

**PhD position (UNIVERSITÄT FREIBURG)**

**Bewerbungsfrist: 31.10.2019**

The *Chair of Silviculture* at the University of Freiburg offers a PhD position to carry out research on  
**“The influence of structural, functional, and species diversity on temporal stability of productivity and efficiency of resource use in a tropical mixed-species plantation”**

The position is anticipated to start in January 2020 and will run for three years. Payment is subjected to the German standard tariff (up to 75% TVL13).

**Project Description:**

Owing to past deforestation and ecosystem degradation there is a large need and potential for afforestation in tropical and subtropical regions. Mixed-species plantations offer an opportunity to establish forests that may be more productive and offer ecosystem services at a higher level than monocultures. However, whether diverse tree plantations are in fact more resilient to droughts and whether they use nutrients and water more efficiently than monocultures has not been sufficiently studied, in particular not in tropical regions. Using stem discs from the recently harvested “Sardinilla” tree diversity experiment in Panama, with 16 years the oldest of its kind, we will analyse whether there is a stabilizing effect of tree neighbourhood diversity, the scale at which tree-tree interactions occur, on the productivity and resource use dynamics (water and nutrients) of trees over time. This will be the first study that assesses woody biomass production, water-use efficiency, and nutrition accumulation in combination and at an annual resolution, and over a relatively long time period (16 years) in tropical trees. The proposed analyses of tree diversity effects during wet and very dry periods is particularly relevant for future plantations against the background of projected climate change.

**Expected profile of candidate’s qualification:**

The successful candidate is expected to carry out dendro-ecological and dendro-chemical analyses on the stem discs of harvested trees. This includes growth-ring analyses and the quantification of nutrients and the isotopic composition of C and O in individual year rings to identify drought stress in trees. Applicants should have a good background in dendro-ecological analyses, tree physiology and nutrition, and very good quantitative and statistical skills. Proficiency in English (writing/speaking) is indispensable.

The University of Freiburg intends to increase the number of female academic staff members and therefore specifically invites applications by women. Among equally qualified applicants women will receive preferential consideration. Disabled persons with equal qualifications will be preferably employed.

For application please follow the instruction given at the following webpage:

Submit your application no later than **October 31st, 2019** to [ursula.eggert@waldbau.uni-freiburg.de](mailto:ursula.eggert@waldbau.uni-freiburg.de)

Further information will be provided by Prof. Dr. Jürgen Bauhus ([juergen.bauhus@waldbau.uni-freiburg.de](mailto:juergen.bauhus@waldbau.uni-freiburg.de)) or Dr. Julia Schwarz ([julia.schwarz@waldbau.uni-freiburg.de](mailto:julia.schwarz@waldbau.uni-freiburg.de)).