

The Center for Development Research is an international, English-speaking research institute of the University of Bonn, Germany, which hosts the ZEF Doctoral Studies program. For more information, please see [www.zef.de](http://www.zef.de)

The Center for Development Research offers a

### **Doctoral scholarship**

#### **‘Modeling the availability of surface and groundwater resources in inland valleys under the influence of and climate and land use changes’**

#### **Background and objectives**

Climate change is one of the most severe challenges to West Africa in the 21st century. The region is facing an urgent need to develop effective adaptation (and mitigation) measures. To tackle this challenge, the West African Science Service Center on Climate Change and Adapted Land Use (WASCAL) was designed. WASCAL (<http://www.wascal.org>) is a large-scale research-focused program to enhance the resilience of human and environmental systems to climate change. The scholarship is a part of WASCAL.

In particular, options to adapt to water scarcity and increasing variability of water resources are essential. The main objectives of the proposed research are to model the hydrological system of inland valleys (including the simulation of impacts by climate change and changing land use on the hydrological system of inland valleys), to provide information needed for conceiving adaptation measures in inland valleys and to assess the impact of land use changes in and upstream of inland valleys on downstream parts of the basins. The proposed research will be carried out in close cooperation with the research by the doctoral scholarship ‘Use of shallow groundwater, small reservoirs and supplemental irrigation as options in inland valleys to adapt to water scarcity’.

#### **Duration and conditions**

Subject to approval by 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 (Bukina Faso, Ghana, Benin). The awarded scholarship will cover living, research as well as travel costs.

## **Time plan**

The successful candidate will develop an individual research proposal until April 2013. For data collection, 10-14 months of field work in West Africa will be required. She/he will participate in the disciplinary and interdisciplinary courses of the ZEF Doctoral studies program from October 2013-February 2014. During the analysis, simulation and writing-up period of the dissertation, the candidate will be based at ZEF in Bonn.

## **Requirements**

- Master or Diploma degree in Hydrology, Geography, Agriculture, Geodesy or a related field
- profound knowledge on hydrological processes and modeling
- experience on establishing and operating hydrological monitoring networks (discharge, groundwater level, soil moisture) and analyzing the data
- ability to work self-reliantly and as a team-player
- willingness to closely cooperate with colleagues from other work packages of WASCAL and with local stakeholders (inter- and transdisciplinary approaches)
- good knowledge of English (knowledge of French is of advantage)
- expertise in handling Geographical information Systems and Remote Sensing approaches and climate change scenarios or the readiness to develop the respective skills
- work experience in developing countries, particularly in West Africa, is of advantage

## **Application**

The eligible candidates are invited to send their application including:

- a letter of motivation
- Curriculum vitae
- Copies of all relevant transcripts and certificates of bachelor, master or equivalent courses
- Copies of master/diploma thesis and scientific publications, if available
- Recommendation and contact details of two referees

## **Address and closing date for application**

Please send your application (as one pdf-file or comparable format) by e-mail to:

Dr. Bernhard Tischbein, Center for Development Research; e-mail: [tischbein@uni-bonn.de](mailto:tischbein@uni-bonn.de)

Closing date for the application is **November 20, 2012** or until position is filled. Please note that only shortlisted candidates will be contacted.