Stingless Bees Breeding As an Activity for Sustainable Development

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BEES FOR SUSTAINABLE DEVELOPMENT

- Honeybees and stingless bees for rural development
- Honeybees or stingless bees for agricultural purposes
- Stingless bees for natural areas and conservation
- Impact of honeybees on stingless bee populations has to be evaluated

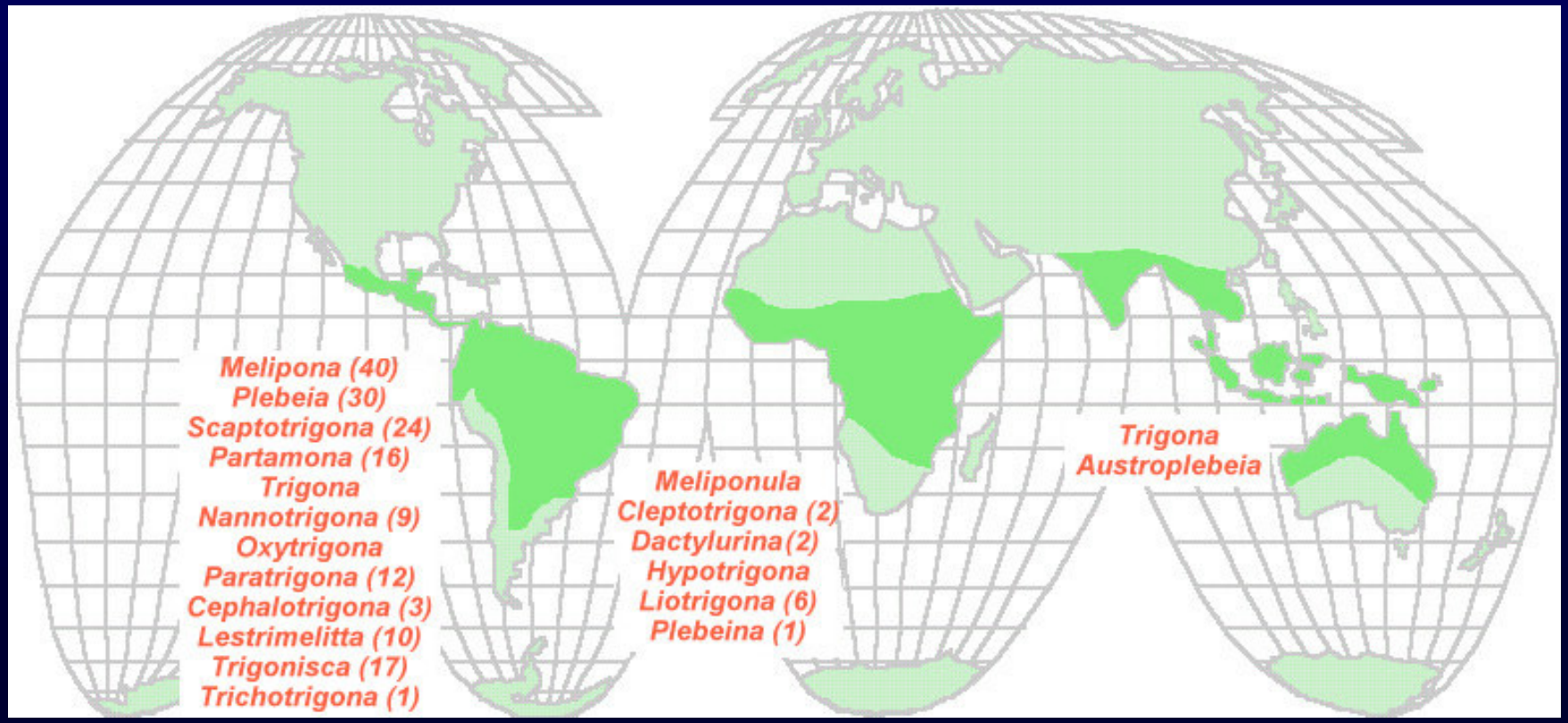
Honeybees or stingless bees?

- Beekeeping with honeybees is more profitable that with stingless bees, considering honey production and engaged people
- Stingless rearing improves environment conservation
- Stingless bees are highly diverse and common in nature
- Management of stingless bees colonies is easier and safer

Stingless bees, native social bees

- Nests are naturally found in hollow trees, in soil cavities, inside other social insects nests or externally built
- More than 300 species are found in Brazil. Breeding techniques are regionally developed for some species

Stingless bees and geographical distribution



Stingless bees as pollinators

- Stingless bees are good pollinators (*Macadamia*, strawberries, carrots, etc.)

Stingless bees as pollinators

- Native bees can be successfully used in greenhouses, if they are produced in large quantities.
- *Tetragonisca angustula* and *Nannotrigona testaceicornis* are good strawberry pollinators

Stingless bees breeding: ecological impact

- Improves of environment quality : the connections between breeding success and environment quality is established by beekeepers
- Environmental restoration begins with the increasing interest for bee plants and nest sites protection

Stingless bees breeding

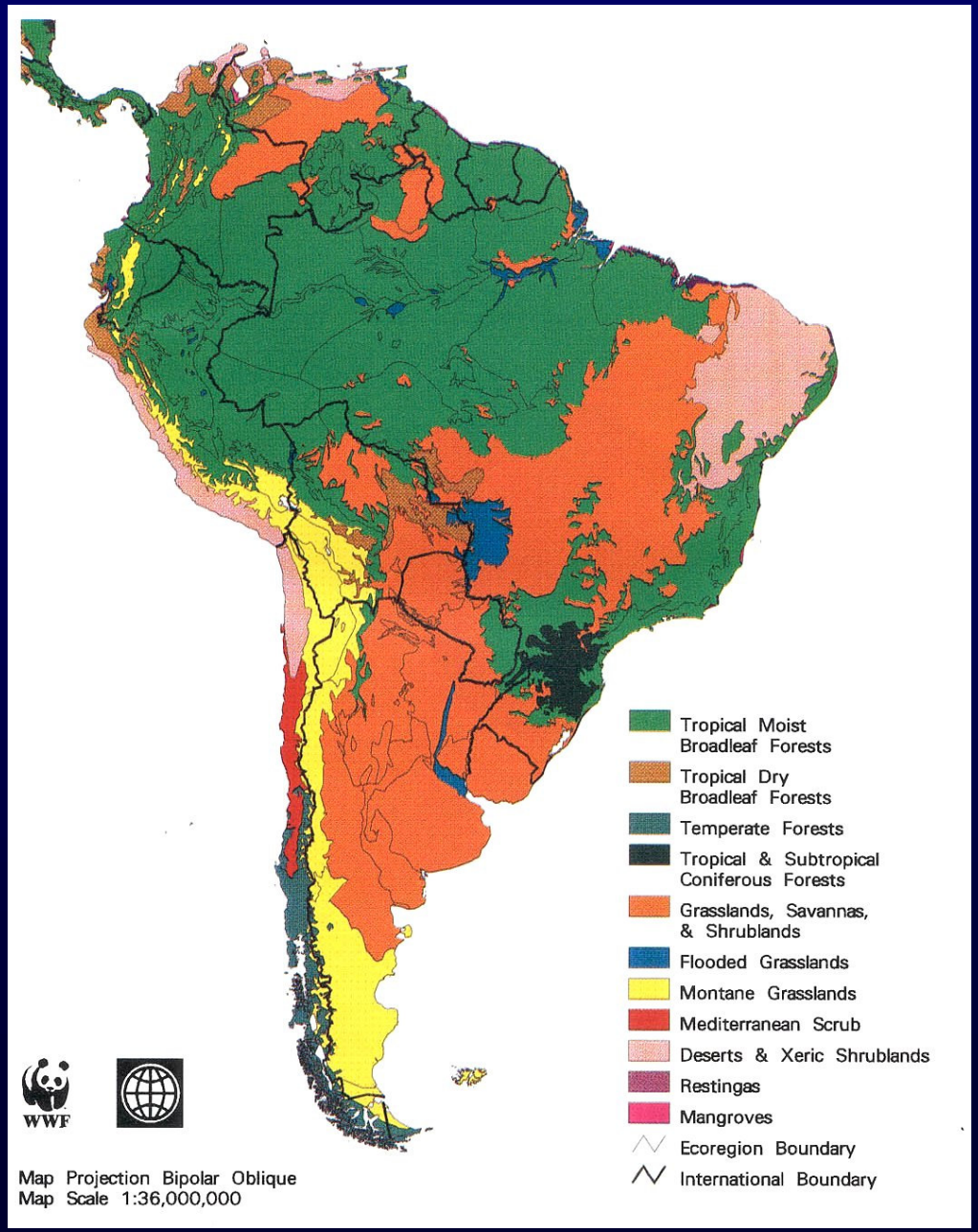
- Nests are transferred to hives by traditional stingless bees beekeepers

- Honey, wax and colonies are trading products

Meliponaries

Seridó Project

- **To improve stingless bees rearing in a underdeveloped area;**
- To work with local leadership and local people
- To improve training on breeding techniques
- To provide beginners with hives and bees
- Follow up activities



Seridó – Rio Grande do Norte - Brazil

Caatinga

- Caatinga suffers from two main human impacts: the cutting of trees for firewood and its use as cattle land. The studied area has the lowest precipitation (300-500 mm per year) of all ecosystems known for Brazil

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Stingless bees breeding in Seridó

- Traditional interest in stingless bees
- Practical example: it is possible to have family incomes working with bees

A stingless bee called Jandaíra (*Melipona subnitida*)

- Traditional beekeeping with *Melipona subnitida*
- An endemic species of caatinga
- Very few literature available until now

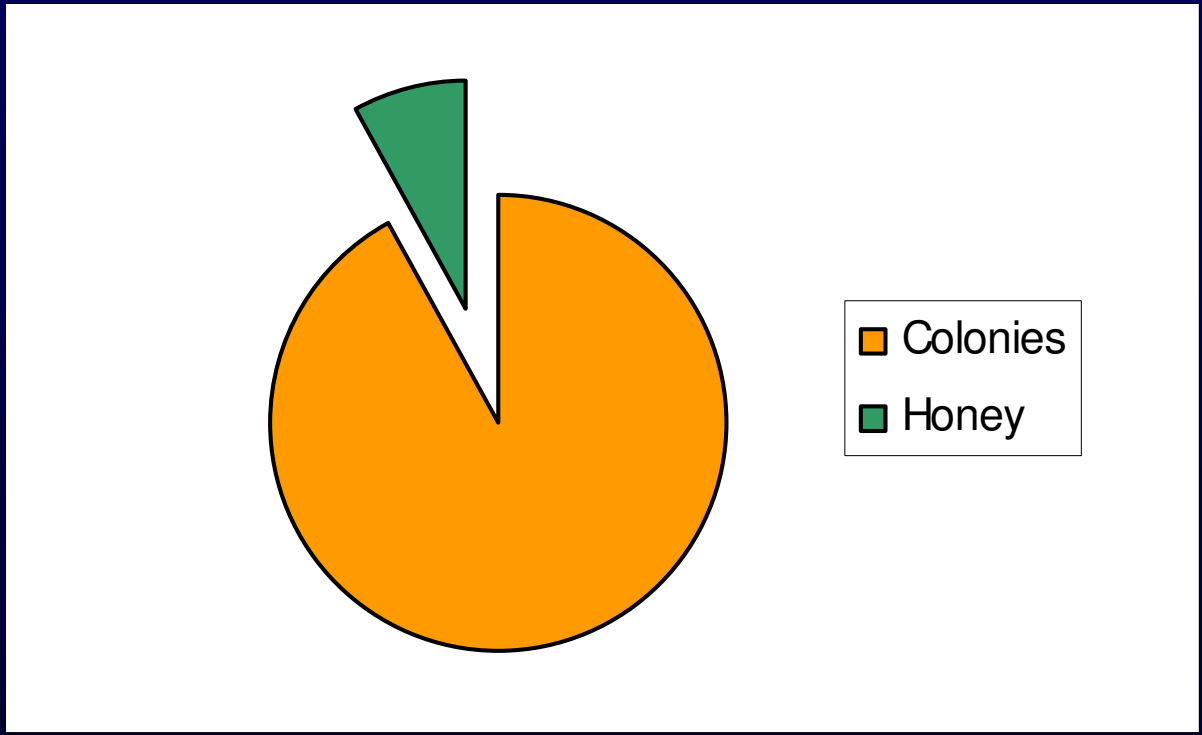
Melipona subnitida: Nest Architecture

- Entrance
- Horizontal or spiral combs
- Nest involucrum
- Honey and pollen pots
- Resin and mud

Nests trading in Seridó

Year	Price plus post	Minimum price	Nest quantity
1997	120,00	80,00	73
1998	150,00	120,00	90
1999	200,00	150,00	136

Stingless bees trading - honey production and colonies



Melipona subnitida: artificial nest division

- Using 3 colonies: A, B and C
- Colony A will provide hatching brood
- Colony B will give adult workers and food pots
- Colony C will be formed

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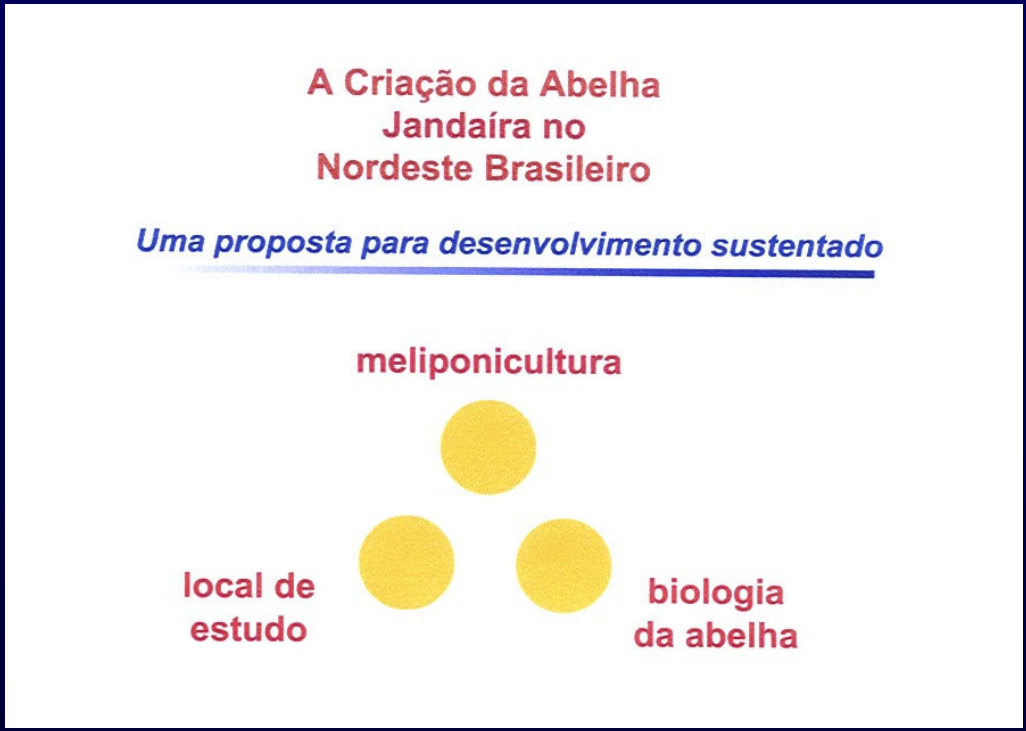
Working with new beekeepers

Environmental education with children

Mayor and researcher planting trees

Results

magazine



Web site: http://www.ib.usp.br/jandaira/

Results

A book for children

Needs: basic biological knowledge

- Nestsites
- Improving bee plants
- Reproduction in natural areas and on controlled conditions
- How to survive in damaged environments:
  - Bee hunters
  - Low habitat quality

What must be changed

- Bee hunters activity
  - Colonies destruction
  - Trees cut
- Leadership training on ecological values
- Trading of stingless bees products
- Abilities for environmental restauration

Research priorities for the new future

- To develop techniques for stingless bees honey storage
- To evaluate their value as pollinators of agricultural importance
- To improve breeding techniques in large scale

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