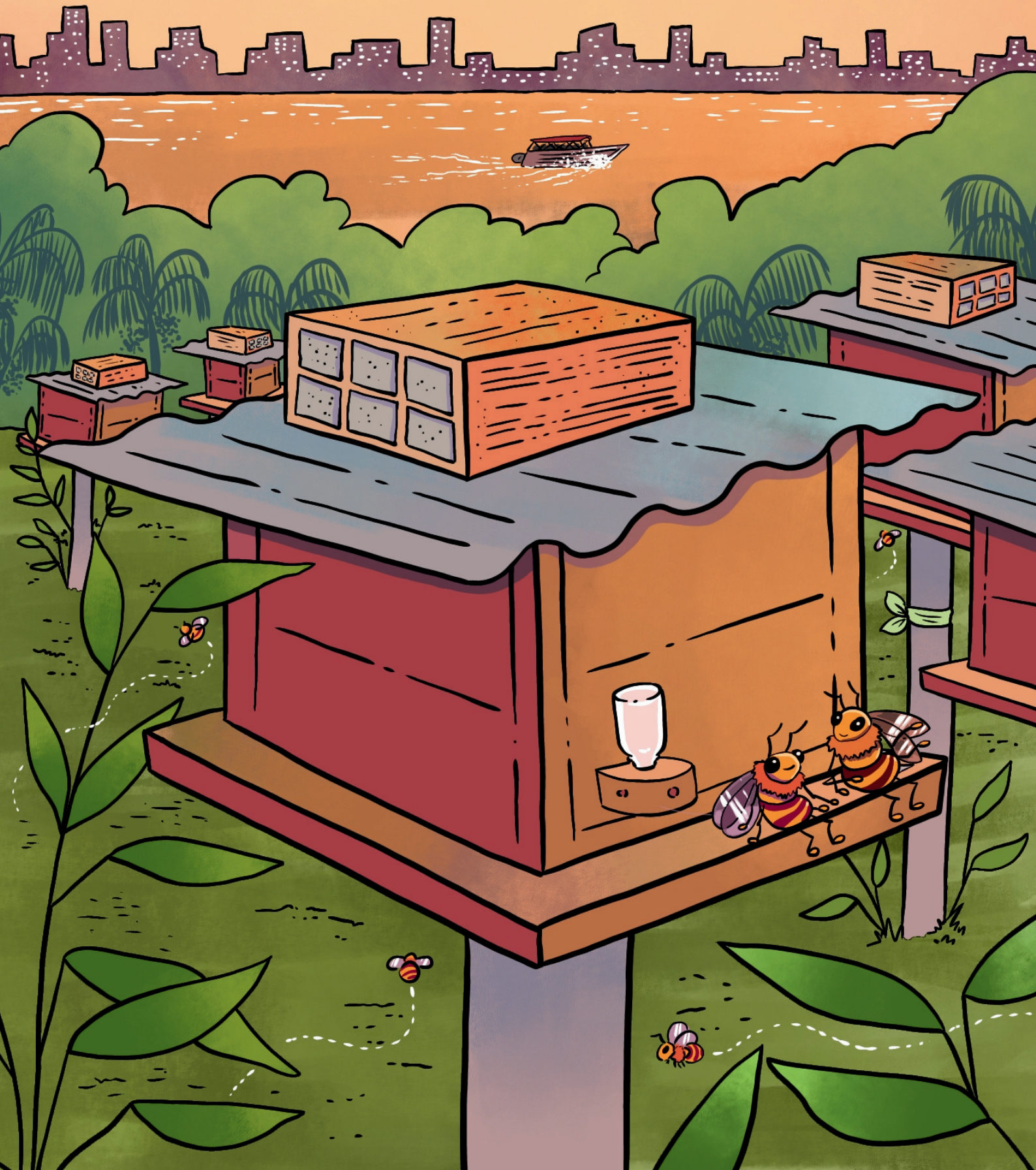


Exploring the World of Bees

- from the Amazon to Slovenia



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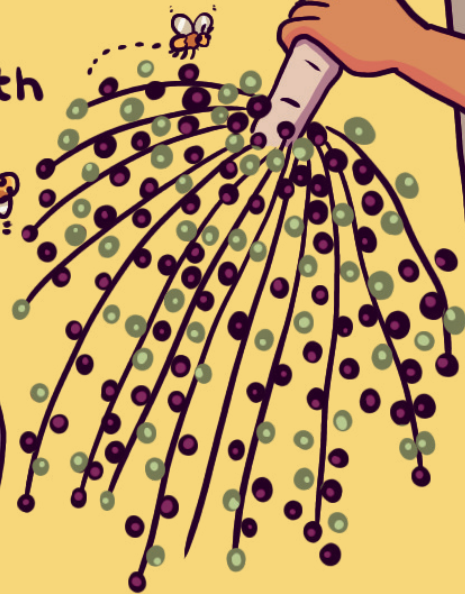
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LIFE BEGINS with a Buzz



Life for bees is getting harder and harder...

We do our best, but humans keep harming us without even realizing it.



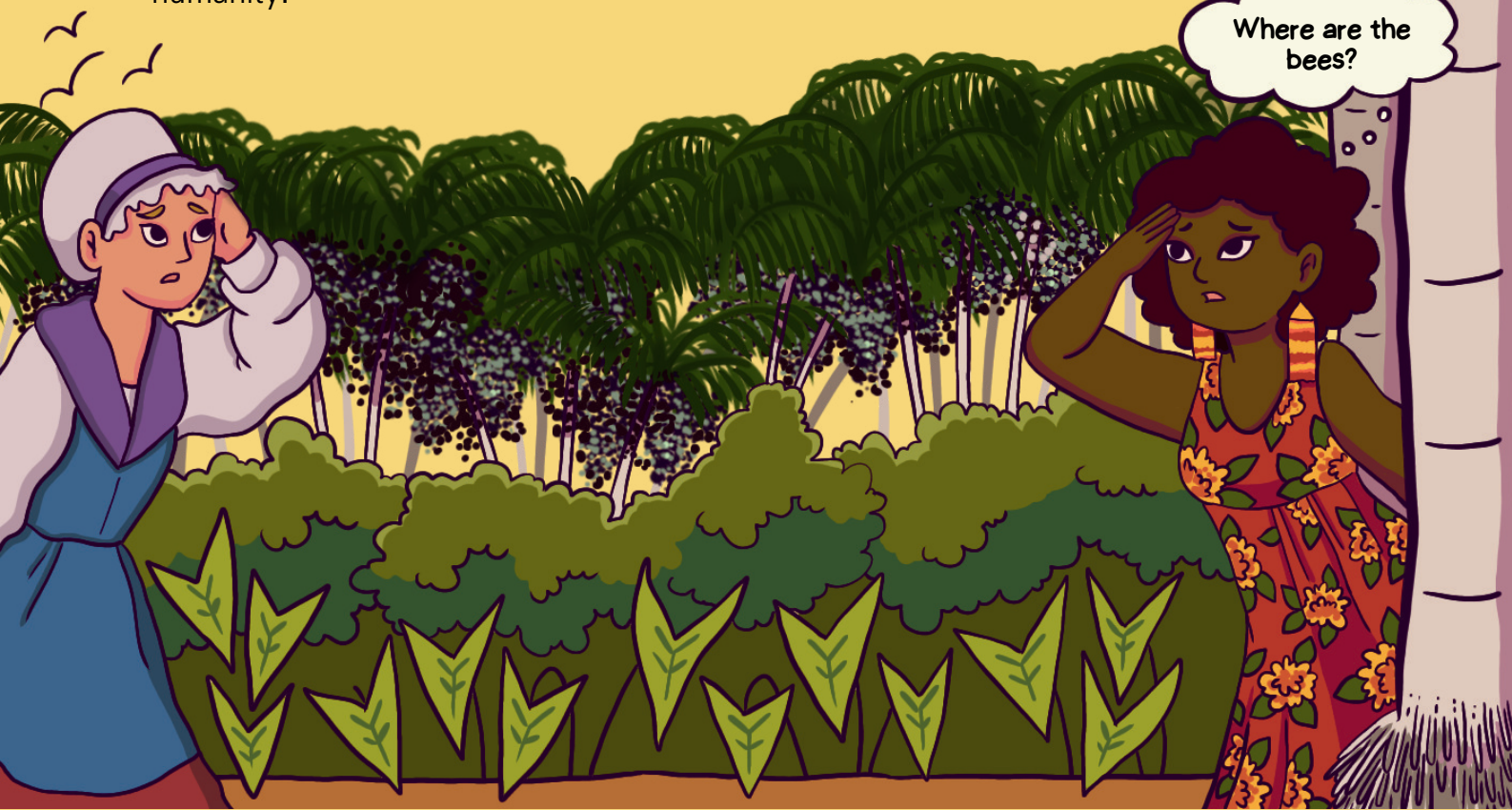
Bees are some of nature's greatest workers.

In the Amazon, they are responsible for pollinating many of the trees and plants that keep the forest alive. Every visit to a flower helps produce fruits, seeds, and food that sustain people and animals in tropical forests.

Brazil has nearly [4.96 million km² of forests](#) (tap to access the link), making one of the largest forest areas on the planet. Understanding environmental services — like the quiet, invisible work of bees — is essential so that nature is valued and cared for by all of us.

That's why many people say that without bees, life as known it would not exist. After all, without pollination there are no flowers or fruits; without flowers and fruits, there are no animals; and without animals, there is no humanity.

Where are the bees?



WHEN THE forest suffers, *bees suffer*

TOO...

The planet is getting warmer, and the Amazon feels this even more intensely.

Much of this warming comes from human actions. Burning fuels such as gasoline and diesel is the main cause, followed by deforestation and forest fires, which release enormous amounts of carbon dioxide into the atmosphere.

When the forest is cut down or burned, it becomes weaker and more likely to catch fire again. And it's not only heat that threatens the lives of bees. The use of chemicals — such as pesticides and agricultural fertilizers, chlorine used in water, soap, mercury, and others — poisons flowers, soil, and water, making entire hives and other animals sick. On Combú Island, for example, the use of chlorine in the swimming pools of new restaurants has led to the death of shrimp nearby.

Bees are an army of pollinators that work almost invisibly, just as shrimp help filter river waters. Without them, biodiversity cannot survive. Caring for native animals, protecting them, and creating healthy environments for them is a way to keep the forest alive, strong, and able to resist climate change.



THE *Symphony* of BEE



Do you know me?
I'm the Melipona
bee, also known as
a stingless bee.

In the Acará Forest, there is music that comes from no instrument. It is born from the wind moving through the leaves, the sounds of animals, and the buzzing of Melipona bees. In August 2025, this soundscape was recorded: urucu-cinzenta bees, potoos, blue-headed parakeets, surucuás, toucans, parrots, and many others come together to form a true forest symphony.

Melipona bees produce varied and vibrant sounds, either through the beating of their wings — which can reach nearly 250 times per second — or through vibrations in their thorax. These sounds are close to musical notes we know as G # , A, A # , and B (between 400 and 500 Hz). The sounds of Apis bees, on the other hand, are lower-pitched, closer to middle C on the piano.

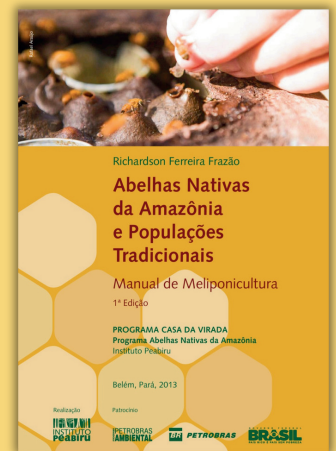
The soundscape of Acará and the buzzing of urucu bees were combined with voices and piano in the musical composition "Zoophony: Bees", by Alvis Migotto, with Anna Claudia Agazzi performing "Mystical Waltz" by Villa-Lobos on the piano. This waltz is chromatic and dynamic, and served as the foundation for a dialogue between the piano and the forest soundscape. At certain moments, to imitate the sound of bees, the pianist played directly on the piano strings, producing buzzing and thoracic-like pulses.

Want to
learn more
about the
anatomy of
Melipona
bees?

The Bees' Waltz



Beyond their musical role, bees also have a special day. On **May 20**, the world celebrates **World Bee Day**, created at the initiative of Slovenia and officially recognized by the United Nations. The date honors the Slovenian beekeeper **Anton Janša**, a great master of modern beekeeping.



Tap here

I'm an Apis bee, a stinging bee and the most well-known of all! I come from the European continent and live in a country called Slovenia!



Flowers that **GUIDE** the Bees

Bees carry an ancient secret: they follow the **flower calendar**. Throughout the year, different plants bloom at specific times, and each new flowering becomes an invitation for bees to visit, collect food, and help with pollination.

This calendar exists in the Amazon and also in Slovenia. It is built through careful observation of nature: when each tree blooms, when plants bear fruit, and which species attract bees the most. Meliponiculturists and beekeepers use this knowledge to better care for hives, strengthen bee health, and conserve native plants. It brings together science and tradition, helping keep forests alive and ensuring high-quality honey.

In the Amazon, the **uruçu-cinzenta bee (*Melipona fasciculata*)** is an important pollinator. It visits many flowers that are essential to families who depend on forests and agriculture.

Among the species it helps pollinate are **açaí, cajá, camu-camu, annatto, eggplant, chili peppers, bell peppers, rosemary**, and many other food and medicinal plants.

In Slovenia, the **Carniolan honey bee (*Apis mellifera carnica*)** is also a tireless visitor. She loves open, flower-filled fields and flies among **lavender, sage, orange trees, strawberries**, and even **eggplants**.

Although they live on different continents, both bees share the same passion: following the path of flowers.



Inventing, caring and learning from bees

The researcher and inventor **Hercule Florence** (to learn more, visit the [Hercule Florence Institute - IHF](#)) believed that human beings reach their true greatness when they create something new. That is exactly what he did when he invented **Zoophony**, a way of recording the voices of animals — such as the buzzing of bees we heard on Page 3.

He believed that every sound in nature is a message, and that learning to listen and observe is a way to protect the world. Together with technicians, universities, and Amazonian communities, the **Institute** has improved methods for raising **Melipona bees**, always respecting the traditional knowledge of families who live in the forest.

From this work came simple and effective guidelines for **caring for hives, managing stingless bees**, and harvesting honey in a sustainable way. This effort helps conserve socio-biodiversity and strengthens communities that depend on the forest for their livelihoods.

In Slovenia, beekeeping also involves a great deal of study and innovation. One of the country's most well-known technologies is the **AŽ hive**, designed specifically to make managing Apis bees easier. It is stacked like a bookshelf, and its frames can be moved like the pages of a book — a smart and traditional way of caring for hives, used by more than 90% of Slovenian beekeepers.

Even though they live far apart, **Brazil and Slovenia** show that when humans care for bees, bees give back life, food, and balance to all of nature.





BUILDING

a future
together with *Nature*

Caring for the forest is also a way of caring for bees.

When communities grow native seedlings in **nurseries**, they help restore degraded areas, protect water springs, improve soil health, and increase the availability of food and shelter for pollinators.

Stingless bees build nests that vary greatly from one species to another. Some, such as **marmelada**, **cachorro**, and **jataí bees**, create cluster-shaped structures with intertwined, overlapping cells that look like small natural works of art.

Each nest reveals a different way of living, organizing, and protecting the colony. To raise *Melipona* bees, it is important to prepare a well-designed **meliponary**. The site should be at a safe distance from homes — about 50 to 100 meters — have shade, flat ground, and be close to a water source.

This way, the hives remain protected, accessible, and ready to grow in a healthy way. When the space is well planned, bees adapt more easily and produce more, while the surrounding forest grows stronger.

The world is always under construction — and everything works better when humans and nature work together.

THE Fruit that is BORN from the FLIGHT of BEES

We feed on nectar and carry
pollen from flower to flower.
From the flower comes the
fruit... and the fruit is açai!

The açai palm is one of the most beloved trees in the Amazon. It grows tall and elegant, offering its heavy clusters of fruit that nourish entire families — from the heart of the forest to city tables.

In the song "Sabor Açai," Nilson Chaves reminds us that açai is much more than food: it is culture, identity, and the strength of a people who live in deep connection with the forest.

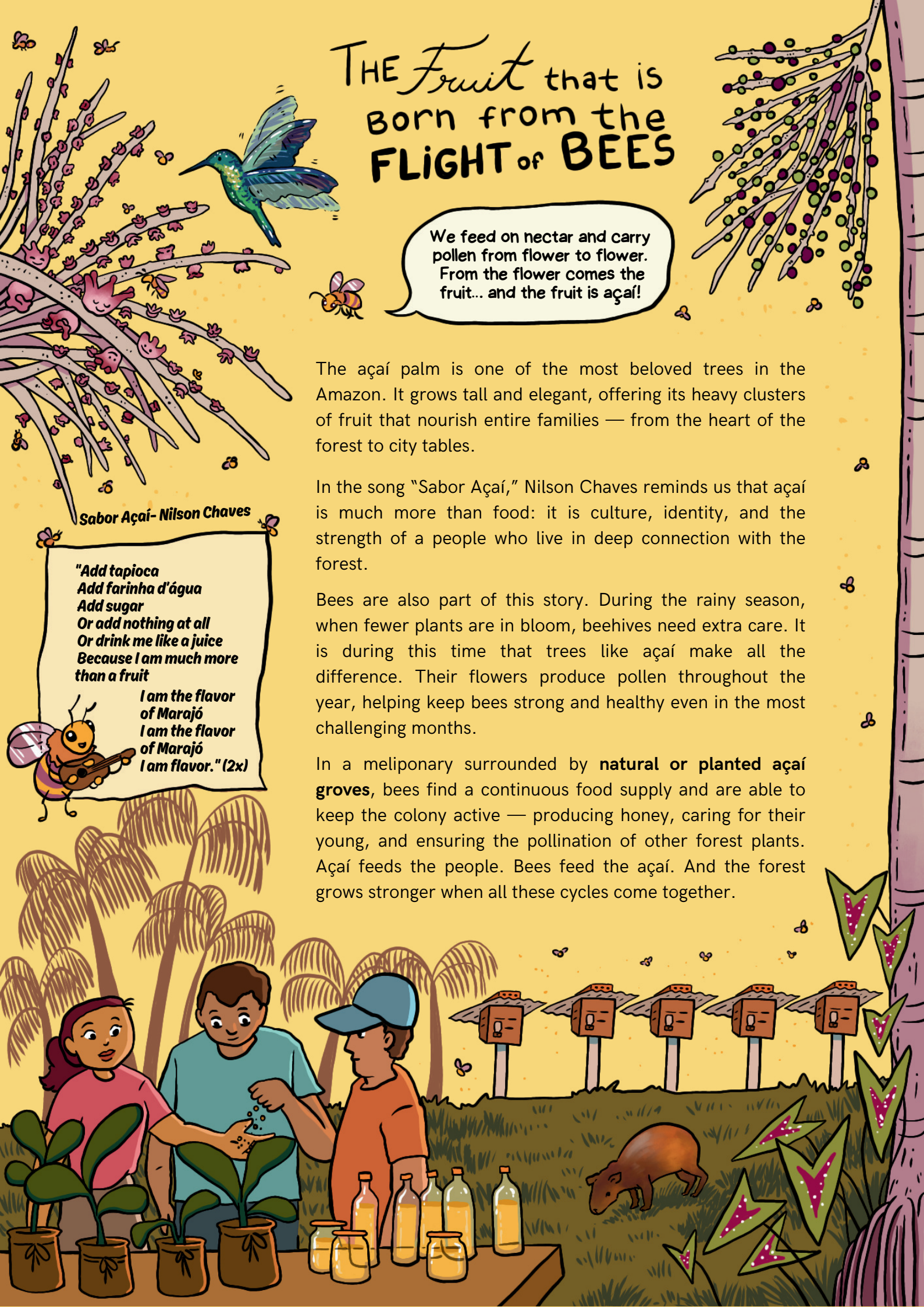
Bees are also part of this story. During the rainy season, when fewer plants are in bloom, beehives need extra care. It is during this time that trees like açai make all the difference. Their flowers produce pollen throughout the year, helping keep bees strong and healthy even in the most challenging months.

In a meliponary surrounded by **natural or planted açai groves**, bees find a continuous food supply and are able to keep the colony active — producing honey, caring for their young, and ensuring the pollination of other forest plants. Açai feeds the people. Bees feed the açai. And the forest grows stronger when all these cycles come together.

Sabor Açai- Nilson Chaves

"Add tapioca
Add farinha d'água
Add sugar
Or add nothing at all
Or drink me like a juice
Because I am much more
than a fruit

I am the flavor
of Marajó
I am the flavor
of Marajó
I am flavor." (2x)






Forest Bathing: *Breathing with Nature*

Being in nature is good for the body, the mind, and the heart. When we walk among trees, listen to birds, breathe in forest scents, and notice the life around us, something special happens: we reconnect with the natural world. Taking a “forest bath” is exactly that — a pause to feel, listen, observe, and better understand how nature works.

Take a moment and notice: what have you learned from nature? What makes you feel better when you are in it? The colors? Sunlight filtering through the trees? The sounds of animals, leaves, wind, water, and rain? What do you feel when you step into a river, touch the trunk of a tree, or feel the earth beneath your bare feet?

Bees are great teachers in this relationship. By observing them, we become more connected to the environment. In the Amazon, many **plants that are essential food sources depend on bees to produce fruit. This is the case with açai, cacao, Brazil nuts, and many others.** Protecting bees means protecting food, forests, rivers, climate, and health.

When we live in harmony with nature, we avoid forest fires, cut down fewer trees, use biofertilizers. We take care of water quality and help ensure that bees and all other animals continue to live — and that the Amazon remains one of the most life-rich places on the planet.



Understanding bees means recognizing the great system of cooperation and exchange that exists with the nature around us. You are part of it too.



SYNOPSIS

"This booklet is the result of a partnership between the Embassy of Slovenia and the Peabiru Institute, with the collaboration of São Paulo State University (UNESP). It brings together international and Amazonian knowledge about the importance of bees. Here, we introduce Apis bees and native Melipona bees, their differences, and their essential role in nature. The content explains how human actions can harm them and how simple practices can help strengthen and protect them. We also show how caring for bees contributes to human health and environmental well-being. This booklet is an invitation to learn about, protect, and live in harmony with these guardians of life."