

RESEARCH ACROSS DISCIPLINARY BOUNDARIES: TAILORING CROP GENETICS AND CLIMATE SERVICES TO SMALLHOLDER FARMING SYSTEMS IN NORTHERN MOZAMBIQUE

D'AMICO V.*, SOLEMANEGY M.**, MACHARIA M.*, TAKELE R.*, CAPRONI L.*, PE' E.*
, BUIZZA R.*, MABICA R.***, AMANE M.**, MUNISSE P.**, CONGUARA B.*****,
OCCELLI M.*****, DELL'ACQUA M.*

*) Scuola Superiore Sant'Anna di Pisa

**) Instituto de Investigação Agrária de Moçambique

***) PLAN International

****) Mozambique National Meteorology Institute

*****) Eduardo Mondlane University

*****) Global Development - CALS, Cornell University

crop genetics, climate services, mozambique, smallholders, participatory methods

Climate change has dramatic impacts on low-input agriculture in sub-Saharan Africa. Exposure to climate variability, combined with low adaptive capacity, burdens local livelihoods with chronic issues of food security. Adaptation requires integrated agronomic and socio-economic adjustments to food production and consumption, and transdisciplinary approaches should be devised to understand the complexity of farming systems and address their issues while keeping farmers and local stakeholders at the center of the research via participatory approaches. Here, we present the results from a knowledge integration process used to combine crop genomics, climate science, and social science to enhance the resilience and adaptability of smallholder farmers in northern Mozambique. We focused on the co-design, co-development, and co-evaluation of two climate services: climate-ready cowpea (*Vigna unguiculata*) and rice (*Oryza sativa*) varieties, in combination with tailored seasonal rainfall forecasts. To this end, we performed four focus group discussions (FGD) and a survey involving 248 households in the district of Mogovolas, combined with key informant interviews conducted between the target areas and the capital city of Maputo. Based on the mix of qualitative-quantitative data collected and

analyzed, we devised transdisciplinary pathways to address the climate-related vulnerability of the selected local communities. Here we report about the co-definition of objectives and co-development of climate service prototypes, describing a participatory methodology including participatory variety selections with farmers to evaluate the desirability of the rice and cowpea varieties identified, and FGD with the local communities to evaluate the readability of forecast maps, and a stakeholder workshop with actors from the climate services value chain to guarantee the flow of the climate information until the “last mile”. By this, we offer an outlook for potentialities of transdisciplinary approaches for policy actors, researchers, and practitioners, willing to bridge the gap between research/policy agendas and climate-related challenges.