The Department of Geography, University of Bonn, Germany, offers a PhD position within the WASCAL Project (West African Science Service Center on Climate Change and Adapted Land Use www.wascal.org) on

Soil degradation by water erosion

WASCAL

Climate change is one of the most severe challenges to rural Africa in the 21st century. West Africa is facing an urgent need to develop effective adaptation and mitigation measures. WASCAL (http://www.wascal.org/) is a large-scale research-focused program designed to help tackle this challenge and thereby enhance the resilience of human and environmental systems to climate change and increased variability.

Objectives

Soils play a crucial role in agricultural and natural systems. They provide the fundamental background for plant production and ecosystem services. Soil quality (fertility, soil carbon content (SOC), soil properties) is severely affected by climate and land use change as turnover rates depend on temperature and soil moisture, and land management directly influences soil properties. Soil degradation by water erosion and nutrient depletion are the key processes concerning soil degradation and are directly dependent on climate and land use. Adapted soil and land management will be extremely important for food security. Strong feedbacks exist between soil nutrient supply, soil carbon dynamics, soil degradation by water and agricultural production.

Your tasks will be:

- To analyze and simulate soil erosion, transport and sedimentation. This includes a participation in the installation of a hydro-meteorological measuring network in the research areas in West Africa.

- To quantify sediment yields at different scales and to analyze off-site effects on reservoir siltation.

The work will be carried out in the WASCAL focal watersheds and will cover investigations from the local (point) to the watershed scale.

Requirements

We are looking for a highly-motivated and self-reliant candidate with a master (or comparable) degree in Geography, Soil Sciences or a related field (e.g. Geo-Ecology, Hydrology) with a profound knowledge on soil processes. We expect the willingness to spend longer periods in West Africa (Burkina Faso, Ghana, Benin) and to organize samplings campaigns self-reliantly. Candidates should furthermore possess the ability to work in a team. The position requires expertise in Arc-GIS and modeling. We expect the willingness to closely collaborate with colleagues from other work packages within the research program and with partners and stakeholders in West Africa. A high level of written and spoken English and at least basic skills in French are a prerequisite.

The position

Subject to financial approval from the donor, we offer a three-year scholarship as a doctoral student. During this time, the doctoral student will be based in Bonn (Germany) and the field work will be done in West Africa. The position is available from 1st of March 2012. Evaluation will begin in January 2012 and continues until position is filled.

The University of Bonn is an equal opportunity employer and particularly welcomes applications from women candidates. Please address applications (CV including photograph, diploma/master thesis or other example of your work, two references with names and addresses of the referees, cover letter including a statement of research interests and achievements) via email to: Prof. Dr. Bernd Diekkrüger, Meckenheimer Allee 166, 53115 Bonn, Germany, b.diekkrueger@uni-bonn.de. Please note that only shortlisted candidates will be contacted.