



EPICC IN TANZANIA – 2018-2021

Climate · Hydrology & Water Resources · Agriculture · Migration

OVERVIEW

Agriculture is of major livelihoods and economic importance in Tanzania, with the majority engaged in this sector. It has increasingly struggled with droughts in recent decades, posing growing risks, especially for rainfall-dependent agriculture. Long-term projections show that average rainfall will consistently decrease. In addition to droughts, floods are a key problem for the Tanzanian population, some of which are directly related to the El Niño phenomenon. Climate change will intensify this phenomenon. As these events impact upon livelihoods, more people are migrating in search of improved livelihoods opportunities. Long-term climate resilience as well as adaptive capacity building and better institutional cooperation on climate impacts are therefore important. EPICC has sought to address Tanzania's adaptation to extreme events in five thematic areas over the period 2018 to 2021.

The project East Africa Peru India Climate Capacities (EPICC) was hosted by Germany's Potsdam Institute for Climate Impact Research (PIK). Its aim was to strengthen resilience by enhancing capacities in climate adaptation science and practice together with three partner countries: Tanzania, Peru and India.

CLIMATE

The climate work package analyzed, evaluated and produced a wide range of climate data and information, including in-situ measurements, remote sensing products, medium-range predictions and long-term projections. Analyses of past and projected changes in climate parameters, compared to the long-term mean, and in the year-to-year variability of weather-related variables provided the basis for research on adaptation practices in water management and agriculture. Climate model simulations have also considered extreme events and drought indices in Tanzania have been developed further.

HYDROLOGY AND WATER RESOURCES

EPICC's hydrology portfolio in Tanzania focussed on working with local stakeholders on modeling and policy development. The focus was on the SWIM (Soil and water integrated) modeling system, which allows for testing, modeling and forecasting at different scales.

AGRICULTURE

The agricultural work package focused on seasonal yield forecasts of key crops such as maize. Existing agricultural information systems were supplemented with crop risk assessments and crop yield forecasts under climate change conditions. In Tanzania, the year-to-year variability of crop yield is strong and dominated by weather impacts. EPICC quantified this impact of weather on yield in Tanzania on sub-national level using the statistical crop-model AMPLIFY (Agricultural Model for Production Loss Identification and Failures of Yields). This newly developed model can provide a forecast of maize yield about six weeks before harvest based on publicly available global climate data.

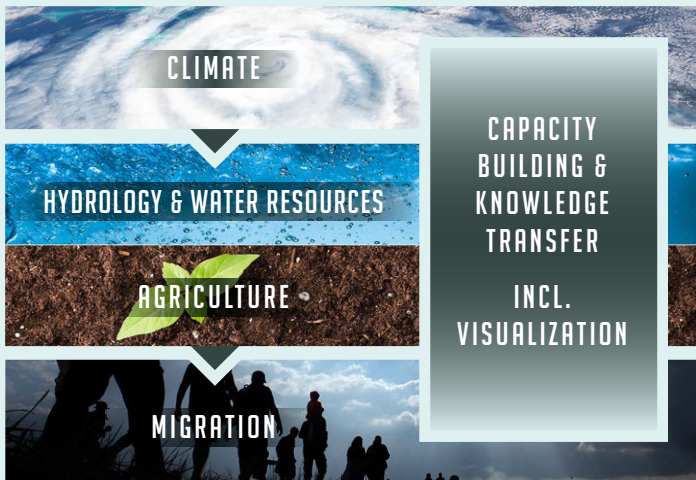
MIGRATION

This work package investigated how different forms of human mobility in Tanzania – short- and long-term migration, displacement by disaster, and planned relocation or resettlement of people – relate to climate change. The research included empirical case studies of mobility in areas affected by worsening climatic conditions and extremes such as flooding and droughts. It was examined, among other things, which household characteristics make migration more likely and which climate and environmental variables play a role in this.

CAPACITY BUILDING

Cross-project capacity building activities have linked the individual scientific outputs produced in the project, fostered stakeholder involvement and served to transfer generated knowledge into application. Activities have included:

- in situ and virtual stakeholder and training workshops
- co-produced policy development
- guest expert stays at PIK
- climate information display prototypes; see especially *ClimateImpactsOnline*



Partners in Tanzania have included:

Ministry of Agriculture (MoA), Tanzania Meteorological Agency (TMA), Tanzania Agriculture Research Institute (TARI), Lake Rukwa Basin Water Board (LRBWB), Sokoine University of Agriculture (SUA), University of Dar Es Salaam (UDSM), MVIWATA, Munich Re, ACRE Africa, IOM Tanzania. Cooperation with these and all other partners and collaborators was warmly appreciated!

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