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Poster Communication Abstract – 1.14

DEVELOPMENT OF CLIMATE SERVICES FOR SMALLHOLDER COMMUNITIES IN MOZAMBIQUE: TOWARDS CLIMATE-READY CROP LANDRACES COUPLED WITH IMPROVED SEASONAL FORECASTS.

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Participatory evaluation approaches are a viable solution to increase the impact of farming innovation on small-scale agriculture. Farmers are involved directly in setting research goals, selecting seeds, observing pests and crop diseases, or evaluating research products. The cooperation among farmers and scientists helps tailor research to the needs and criteria of the participants, empowering farmers as co-creative agents in rural research. When focused on crop varietal selection and breeding, participatory approaches may impact local communities increasing the local adaptation of selected varieties.

Due to their participatory nature, these evaluations call for interdisciplinary approaches, able to merge the local and experience-driven knowledge of the participants with state-of-the-art breeding techniques. By accessing the knowledge of the farmers and the local awareness they possess, researchers unlock the potential of local, underutilized genetic resources to boost communities' climate resilience and food security. Following this stream of research, the H2020 project FocusAfrica (2020-2024) aims at coupling the knowledge of climate and crop scientists with that of farmers in Mozambique to co-create climate services. Following a participatory approach, FocusAfrica will develop climate-adapted crop varieties and weather prediction models, while tailoring these climate services on farmers' needs and knowledge.

Within FocusAfrica, crop geneticists, socioeconomic and climate scientists engage more than 200 households in the district of Mogovolas (Nampula region). Surveys, focus group discussions and participatory techniques will identify constrains and valuable climate traits for local growers of cowpea and rice. A genomic characterization of rice and cowpea local varieties will generate information about the genetic agrobiodiversity on the region, allowing to connect allelic variation with climate and farmers' preferences with genome wide association studies (GWAS). Finally, climate analysis will improve seasonal and sub seasonal forecasts, to develop an early warning system coupled with characterized cowpea and rice varieties.

In this poster, we report the strategy of FocusAfrica in Mozambique, reporting early advancements made in the project. We showcase the effectiveness of a close-knit relation between social sciences, genomics, and climate science to support data-driven decentralized breeding approaches targeting smallholder agriculture.