

## Sustainable use of insects to improve livestock production and food security in smallholder farms in West Africa

### The issue

#### Globally:

- Meat consumption has dramatically increased in recent years
- Animal feed needs a substantial amount of proteins
- The two main sources of protein for animal feed (soya and fishmeal) are not sustainable
- There is an urgent need for new sustainable sources of protein for animal feed

#### In West Africa:

- For poultry and fish producers, feed is expensive (70% of the costs), especially proteins (fish meal, soya, groundnut)
- For smallholder farmers, scavenging poultry are usually fed with grains and fish with organic waste, resulting in low growth and yields, high juvenile mortality, etc.

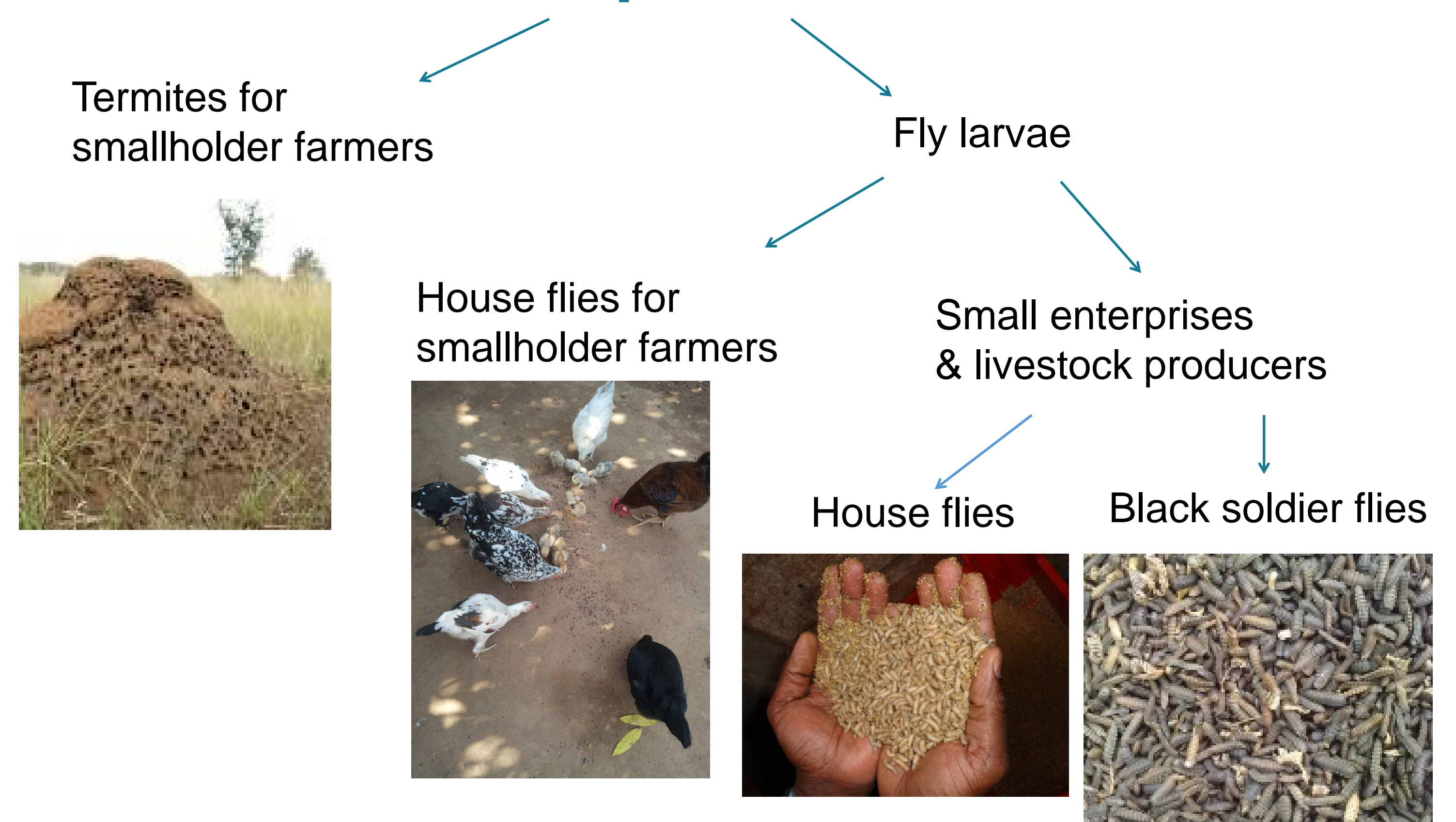


### The solution

**Insects provide a more sustainable source of protein for animal feed but preferably...**

- Insects that can be produced cheaply on waste products, e.g. fly larvae
- Insects already used traditionally as animal feed, e.g. termites

### 4 options



### Hypothesis and objectives

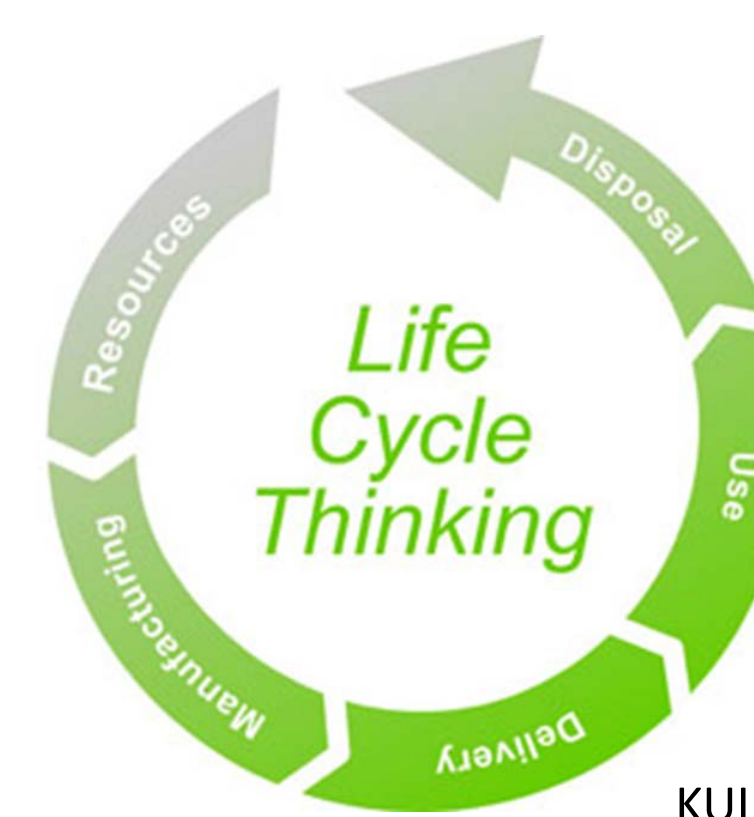
**Research hypothesis:** Fly larvae and termites are an economically, socially and environmentally viable source of protein for poultry and fish feed on smallholder farms in West Africa.

#### Objectives:

- To develop appropriate methods for fly larvae and termite production and utilisation in smallholder farming systems in West Africa, based on waste material.
- To understand and ensure the social, economic and environmental sustainability of the proposed innovations.
- To validate and implement the innovations with the beneficiaries, and disseminate the project's findings to the stakeholders, general public, scientific community and policy makers.

### Activities – 8 Workpackages

1. Improving fly larvae production for smallholder systems
2. Improving knowledge on termites as animal feed and collection systems
3. Evaluation of fly rearing residues
4. Nutritional quality and suitability of fly larvae and termites
5. Health, safety and environmental sustainability
6. Economic assessment of potential project impacts at farm and enterprise level
7. Understanding the social context and engaging local communities
8. Technology Transfer, Community Development, and Implementation



### Project team and geographic focus

-  CABI - CH (Switzerland)
-  Université de Neuchâtel (Switzerland)
-  Université d'Abomey-Calavi (Bénin)
-  Institut National des Recherches Agricoles du Bénin (Bénin)
-  Council for Scientific and Industrial Research (Ghana)
-  Fish for Africa (Ghana)
-  CABI – WAC (Ghana)
-  Université Polytechnique de Bobo-Dioulasso (Burkina Faso)

