Nectar da Amazônia – Amazon Nectar
Providing a sustainable alternative to deforestation

I. About the bees

On a recent field visit, a four-year-old girl stood next to her mother, watching a training session around a hive. After listening carefully, she turned and looked up at her mother who was expecting her next child. She wanted to know whether they could raise a hive of bees for her new sister. This child had understood the essence of native beekeeping. The new hive would represent an investment for the future in which her sister would be born. The bees, naturally stingless, would be a safe and gentle presence in the baby's life. She and her sister may well be a part of the new generation of Amazonian youth making their living from the forest and helping to ensure its continuity.

- Most of the food we eat is produced thanks to pollinators. Globally, the economic value of bee pollination is estimated at 1/10 of the value of agriculture – US$ 153.10 billion [Gallai et al, 2009];
- Scientists estimate that there are 25,000 species of bees in the world. Among them is the Melipona family (stingless bees), with 600 species worldwide. Brazil has 244 named species and 89 species not yet described, among which are 114 species in the Amazon [Pedro, 2014];

II. The problem

- Bees are disappearing worldwide; between 1947 and 2005 in the United States, domesticated honeybee colonies decreased by 60% [Meet our prime pollinators – Nature];
- At the same time, in the last 50 years, global agriculture that depends on animal pollination increased by 300% [Aizen, M. A. & Harder, L. D. *Curr. Biol.* **19,** 915–918 (2009)];
- In the Amazon, if wild bees disappear, local biodiversity will be seriously compromised. Major crops will also suffer–all palms including açaí (*Euterpe olereacea*), Brazilian nut (*Bertholletia excelsa)*, cocoa (*Theobroma cacao)*, cupuaçú (*Theobroma grandiflora)*, peppers (*Capsicum spp*) and most fruits;
- The Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES), created to monitor global loss of biodiversity, has an agenda that includes pollinators, pollination and food production. The assessment will be evaluated at a Kuala Lampur meeting in February 2016, after which it will be delivered worldwide through outreach programs.

III. Native bees: key to conservation in the Amazon

1. **Fighting deforestation –** Native beekeeping generates forest-based income for traditional populations. In this way it discourages forest fires and deforestation while providing an incentive for the conservation of forest biodiversity.
2. **Putting a value on environmental services to help combat climate change –** Through this REDD mechanism (Reducing emissions from deforestation and forest degradation), Peabiru believes

that native honey production has the potential to prevent an equivalent of 16 kilos of carbon for each kilo of honey from native bees [PEABIRU, 2014];

3. **Same investment, bigger harvest –** Encouraging pollinators can increase the efficiency and yield in agricultural and non-timber forest production. The açaí market, currently booming and enjoying growing demand worldwide, depends on ongoing pollination.
   a. Only in the state of Pará, the açai value chain equals an annual income of US$ 500 million, involving more than 300 thousand people. It represents more than 70% of income in traditional communities [CONAB, 2013];
   b. Açaí (*E. olereacea)* depends on meliponini as major pollinators. In the Amapá National Forest, 17 species of bees were linked to açai [Frazão, 2009];
   c. Each community, whether indigenous or afro-descendent, can offer a different honey with a different story. Flavor profiles reflect the characteristics of each region of origin (the concept of *terroir*).

4. **Keeping traditional families in the forest**
   a. **Community-based development** – native honey production is, at it its heart, a community-based enterprise. In this context, local associations and family involvement are vital.
   b. **Local income and job generation** – According to Peabiru's field research, in some regions, 1 kg of honey (US$ 10 to 15) can represent 10-20% of average monthly income per capita. It can provide an anchor to rural youth, thus helping to stem regional urban migration.
   c. **Money in the hands of women –** native honey production provides a source of income accessible to women and compatible to their daily activities. Women's income can have a direct impact on the security and wellbeing of rural families.
   d. **Bees are the best environmental educators** – Raising native bees provides an effective lens through which traditional families can consider environmental impacts and outcomes, from logging and burning to better forest management.

5. **The whole forest in a spoonful**
   a. In the Amazon forest, up to 90% percent of native trees depend on bees as prime pollinators [KERR et alii, 1996];
   b. In turn, bees depend on forest. An old growth Amazon forest can carry many dozens of species of meliponini bees; in degraded pastureland this number drops to 0-2 species;
   c. Native bees are generalists in their searches for nectar and pollen. The honey they produce can be said to bring together the whole forest in a spoonful.
   d. This is a new product in a budding market. Commercial pathways are still to be developed, but in just the last ten years the price has risen tenfold. What was once only used medicinally in rural interiors is now highly valued by chefs and discerning consumers alike.

IV. Peabiru Institute – Our experience and approach:

- Our work spans the past 10 years, during which diverse institutions have funded diverse initiatives in traditional Amazonian communities. These have included the BNDES (Fundo

Amazônia), Dutch Embassy, ABN AMRO Foundation (where Peabiru worked in partnership with The Royal Tropical Institute, from Holland), Petrobras and The Nature Conservancy.

V. The Fundo Amazônia (Amazon Fund) finances "Amazon Nectar"

- The main goal of the Amazon Nectar project is to strengthen the native honey value chain, providing a sustainable alternative to deforestation. Our approach focuses on four areas: increasing sustainable production, reaching the formal economy, building capacity, and integrating participatory monitoring and evaluation. The project also includes a "Honey House" processing facility at the central location of Macapá.
- Beneficiaries of the project are 310 producers from 5 regions, distributed in 30 rural villages. Among the groups involved are Indians, African-Americans (quilombolas), traditional fishermen and family farmers from river communities.
- The Amazon Nectar project is a two-year initiative valued at nearly half a million euros. We estimate that the project, upon completion, will help to protect over seventeen thousand hectares of Amazon rainforest, savannah and floodplain.

VI. Next steps

- There are more than one million families living in rural underdevelopment in the Brazilian Amazon. How powerful it would be if each of these families worked to raise native bees. We envision every Amazonian home garden flourishing under the enterprising activity of these small workers. We see the Amazon Nectar initiative as a pilot project with the potential to eventually reach a greater population, preparing the forest farmers of the future.
- A next phase of this project is to reach a wider audience of rural families. We intend to produce a short film and web page to make our work public and accessible. Many communities have sought our support in beekeeping. To respond to this demand, we would like to build a Demonstration Center to train field technicians to carry this expertise further.
- This center will be a pilot: we also see an opportunity to assist forestry and agricultural university programs and technical schools, throughout Brazil and tropical countries of the world, to adopt their own native beekeeping demonstration centers.
- By generating income from standing forest and thus discouraging carbon emissions from deforestation, this project aligns closely with the objectives of funding sources such as REDD+.

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