

MELIPONA BEECHEII, FARMLAND AND FOREST

Strategies for the construction of symbiotic systems of agriculture, bees and forests in Campeche State



Mennonites

Mayan beekeeper

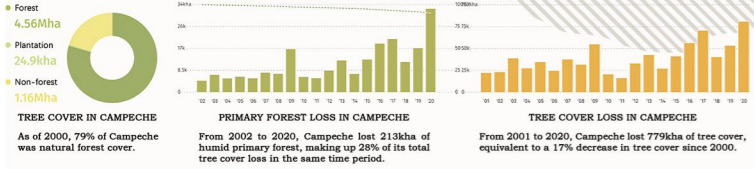
The long history of Mayan beekeeping

The Mayan beekeepers saw the native bees as a link to the spiritual world and a gift from the gods of honey, these bees are called *Melipona beecheii*, a stingless bee. It is said that the Maya have been keeping these bees for 3,000 years and their honey is a highly prized food and medicine for the Maya. The dense trees on the Yucatan Peninsula were originally a haven for the *Melipona beecheii*. But with the arrival of the Mennonites, the bee homes and bees are disappearing.



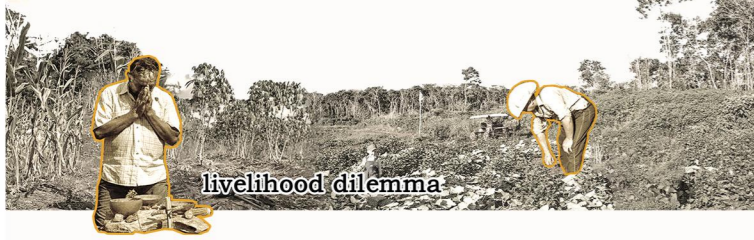
Forest

Farm

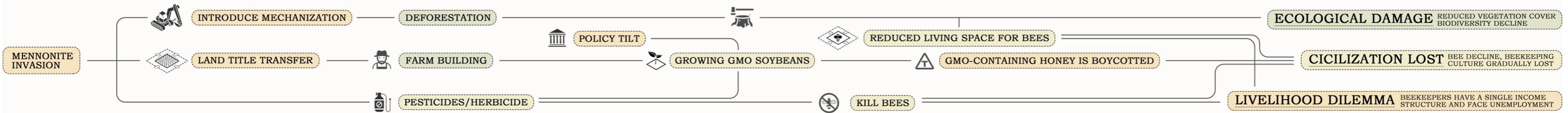
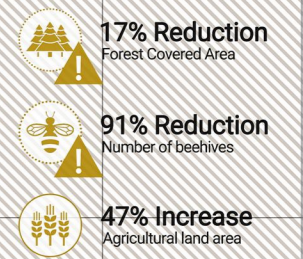
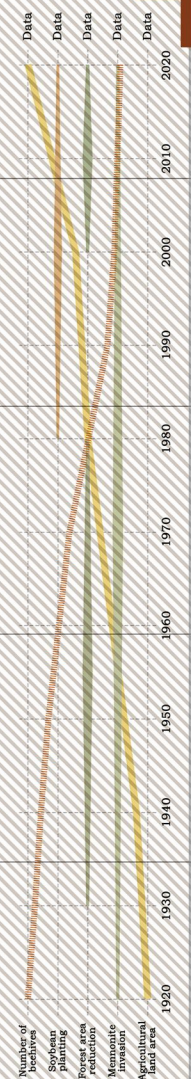
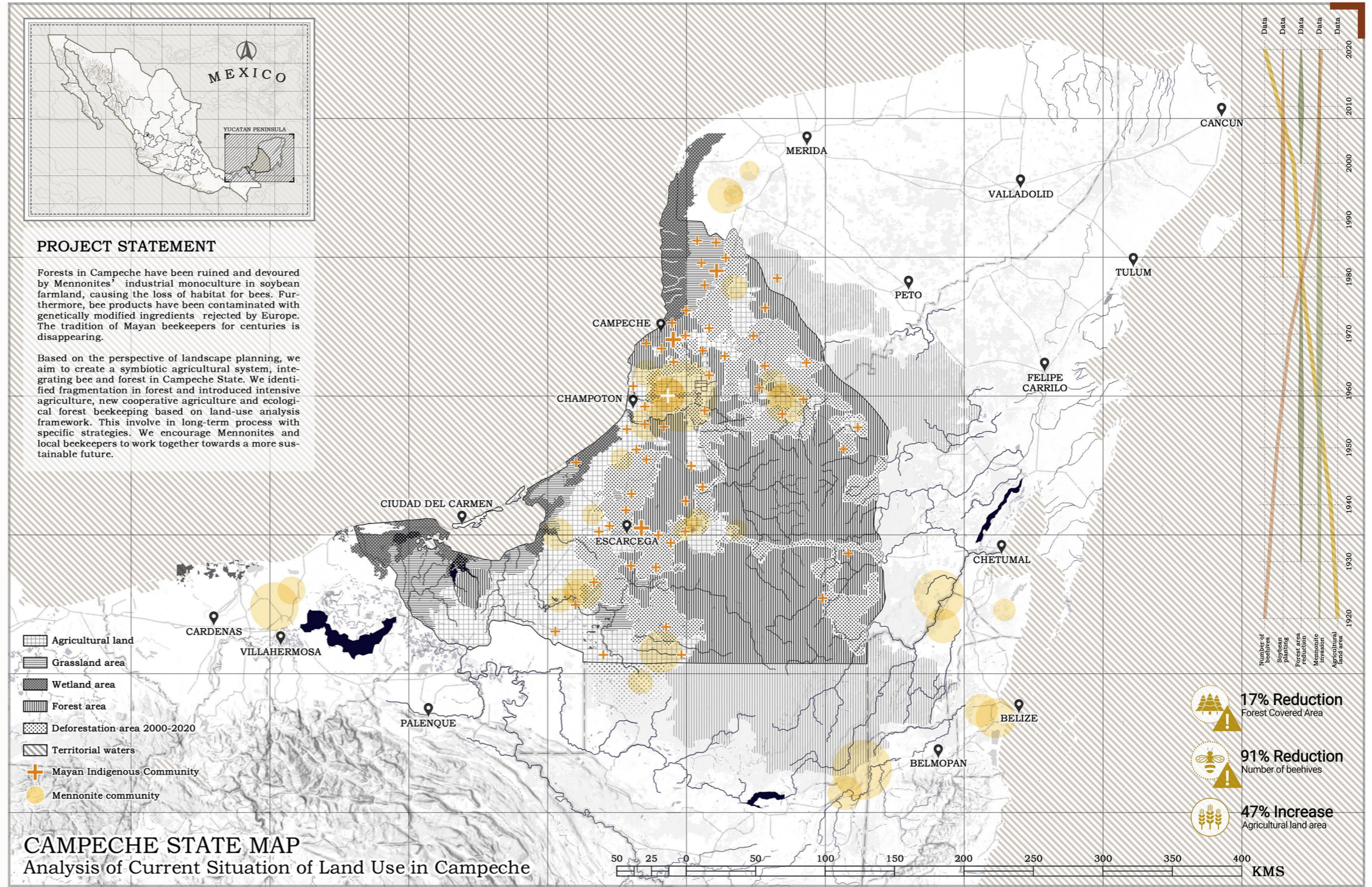


Conflict between beekeepers and Mennonites

Mennonites are deforesting to expand agriculture and using pesticides to grow genetically modified crops. However, the reduction in forest cover has led to the gradual loss of bee space, the use of pesticides and insecticides threatens the lives of bees, and bee products tainted with genetically modified ingredients are rejected by Europe, all of which have led to a deterioration in the situation of Mayan beekeepers, many of whom have stopped keeping bees and have lost their millennia-old beekeeping traditions.



livelihood dilemma



Country / City China / Chongqing

University / School Chongqing University / College of Art

Academic year 2022 / 2023

Title of the project Melipona beecheii, Farmland and Forest

Authors Shuai JIANG, Tianwei LIAO, Hanyu HU

TECHNICAL DOSSIER

Title of the project Melipona beecheii, Farmland and Forest
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Written statement, short description of the project in English, no more than 250 words

Since the 1930s, Mayan beekeepers have made Campeche, covered with the largest virgin tropical forest with very delicate ecosystems in Mexico, a world-class honey producer. However, then the Mennonites came with genetically modified soy, pesticides and large machines, and started to deforest large parts of land where the bees feed. Campeche's forests were devoured by Mennonite monoculture soybean fields, and bees lost their habitat. Furthermore, the widespread rejection for bee products contaminated with genetically modified ingredients has been threatening the livelihoods of Mayan beekeepers. Thus, it destroyed everything of bee culture from millennia back.

Based on the perspective of landscape planning, we aim to create a symbiotic agricultural system, integrating bees and forests in Campeche. Based on the land use analysis, we identified various land-use modes according to the degree of forest fragmentation. Therefore, we introduced intensive agriculture, new cooperative agriculture and ecological forest beekeeping, involving a long-term, complex process with specific strategies. We encourage Mennonites and local beekeepers to work together towards a more sustainable future.

For further information

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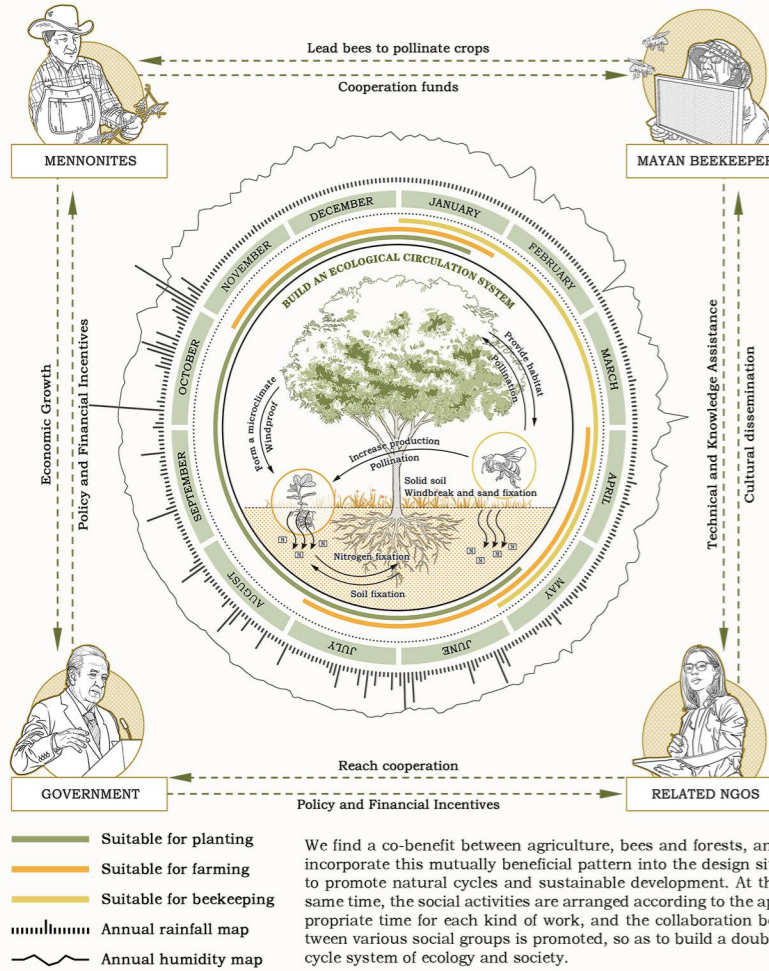
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Barcelona November 2023

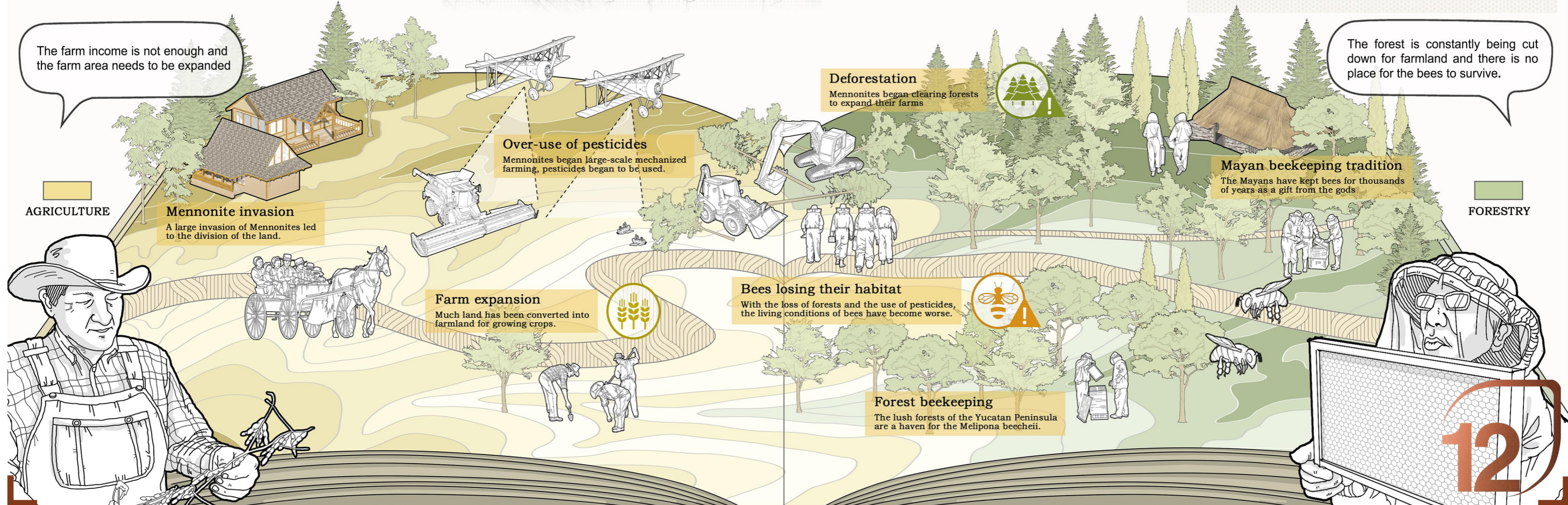
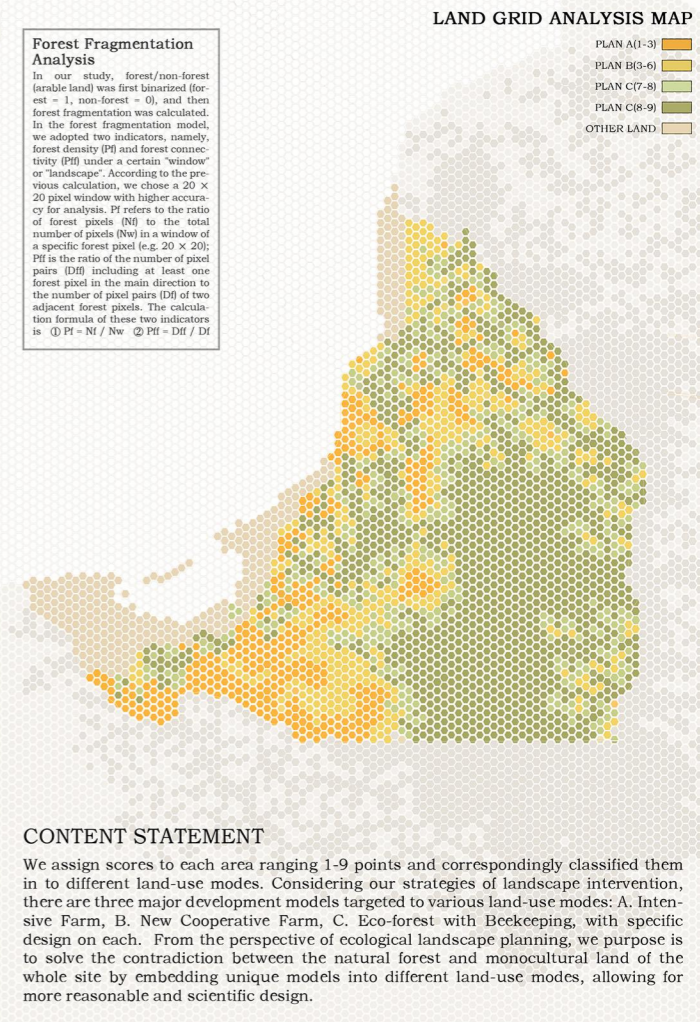
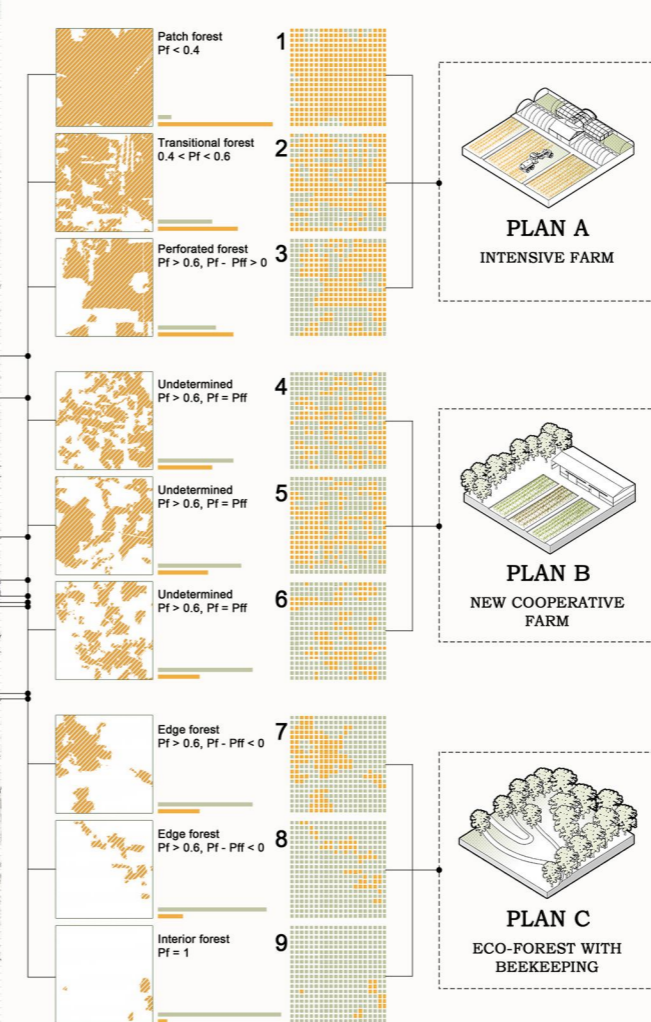
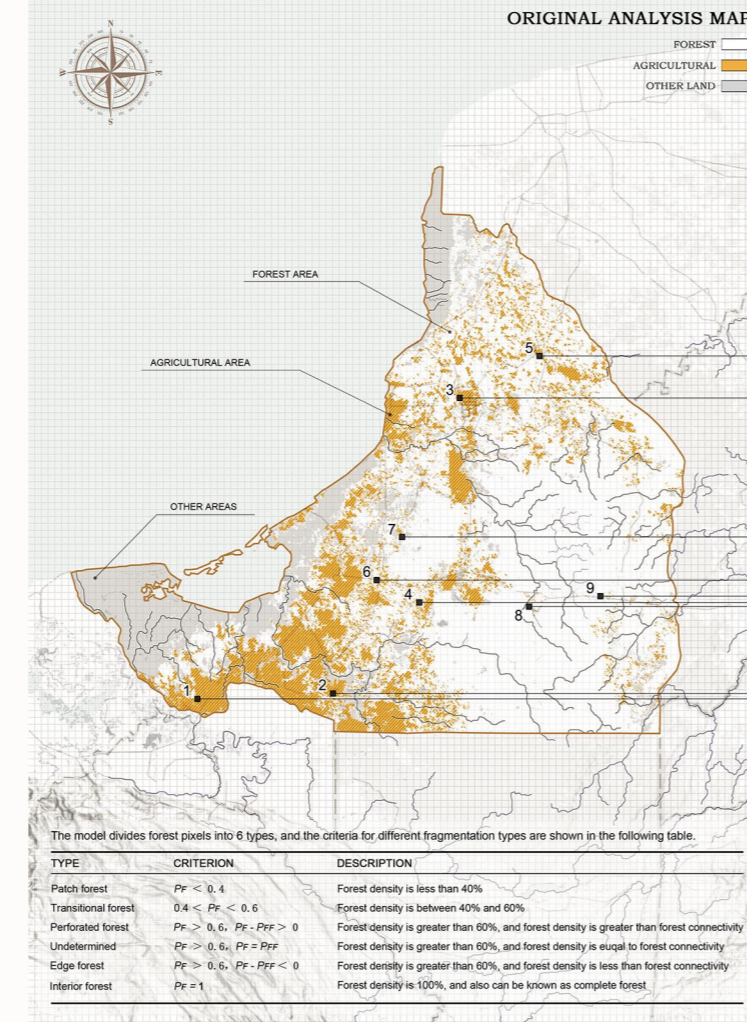
SCHOOL PRIZE

PROGRAM GOALS

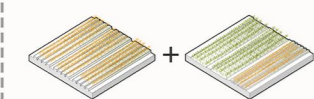
The inner circle constructs a cyclic symbiosis system among agriculture, bees and forests, and the outer circle constructs a collaborative system of socially related groups.



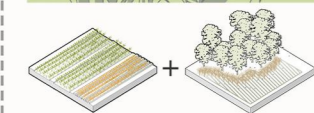
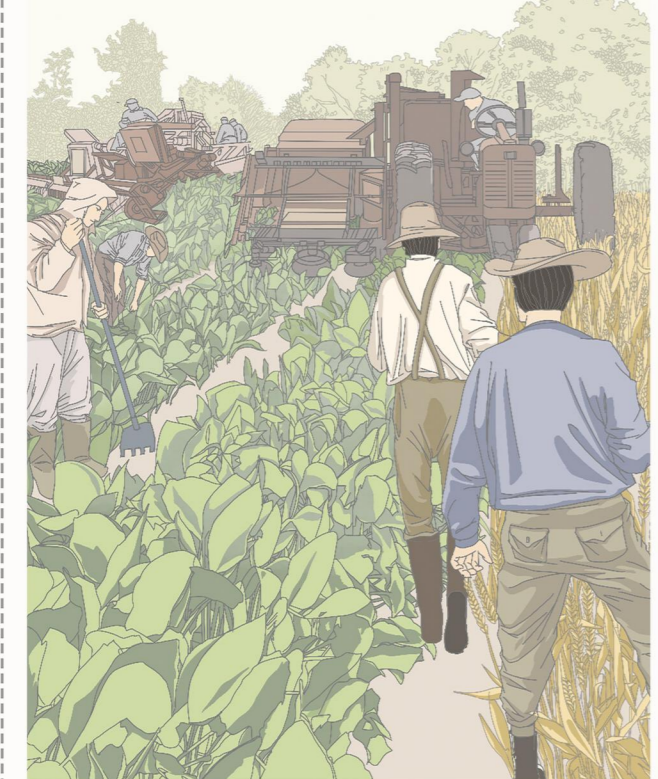
LAND-USE FRAMEWORK



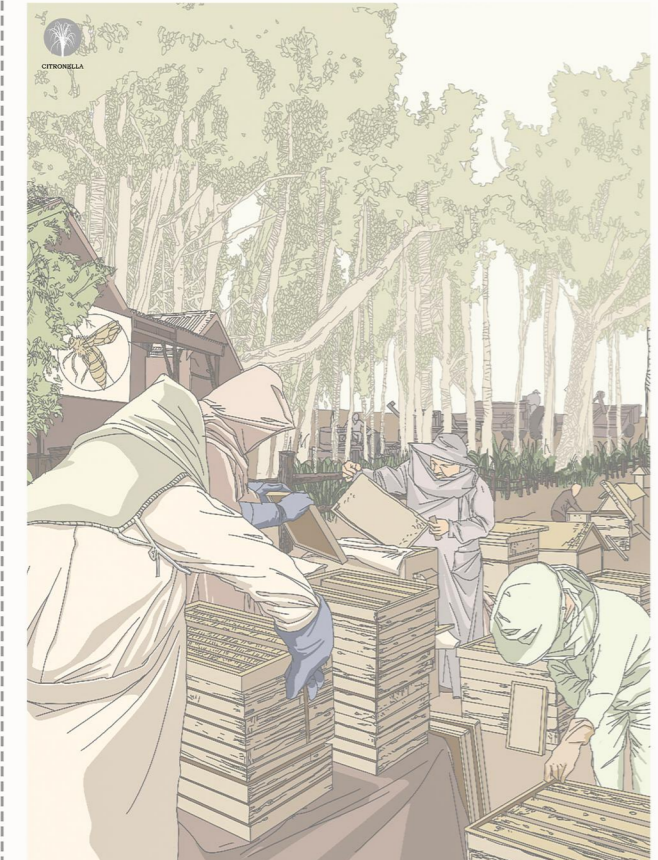
PLAN A — INTENSIVE FARM



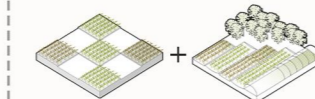
Improved intensive agriculture
This area retains the large-scale mechanized cropping pattern and allows GM soya to continue to be grown, but other suitable or soil-rehabilitating crop types need to be introduced each year to slowly replace GM soya, thus achieving a more sustainable agricultural pattern.



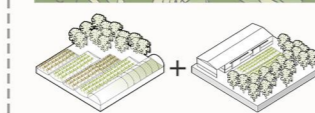
Beekeeping protected by buffer zone
As the intensive agricultural area is temporarily reserved for the cultivation of GM soybeans, a buffer zone is designed to prevent bees from entering in order to protect the living environment of bees and the livelihood of beekeepers in order to prevent bees from being exposed to GM crops and pesticides.



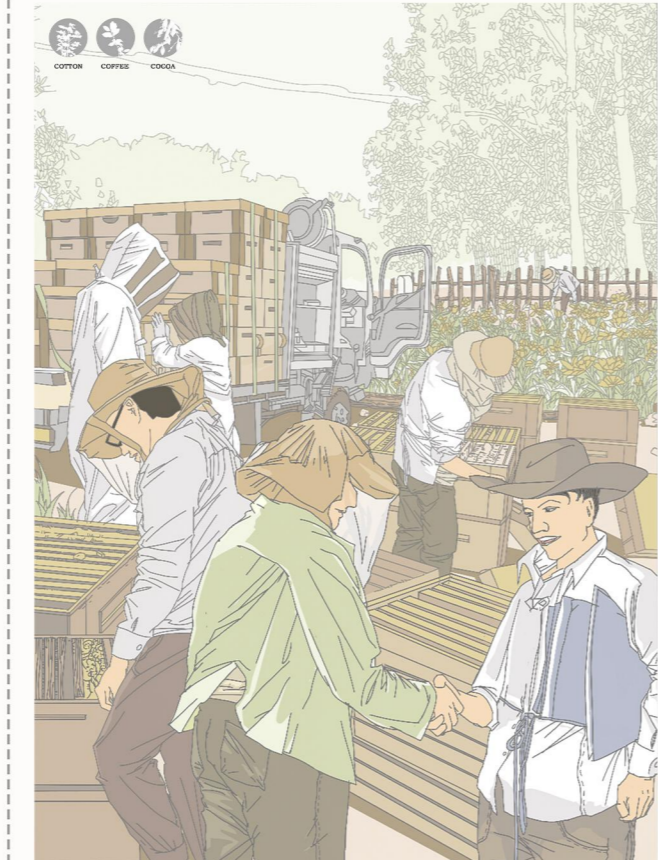
PLAN B — NEW COOPERATIVE FARM



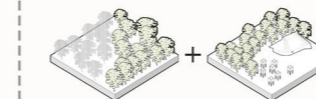
Intercropping & crop rotation
The introduction of a variety of locally appropriate cash crops and the replacement of the previous large-scale monoculture farming model with a new agricultural model of crop rotation and intercropping will help to increase crop yields and provide protection against pests.



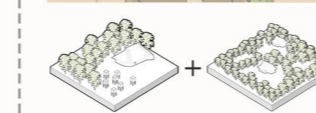
Establishment of partnership
The new farming model has a stronger pest control capability, and when pesticides are no longer used, beekeepers can enter into a partnership with Mennonites, leading bees to pollinate crops to improve crop yields and quality, in return for a profit.



PLAN C — ECO-FOREST WITH BEEKEEPING



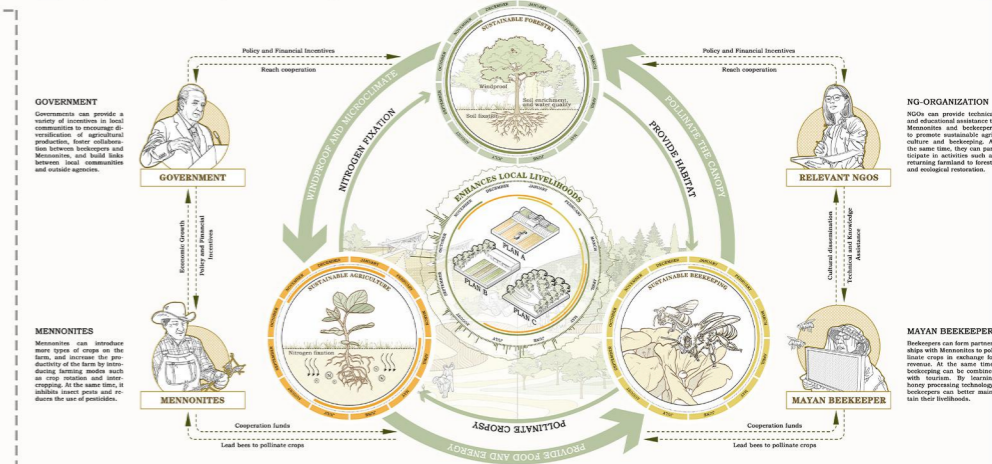
Restoration of forest
This is an ecologically sensitive area at the edge of the forest that is unsuitable for agriculture and where government incentives and community activities are used to guide the local people to restore the forest and rebuild the bees' home.



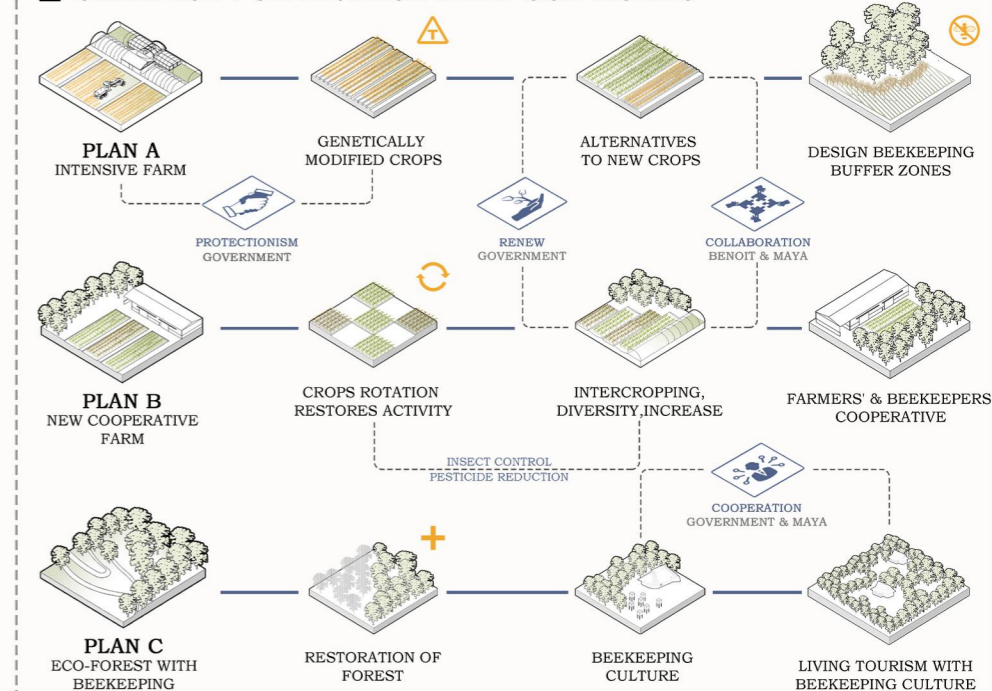
Tourism with beekeeping culture
The Mayan beekeeping industry can be transformed by combining beekeeping in the forest with cultural tourism, which can lead visitors to experience the culture of beekeeping and promote economic growth and cultural dissemination.



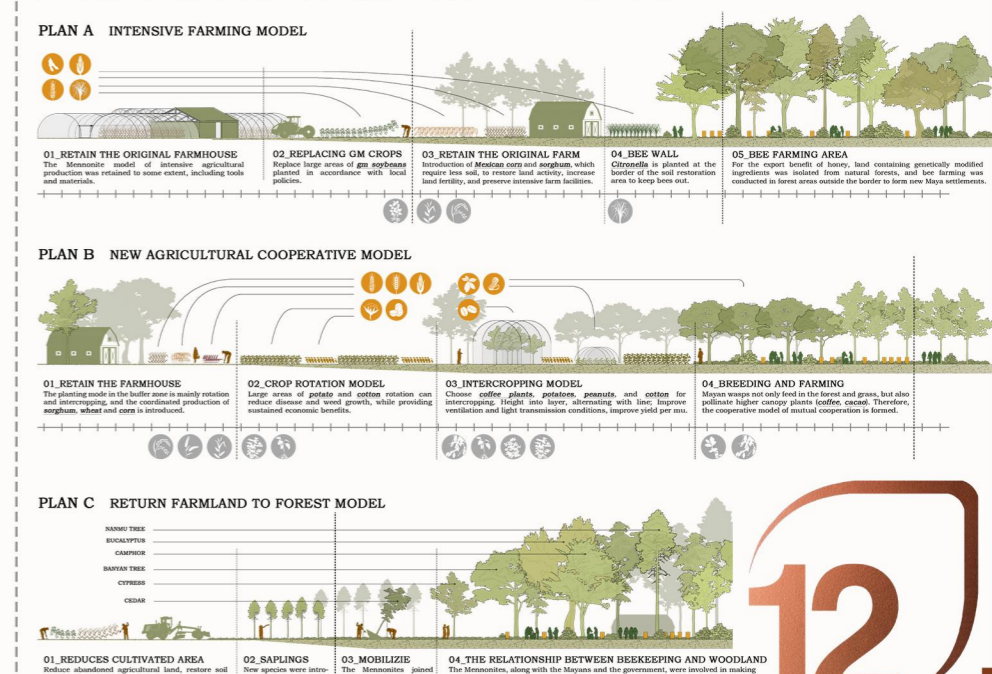
OVERALL STRATEGY



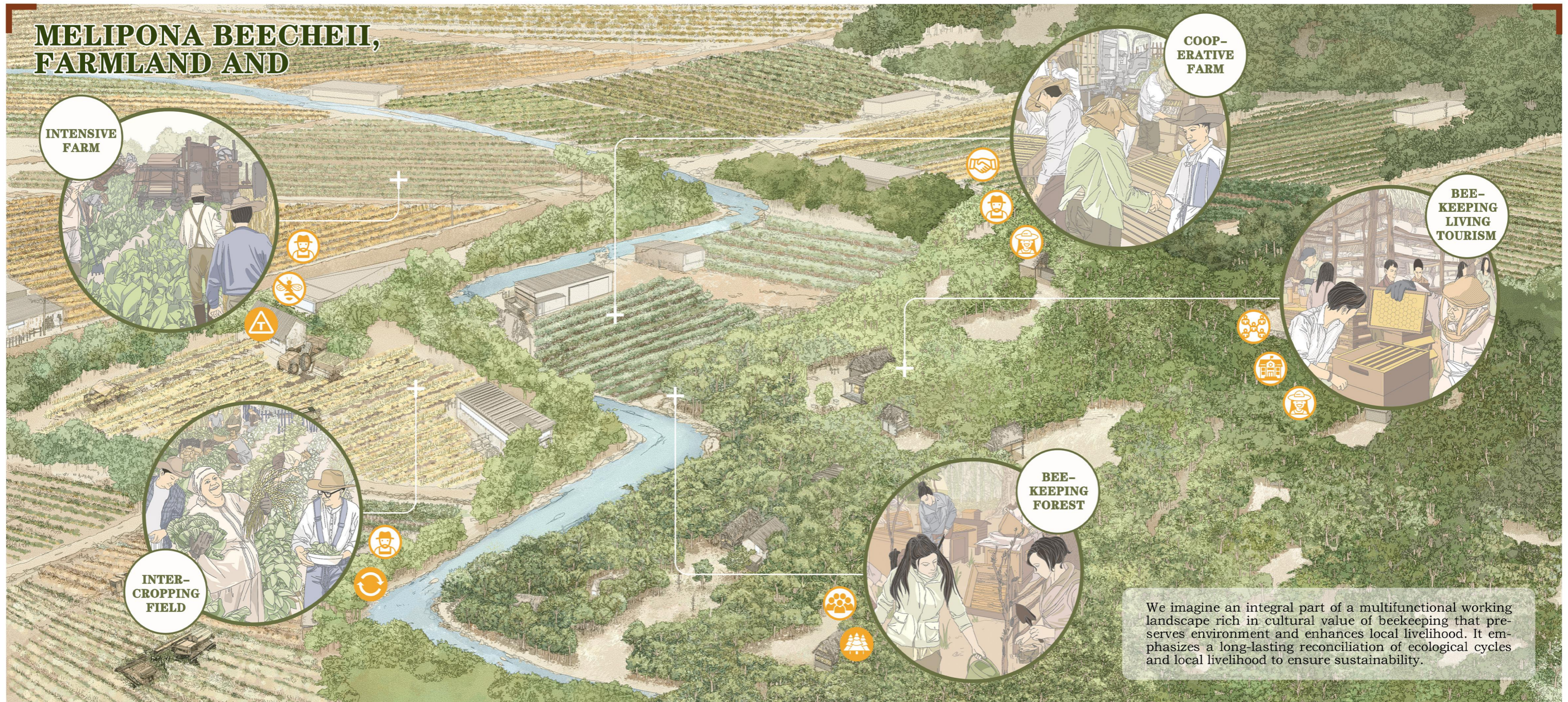
STRATEGY FOR DIVERSE LAND-USE MODES



PROCESS FOR DIVERSE LAND-USE MODES

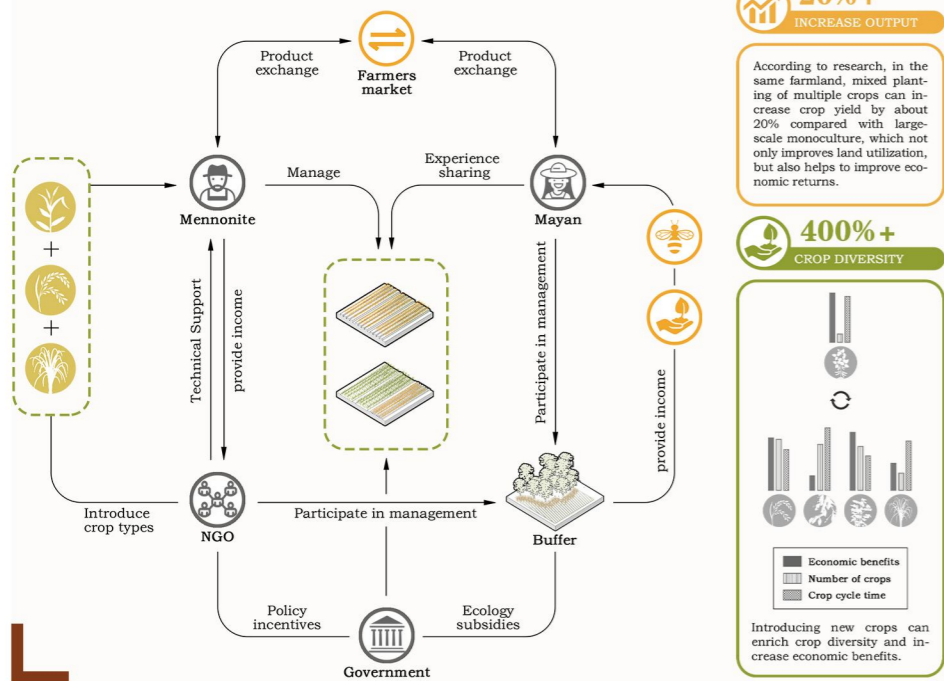


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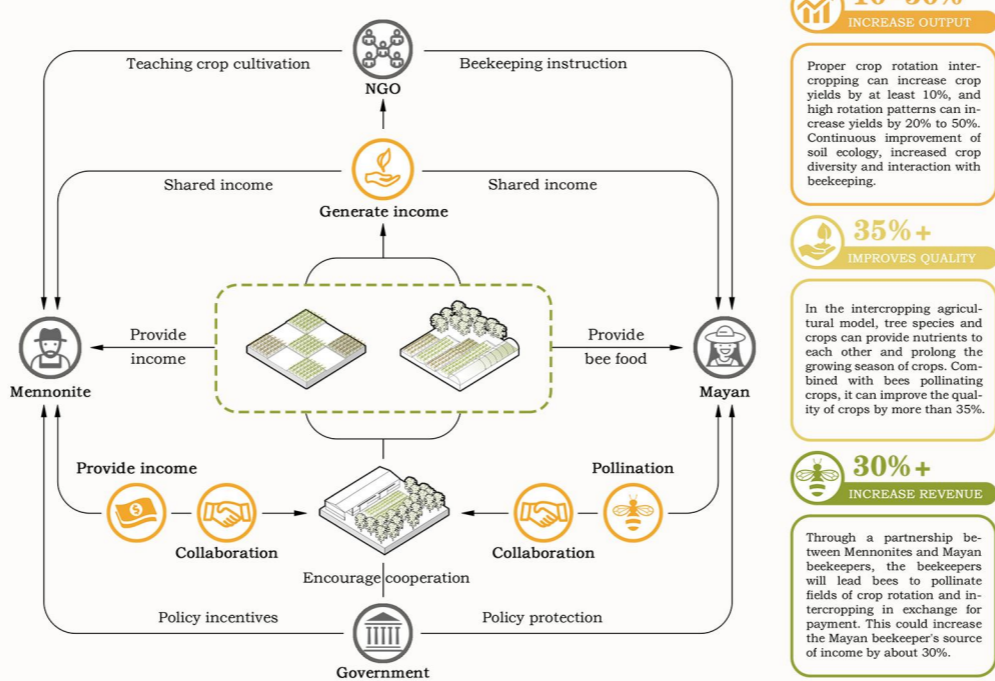


We imagine an integral part of a multifunctional working landscape rich in cultural value of beekeeping that preserves environment and enhances local livelihood. It emphasizes a long-lasting reconciliation of ecological cycles and local livelihood to ensure sustainability.

PLAN A — SOCIAL FRAMEWORK OF STAKEHOLDERS



PLAN B — SOCIAL FRAMEWORK OF STAKEHOLDERS



PLAN C — SOCIAL FRAMEWORK OF STAKEHOLDERS

