

Research Project

Exchanging mobility for intensification modes of livestock production in African pastoral systems: trade-offs and challenges for pastoralists' climate change adaptive capacity

Third-party funded project

Project title Exchanging mobility for intensification modes of livestock production in African pastoral systems: trade-offs and challenges for pastoralists' climate change adaptive capacity

Principal Investigator(s) [Kuhn, Nikolaus J.](#) ;

Co-Investigator(s) [Rueff, Henri](#) ;

Organisation / Research unit

Departement Umweltwissenschaften / Physiogeographie und Umweltwandel (Kuhn)

Department

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Rangeland systems in drylands support 200 million pastoralists globally who opportunistically make use of scarce and scattered resources by moving their livestock. Mobility is an efficient strategy to cope with increasing drought events induced by climate change. Development models nevertheless promote the intensification of pastoral systems to supply a growing global meat market and support pastoralists' livelihoods. Intensified means of livestock production are often incompatible with a mobility strategy, especially when privatised land tenures prompt pasture fragmentation and underpin long-term ecosystem service diversity losses. The improved livelihood prospects of pastoralists opting for intensification is hence potentially challenged by higher vulnerability to climate change. The proposed consortium seeks to understand pastoralists' climate change adaptive capacity in Africa's drylands under the above transformation process.

With intensification, means of livestock production tend to rely on costly inputs, investments, and uncertain external markets (i.e. volatile prices, export bans due to livestock diseases). High-input and output livestock breeds are fed on costly fodder and substitute indigenous genetic livestock resources. Indigenous breeds however have substantial climate change adaptive traits since they require low maintenance, have higher reproductive rates and resistance to diseases. Livestock mobility in resource-scarce environments is critical for seed dispersal and reduces concentration of livestock, contributing to sustainable land management.

Institutions and power relations are challenged due to the above transformation. Those who keep mobile modes of production are often marginalized and left with little alternative but to opt for intensification as well, since this economic environment imposes standards and cultural changes.

While intensification is gaining momentum globally, subsequent climate change adaptive capacity of pastoralists remains under-studied. There is a scientific and policy knowledge gap on the physical and socio-economic impact of this transformation. Understanding trade-offs, challenges and opportunities of foregoing mobility is critical to inform policy and development actors endorsing an intensification path.

This transformation process raises two research questions:

1-How does the climate change adaptive capacity of pastoralists opting for an intensified mode of production compare to those who keep a mobile mode of production?

2-How does an intensification path in African pastoral systems impact physical (land management and land degradation), and socio-economic dynamics (aversion to risk, preparedness and response to climate shocks, institutions, land tenures)?

This multidisciplinary WUN consortium of researchers sharing dryland pastoral systems research interests will convene a workshop and a fieldtrip in Botswana's drylands where intensification has been occurring for 40 years. The workshop will reflect on climate change adaptive capacity experiences across African countries due to intensification and deliver a scientific review article and a policy brief. The consortium will establish long-term institutional links between the three partners by jointly drafting a research proposal to bid for a long-term grant. The expected outcome will be an improved and integrated understanding of pastoral systems transformation towards an intensified mode of livestock production, and the resulting impact on climate change adaptive capacity of pastoralists and their livelihoods. This knowledge will further future-proof policy supporting African pastoral communities.

Keywords dryland extensive pastoral systems, Africa, Rangelands, Climate change adaptation, resource-scarce environment, sustainable livelihoods

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