

## Project: 1111

### Title: KIT-ELVIC – Climate Extremes in the Lake Victoria Basin

Report for period 01.07.2020 - 30.06.2022

During the application period 2020 - 2022, the focus was on the evaluation and post-processing of the ERA-Interim driven control run within the KIT-ELVIC. KIT contributed to the CORDEX-FPS-ELVIC project with a dynamical downscaling approach using the regional climate model WRF to achieve the overall project aims: the generation of a high-resolution (3 km grid spacing) convective permitting multi-model ensemble over the Eastern African Lake Region with a specific focus on the Lake Victoria to analyze the regional climate over this vulnerable region.

The continuous 10-year run with the WRF model at high resolution (2.8 km grid spacing) has been analyzed and the comparison with the results of the other modelling groups as well as a validation of the high-resolution model ensemble with observational datasets led to a publication that is currently under review in Climate Dynamics. For the next application period, we plan to conclude the project by running the envisaged climate change scenario runs for the end of this century (see application for computing time within the project 1111 for 2022 - 2023). The following Figures give an overview (Fig. 1) of the ELVIC project and some results of the modelling activities within this project.



Figure 1: Overview of participating institutes and considered regional climate models over the model domain with focus over the Lake Victoria.

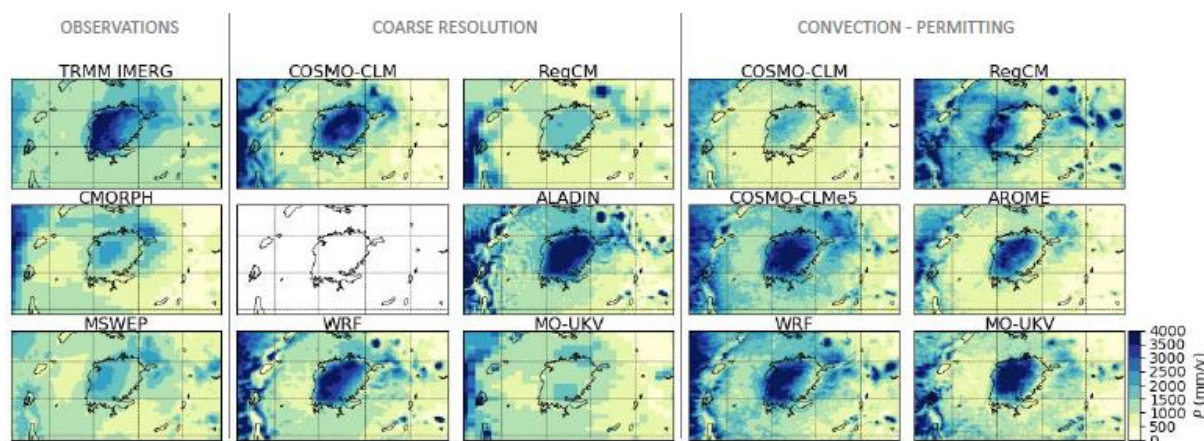


Figure 2: Comparison of observational precipitation data sets and annual mean precipitation based on different regional climate model output for coarse and high resolution.

#### Submitted Paper:

van Lipzig NPM, Van de Walle J, Berthou S, Coppola E, Demuzere M, Fink AH, Finney DL, Glazer R, Ludwig P, Marsham JH, Nikulin G, Pinto JG, Rowell DP, Thiery W (2022) Representation of precipitation and top-of-atmosphere radiation in a multimodel convection-permitting ensemble for the Lake Victoria Basin (East-Africa), Climate Dynamics, submitted