Project LANDSURF

Land surface processes as a determinant of climate change in Africa –
scenarios, high-resolution modeling and development of a stakeholder data portal

Summary of the 1st End-user Workshop on
"Identification of indicators for the decision support system (DSS)"

On 8 December 2021, the 1st participatory workshop of the LANDSURF project took place, hosted by the Climate Service Center Germany (GERICS), in a virtual format to identify potential indicators for the Decision Support System (DSS) planned in this project. A total of 21 participants from six different countries (Burkina Faso, Mali, Nigeria, Togo, Uganda, Germany) were asked about their information needs in the sectors of agriculture, food security, water management and risk management through Zoom polls and Google Jamboards during the workshop.

At the beginning of the workshop, the Director of the Climate Service Center Germany (GERICS), Prof. Dr. Daniela Jacob, emphasised the importance of LANDSURF and the involvement of end-users in this project that aims to support adaptation to climate change in West Africa. Afterwards, the coordinator of LANDSURF, Prof. Dr. Heiko Paeth from the University of Würzburg, introduced the project and its various components. Dr. Vincent O. Ajayi from the Federal University of Technology Akure then explained in his presentation the different terms and climate model data used in climate science to bring the audience to the same level of knowledge. Subsequently, Lorenz König from the University of Halle presented the DSS to be designed and developed in LANDSURF. He used practical examples to show the possible functions and features the new system could have.

The second part of the workshop was dedicated to identifying indicators that can describe the impact of climate change on specific sectors in West Africa. In order to inspire the end-users which indicators could be of interest to them, Dr. Torsten Weber from GERICS presented some results showing different rainy season parameters calculated from observational data. During this session, end-users made suggestions via a Google Jamboard (see picture below) on what information and indicators they would like to obtain from the DSS. Through this participatory workshop, the project received a lot of valuable information, which needs to be analysed. A survey for the final selection of indicators for the DSS is planned for the next month.

This workshop can be considered a successful event as the project received positive feedback throughout. To ensure the usability of the DSS, further participatory workshops will be held during the project. The next workshop, which will focus on the design of the DSS, is planned for spring 2022 in West Africa.

End-user indicators or information needs
Utilisateurs finaux Indicateurs ou besoins d'information

Inter-Tropical Front position

duration of dry spells, onset, length of season,

Number of Dry Spells (During Rainfall/planting Season)

Length of the rainy season

shift in the onset of rainy seasons

Number of the rainy days

isohyets (different way to present the rainfall amounts expected in future)

Maize, rice, sorghum,

flood

Crop Water Demand

Plant water requirements, water balance

Irrigation Requirement

Occurrence of dry spells

Exceedances of temperature extremes

maybe some zones of certain regional climate characteristics (P // T) like climate zones, but specific for WA

Surface water (for irrigation purposes)

Millet, maize and sorghum

NDVI trend

land use change

Crop types?

Exceedances of Thermal-Humidity Index (THI)

Crop Suitability index

climate hazard zone maps

Biomass estimation at ground level (based on the NDVI: Normalized Difference Vegetation Index)