



## Prospects and constraints for the use of insects as human food and animal feed in West Africa

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# Insects as animal feed and human food in West Africa



# Animal feed in West Africa



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## Smallholder farmers

- Scavenging poultry fed with grains (at best)
- Fish fed with organic waste (at best)
- Low growth and yields, high juvenile mortality



# Insects as animal feed in West Africa

Opportunistic feed during outbreaks: e.g. Grasshoppers and caterpillars



# Insects as animal feed in West Africa

Traditional feed: termites

Collection of termite mounds chippings in the bush



# Insects as animal feed in West Africa

Traditional feed: termites

Methods to collect termites on farm



(Chrysostome et al. 2009)



# Insects as animal feed in West Africa

Traditional feed: fly maggots

Maggots are a traditional poultry feed





# Insects as animal feed in West Africa

Traditional feed: fly maggots

Maggot production systems have been developed but their use has not yet been widely adopted outside demonstration farms (see Koné, Nacambo and Kenis, tomorrow 16:10)



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- Safety issues related to maggot production in smallholder farm systems needs to be investigated.

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- Acceptability of eating animals fed with maggots may have to be improved, and policies on the use of insect-based animal feed need to be developed or adapted.



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- Safety issues related to maggot production in smallholder farm systems needs to be investigated.
- Acceptability of eating animals fed with maggots may have to be improved, and policies on the use of insect-based animal feed need to be developed or adapted.
- **Termites** will always be restricted to smallholder farms but the systems used to enhance populations on farm can be improved

# Insects as human food in West Africa

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van Huis, 2003:

Niger:	15	D.R. Congo:	64
Nigeria:	9	Zambia:	56
Sénégal:	7	Cameroun:	41
Burkina F.:	1	Congo:	32
Mali:	1	Zimbabwe:	32
		Madagascar:	24
		South Africa:	21







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[Rechercher une plante hôte](#)

## Les Insectes Comestibles d'Afrique de L'Ouest et Centrale sur Internet

### Connexion utilisateur

Nom d'utilisateur : \*

Mot de passe : \*

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### Recherche

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### Recherche Insectes



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Africa  
Tervuren



Niger	7
R.D. du Congo	22
Cameroun	17
Mali	9
Rép. Centrafricaine	14
Bénin	19
Togo	15
Congo Brazzaville	23
Guinée Conakry	15
Burkina-Faso	16

# Insects as human food in West Africa

Prospects and constraints – example of the shea caterpillar.  
*Cirina forda* (= *C. butyrospermi*) in Burkina Faso





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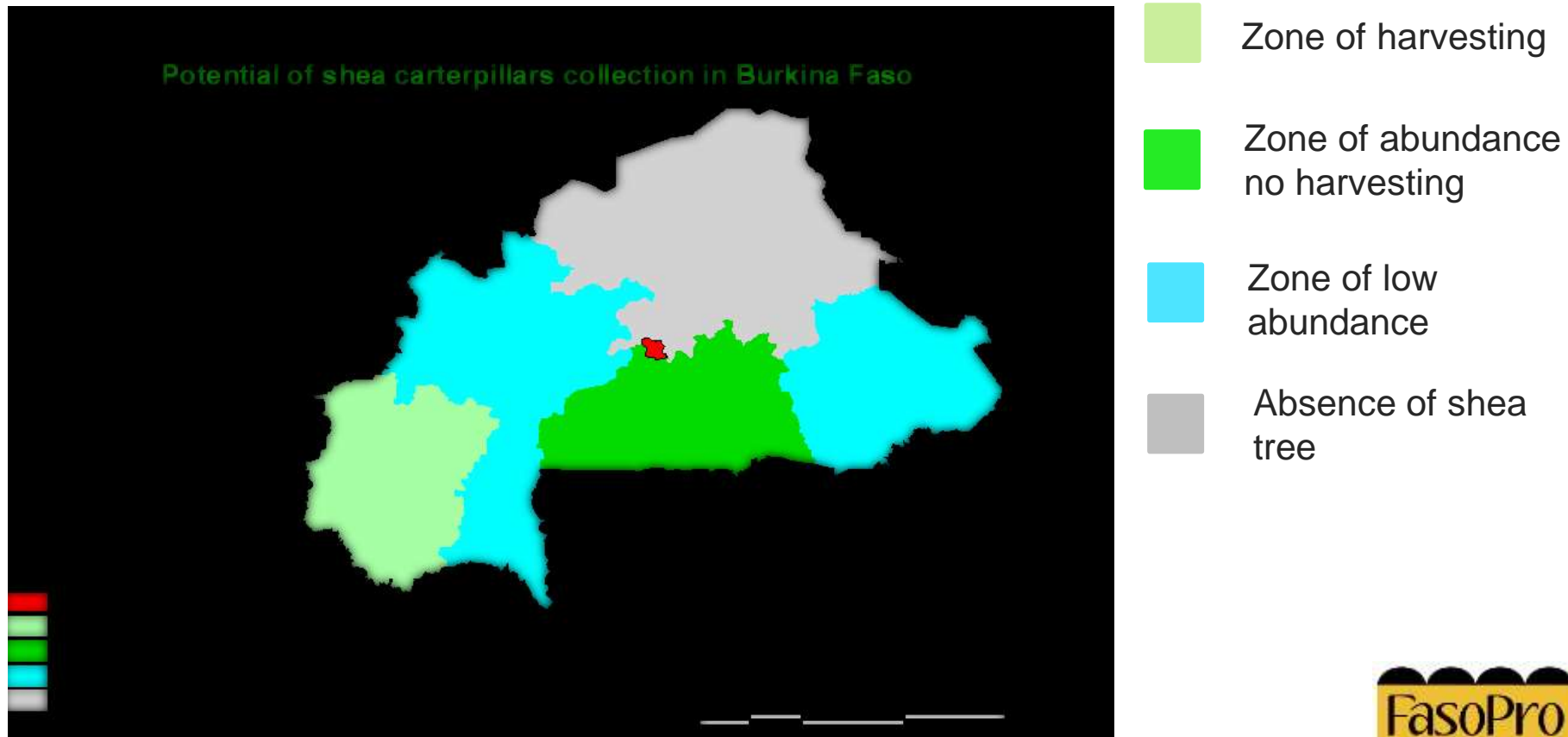
# Insects as human food in West Africa

Prospects and constraints – example of the shea caterpillar.  
*Cirina forda* (= *C. butyrospermi*) in Burkina Faso



# Insects as human food in West Africa

Issue 1: the caterpillar is consumed by a small portion of the population



# Insects as human food in West Africa

Issue 2: Mass production is difficult: the caterpillar is specific to the shea tree and has an obligatory diapause of 9 months in the soil in the pupal stage.



# Insects as human food in West Africa

Issue 3: The dry caterpillars are only available for 3-4 months after harvest. Prices fluctuate.





# Insects as human food in West Africa

Issue 4: Market chain not structured. Difficult to ensure product quality and safety as well as product tracability.





# Insects as human food in West Africa

**FasoPro**, a young start-up, social enterprise, is trying to solve these issues through:

- Transformation of the shea caterpillar.
- Sustainable collection and production

# Insects as human food in West Africa

## Transformation of the caterpillar

### First product: Toumou' Délice

- Pre-cooked fresh caterpillars
- Can be conserved 18 months
- Available as 200g, 500g and 1kg
- Improved food safety



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### Products under development:

- Hyper-nutritious sauces for babies, young children and pregnant women, to prevent malnutrition
- Tasty cubes and powder based on caterpillar and other local products, for “seasoning”



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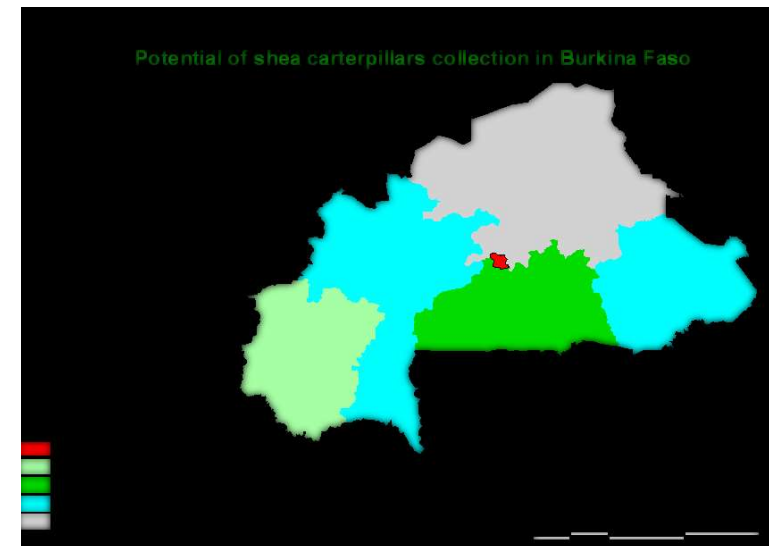
## Ensuring a sustainable provision of caterpillars

1. Better exploit the existing resources (+ 70K tons available)

# Insects as human food in West Africa

## Ensuring a sustainable provision of caterpillars

1. Better exploit the existing resources (+ 70K tons available)
  - Train and support traditional harvesting
  - Contract harvesters
  - Organise harvesting in regions that do not traditionally harvest
  - Ensure sustainability of caterpillar populations and assess the reasons for the absence of caterpillars in other regions





# Insects as human food in West Africa

## Ensuring a sustainable provision of caterpillars

### 2. Develop methods for caterpillar mass rearing

- Develop artificial diets
- Develop systems to break diapause and shorten life cycle
- Develop system to mass produce eggs

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Support needed for research, development and implementation !!!

(Any suggestion warmly welcome)

**Thank You**

