

# The role of agriculture in the urban metabolism of Ouagadougou (Burkina Faso): a model facing its limit



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# Introduction

Growing urbanization on the worldwide scale

Special problem in developing countries:rural exodus + exponential population increase since 30 years

- Urban densification and poverty of a growing part of the population
- Growing production of domestic and industrial waste :management as a recurring problem

Poverty → Food insecurity

Growing population → Growing demand / needs for incomes

→ Growing area of agriculture

## Different forms

- Crops: food crops, market gardening



- Breeding



- horticulture



### Growing place :

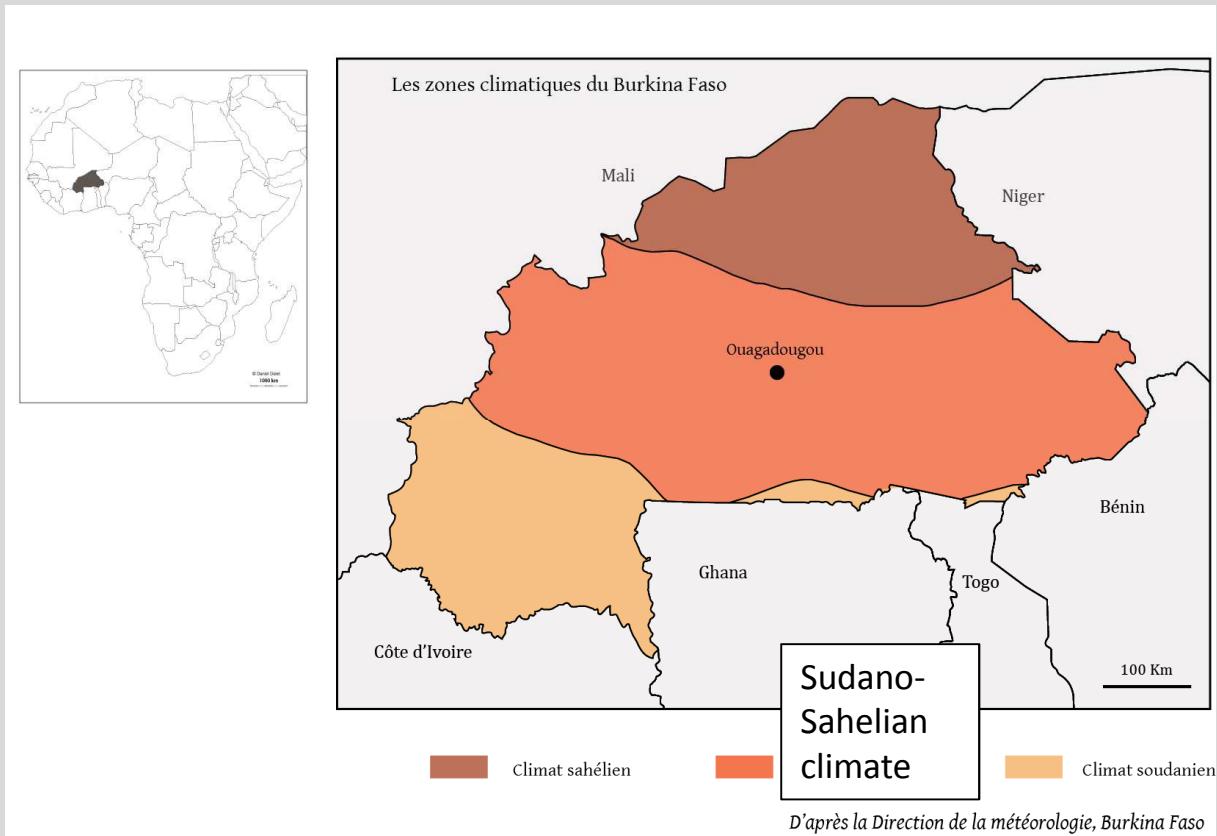
- in the economy of the most fragile households
- in the supply of the city (especially for perishable products: fruits, leafy vegetables) – one reason: problem of transport

### Ouagadougou, capital of Burkina Faso: particularly concerned

Agricultural area: +255%  
between 1996 and 2009

#### Facing difficulties:

- poor soil  
(lateritic outcrops)
- dry climate (dry season = 8 months)



Highly subordinate to water supply and organic amendments

Use of most accessible resources (cost and geographical proximity)

**How does agriculture fit in and remain in Ouagadougou? What role does it play?**

1. Framework and materials of the research
2. The major role of urban agriculture in Ouagadougou
  - Social and economic role
  - Contribution to the urban metabolism
3. An unrecognized agriculture or the limit of the model

# **1. Framework and materials of the research**

## Framework

A research program funded by the National network of human sciences houses



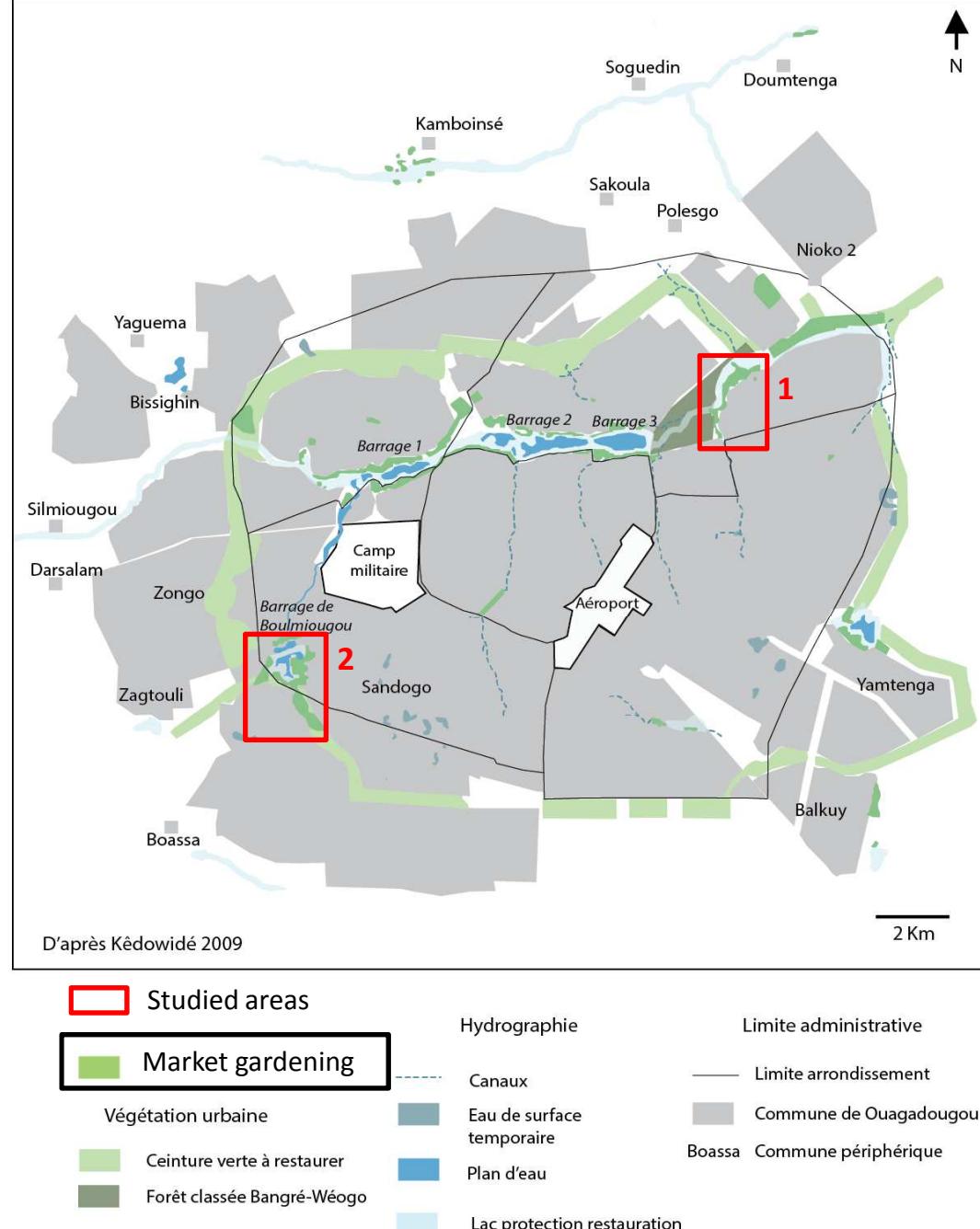
AURA: Urban agriculture in Africa

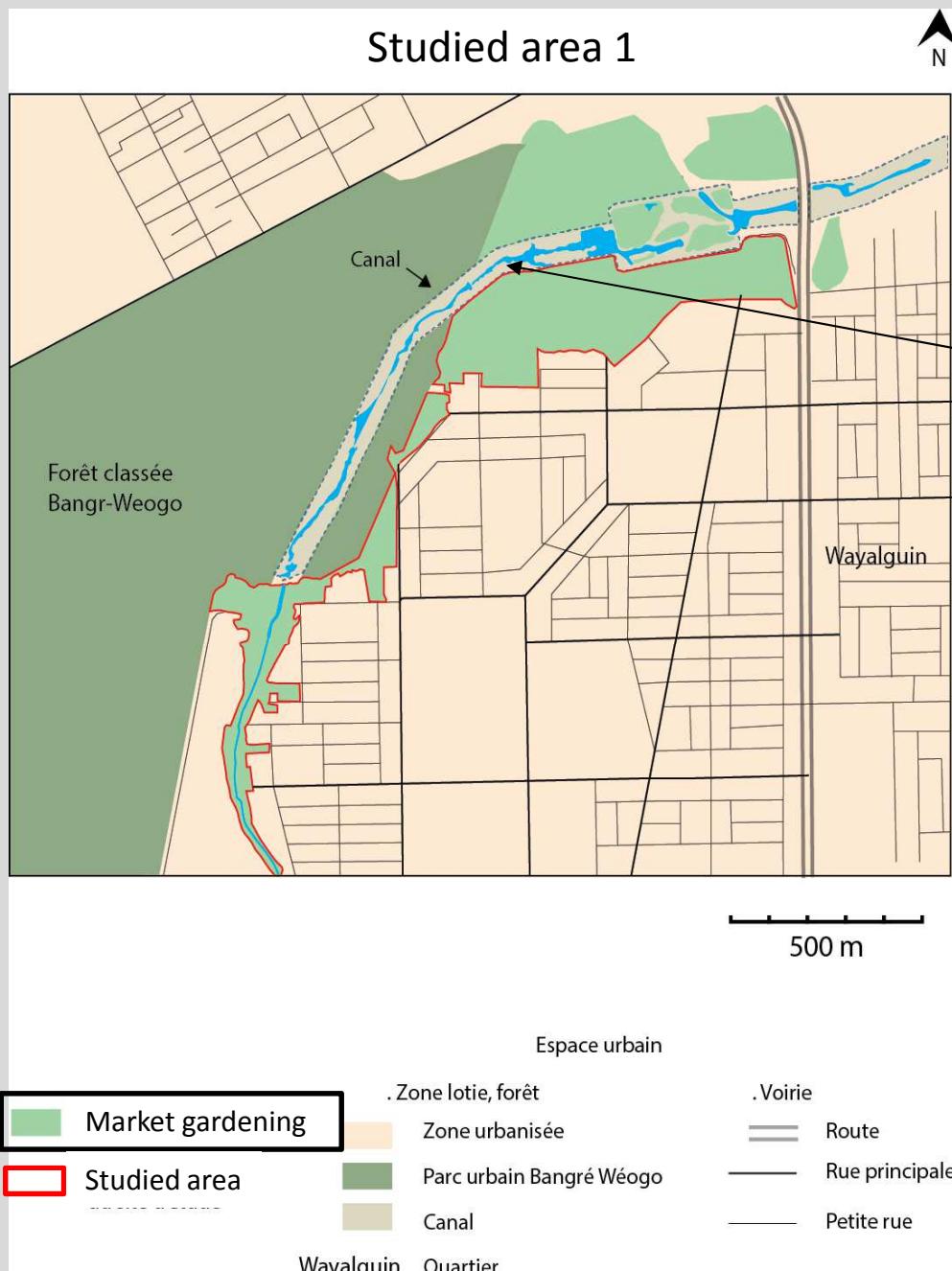
Purposes:

- Understanding the relations between agriculture and Ouagadougou city (practices, perceptions, production)
- Particularly questionning the role of agriculture in the sanitization of the city

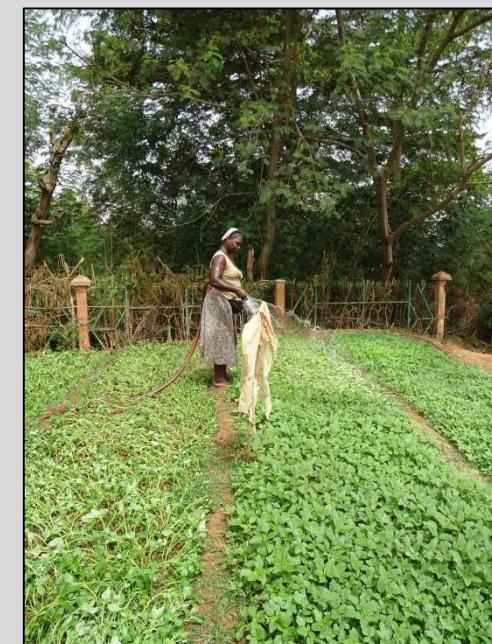
Focus on market gardening = main agriculture in Ouagadougou

Here = first results

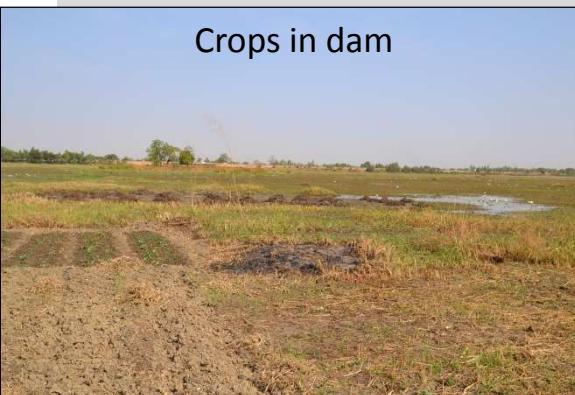
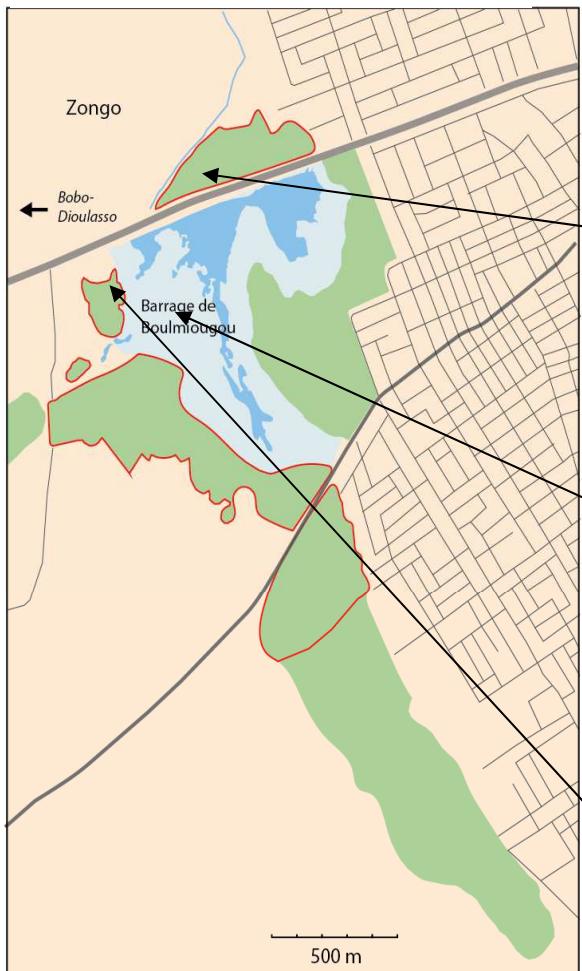




Water supply by canal



## Studied area 2



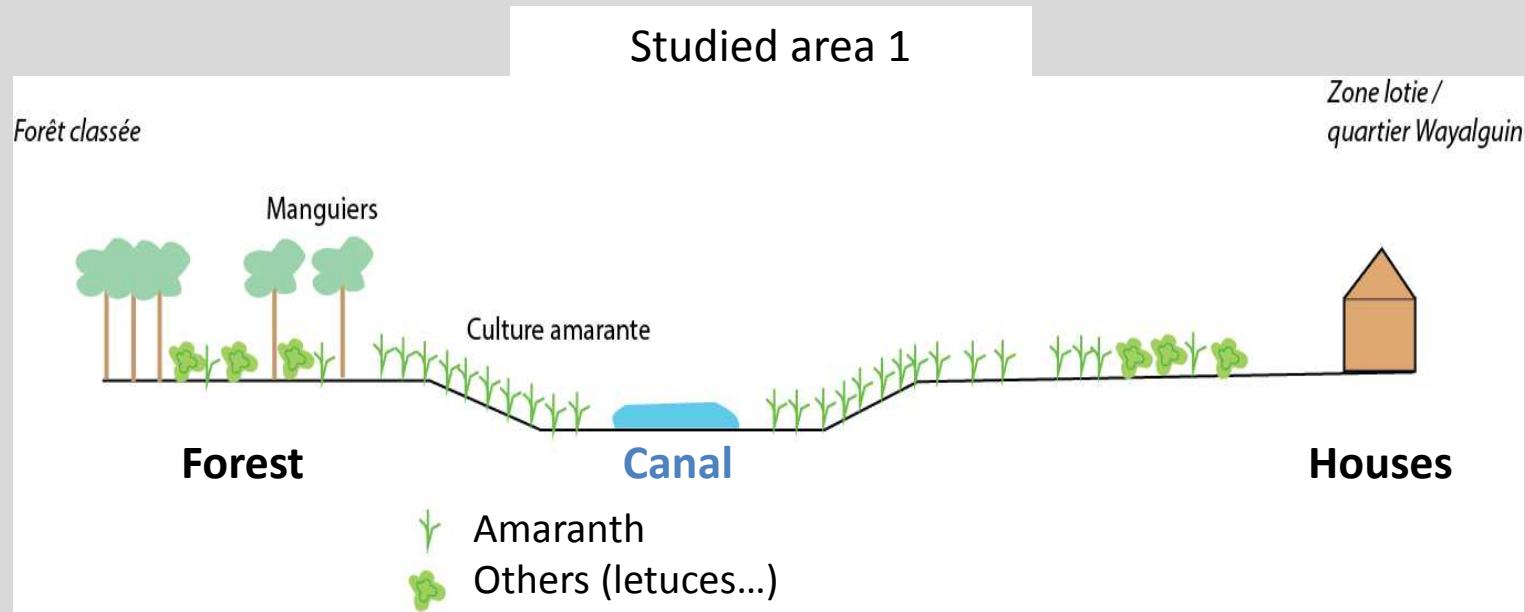
Water supply by canal  
and dam



Hydrographie	Zone urbaine
Eau de surface	Espace urbanisé
Zone du barrage	Route
	Voie principale
	Petite rue
Zongo	Quartier
Market gardening	
Studied area	

# Non-participative observations and field surveys

Purpose: knowing the crops organisation and the practices



## Semi-supervised interviews

- Burkina officials
- City-dwellers met in the studied areas (farmers and others)

Purpose: knowing  
practices and  
perceptions of urban  
agriculture

## Analysis of official documents

Master plan for development

## **2. The major role of urban agriculture in Ouagadougou**

- Social and economic role
- Contribution to the urban metabolism

## • Social and economic role

An essential activity for the city

Growing area / crops planted everywhere



## Food supply

Creator of jobs / source of incomes for many people:

- Farmers
- Buyers who come to harvest and resell on the markets
- Suppliers of seeds and seedlings
- Manure and compost vendors
- Collectors of weeds for livestock feeding (before planting)...



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## Sociability places:

- Mutual aid, solidarity

Example of dam building  
for water stock

- Other activities

Example of praying place



- Contribution to the urban metabolism

**Use of waste water flowing in canals (including water from industry or hospital)**



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## Use of waste

Waste as a major problem for Ouagadougou

Official garbage dump



Unofficial dump on the green belt



Waste in a canal



Plastic waste in soil



## Use of waste

Waste as a major issue

Official garbage dump



Unofficial dump



The role of

in soil  
ng its limit

A problem for agriculture  
Removing plastic waste before planting



Use of  
organic  
waste to  
fertilize

## Plant waste for mulching



Sometimes, crops are planting on garbage dumping = more fertile soil



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### **Urban agriculture in Ouagadougou :**

Use of waste     contribution to urban metabolism

 **Precursor**, whereas northern countries are looking for solutions allowing a closed-loop functionning

But not a consequence of an official will to sanitize the city

### **3. An unrecognized agriculture or the limit of the model**

## **Urban agriculture in Ouagadougou :**

No support from public authorities

Even doomed

### **Reason**

Agriculture at the opposite of the choice for urban planning

Image of an urban planning where « concrete is modernity » = no place for agriculture

### **Consequence**

Emphasis of disadvantages by public actors

Two kinds :

- environmental pollution
- Health problem

- **Urban agriculture as a source of environmental pollution**

Silting up of canals near cultivated plots



A plot in the middle of the canal



Extraction of silt for sale



Use of chemical products (pesticides, fertilizers) often in high dose



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- **Urban agriculture as a source of health problem**

**Reason :** Use of waste and waste water

**Water containing bacterium, chemical/toxic products:**

- coming from domestic source but also from hospitals, industries
- containing waste



In the Master plan for development:

High area of market gardening but question about quality of water used by farmers

## High presence of waste in soils



## Culture on waste also containing bacterium sources, chemical/toxic products



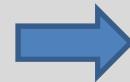
Different kinds of waste: plastic but not only  
Also coming from domestic use but also industrial use

→ Contamination risk for vegetable then for consumers → Health risk

= limit of the model, based on the role of agriculture in the urban metabolism

Emphasis of these problems by public authorities  
True problems

But high presence of agriculture in Ouagadougou



Laisser-faire of the public actors

# Conclusion

**Major role of agriculture in Ouagadougou:**

**Economic and social**

food/market supply

jobs/incomes

social role

**Contribution to the urban metabolism**, by using waste coming from the city (a major problem for Ouagadougou)

Precursor / model coming from the base, without official support

**But source of pollution and health problem**

= limit of the model

**Finding solutions** to limit these problems, to limit the contamination risk (future research)

Important point, compared to the **growing importance** of UA in Ouagadougou

**Laisser-faire** of the public actors : UA as accomodating = cultivated land as a land reserve in a context of urban expansion and densification

# Thank you for your attention



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