Applying Climate Service in The Future Okavango (TFO) Project

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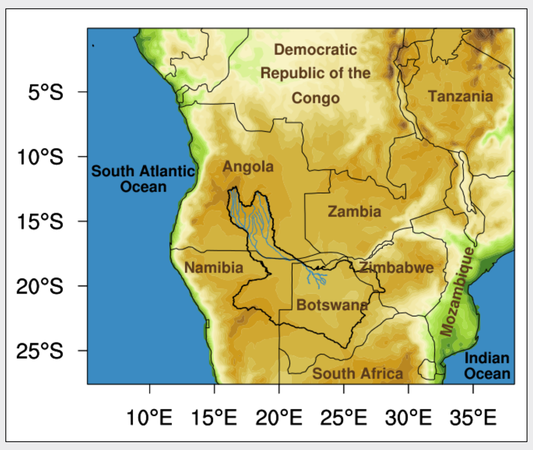
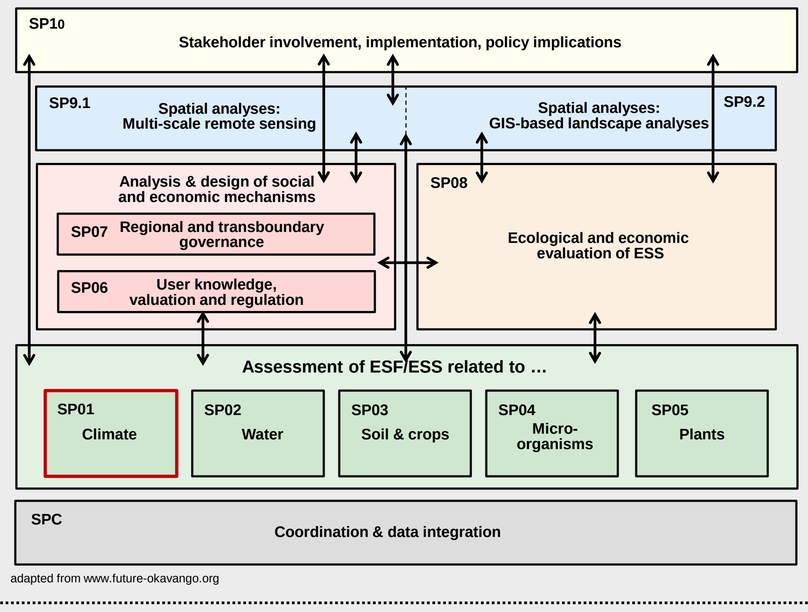
Area of Interest

The Okavango River Basin with the world's largest inland delta is a hotspot of future climate change. The river originates in the rainy Bié Plateau in Angola, touches the north-western part of Namibia with its savanna woodlands and terminates in a delta situated in the Kalahari Desert in Botswana. As the region strongly depends on the water resource of the Okavango River, possible changes of the climate are of uppermost importance and interest, because they affect all components of the hydrological cycle and thus the lives of the people living in a region of such unique natural characteristics.





adapted from www.future-okavango.org

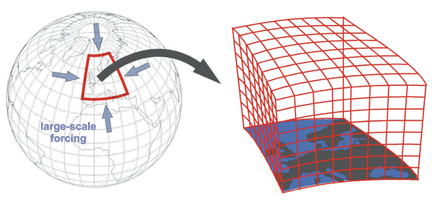
The Project

The project "The Future Okavango" (TFO) (www.future-okavango.org), which covers Angola, Botswana and Namibia, aims at an improvement of knowledge based land use management within the Okavango River Basin. An important aspect of TFO is the application of a trans-disciplinary approach by involving relevant regional stakeholders on different scales from the three countries and the support of the already well established communication between science and decision makers in the region. In order to develop strategies for sustainable land management in the Okavango River Basin, decision makers need high resolution climate change information for the future. The TFO project consists of 10 subprojects from different disciplines, which analyze and quantify ecosystem functions (ESF) and ecosystem services (ESS), and a coordination unit.

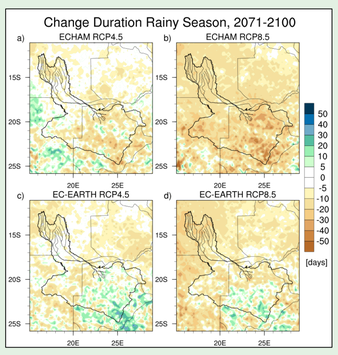
Climate Service provided by GERICS (SP01)

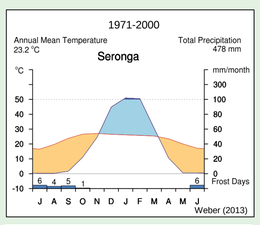
Regional climate model data, e.g. time series for temperature, precipitation, wind speed

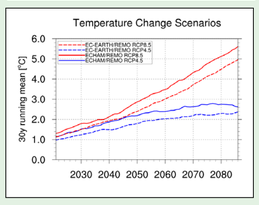
Dynamical downscaling of climate model data



Analyzed regional climate information, e.g. duration of rainy season, trends of temperature, climate diagramms







Support for user of climate model data, e.g. by workshops

In the framework of TFO, the Climate Service Center Germany conducted regional climate change projections, which were dynamically downscaled with the regional climate model REMO (Jacob & Podzun, 1997, Jacob 2001) using data from two different global circulation models (ECHAM6 and EC-EARTH) as forcing. The high spatial resolution of 25 x 25 km of the regional climate change projections was achieved by applying a double nesting method. In order to take into account the uncertainty related to the human contribution to climate change, two different representative concentrations pathways (RCPs) are considered containing a possible low (RCP4.5) and a high (RCP8.5) anthropogenic emission scenario (Moss et al., 2010). Climate model data and climate change information including uncertainty measures have been prepared according individual demands and delivered to the project partners. Furthermore, the Climate Service Center Germany organized a workshop on the use and interpretation of the climate data within the project.

References

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