SOCIO ECONOMICAL USES AND REGENERATION OF *SECURIDACA LONGEPEDUNCULATA* FRES. IN BURKINA FASO

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OUTLINE

- INTRODUCTION
- OBJECTIVES
- MATERIALS AND METHODS
- RESULTS AND DISCUSSIONS
- CONCLUSION AND RECOMMENDATIONS

INTRODUCTION (1/3)

- *S. longepedunculata* : only one species belonging to the genus Securidaca in BF

- Rare species (North, North-Centre and East)

✓ (SP/CONAGESE, 1999; Hahn Hadjali et Thiombiano, 2000)

- Studies on its socio economical importance

✓ (Nacoulma/Ouédraogo, 1996; Nana/Sanou, 2005; Koadima, 2008)

INTRODUCTION (2/3)

- But investigations limited to the protected areas

In addition,

in BF, Forest areas's annual decrease of is estimated to about 4% (MAHRH, 2008)

- Main cause: extension of farming lands

INTRODUCTION (3/3)

OBJECTIVES

- Establish a check list of its uses
- Study its regeneration through population's characterization in three different ecological zones under human pressure

Three Hypothesis

- *S. longepedunculata* = high socio-economical purposes species
- Its natural Regeneration is poor
- Traditional land use systems

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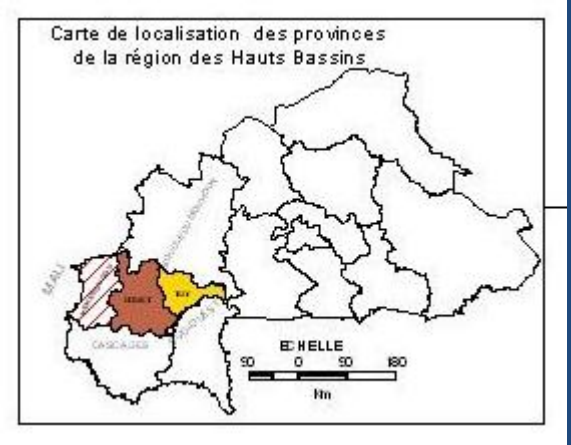
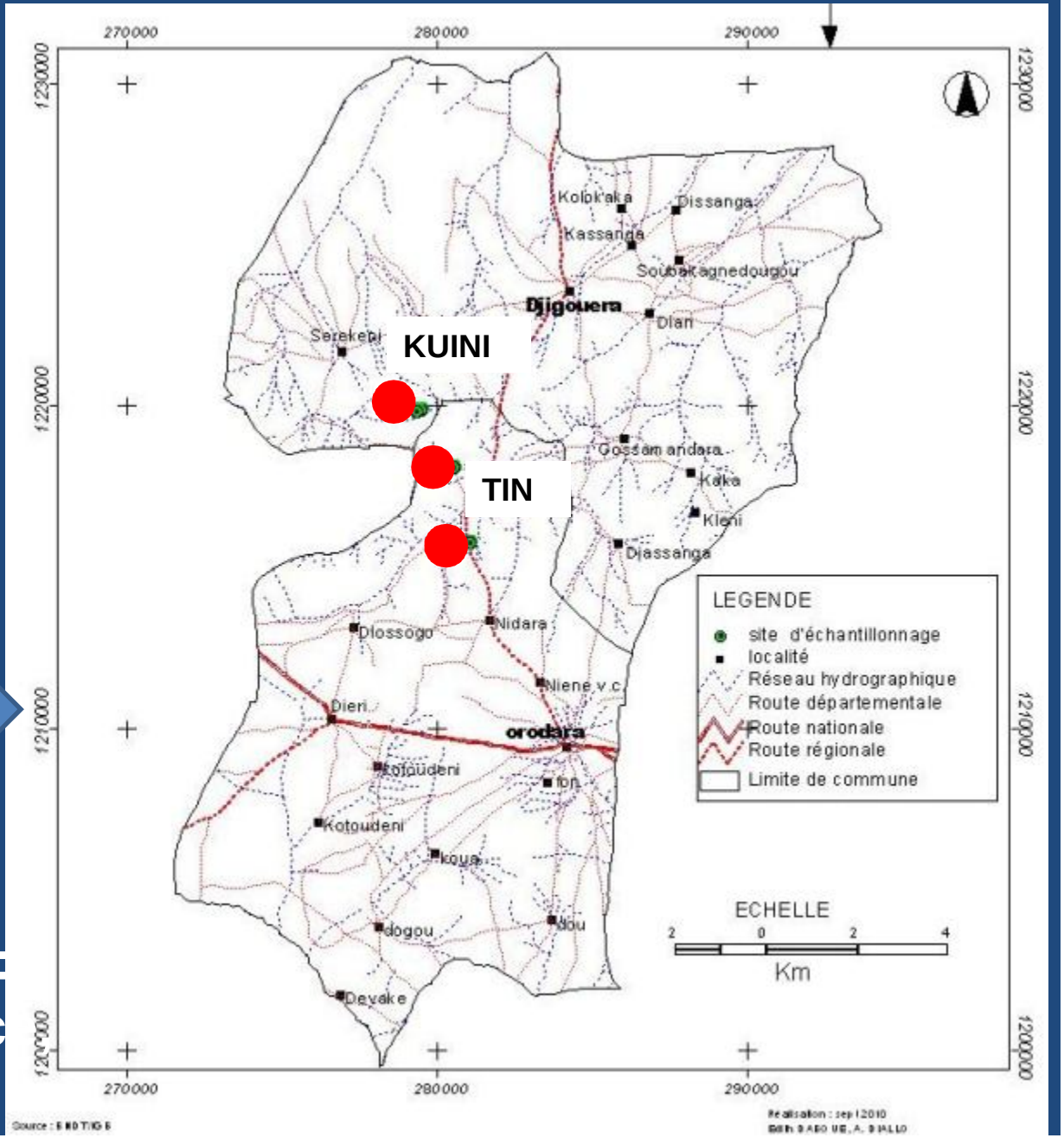
Influence on its development

MATERIALS AND METHODS

MATERIALS AND METHODS (1/5)





Study area and sites:
Kenedougou provinc
West part

MATERIALS AND METHODS (2/5)

To check the utilisations

- Ethnobotanical surveys

Semi Structural interviews

MATERIALS AND METHODS (3/5)

Populations characterization

- **« Population »:** statistical and genetically points of view

- **Population =** Group of at least 50 individuals adults and juveniles of *S. longepedunculata* well circumscribed in an area

- Investigations conducted in 5 steps

MATERIALS AND METHODS (4/5)

- **Prospection**

- **Identification and localization of species populations**

Populations chosen following human pressure gradient going from:

✓ Farm

✓ Fallows : 5, 10, 20 years old

✓ Protected population in the village forest of Tin

MATERIALS AND METHODS (5/5)

- **Delimitation of each population with GPS**

- In each population:

✓ **Localisation of each individual** with GPS

✓ **Dendrometric parameters** measurement of each individual (total height and diameter)

- **Data analysis**

✓ Population structure in diameter and height

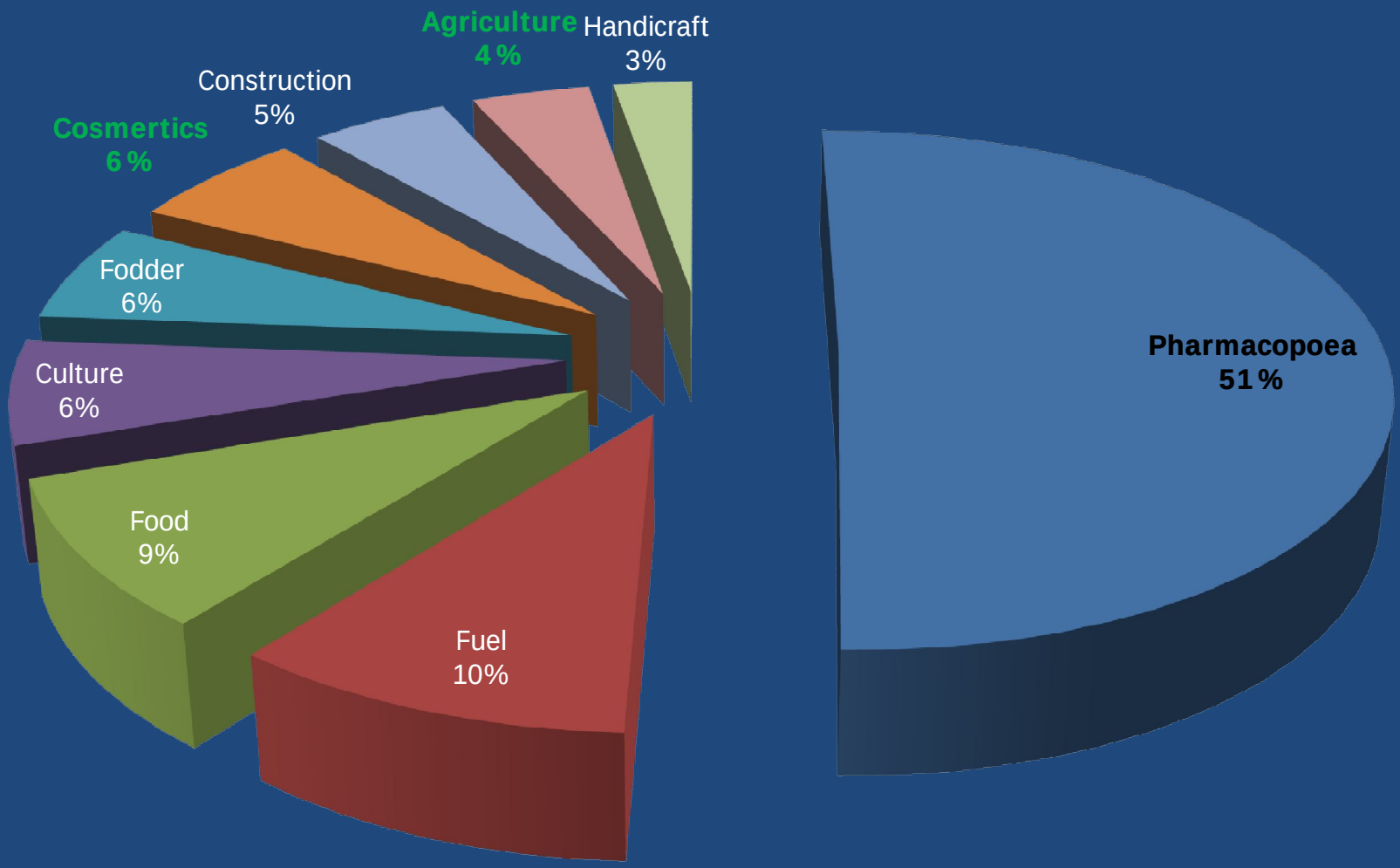
✓ Spatial distribution : mapping using Arcgis 9.1

✓ Excel and sigmaPlot softwares were also used

RESULTS And DISCUSSIONS :

ETHNOBOTICAL SURVEYS

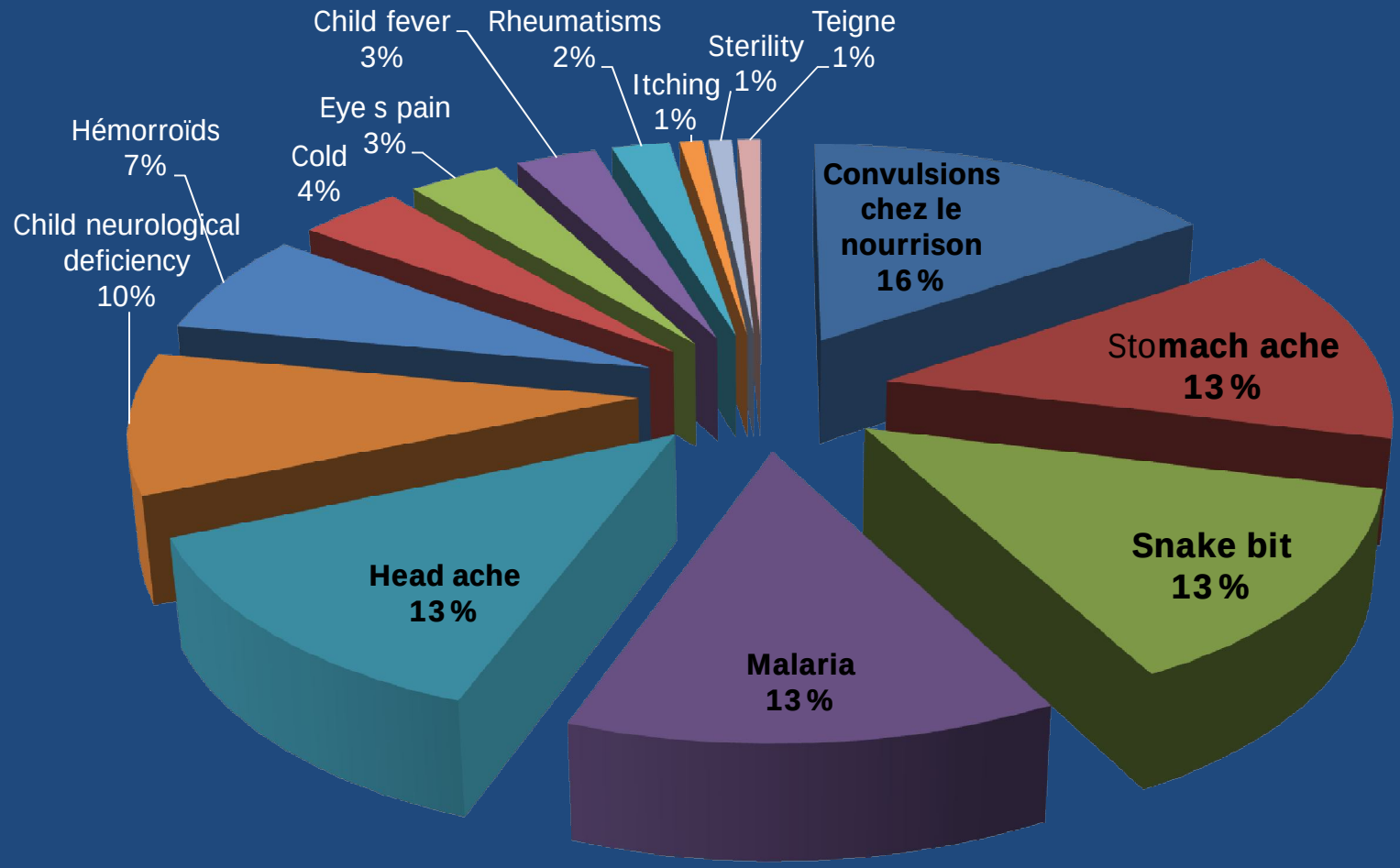
9 **DOMAINS** OF USE with different levels



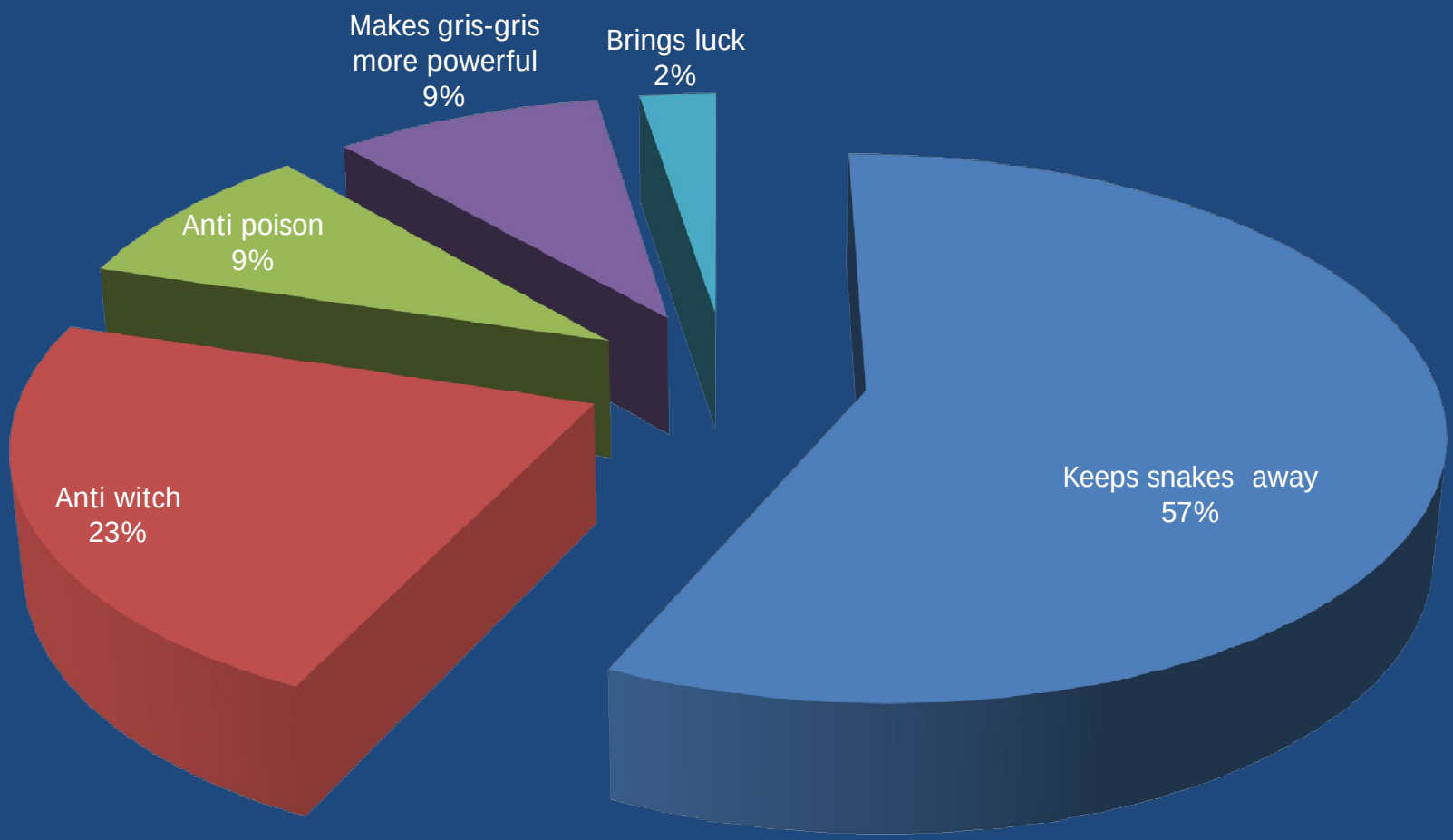
PARTS OF THE PLANT USED ?

PHARMACOPOEA

14 different diseases recorded



5 **OTHER USES**


Makes gris-gris more powerful 9%
Brings luck 2%
Anti poison 9%
Anti witch 23%
Keeps snakes away 57%

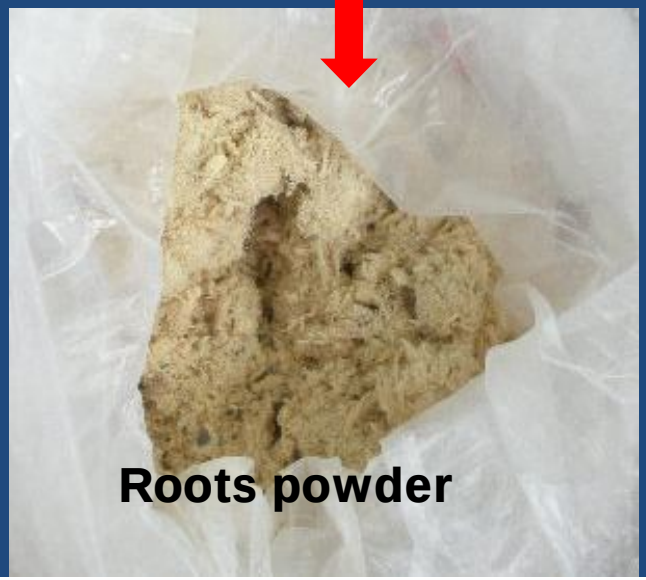
ANALYSIS ?

- ***S. longepedunculata*** **= Highly medicinal species**

- Diseases its treats are familiar

- Child care: 29%
  - ✓ Nana/Sanou (2005)

- Contributes potentially to people health improvement



ANALYSIS

However, one important threat:

Roots exploitation

- All domains : average citation frequency 63,39%
- Pharmacopoea alone, 81%

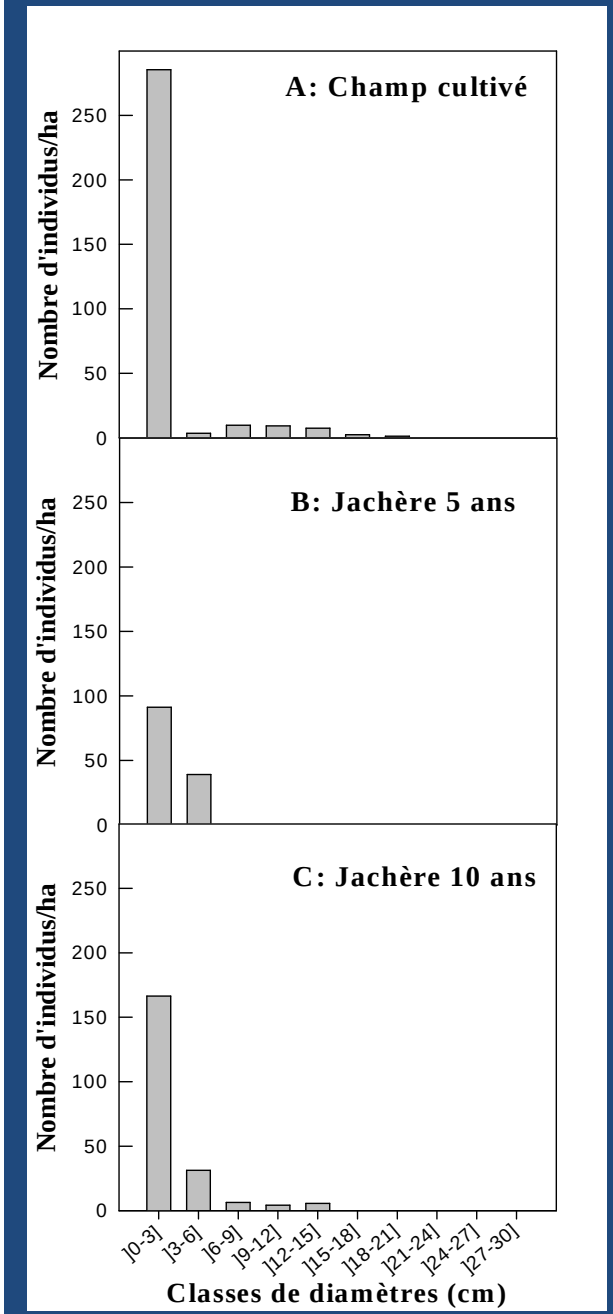
- Nacoulma/Ouédraogo (1996),Bélem *et al.* (2008), Olivier *et al.* (2003),

- Real threat to the survival of the species (Ouédraogo, 2006; Koadima, 2008; Kaboré, 2009

RESULTS AND DISCUSSIONS :

POPULATIONS REGENERATION AND CHARACTERISATION

Distribution per diameter class (1/5)

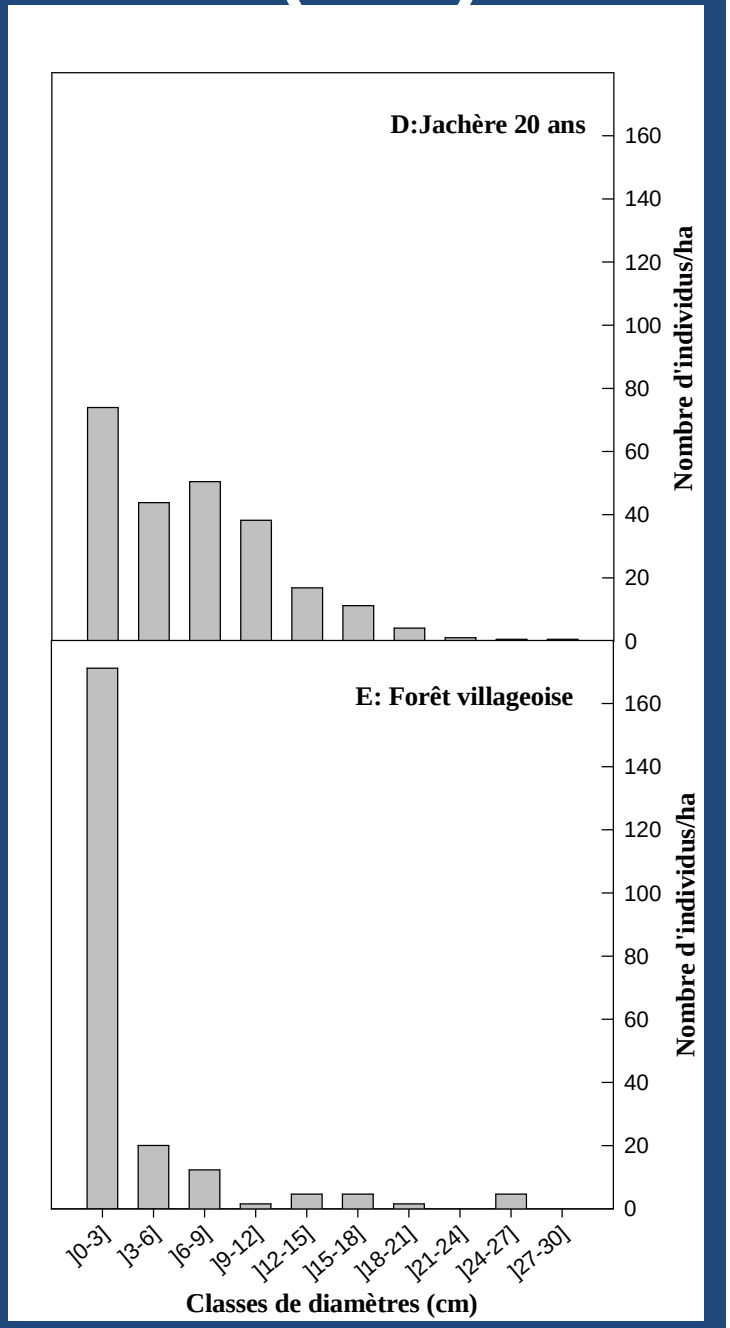


- **Farm and 5, 10 years old fallows**

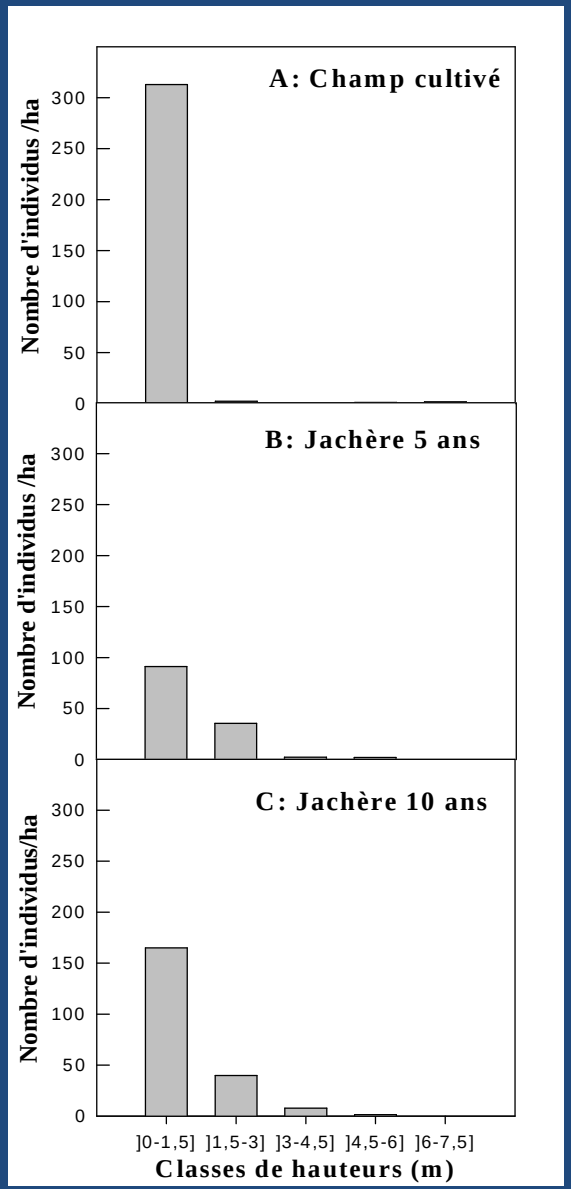
✓almost all the individuals are in lowest class (juveniles)

- **20 years old fallow + protected area**

✓Few individual with large diameter



Distribution per height class (2/5)

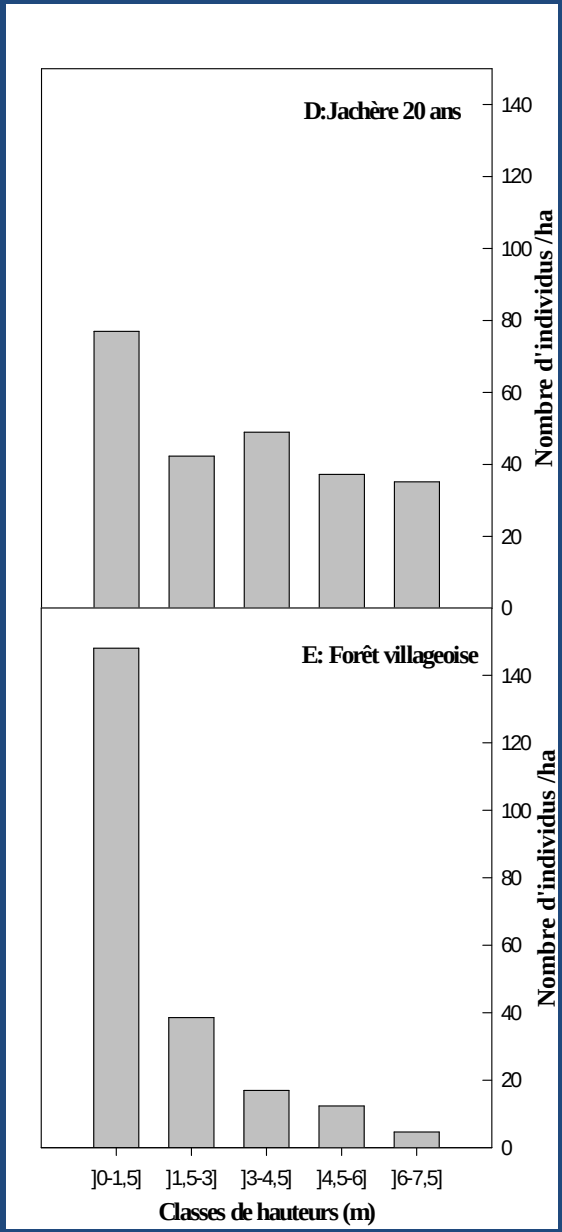


- **Farm and 5, 10 years old fallows**

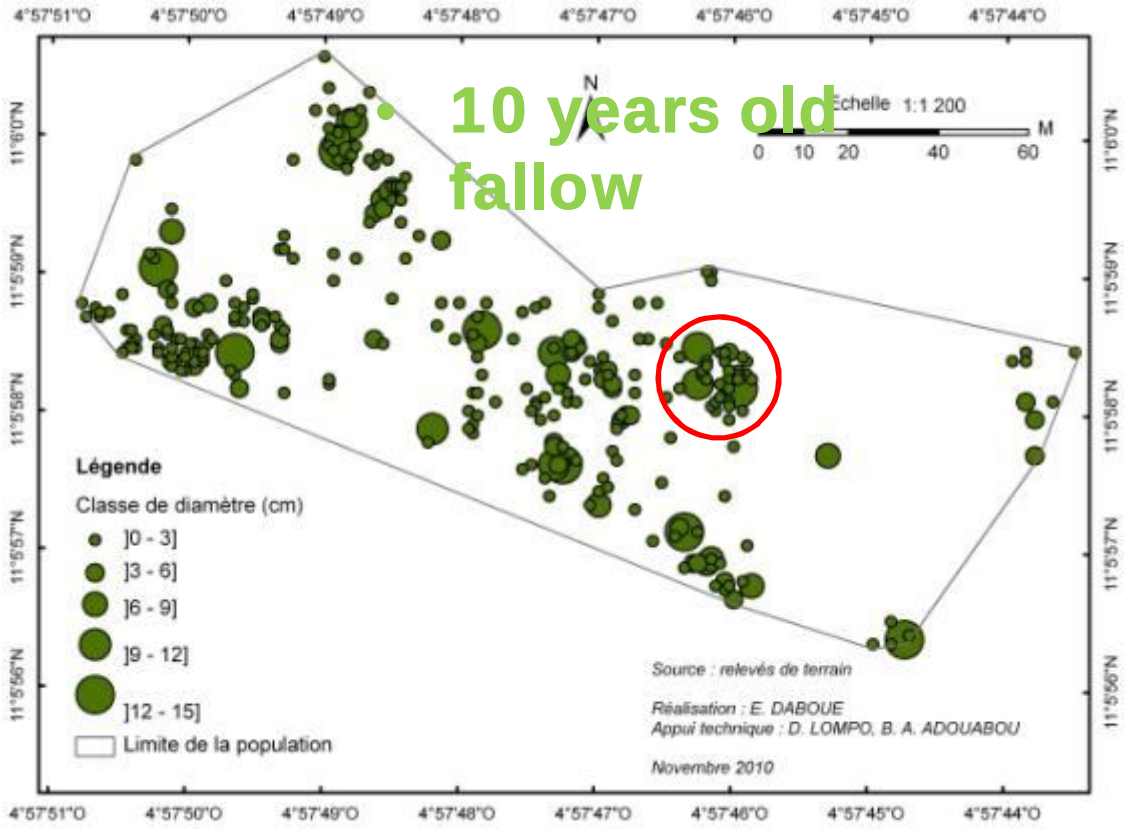
✓almost all the individuals are small sized (short)

- **20 years old fallow + protected area**

✓All the height classes are represented



Spatial distribution (3/5)



On one hand:

Aggregation of seedlings around adult plants

Juveniles under adult tree

Spatial distribution (4/5)

- **Natural suckering**

✓Parkan *et al* (1988) et Thiès (1995)

Ploughing equipments

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Hurt the roots

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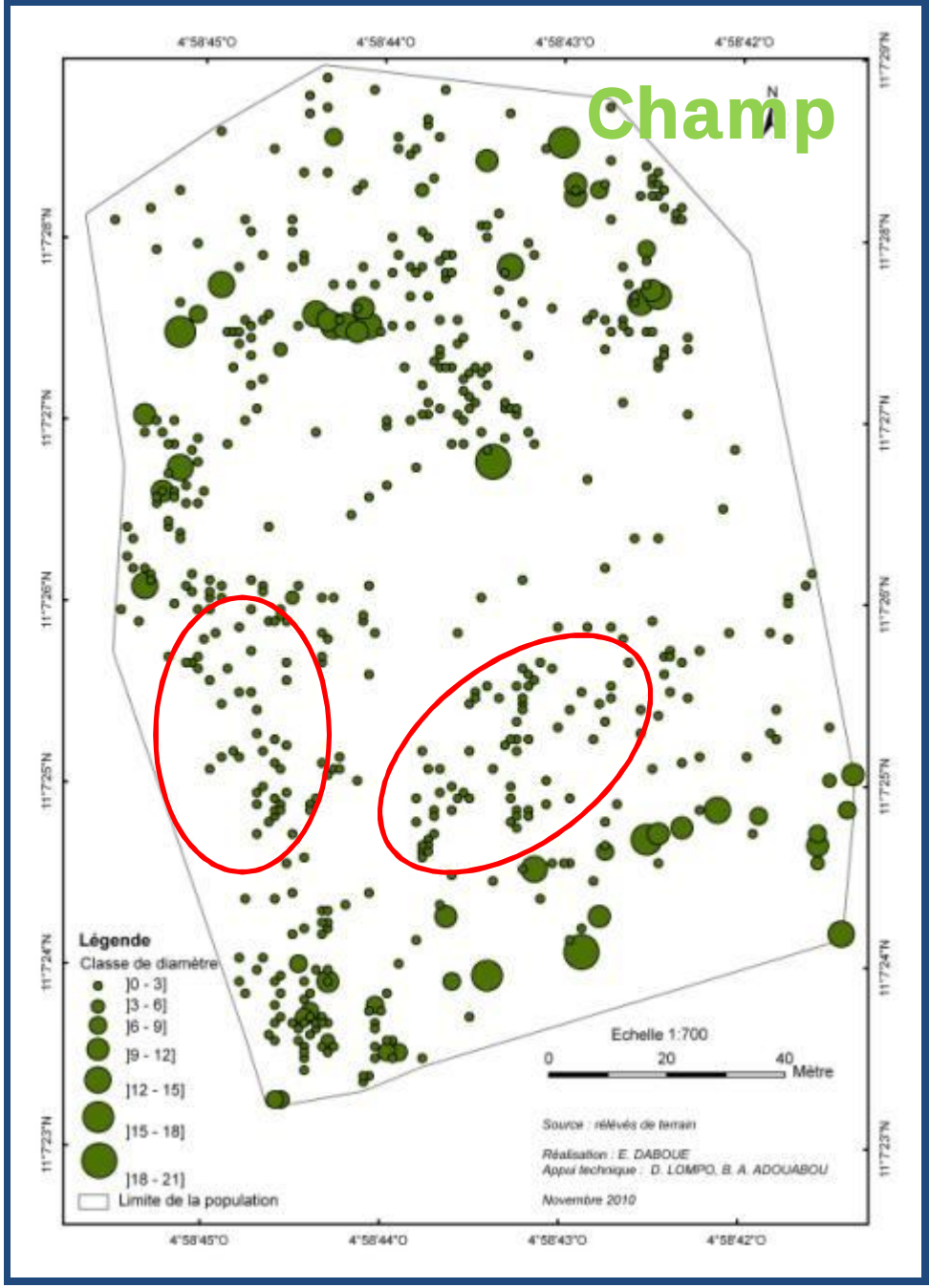
On hurted surfaces grow young plants

✓Bélem, 2009

Spatial distribution (5/5)



On the other hand:

Agregation of juveniles

Blades of ploughing equipment **Cut** the roots

↓

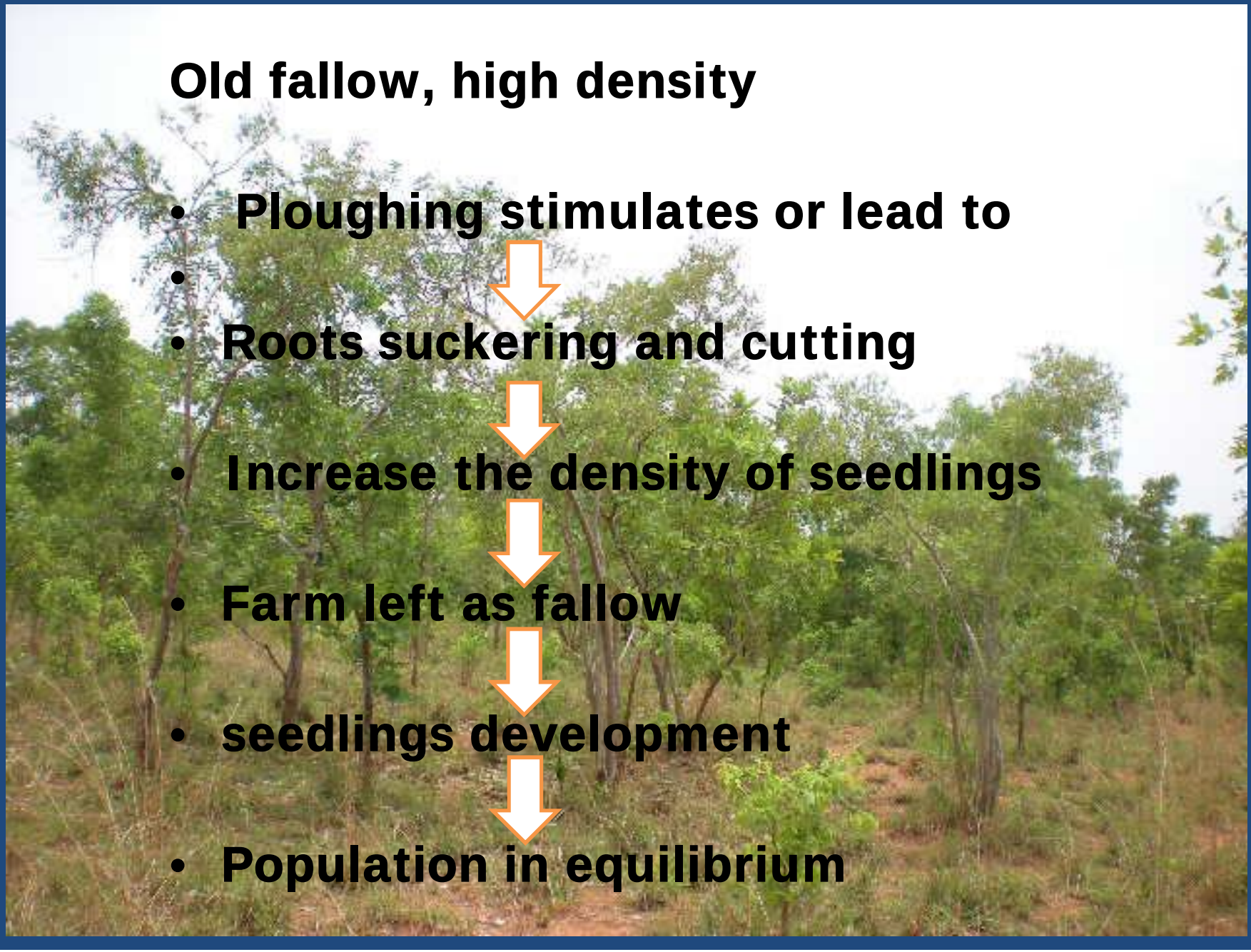
Ploughing moves branches together

↓

Clump of young plants

Vegetative propagation by cutting is possible

GENERAL ANALYSIS



Old fallow, high density

- **Ploughing stimulates or lead to**
- **Roots suckering and cutting**
- **Increase the density of seedlings**
- **Farm left as fallow**
- **seedlings development**
- **Population in equilibrium**

CONCLUSION AND RECOMMENDATIONS

CONCLUSION

- Multiple uses Known

  1st hypothesis confirmed

- Good regeneration in the Kenedougou province

  2nd hypothesis non confirmed

- Ploughing + fallow → stimulate regeneration, seedlings development

- Possibility to reconstitute degraded populations

  3rd hypothesis confirmed

RECOMMENDATIONS

- Extend the study to the other regions of BF
- Study the populations state at national level
- Determine the regeneration conditions
- Domesticate the species
- Promote the species cultivation (gardens, agroforestry)
- Strengthen the capacities of traditional healers

THANKS FOR YOUR ATTENTION