala (for honey)</td><td>Honey importers that look for Fair Trade and/or USDA ORGANIC certificates</td></tr>
<tr><td>Certificate issuers of organic honey and Fair Trade</td><td>Key Resources</td><td rowspan="3">Warehouse for bee products and exportation</td><td>Channels</td><td>Independent beekeepers that look for an apiarian teaching center</td></tr>
<tr><td rowspan="3"></td><td>Apiarian field materials</td><td>Municipal channels inside the MBR</td><td></td></tr>
<tr><td>Beehives of pilot plan</td><td>Advertising campaigns through COCODES (Community Development Councils)</td><td></td></tr>
<tr><td>Center for storage and packaging</td><td></td><td></td><td></td></tr>
<tr><th colspan="3">Costs Structure</th><th colspan="2">Income Influx</th></tr>
<tr><td>Transportation logistics of the students from the MBR to the apiarian teaching center.
Cost: $0, due to agreement with municipalities to incentivize development</td><td>Apiarian materials and tools for students and personnel of the apiarian teaching center</td><td>Infrastructure for center for storage and packaging of honey that meets requirements for exports</td><td>Learning course for independent producers/beekeepers</td><td>Export of honey provided by the producers, which are the community leaders after attending the apiarian teaching center</td></tr>
<tr><th colspan="5">Impact and Measurement</th></tr>
<tr><td colspan="3" rowspan="3">Approximately 20 communities that are located in the MBR without being able to perform agricultural exploitations because it is an environment protected zone. As a result, most members are in poverty or extreme poverty by not having fixed sources of income, which shows how the project would provide an alternative source of income that would improve their economic situation and life.</td><td colspan="2">Monitoring of number of beehives per beekeeper</td></tr>
<tr><td colspan="2">Supervision of delivery of honey and derivatives to the apiarian collection center</td></tr>
<tr><td colspan="2">To successfully complete the apiarian exploitation course</td></tr>
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