

IRRIGATION AND WATER JUSTICE: Divergent adaptation in northern Niger

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Objectives of presentation

- ▶ In a development model focused on privatization – which has been shown to reduce collaboration, how do we **protect the commons** (shared intellectual, natural resource, and social spaces)?
- ▶ In the midst of increasing knowledge about alternatives to traditional modern water development, how might innovations move beyond high-cost technologies, **to provide more low-cost social needs and environmental innovations?**
- ▶ How might we **decolonize our thinking** to permit local solutions based on local knowledge? (eg. of trash collection in Ghana)

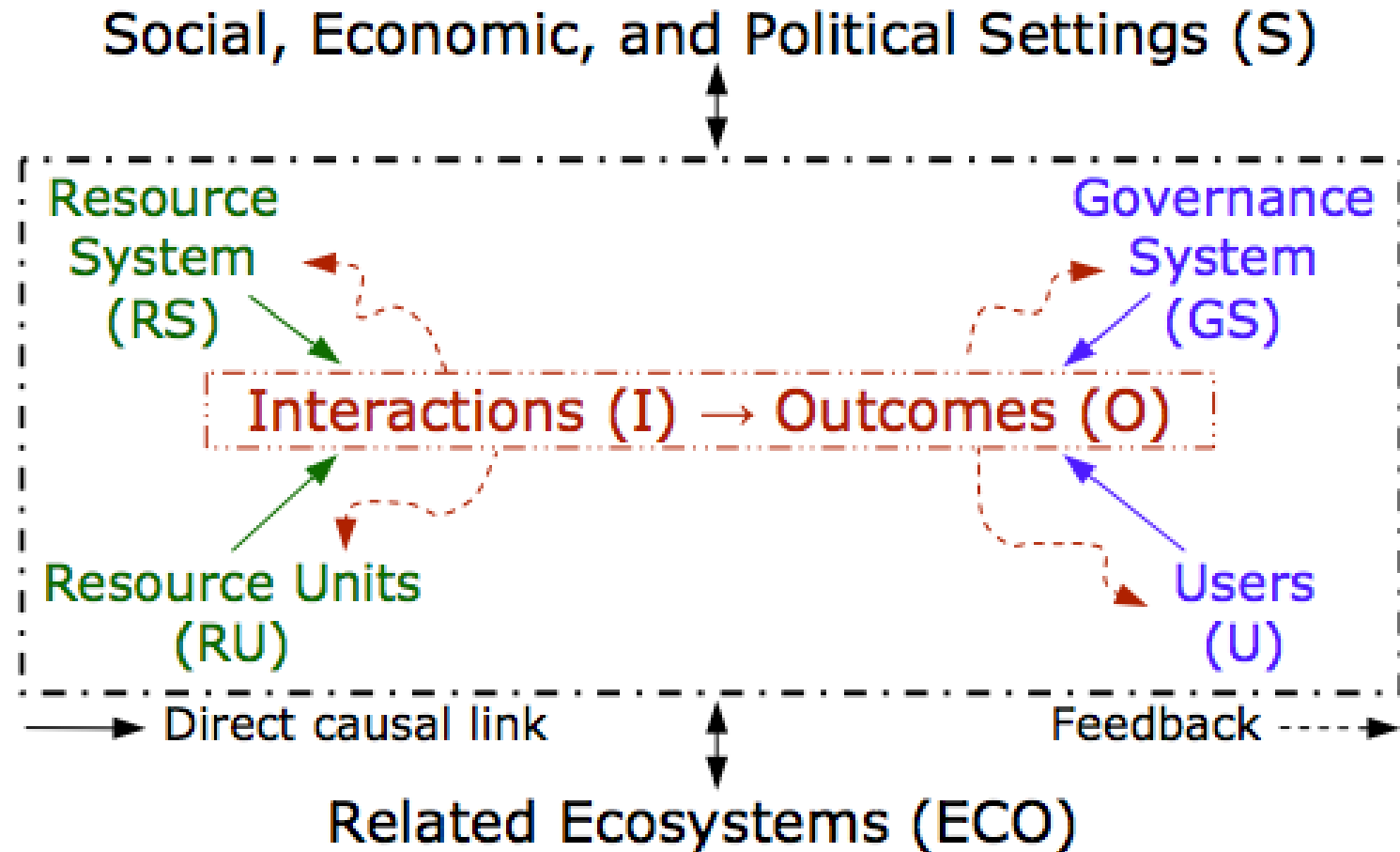


Fig. 1. A multitier framework for analyzing an SES.

Rethinking adaptation to climate change

Adaptation: a response to human or environmental stimuli that may buffer, sustain activities or transform a situation to a less vulnerable state (SREX 2012)

AR5 IPCC's chapter on "human security" and others (Raleigh 2010; Ericksen 2011; Snorek et al. 2014) highlighted how *adaptations can enhance inequalities*, impact resilience and disrupt overall human security of an SES

Divergent adaptation: those adaptations that promote the adaptive capacity of a community, which *leads to reduced adaptive capacity of an alternative community* in a shared space.

Example: a dam built to provides water resources to the growing city, while limiting water supplies to small holders downstream.

While there will always be losers in adaptation, adaptation policy must account for these actors in the design and execution phases.

ADAPTATION SHOULD BE NEGOTIATED AMONGST ALL STAKEHOLDERS.

“He who is sitting on water should never go thirsty.”



- Ministry of Environment, Water, and the Battle against Desertification in 2011

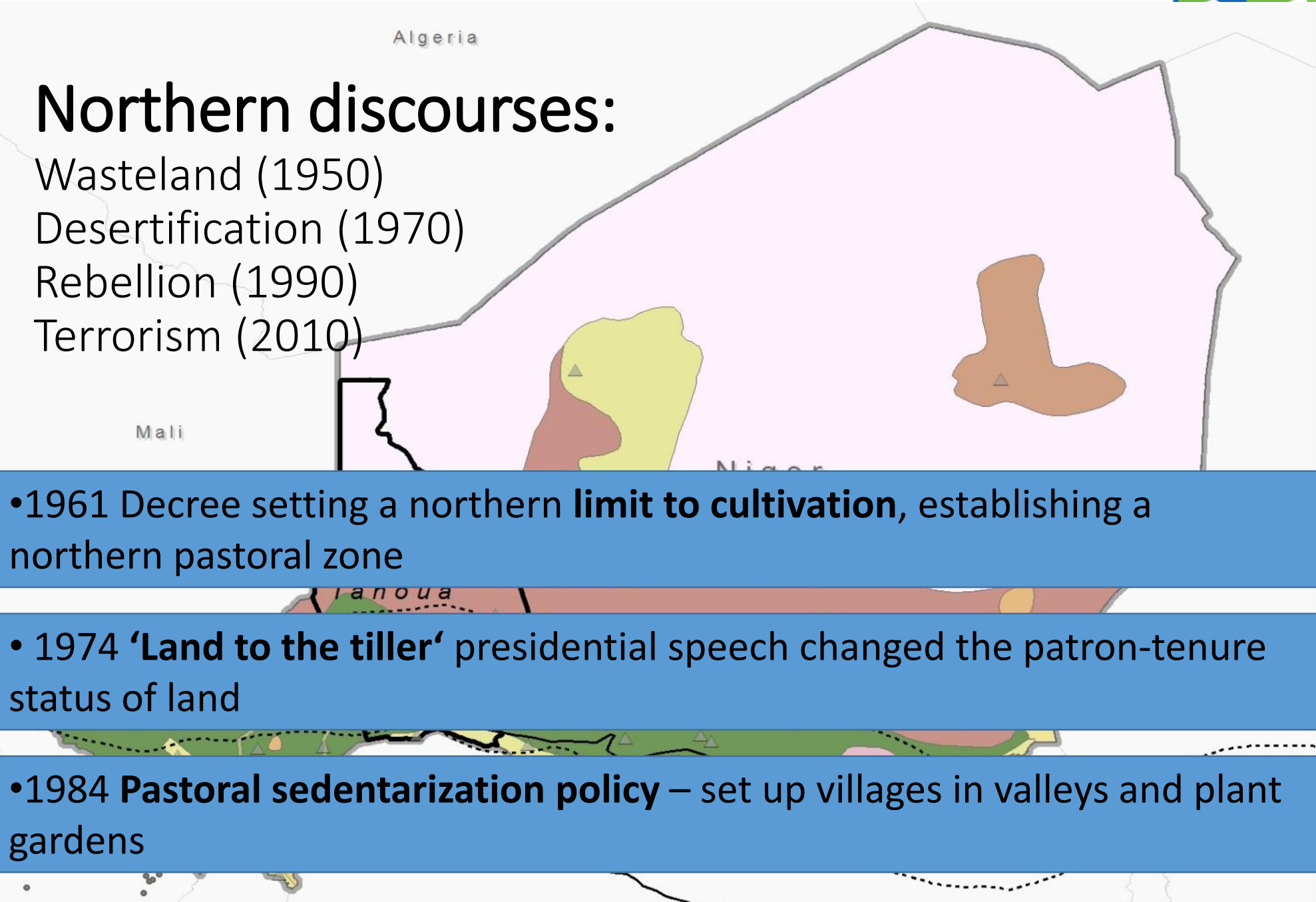
Northern discourses:

Wasteland (1950)

Desertification (1970)

Rebellion (1990)

Terrorism (2010)

A map of Northern Nigeria is shown, with various regions highlighted in different colors: a large pink area covering most of the north, a yellow area in the west-central part, and a brown area in the east-central part. Small grey triangles are placed within these colored regions. The map also shows the borders of neighboring countries: Algeria to the north, Mali to the west, Niger to the south, and Nigeria to the south. The word 'Nigeria' is written at the bottom of the map.

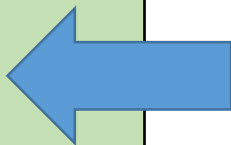
- 1961 Decree setting a northern **limit to cultivation**, establishing a northern pastoral zone

- 1974 **'Land to the tiller'** presidential speech changed the patron-tenure status of land

- 1984 **Pastoral sedentarization policy** – set up villages in valleys and plant gardens

Climate Change Scenarios and Commons in Niger

Common space	Continuing loss of pastoral commons	<p>Scenario A: Average</p> <p>Impacts Average 2031 à 2050</p> <p>Implications: Well being, conflict, cooperation</p>	<p>Scenario B: Worst</p> <p>Impacts Extreme 2031 à 2050</p> <p>Implications: Well being, conflict, cooperation</p>
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Pastoralism as a livelihood will be lost over the next 40 years.

Relations linked to the change	Protection of pastoral commons	<p>Scenario C: Optimistic</p> <p>Weak Impacts 2031 à 2050</p> <p>Implications: Well being, conflict, cooperation</p>	<p>Scenario D: Average</p> <p>Impacts Average 2031 à 2050</p> <p>Implications: Well being, conflict, cooperation</p>
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No change in frequency of drought/flooding events	Increase in drought/flooding events
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Hydro-climatic Change

Methodology

- ▶ Remote sensing (2013-14)
 - ▶ Quickbird 0.6 meters resolution)
- ▶ Qualitative Interviews (Nov 2015)
- ▶ Tuareg, Fulani, Hausa ethnicities
- ▶ 19 focus groups in two villages (Rainfall 200-250 mm/yr)
 - ▶ 4 pastoralist
 - ▶ 11 agriculturalist
 - ▶ 4 local government
- ▶ 9 focus groups in pastoral camps

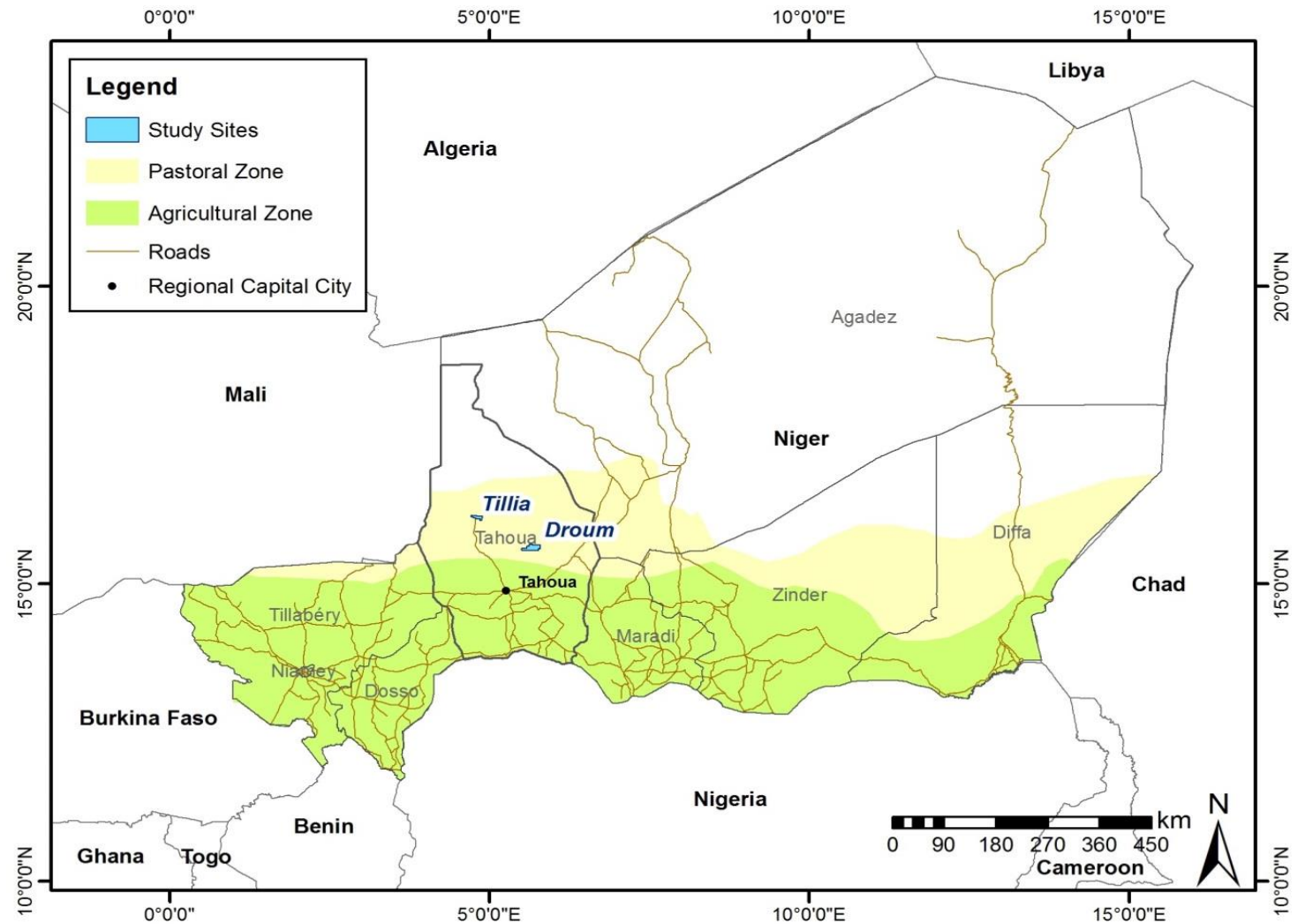
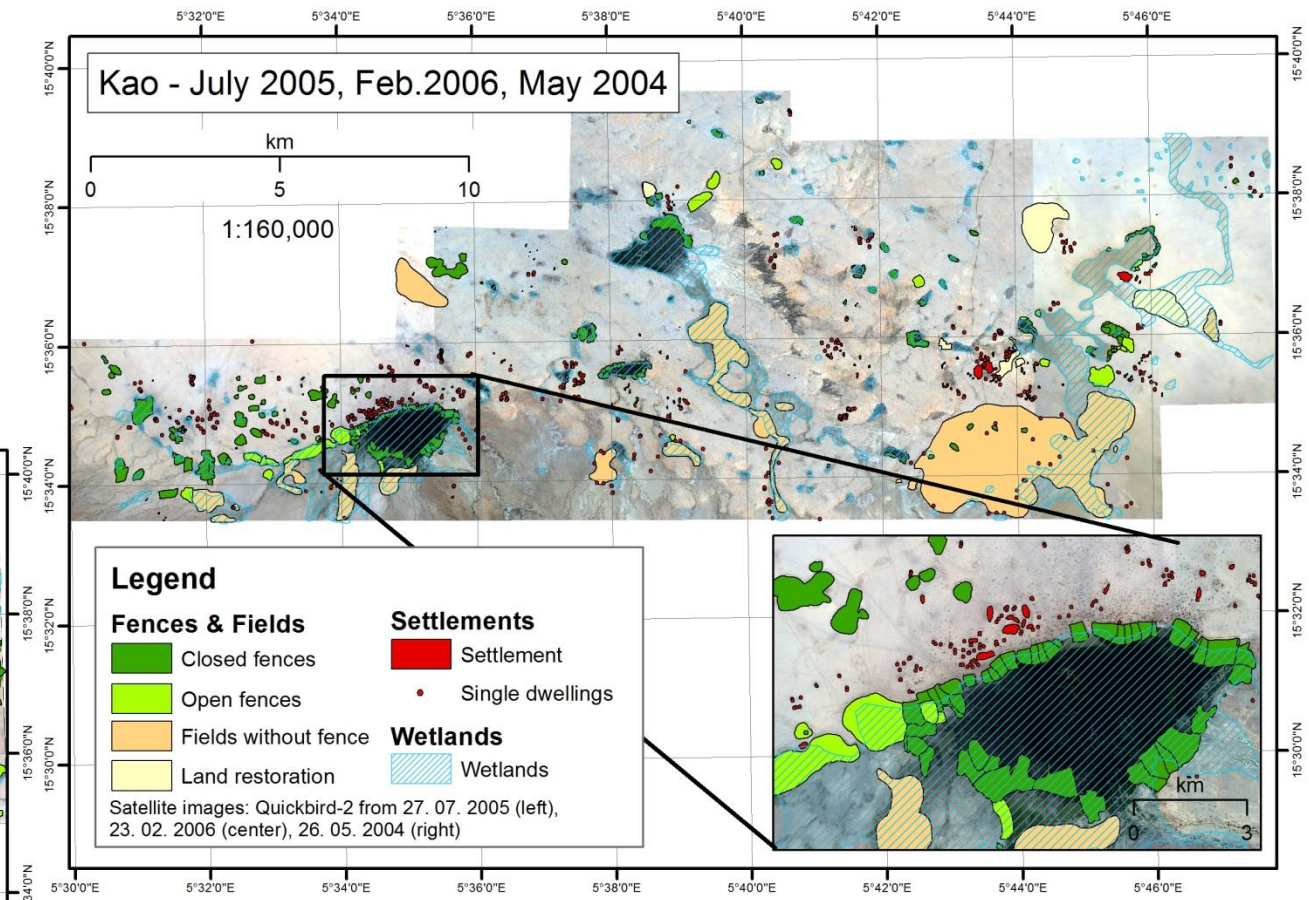
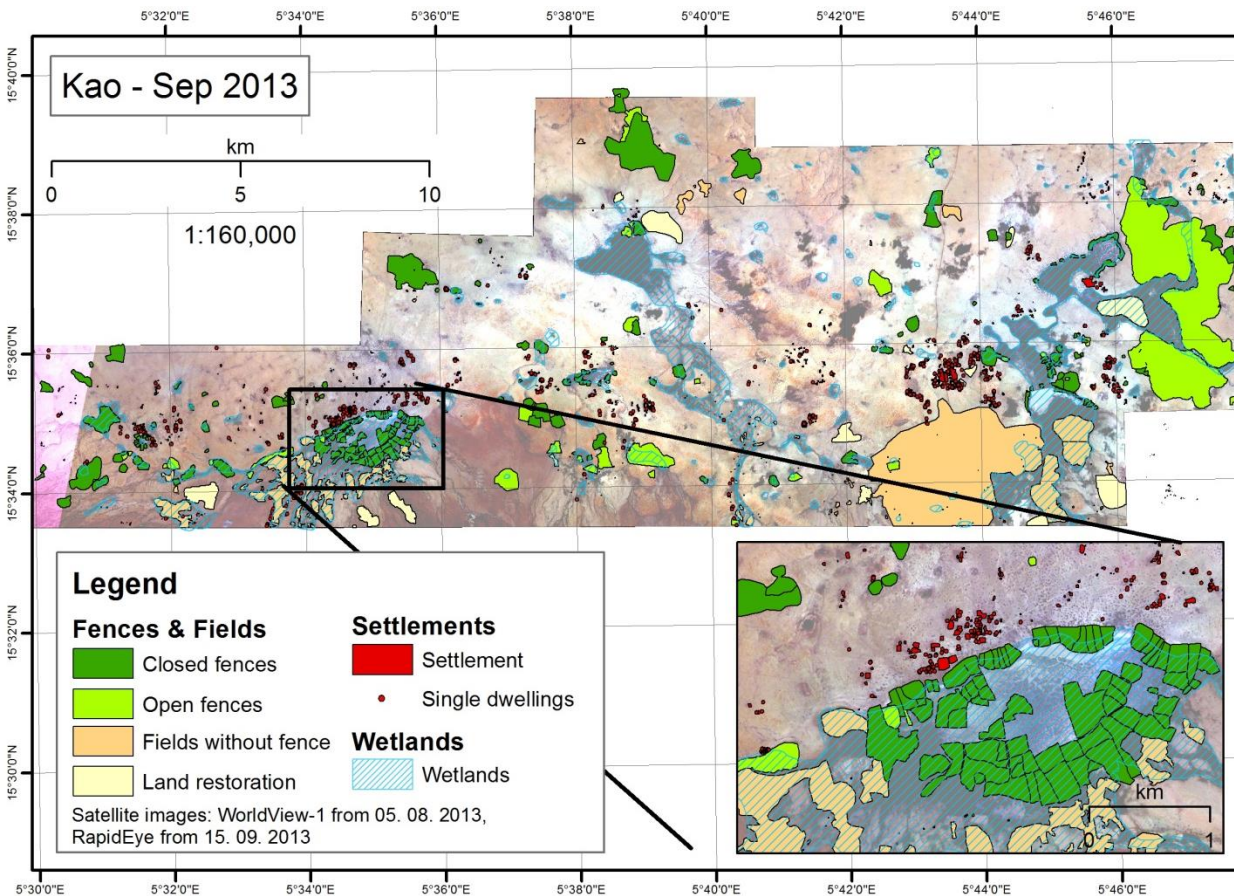


Figure 1. Map of research sites. Livelihood zones represent only principal livelihood activities and are not exclusive. Livelihood Zones Data Source: GAUL/FAO data: <http://www.fao.org/geonetwork/srv/en/metadata.show?id=12691>, own figure.

Case: Pastoral Zone, Kao

Images were made available for scientific purposes via DLR-request for high-resolution optical imagery from European Space Imagery (EUSI).



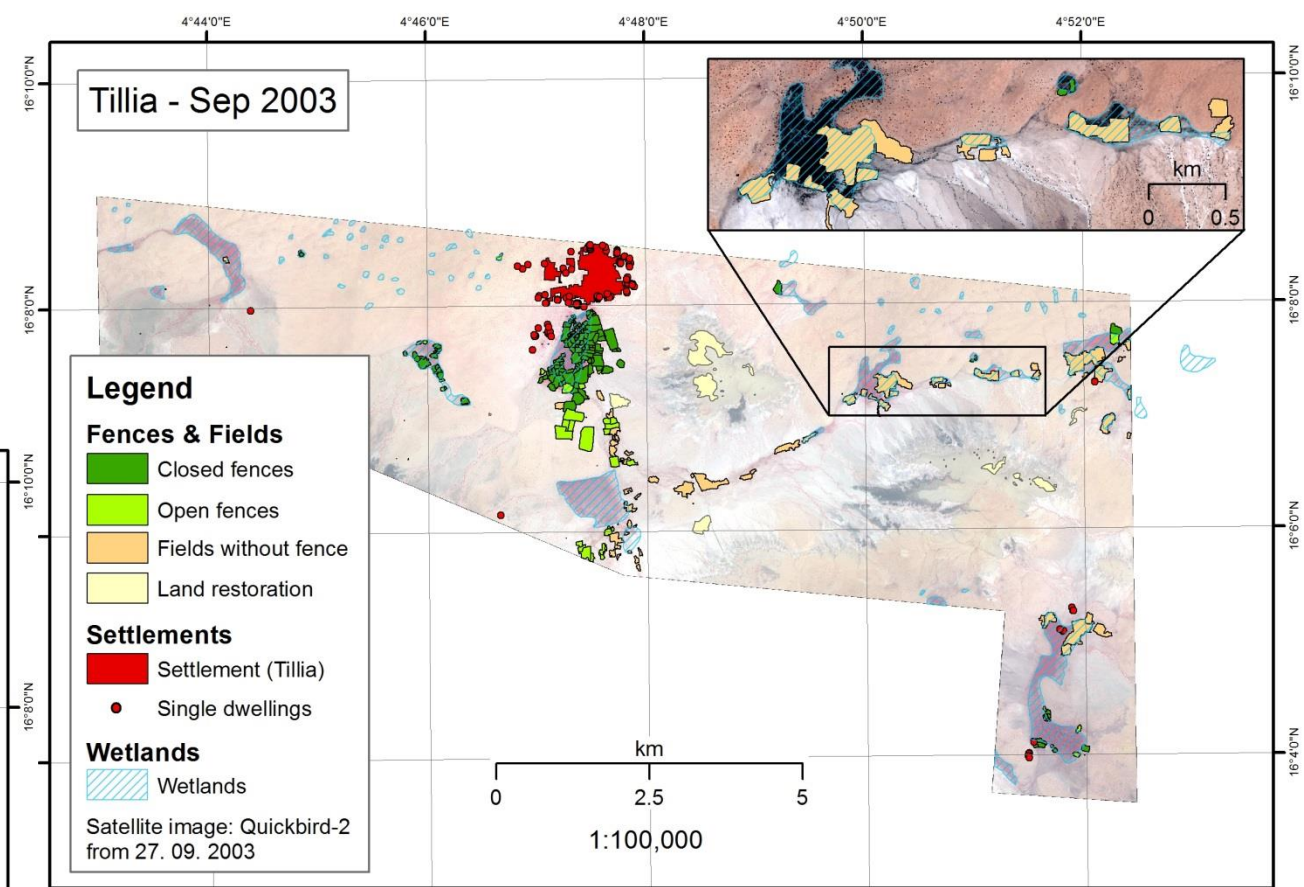
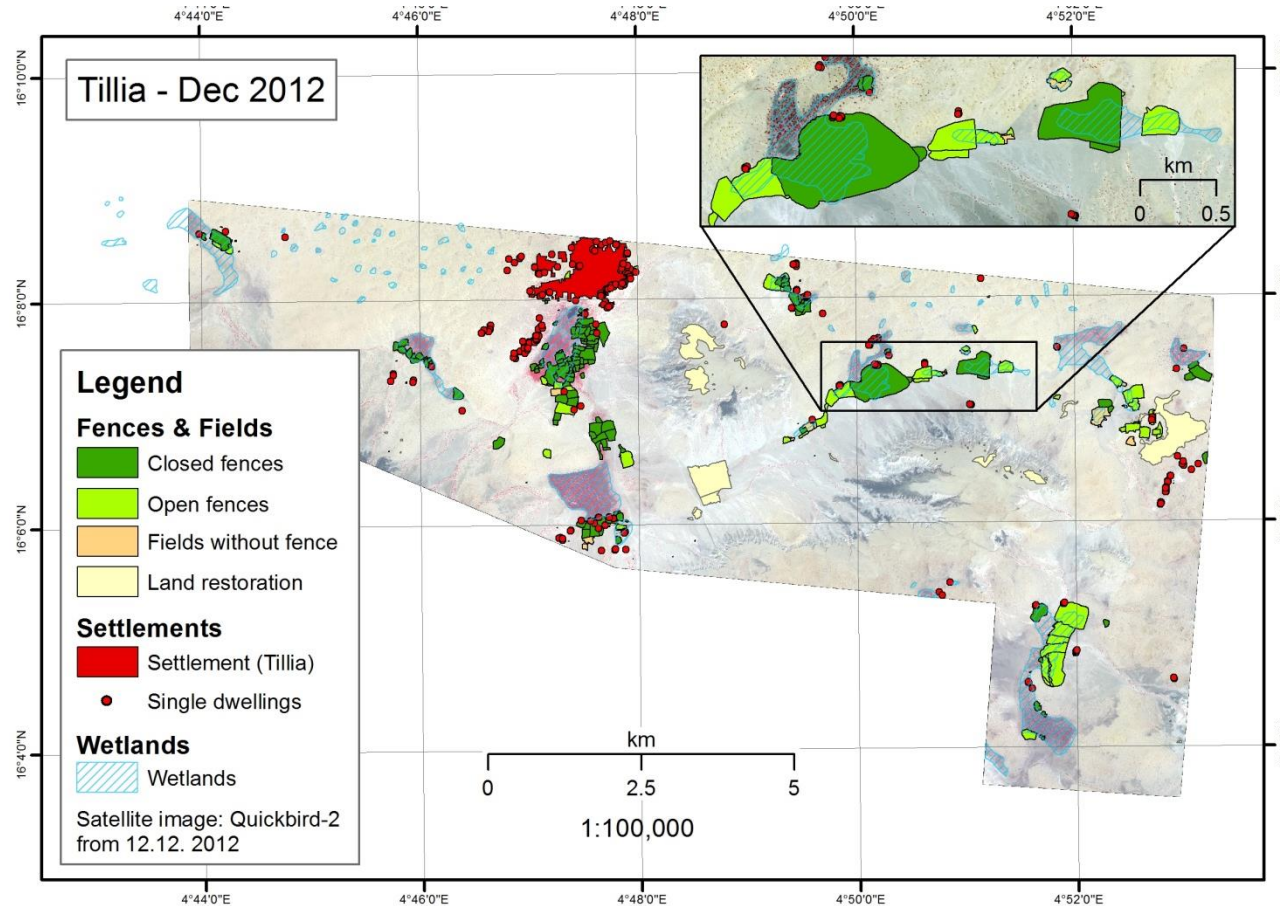
Changes over 9 years:

- Closed fences: + 98%
- Open fences: +538%
- Open fields: -17%
- Settlements: +20%

(Total area: 263 km²)

Case: Pastoral Zone, Tillia

Images were made available for scientific purposes via DLR-request for high-resolution optical imagery from European Space Imagery (EUSI).



Changes over 9 years:

Closed fences: +64%

Open fences: +182%

Tillia settlement: +39%

Dwellings: +129%

(Total area: 95 km²)

Perspectives from former pastoralists

“... It is normal [to cultivate in the pastoral zone] ... because the authorities have given us permission. At present, in the city, there is an agriculture agent that the State sent here ... Also, the State provides seeds ... if the State has authorized it, it is normal”



Site A: Privatized: enclosure & conflict



- Cultivators act with impunity (according to land commissions)
- Multiple water access conflicts and dangerous access points for livestock
- Pastoralist pay when animals penetrate fields
- Pastoralists pay for water, extracted with government-supplied water pumps

Site B: Mixed commons/private regime



- ▶ Few conflicts over lake access
- ▶ No payment are possible to cultivators, must protect fields with fencing
- ▶ Cultivation limited to southern part of lake
- ▶ Pastoral rights to water protected, as well as those of gardeners

Conclusions and Recommendations

- ▶ In a development model focused on privatization – which has been shown to reduce collaboration, how do we ***protect the commons*** (intellectual, land, water, energy production), which produces collaboration?
- ▶ The world is increasingly globally connected and innovation is becoming more and more open access, yet, in the midst of all this knowledge, how might innovations move beyond technological needs, ***to provide (to the West, especially) social needs and environmental innovations?***
- ▶ How might we ***decolonize our thinking*** by recognizing that true innovation originates in our own motivations and ideas, which can only sometimes be informed by exterior concepts and knowledge?

Discussion: What can we learn from this case study?

- ▶ Who owns the water? Who should have access to water? What payment schemes?
- ▶ The enclosure of resources happening here is happening in all places where commons regimes are being privatized through irrigation programmes
- ▶ It is often held that privatization is a necessary condition for development and growth; however, privatization is not a panacea nor is it conducive to equitable water management
- ▶ If access to water is a right, it needs to be managed using commoning processes, or those in which users collaborate to develop a management plan
- ▶ Commons management is build on principles of sharing, equity, reducing hierarchies, and opening up learning and transparency
- ▶ This is not a utopian process, but it being practiced despite more neoliberal and dominant development regimes
- ▶ Moreover, commons management practices may also permit minority ideas to be imagined, such as the development of ecosystem based adaptation and cultural innovations for minority actors such as women, children, and minority ethnic groups

CONTRIBUTING TO THE PAUWES RESEARCH AGENDA

Researches also have a role in challenging dominant political paradigms and inspire new technical innovations

Enclosures are problematic for inclusive development and induce divergent adaptations

This research could be expanded throughout pastoral zones in the Sahel and Eastern African regimes.

Also, I hope to engage with these concepts through a project examining water gentrification patterns in Niamey and Bamako.

Thank You!

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As researchers or practitioners what are the possible interactions/collaboration with practitioners resp. researchers to improve/upscale your activities

What are the potential aspects of the research that can be transformed into practice?