Production and Processing of Edible Insects for Improved Nutrition

Situation of Edible Insects before Developing its Processing Technologies to Enhance Rural Nutrition in Madagascar

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Context

- In Madagascar, **highlands are most affected by chronic malnutrition** conducting to growth retardation : from 45 to 60 % (ONN, 2019)
- **65 species of edible insects** from seven orders recorded (RANDRIANANDRASANA & BARENBAUM, 2015) in Madagascar
- **decreasing quantity of collected wild resources** season by season (*Borocera madagascariensis*, Coleoptera larvae and adults etc.) according to the ex-ante analysis of the ProciNut Project (2018).

Objectives

- Establish baseline database for the ProciNut project,
- Identify the willingness to rear insects in rural community which wild collect insects for human consumption for centuries
- Understand the acceptance of 5 insect species as livestock and their suitability of rearing at the study site in order to design adequate processing technologies

Materials and Methods

- Five villages of Sandrandahy, an integral part of the southern zone of the Central Highlands whose altitudes vary between 1,200 to 1,500 m. The climate of the region is a tropical
- Random survey of 128 household leaders from July to August 2019 (Fig. 1)

Fig. 1: Household leader survey (july 2019) in the village of Ambohibary, Commune of Sandrandahy, Amoron'I Mania Region, Madagascar
Photo: Andrianantenaina Razafindrakotomamonjy

Results

- **96,1 %** of households eat at least 1 species of insect, men (84,5%) are more interested in insect farming compared to women (68,7%) (fig. 3)
- **74,2 %** of farmers are willing to start insect rearing (fig. 2)
- **Potential species for rearing**: silkworms (*B. madagascariensis*), local crikets (akitra or *Gryllus madagascariensis*, sakivy or *Amblylakis nigrolimbata*), local locusts (valala or *Cyrtacanthacris tatarica*) (fig. 4).

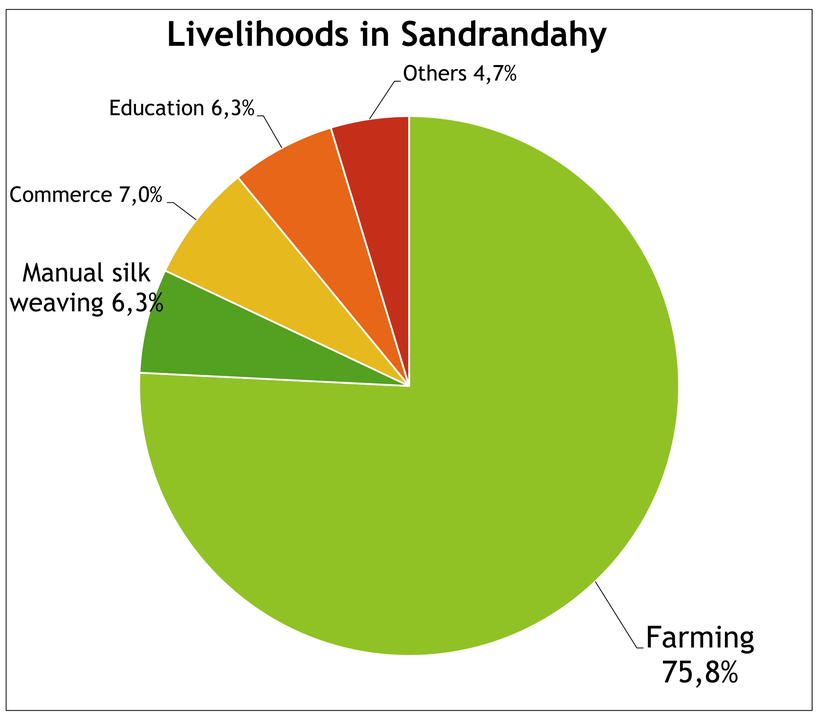

Fig. 2: Main livelihoods in Sandrandahy, Amoron'I Mania Region, Madagascar

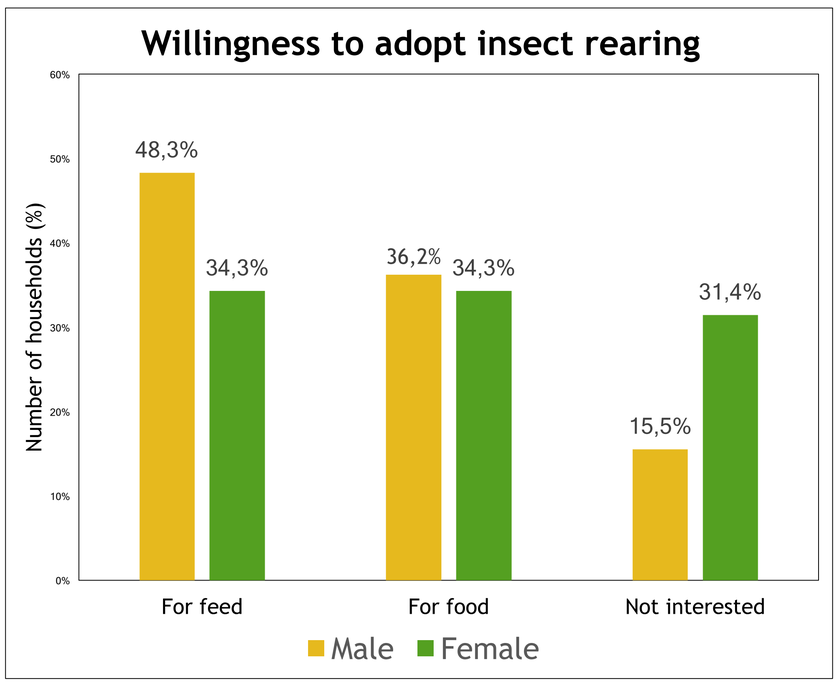

Fig. 3: Willingness to adopt insect rearing for food and feed segregated by gender in Sandrandahy

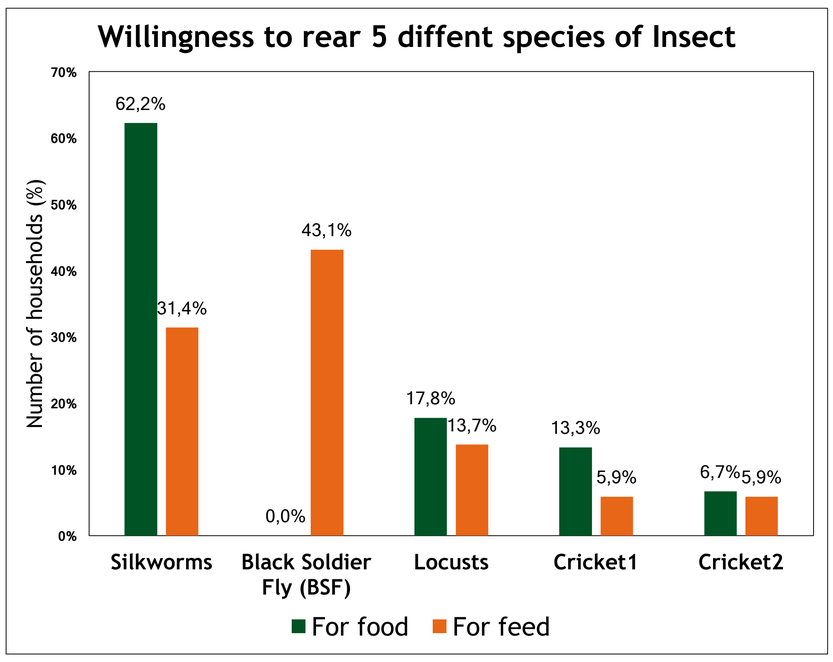

Fig. 4: Willingness to rear 5 different species of insect (silkworms: *B. madagascariensis*, BSF: *Hermetia illucens*, Locusts: *C. tatarica*, Cricket1: *A. nigrolimbata* Cricket2 : *G. madagascariensis*) for food and feed in Sandrandahy, Amoron'I Mania Region, Madagascar

Way forward

- Taxonomy identification and nutritional profile analysis of native species
- Selection of **farmer leaders** by gender and interest for household nutrition improvement
- on-farm experimentations using locally available resources
- national policy to be developed with the local stakeholders to promote the edible insect sector.

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