



## Mesoscale Modelling of Westafrican Precipitation in IMPETUS Westafrica

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**ABSTRACT:** The objective of the IMPETUS Westafricanproject is the research on water availability, water use and management and future impacts of expected climate changes on the socio-economic development in two critical regions of Westafrica: On the northern side of the Sahara in the catchment of the Oued Drâa in Morocco, south of the Sahara and Sahel in the catchment of the river Ouémé in Benin.

Precipitation is the most important input to the hydrological cycle in these regions. For any hydrologic or economic modelling we need spatially distributed precipitation fields as accurate as possible. Therefore, precipitation modelling is one scope for the meteorologists participating in IMPETUS. For detailed studies on the influence of land use changes on soil hydrology and plant growth, the spatial scale of used models should be as small as possible. Therefore, the use of mesoscale models for regional climate modelling is tested and further developed.

Since causes of rainfall variability are multiscale phenomena—teleconnections with ENSO and NAO steer the rainfall variability as well as local changes like deforestation—a hierarchy of models, from the global scale down to the Meso-/Microscale, was set up to study processes affecting rainfall variability in the regions of interest. This model chain is described in some detail, first results and future aims of research activities in the area of mesoscale modelling are shown.