

Agroecological transitions of pastoralism

A discussion of key concepts and an essay for explaining the current dynamics using a political economy lens

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Introduction



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Global Food system crisis => need for alternative approaches to structural and systemic change.

=> Emergence of **agroecology** as an **attractive framework** for analyzing complex systems

=> **pastoralism left out** (complex tenure systems, collective actions required...)

Pastoral systems are currently undergoing profound changes

=> **wide diversity** of adaptations and pastoral identities

=> **To acknowledge diversity => what does it mean in terms of AET?**



Pastoralism and the future of food sovereignty

Research question and datas

The research question: Why agroecology is suitable framework to analyze pastoral systems dynamics?

Using a case study from North Africa –Beni Khedache, Médenine, south Tunisia, we identify enablers and barriers to transformative agroecological changes in pastoral areas, in a specific socio-political context

A range of qualitative and quantitative (household) data collected between 2019-2021.



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Presentation overview

- 1. Pastoralism and agroecology: a paradoxical relationship**
 - Methodological challenges
 - Addressing diversity
- 2. A pastoral system in tension: Explaining the transition pathways through political economy**
- 3. Shift of policy mindset and narrative for pastoral areas in Tunisia**
- 4. Pastoral systems diversity and typology in Dhaher: Different resilience strategies and agroecological trajectories**
 - Typology
 - Divers AE profiles of the pastoral farm types in Dhaher, South eastern Tunisia

Pastoralism vs agroecology: intersections, divergences, and conceptual challenges



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Is pastoralism already agroecological?

Pastoralism: historically, embodies some of the key essential elements of agroecology: local knowledge, flexibility, adaptability, circularity, collective action, and mobility, thriving in marginal areas with limited resources through family-based activities.

=> complementarity of spaces vs specialization/intensification of production.

But local pressures and deep transformations => Agroecological nature questionable => Need to be reinvented

Methodological challenges



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- **Identify the right indicators, tools and approaches** => difficult to quantify, to have a specific metric.

Can a 'gradient' of agroecological intensity be established?

=> Need to reinvent concepts, frameworks, analytical methods to better take diversity into account

- **Addressing diversity and structural change**

Pastoralism: becoming increasingly diversified

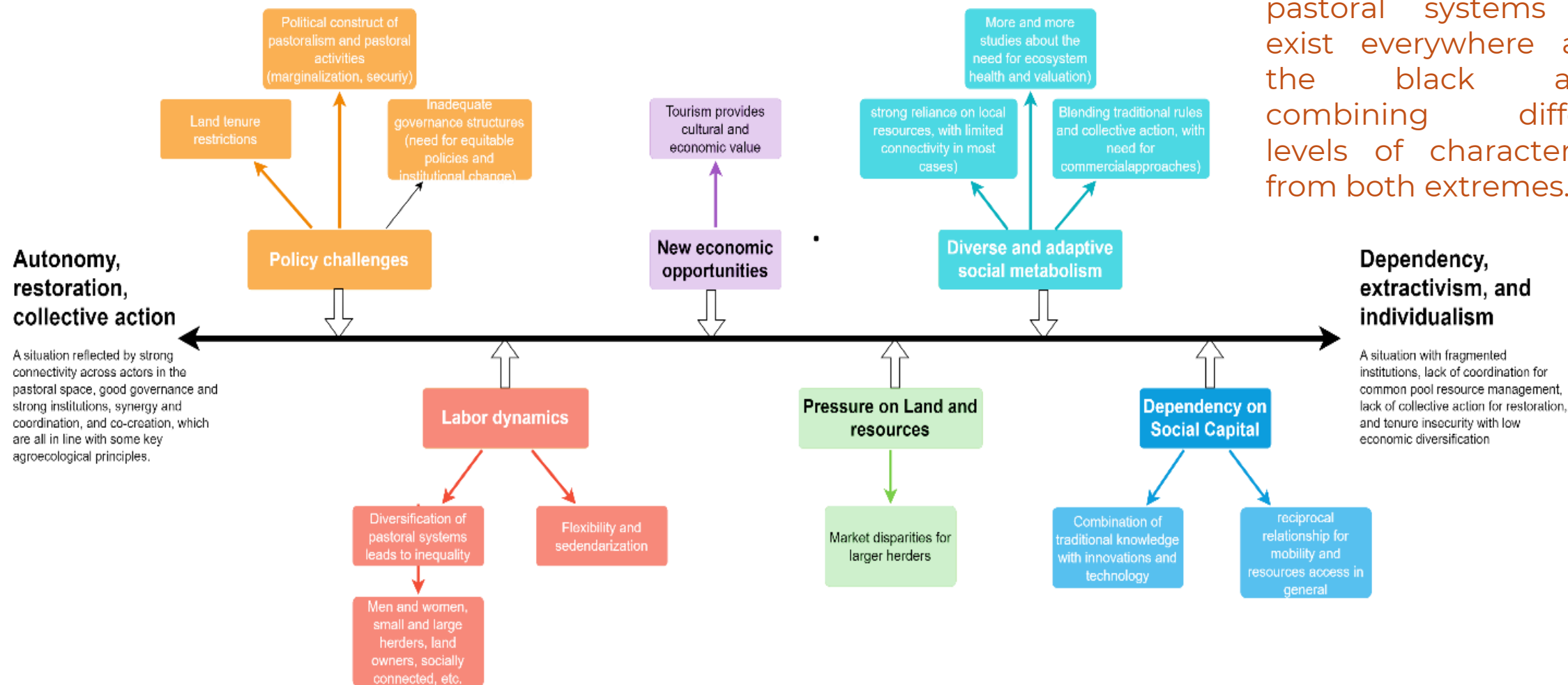
Sedentary pastoralism has increased as a result of political and socio-economic changes.

=> Many pastoralists are now adopting mixed farming practices, to increase productivity, income and resilience to growing climatic challenges.

+ Policies and governance structures influence the transformation of traditional pastoral systems.

A pastoral system in tension: Explaining the transition pathways through political economy

Variety of hybrid forms of pastoral systems that exist everywhere along the black arrow, combining different levels of characteristics from both extremes.



A dichotomy of agroecological trends in pastoral systems



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Rangeland degradation, loss of biodiversity, traditional knowledge, and local informal organizations.

=> Reduce resilience and autonomy of pastoral communities to shocks

=> Land privatization, agricultural expansion: conflicts, degradations

=> **Moving away from AE**

VS

****Connectivity, economic diversification => moving towards AE**



Shift of policy mindset and narrative for pastoral areas in Tunisia



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- Colonial period: marginalization and land grabbing: disqualification of a social system at the margin of the state
- Since Independence (1952), 4 periods of Tunisian pastoral policies : from top-down approach, to regulating law, privatizations, local communities' involvement, reconfiguration of powers

=> Shaped by the government orientations : State agencies remains key in planning, monitoring and capacity development.

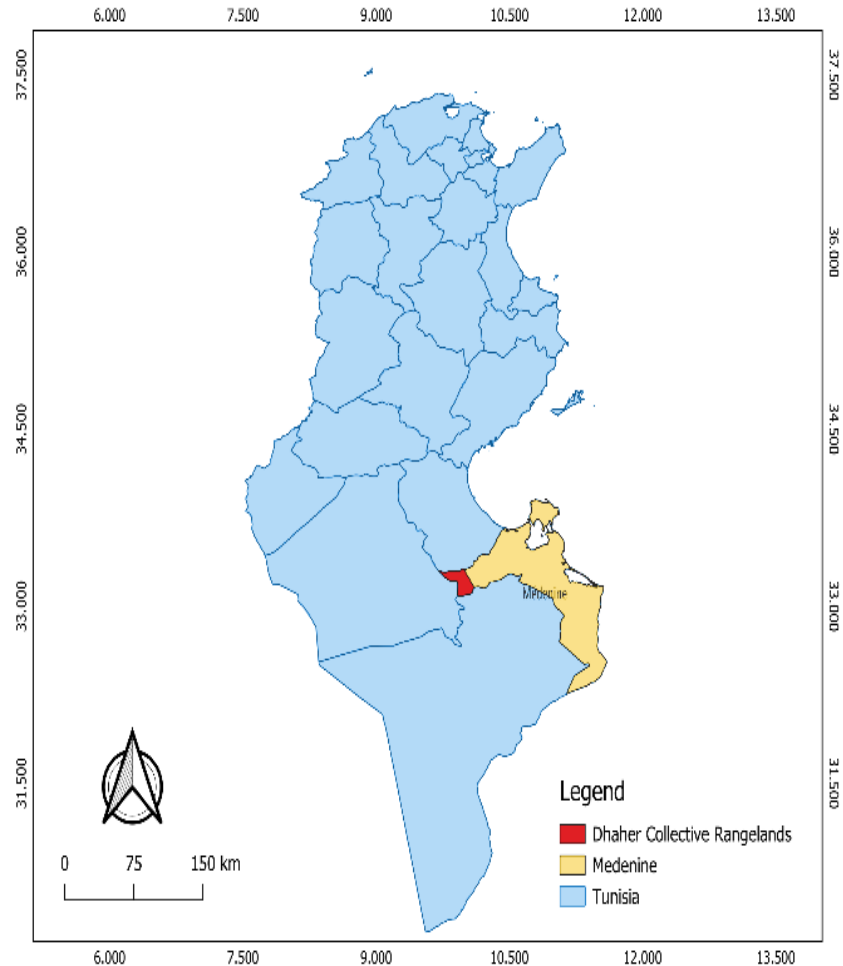
=> Combination of bottom-up and top-down interventions: hybrid form of governance.

- ✓ A negotiation of power between central authorities and local stakeholders. (decentralization, revolution) changing according to the institutional context.
- ✓ Towards a new need for productive autonomy? After covid, global inflation, and a new constitution (2022): Pastoralism for food sovereignty in the south is strategic

Pastoral systems diversity and typology in Dhafer: Different resilience strategies and agroecological trajectories



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The Dhafer area includes a **mountain chain** (on the west) and a much broader **desertic plan**

Four types of farms; distinguished by the **structural and technical characteristics** of the pastoralists and their **recent dynamics and changes**.

- Diversified agropastoral system (100-200 small ruminants): sedentary pastoralists who have maintained their livestock activities (mainly sheep and goats) and pasture grazing. 25 and 30 hectares of agricultural land. The main crop activity is olive growing, with an average area of between 3 and 12 ha
- Mountainous pastoralism (less than 50) Smallholders based on supplementary irrigation from Jessour-based water harvesting systems, with limited livestock activity
- Specialised pastoral system (+500): still make considerable use of pastoral resources for grazing combined with mobility.
- Specialised olive tree system (50): collective pastures that have been privatised

Diverse “agroecological” profiles of the current pastoral farm types in Dhaher, South eastern Tunisia, their trajectories, and explicative factors



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Pastoral System Type	Towards Relying on Internal Inputs	Towards Equitability	Towards Environmental Conservation & Biodiversity	Towards Local Adaptation & Control over Resources	Towards Effective Systemic Management of Local Territories & Resources	Towards Enhanced Landscape Governance & Organization	Towards Effective Connectivity with Markets
Diversified Agropastoral System (mainly through additional land acquisition for tree plantation)	Efforts towards diversifications means reliance on more external inputs. Need for external capitals, aids, and knowledge (from family, community or state) to support transition towards diversification.	Lack of tenure security, access to land is not equal across community members, thus problems of equity and fairness. Change of production systems is not also equitable towards men and women.	Better for the environment as less pressure on grazing resources and rangelands. More diversification at farm level, with conservation of local seeds and biodiversity.	Tree cultivation remains dependent on climate and/or access to supplementary irrigation. No control of farmers on water or land as this is under state and collective control.	Increasing investments in public goods and services such as water points, resting areas, roads, etc.	Farmers are not necessarily better organized collectively for territory planning (as the case for pastoralism). Land titles are private thus leading to individual decision making.	Better connection with market, especially for olives and fruit marketing.
Small-Scale Agropastoral System or Agricultural System with Livestock or Water Harvesting System (Jessour-based)	New configuration of the production system with new opportunities and challenges. But usually these remains system with low level of inputs and good levels of recycling (residues and manure)	No problem of tenure are these systems are usually established in mountainous areas. Internally, women have more income generating opportunity at farm level.	Protection of landscape against erosion. Cultivation and conservation of local crops and varieties, thus conserving genetic resources.	Water harvesting techniques used are strong adaptation technique which fits to context. Low need for water and land thus available resources remain under control.	The used techniques are highly useful for territory management and planning. System management is well documented through crop livestock integration and diversification of activities.	Jessour systems remains farm based, they are not encouraged by the state, and nor involve strong community governance arrangements. Contribution to this transition element is low.	Limited but evolving connectivity as traditional systems are usually of low area, productivity, and aim to self-sufficiency.
Specialized Pastoral System: extensive use of pastoral resources	Very low use of external inputs for livestock activities. Highly independent system, as mobility is key and grazing is the main source of feed.	Equitable in terms of access to land, but, nowadays, limited equitability as overuse of resources (by new large investors) can disadvantage smaller pastoralists. Also, dominance of large herders in community for access, use and decision making.	Conservation efforts are minimal after dismantling of traditional Miyaad; Situation today is that overgrazing leads to environmental degradation. Many rangelands are fully degraded to an irreversible way in the region.	New technologies allows stronger adaptation to local conditions, feed supplements, communication and mobility through trucks, etc. Control over resources is also growing with more and larger private investments.	Increasing public investments in rangeland infrastructure, roads, telecommunication, etc. Pastoralists have access to new technologies that supports planning and coordination.	Attempts are made to enhance governance, but progress remains inconsistent due to conflicting stakeholder interests. Management is often weak due to overexploitation and lack of collective action.	Market is a key element for this system and increasingly important for feed and livestock products. Local demarcation of products is evolving.
Abandoned Pastoralists: Olive Tree Specialized System	High level of relying on external inputs for the different new cropping systems in place.	Access to land is depending on many factors that are not necessarily equitable and/or lead to equitable access and use of land and water.	Increasing use of chemical fertilizers, groundwater depletion, mono-cropping, etc.	Involving innovative knowledge and technical packages for high productivity, local adaptation. Full control over land and water resources.	Systemic management is weak as this system is rather based overuse of water and intensive exploitation of land. State efforts to regulate and manage at territorial level are not always up to the demand.	Local governance is often minimal or fragmented as pastoralists disengage from collective resource management to rather individual farms with independent decision making.	Connectivity with olive oil markets is high, with ongoing development of brands and better marketing channels.

Current challenges and diversification of trends



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****Diversified agropastoral systems** in the Dhaher region

⇒ **increasingly dependent on external inputs**, vulnerable to market fluctuations.

⇒ **Continue to create synergies between crops and livestock** within the farm and/or landscape. +family labour

-Access to land and tenure security remain key.

***The more “agroecological”=> smallholder farming with Jessour water harvesting** New form(local knowledge, adaptation, diversification)

***New forms of 'exclusive' pastoral system: one of the least agroecological.** (cf. local power, productivity, extractivism and external intensive investments by the landowners)



Conclusion



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- The importance of recognizing the diversity of pastoral systems and their unique challenges within the agroecological framework.
- Sustainable transitions in pastoralism require a deeper understanding of socio-political drivers.
- Calls for more holistic approaches to pastoralism, emphasizing systemic transformations and the need for further research.
- Hybridization of pastoralism; hybridization of AE; Transition pathways are never linear

Thank you



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