

Le cadre conceptuel de l'OHMi Tésékéré : condition de réflexion sur la durabilité et les trajectoires du socio-écosystème

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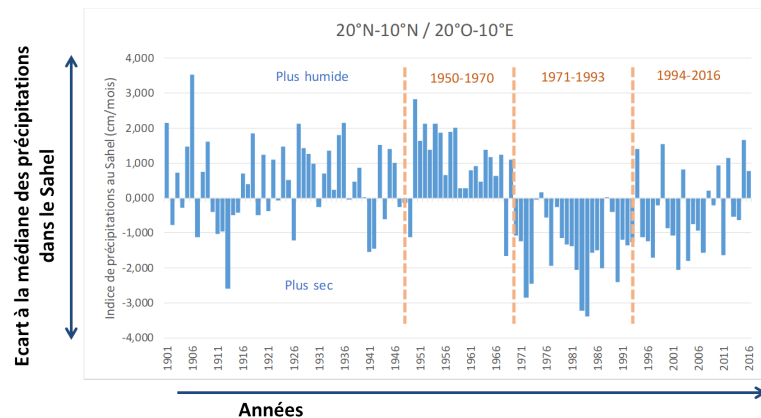


Conceptual/functional framework of the OHM-DRIIHM and SES observation



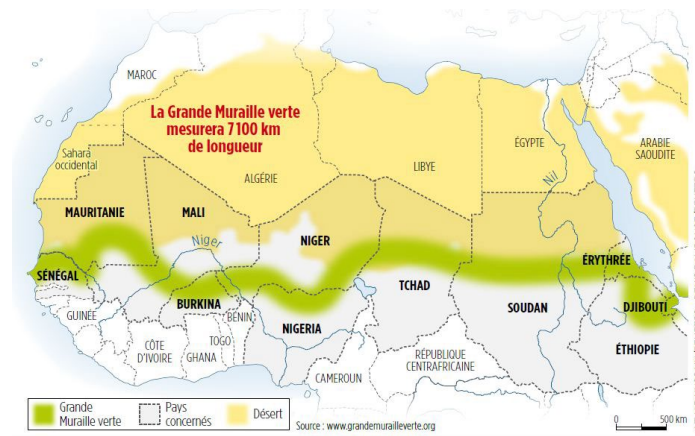
Structuring fact

Desertification : process
80% loss of ligneous since 50's



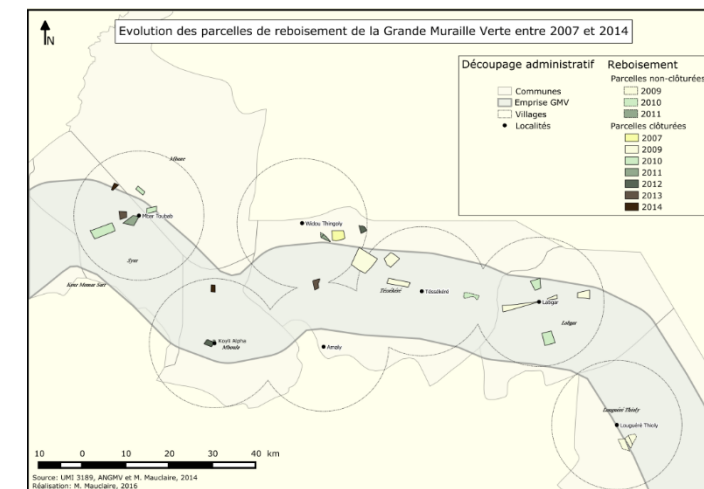
80's : increase in sheep and goat numbers

Disrupting event



The Great Green Wall does not directly contradict the Structuring Fact: it is anagonistic to it

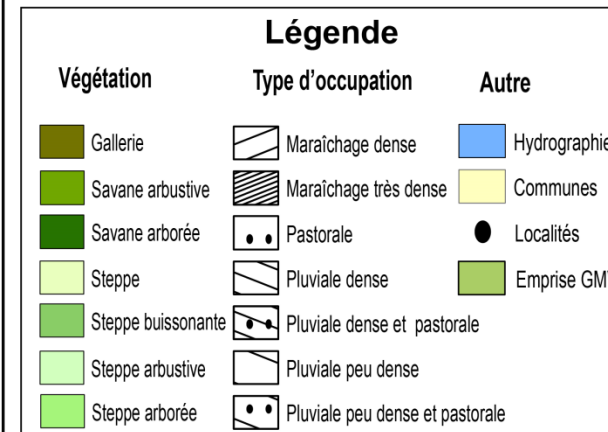
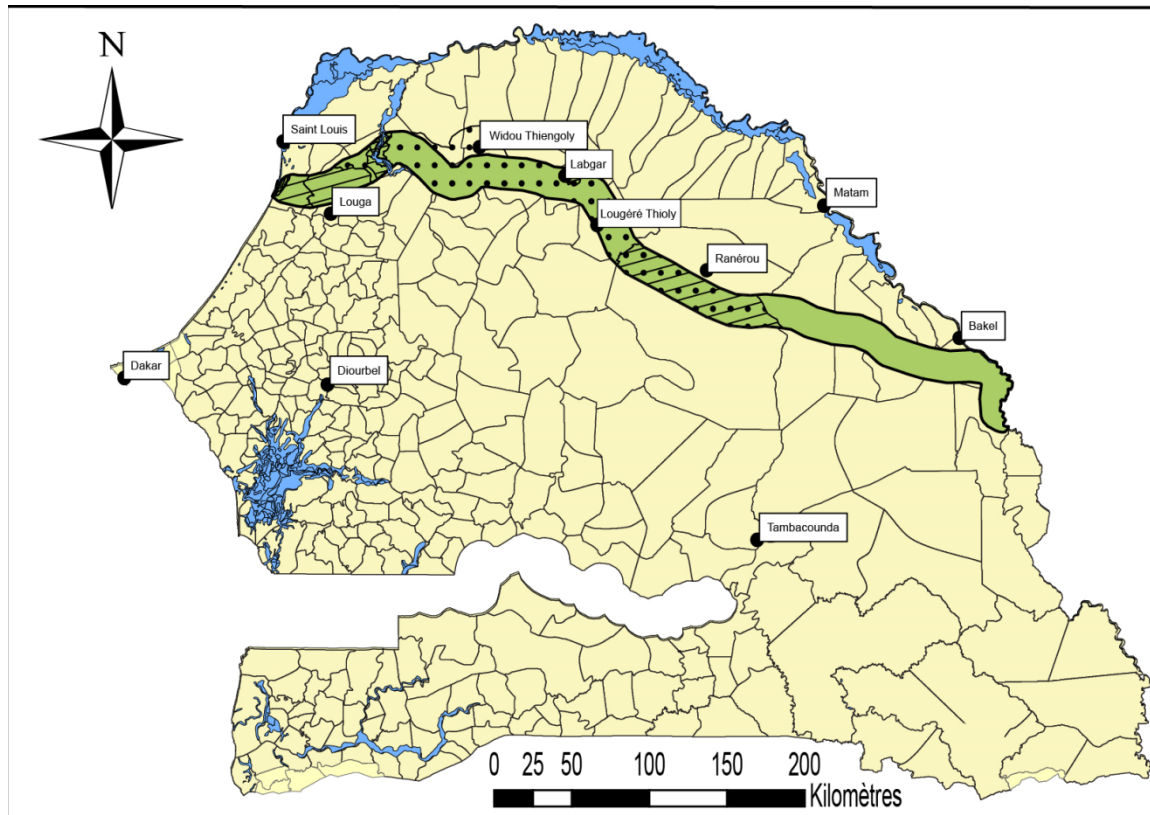
Focal object



Tésékéré municipality

Implementation of Great Green Wall

- In Senegal, the Senegalese National Great Green Wall Agency:
 - General alignment vs. Local implementation, affected by local constraints (land use, housing, transhumance...)



Implementation of Great Green Wall

- In Senegal, the Senegalese National Great Green Wall Agency:
 - General alignment vs. Local implementation, affected by local constraints (land use, housing, transhumance...)
 - Environmental approach vs. Multi-track approach (social, economic, environmental)



« Useful »
trees
selection



Seasonal
jobs



Fodder
stocks



Drip
irrigated
gardens



Hives



1. Sustainable development Anthropology/Political ecology
2. The keystone of the implementation of the GMV at the international level



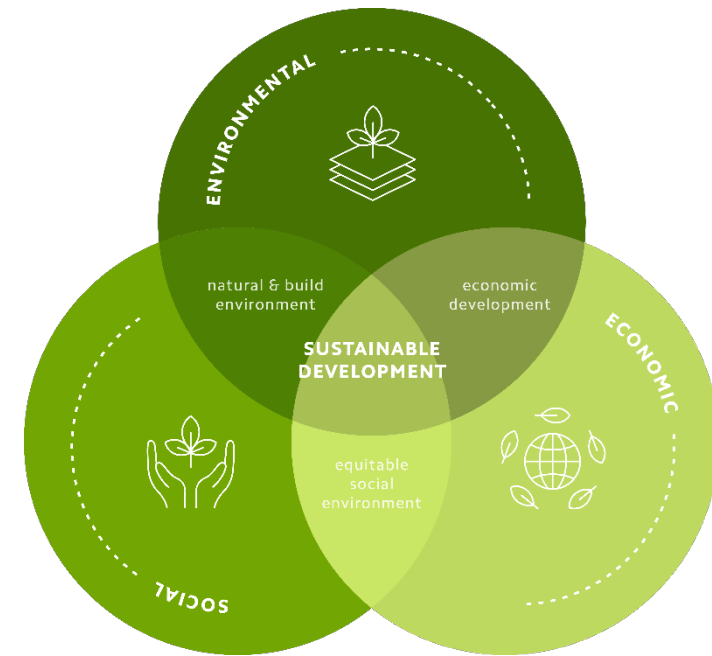


1. Sustainable development Anthropology/Political ecology
2. The keystone of the implementation of the GMV at the international level : sustainable development in text
3. National implementation at local level of the Great Green Wall
 - At local level, durability => adjustment => mosaic of reforested plots
 - At local level, purely environmental approach => multi-sectoral approach (social, economic and environmental)



Sustainability :

- on different scales (international, national, local) and
- in perpetual adaptation, due to the readjustments that this founding event, which must be sustainable, entails.



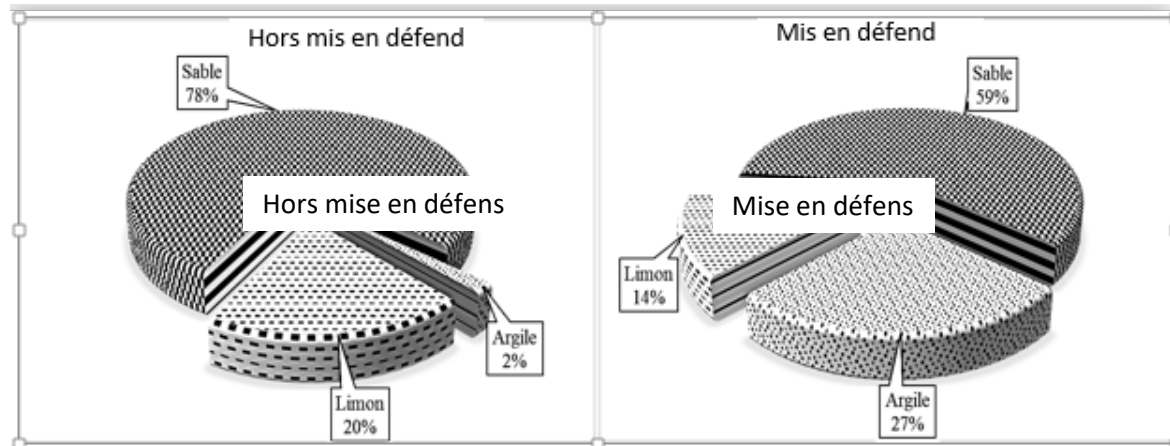
Socio-ecosystem trajectory

Science ? reading the erratic dynamics of the socio-ecosystem's trajectory. At the beginning: disciplinary reading

Socio-ecosystem trajectory

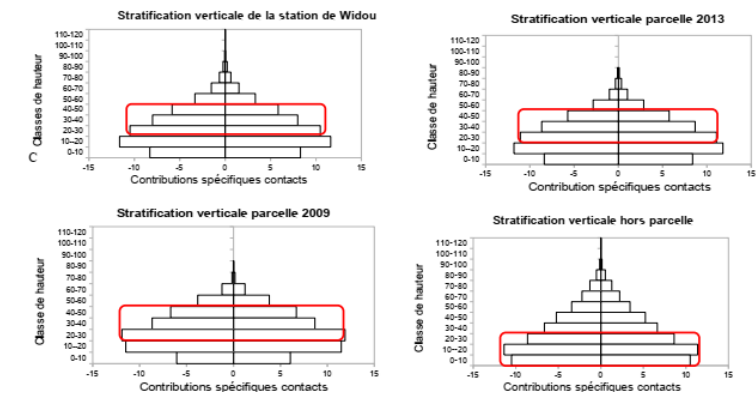
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Soils



Accumulation of matter (high level of litter transformation activity by soil macro- and micro-organisms) => increase in the proportion of fine particles => texture of the surface horizons of the soils in the protected plots greatly enriched with finer granulometric fractions (clay and silt).

Grasses

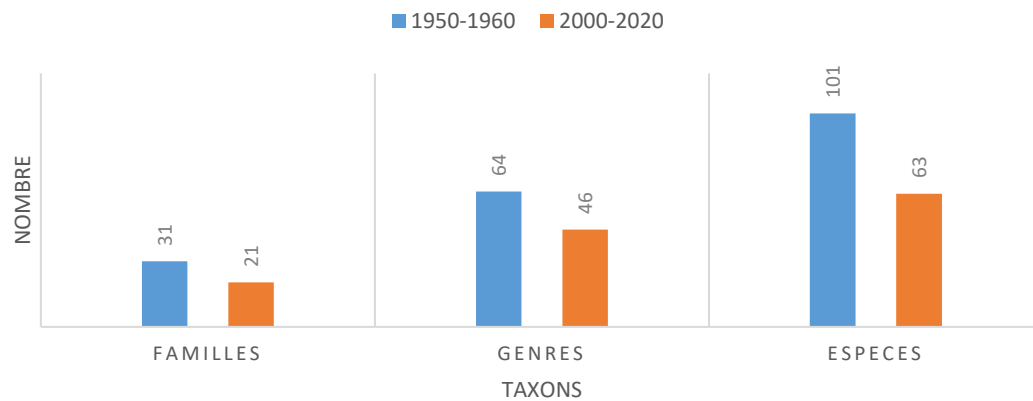


Protection => balances the abundance of species or families in the stand. Helps to develop vegetation in the intermediate strata.

Socio-ecosystem trajectory

Etudes ligneux

Savannahs, steppes, relict riparian forests.



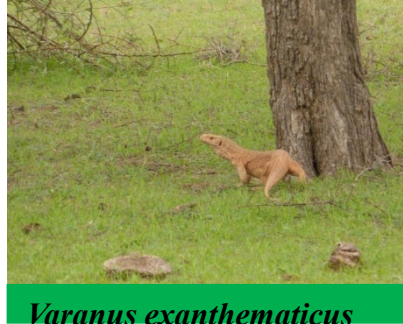
Protected areas => positive impact on natural regeneration :

- Acacia tortilis* (forsk.) Hayne ssp. *raddiana* (Savi) Brenan +++
- Balanites aegyptiaca* (L.) Del +++
- Boscia senegalensis* (Pers.). +++
- Anogeissus leiocarpus* (DC.) ---
- Grewia bicolor* Juss. ---
- Sclerocarya birrea* (A. Rich) ---
- Sterculia setigera* (Del.) ---

1950-1960		2000-2020	
Espèces	Importance relative	Espèces	
<i>Grewia bicolor</i> Juss.	+++++	<i>Balanites aegyptiaca</i> (L.) Del.	
<i>Sclerocarya birrea</i> (A. Rich)	+++++	<i>Calotropis procera</i> Ait.	
<i>Commiphora africana</i> (A. Rich.)	+++++	<i>Acacia tortilis raddiana</i> (Forst.)	
<i>Guiera senegalensis</i> J.F.Gmel	+++++	<i>Boscia senegalensis</i> (Pers.)	
<i>Acacia senegal</i> (L.)	++++	<i>Leptadenia hastata</i> (Pers.)	
<i>Combretum glutinosum</i> Perr.ex DC	++++	<i>Acacia senegal</i> (L.)	
<i>Zizyphus mauritiana</i> Lam.	+++	<i>Combretum glutinosum</i> perr.ex DC	
<i>Pterocarpus lucens</i> (Lepr)	+++	<i>Guiera senegalensis</i> J.F.Gmel	
<i>Balanites aegyptiaca</i> (L.) Del.	+++	<i>Zizyphus mauritiana</i> Lam.	
<i>Adansonia digitata</i> (L.)	++	<i>Sclerocarya birrea</i> (A. Rich)	

Socio-ecosystem trajectory

Reptiles/rodents/birds/mammals



Varanus exanthematicus

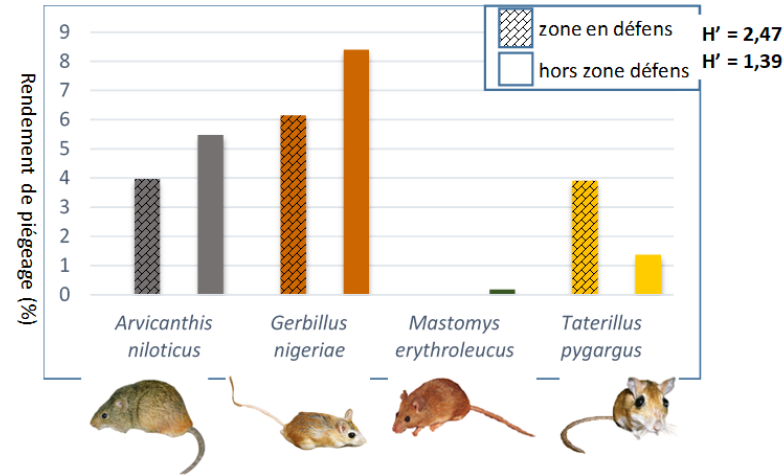


Varanus niloticus

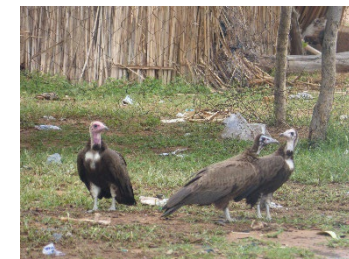


Python sebae

11 species (9 families) in Koyli Alpha in 2021



Impact of GGW: trend towards rebalancing of communities (better even distribution of species)



- **Plant successions and associated biotic communities :**
 - Biological traits of species and interspecific relationships (competition, facilitation, inhibition, etc.) : key processes in ecological trajectories.
 - Same trajectory vary in time and space (/ events => total or partial loss of biomass)

Socio-ecosystem trajectory

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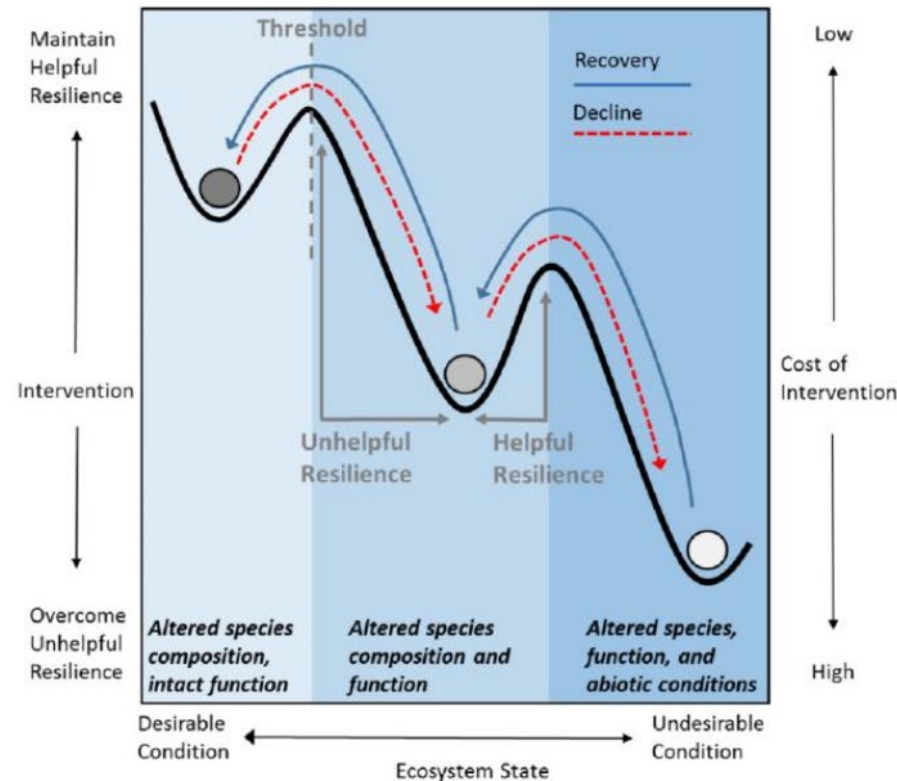


Figure 14 | Représentation schématique des états écologiques selon des perturbations qui induisent des changements (Decline & Recovery ; Ralston et al. 2017)

Socio-ecosystem trajectory

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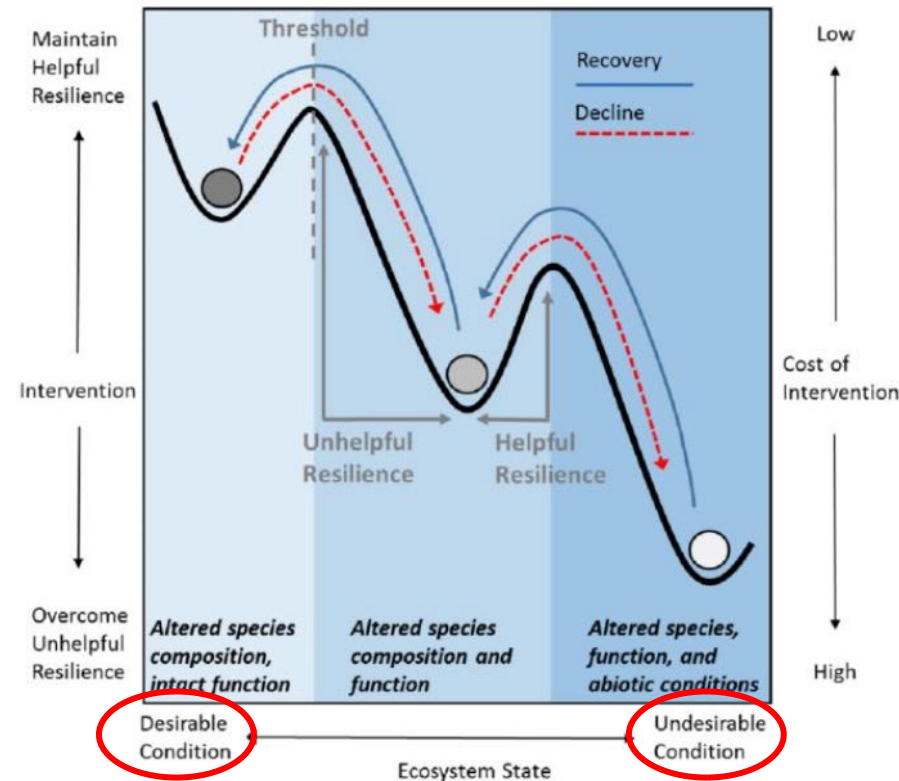
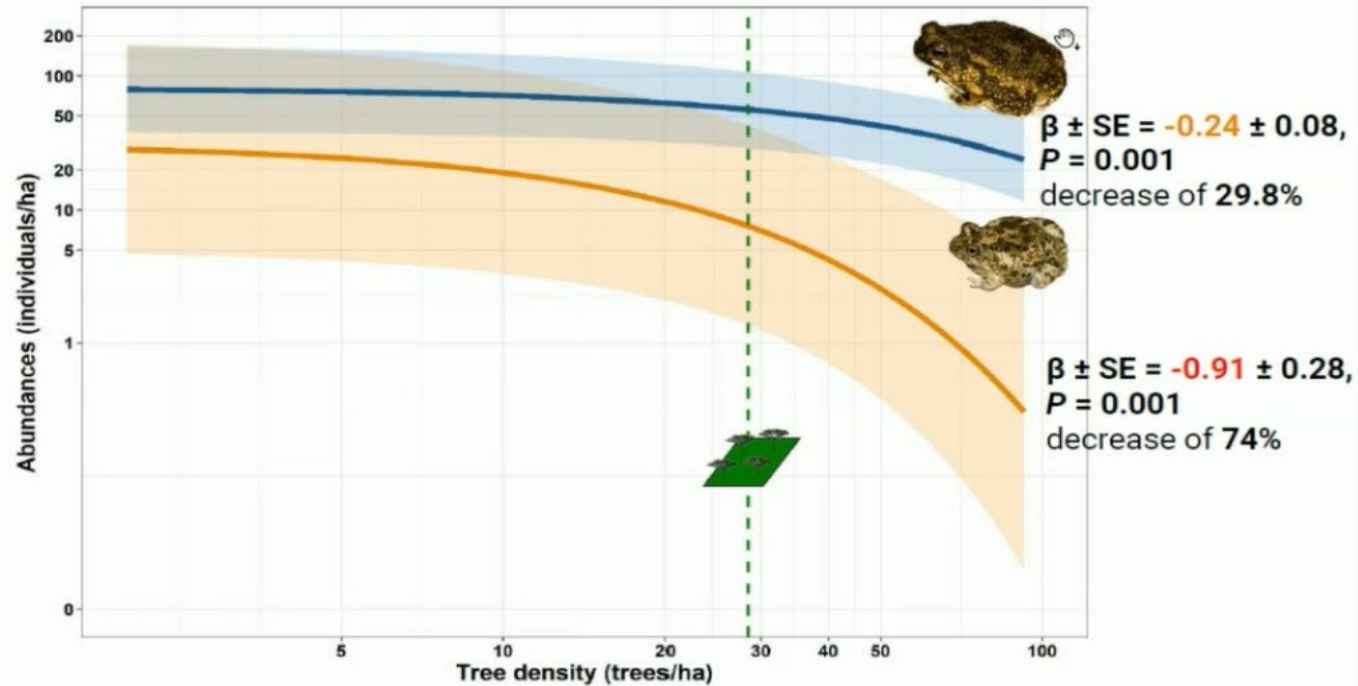


Figure 14 | Représentation schématique des états écologiques selon des perturbations qui induisent des changements (Decline & Recovery ; Ralston et al. 2017)

Socio-ecosystem trajectory

Fulvio Licata, CIBIO/BIOPOLIS, Portugal, 03/05/2024

RESULTS – EFFECT OF TREE DENSITY ON AMPHIBIANS' ABUNDANCES



Generalists species

Specialists species



=> Maintaining a mosaic of open habitats : moderate planting density & maximise amphibians diversity

=> trajectory desirable to some = undesirable to others ?

Socio-ecosystem trajectory

1. **Disciplinary** interpretation of the dynamics of the Sahelian socio-ecosystem takes a long time
2. Is essential to thinking about a common issue
3. Solid foundations for thinking about the trajectory of socio-ecosystems: interdisciplinary at work

Socio-ecosystem trajectory

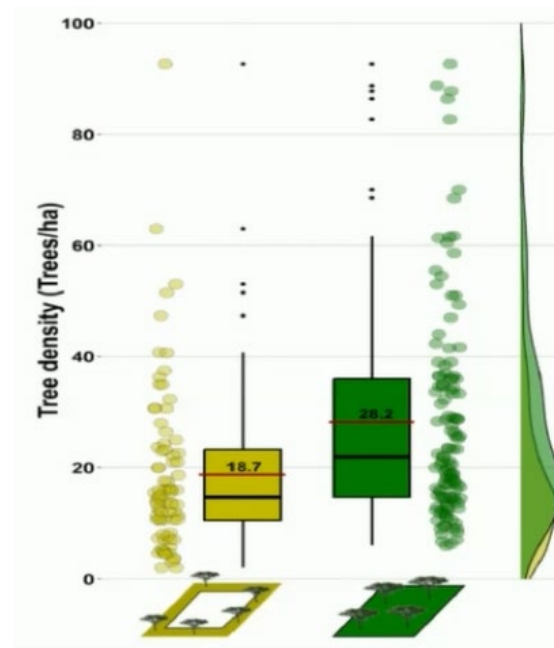
Biodiversité et restauration écologique dans les socio-écosystèmes sahéliens

Objectif : déterminer l'impact de la GMV sur la biodiversité et les interactions socio-écosystémiques.

1. Différences / biodiversité



Metabarcoding
Environmental DNA
Acoustic ecology



Non restauré Restauré

2. Ecologie pastorale : approche bioculturelle



Socio-ecosystem trajectory

