

Is Beekeeping a Viable Additional Income for the Rural Poor?

An economic analysis of beekeeping and honey hunting as income alternatives for the rural poor in the Philippine Cordillera

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Introduction

Modern beekeeping with European honeybees (*A. mellifera*) was introduced into the Philippine Cordillera within development cooperation programs as a source of additional income for the rural poor. Nevertheless, it has burdened the environment and neglected the livelihood potentials found in Philippine native bee species (*A. dorsata*, *A. cerana* and *Trigona* spp.). Additionally, the exoticness to the region of *A. mellifera* entails prohibitive costs for its adoption by smallholders, excluding them from benefiting of this additional income source.

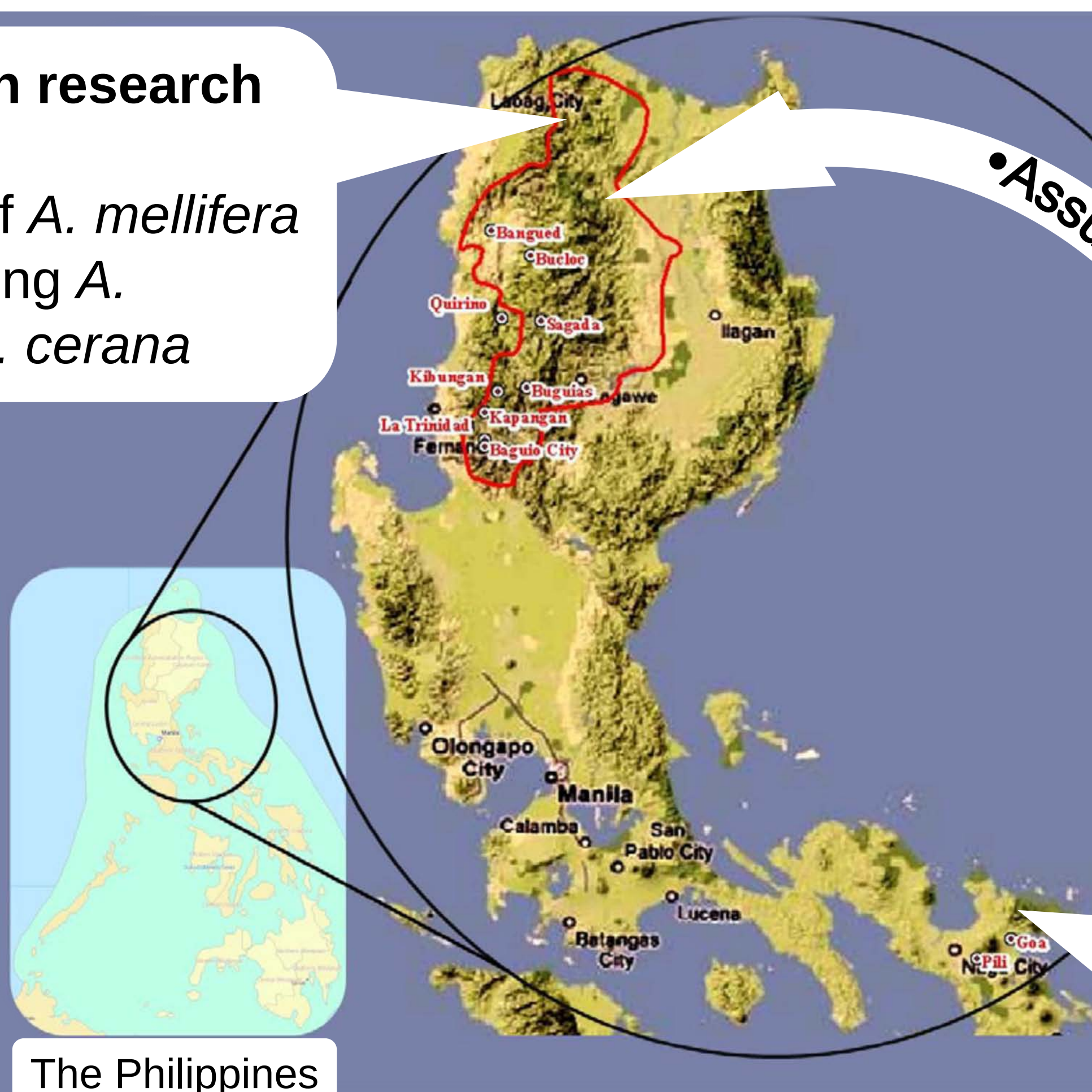
Objectives

- To assess the viability of beekeeping and honey hunting as additional income alternatives for the rural poor in the Philippine Cordillera, by
- getting an overview of such activities, their products and the actors involved,
 - assessing and comparing the profitability and financial constraints of the studied activities faced by smallholders with a **Cost-Benefit Analysis (CBA)**, and
 - discussing the socio-economic and environmental side effects of beekeeping and honey hunting in the study area.

Resources and Assumptions

Technology in research area:

- Apiculture of *A. mellifera*
- Honey hunting *A. dorsata* & *A. cerana*



Assumed technology transfer

Socio-economic assumptions

- Organizations (beekeeping cooperative and associations) currently only serving *A. mellifera* beekeeping can also promote native beekeeping and honey hunting (credit, grants, infrastructure, fixed prices, etc.)
- Honey hunters represent the rural poor predisposed to adopt beekeeping technologies

Calculation assumptions

- Project life: 10 years
- Honey is the only commercial product
- All equipment is purchased
- No transportation costs
- No labor opportunity costs, except hunters
- No opportunity costs of land
- **16.1% PIA discount rate** (bank lending)

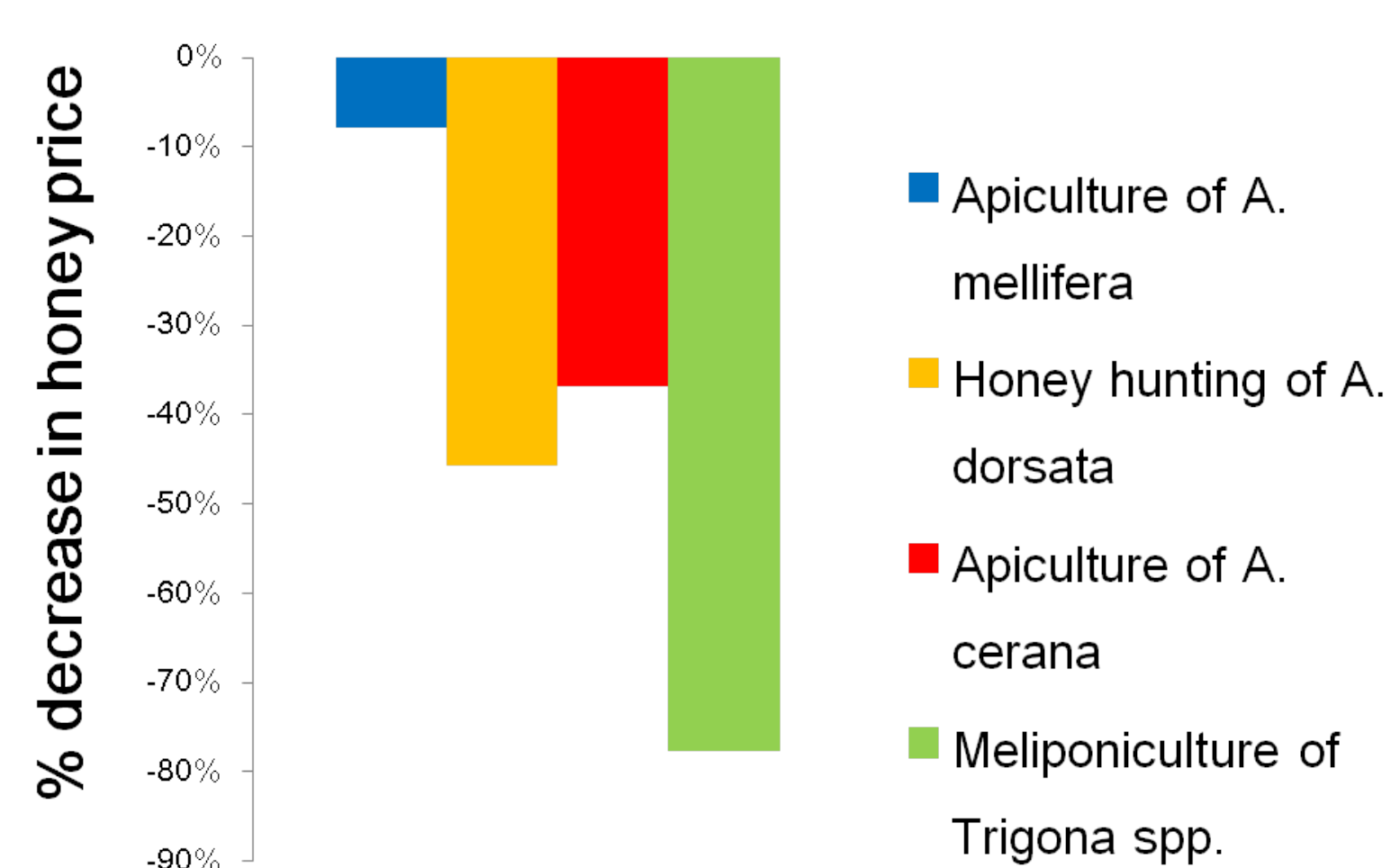
Technology outside research area:

- Apiculture of *A. cerana*
- Meliponiculture of *Trigona* spp.



CBA and sensitivity analysis

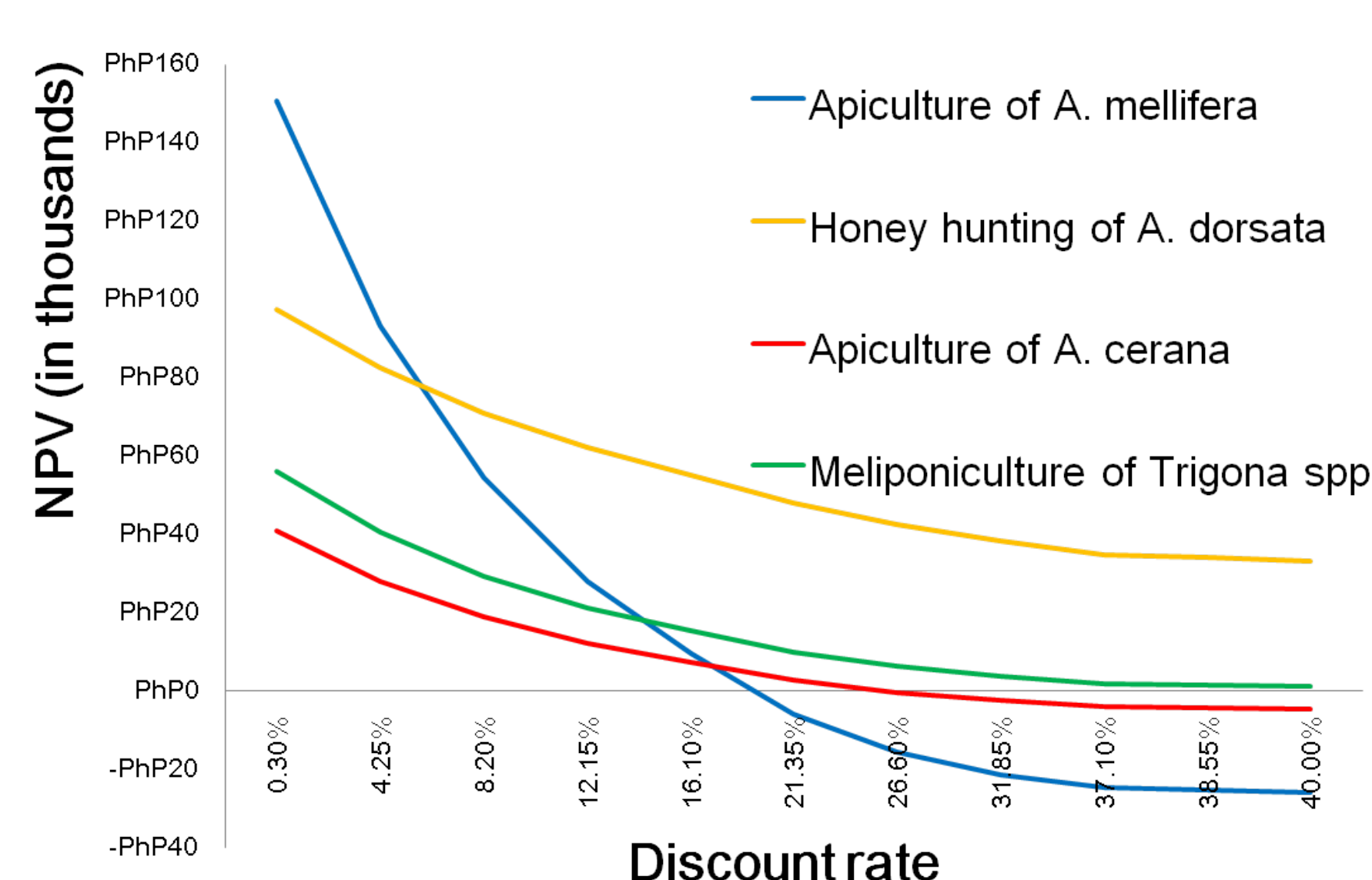
Changing honey price until reaching BEP*



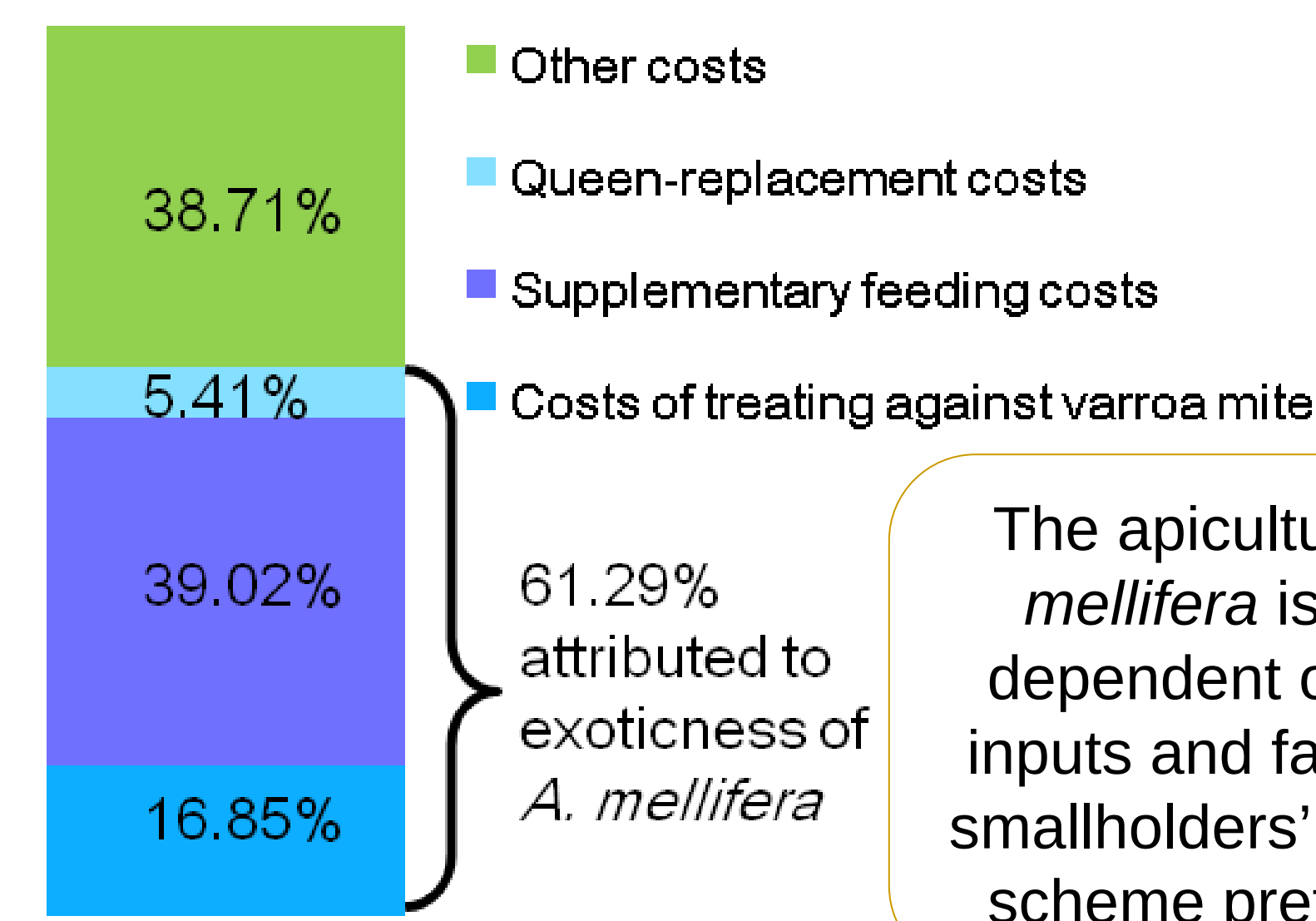
*Break-even point (BEP): point at which investment yields $NPV^{**} = \text{PhP}0$

Similar impact was observed on BEP when changing honey yields.

Changing discount rates impact on NPV**



Share of costs due to exoticness of *A. mellifera*



The apiculture of *A. mellifera* is highly dependent on these inputs and fails under smallholders' low-input scheme preference.

A **risk analysis** that simulates the variability of all profit determining factors simultaneously showed that there is a 45% probability for modern beekeeping to fall below its BEP, and that the farmer will always prefer investing in honey hunting over modern beekeeping regardless of her risk attitude. There is very low probability of negative NPVs** when investing in native beekeeping and honey hunting.

Conclusions

**NPV=Net Present Value=sum of discounted net benefits
€1=PhP60.11 as of March 2009

- Modern beekeeping has mainly served beekeepers endowed with sufficient financial means to incur its high investment and operating costs, excluding the rural poor. It is very sensitive to changes in prices, yields or costs, involves high risk, is only profitable under lower discount rates and might entail negative environmental side-effects due to its exoticness.
- There are great potentials in native bee species for the development of livelihood projects offering an additional income to local rural smallholders. Especially beekeeping of *Trigona* spp. and honey hunting are low risk, profitable investment alternatives. However, uncontrolled feral bee colony extractions can lead to critical bee population falls.
- Infrastructure and institutions currently supporting modern beekeeping could also integrate livelihood projects based on native bees. Such framework could encourage the sustainable use of native bee resources and implement and regulate management programs for the use of feral bee colonies.

Contact