

# Supporting the Vulnerable: Increasing the Adaptive Capacity of Agro-Pastoralists to Climate Change in West and Southern Africa Using a Trans-Disciplinary Approach

International Livestock Research Institute (ILRI)

<b>Country/Region:</b>	Mali and Mozambique
<b>German participation:</b>	Institute for Tropical and Subtropical Agriculture (DITSL), Potsdam Institute for Climate Impact Research (PIK)
<b>Leading scientist:</b>	Dr. Mario Herrero, Dr. An Notenbaert, Dr. Philip Thornton
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## Initial situation

Agro-pastoralists in Sub-Saharan Africa are among the most vulnerable populations of the world. In addition, current climate variability is expected to be exacerbated by the impacts of global climate change. Livestock herders and crop farmers alike will have to prepare for, cope with and adapt to their changing environment. Adaptation strategies, whether they are spontaneous farmers' initiatives or policy-driven actions, will need to deal with existing conditions and anticipated changes.

## Approach of the project

This project takes a transdisciplinary approach to tackle the complex problem of increasing the adaptive capacity of vulnerable agro-pastoralists through livestock.

Producing the required change calls for an enabling policy environment that is directly informed by available scientific information and should be guided by local successes. It also requires local consultation and involvement in the design and testing of new practices to create a feeling of ownership among land managers and to tap into practical traditional experience and expertise. Various dynamic vegetation, crop and livestock simulation models are being linked with climate model output, to assess potential climate change impacts on primary productivity and vulnerability. These activities will form the framework not only for scaling up and out project findings but also for informing priority-setting at a continental level. The project is further building on the wealth of indigenous knowledge that exists on how to deal with climate variability and risk. Assessments of these adaptation options in relation to reducing vulnerability of humans and ecosystems, particularly options associated with livestock, and a review of the attitudes and knowledge of agro-pastoralists, all help in identifying which are the most promising production and coping strategies. Furthermore, participatory pilot testing and a community monitoring and evaluation system are being set up with the aim of improving the learning process and learning cycles of agro-pastoralists.

## Major results achieved

A short film on climate change and adaptation strategies and agro-pastoralist is being produced. The first runs of vegetation dynamics modelling show differential crop and rangeland responses throughout sub-Saharan Africa. In combination with socio-economic vulnerability assessments, hotspots of climate change impacts can be identified. This information will form part of the discussion material in the policy dialogues. The country-level policy dialogues in Mali and Mozambique will further be guided by reviews of existing policies that support and/or constrain potential adaptation by agro-pastoralists.



Training of four MSc students on theory and methods for assessment and analysis of local knowledge took place in an intensive course at the DITSL. After setting up the work plans for the theses, the students have been trained in a second two week training on the participatory methods and expert interviews directly in the villages. Through participatory community-level studies and household surveys, a review of current and past adaptation strategies has been conducted. At the same time, these studies provide detailed information about

the livelihood systems of the local communities. Information about currently promoted and potential future strategies has been collected through literature review and local expert consultations. Based on this information a participatory priority ranking of adaptation options with agro-pastoralist, community leaders and other stakeholders will be conducted. Thereafter, pilot testing of selected high-priority interventions in targeted communities will be undertaken.

## Expected impact

Together, the results from the different research approaches will contribute to a conducive environment for continuous innovation, which should lead to effective livelihood strategies and sustainable resource use. More rigorous information about the potential impacts of climate change on agro-pastoralists' livelihoods will be made available and innovative adaptation pathways will be identified. Through co-learning activities with the agro-pastoralists, these communities will be empowered to use this and all future information concerning climate change, its impact and potential adaptation strategies in a more appropriate way, supported by better-functioning institutions and more relevant policies.

**Collaborating institutions:** : African Union – Interafrican Bureau for Animal Resources (AU-IBAR), Instituto de Investigação Agrária de Moçambique (IIAM); Institut d'Economie Rurale (IER), Mali

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