

Diversity of wild and edible insects for forest sustainability in Madagascar

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Insects farm for food can provide an environmentally sustainable and nutritious alternative to traditional protein sources. Insects offer a far greater range of nutrients than commonly consumed meats, yet require a much smaller footprint to produce. In Madagascar, insects are an indispensable part of seasonal diets for many ethnic groups. It can be used as permanent solution to resolve the problem of food security but few database is available about edible insect diversity.

Objectives

1. Create an online knowledge bank of edible insects (distribution, life histories).
2. Apply innovative techniques to scale the rearing of one native insect species intended for whole insect consumption and another species.
3. Research the bioavailability of micronutrients and food safety associated with targeted edible insects.
4. Investigate attitudes toward insects as food and analyze the implication of these findings.

Methods

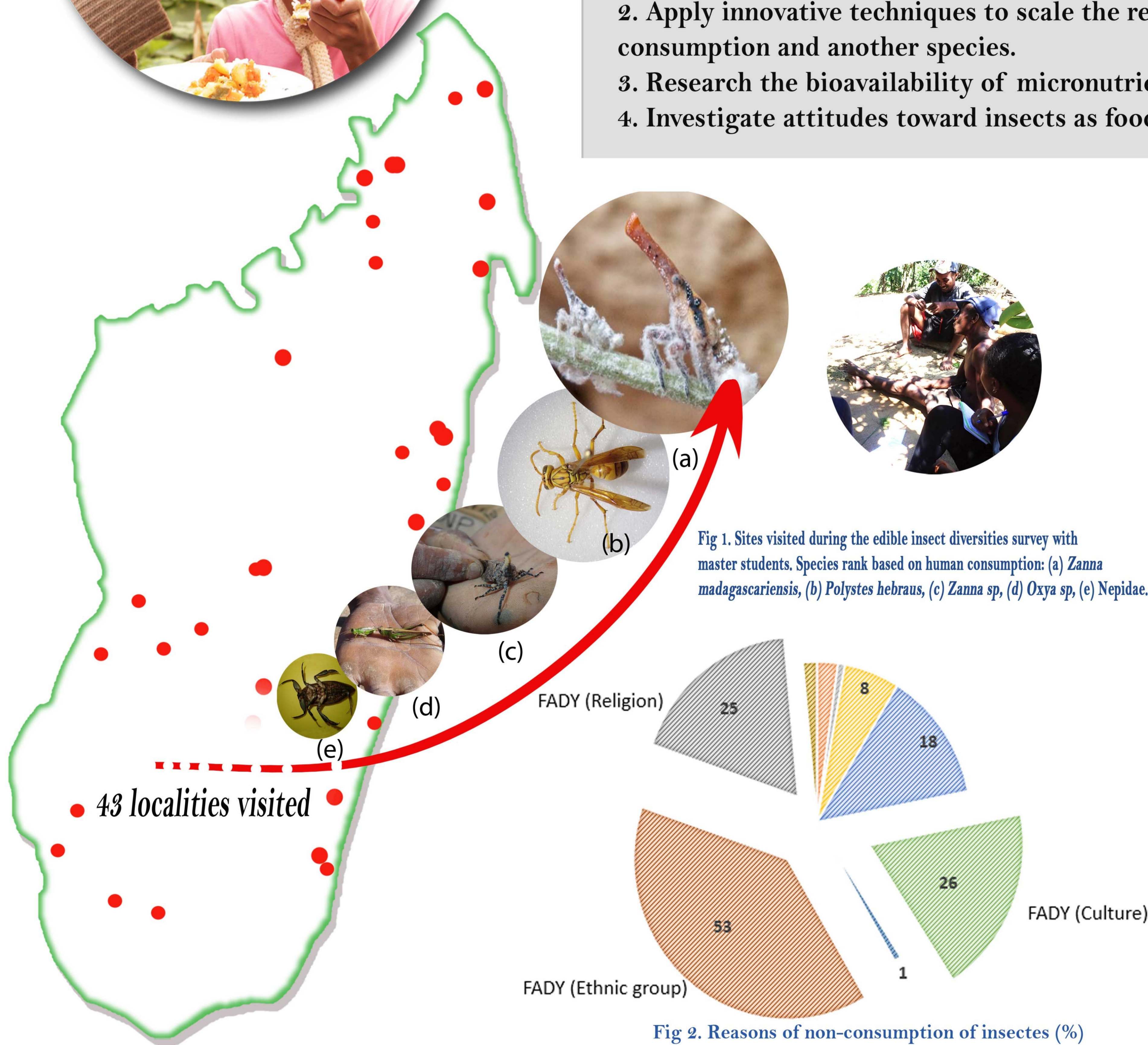
Field survey started from April 2018 to May 2019

1- Inventory of edible insects across Madagascar by using questionnaire (Randianandrasana, 2015).

2. Conduct insect rearing trials in local communities and evaluate strategies to maximize improvements in livelihoods and conservation of local forests.

4. Research the bioavailability of nutrients and food safety associated with the target edible insects (Umpold 2014; Payne et al. 2015).

5. Investigate the attitudes to insects as food and implication for commercialization of insects for food in Madagascar.



Results

- With 43 localities visited belong to 12 Regions, 80 different species belong to eight insect order and 2 largely insect species consumed across the country.
- Two potential species largely consumed: *Zanna madagascariensis* (for low land & upland) and *Polistes hebraeus* (for low land) Fig 1.
- Entomophagy: attitude survey with pupils (150) in primary school of Antananarivo with importance of cultural barrier to accept insect as food (Fig 2 3).

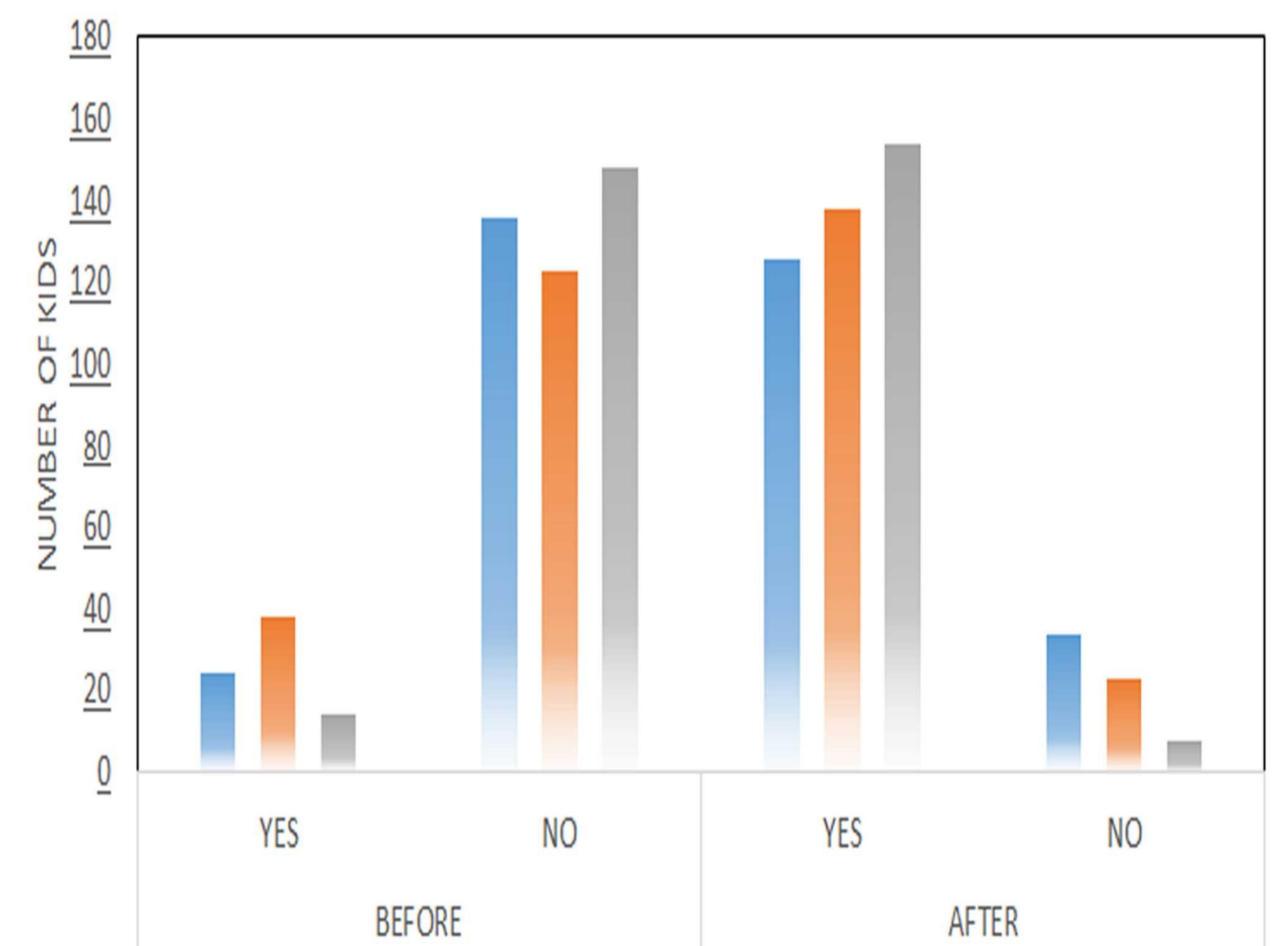


Fig 3. Behavior of kids in primary school before and after education to eat insect as food

Conclusion

Eating Insect as food is part of Malagasy culture but between edibility and deliciousness, there is a big gap. The communication strategies based on sensitization of kids to eat insect is the best approach to fill the gap. The government has an important role also to promote insect as food and to resolve the problem of food security and forest conservation in Madagascar.

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