

## CALL FOR APPLICATIONS / 2 PhD SCHOLARSHIPS in 2022

### [PhD Programme Environmental and Resource Management](#)

#### **Research Cluster “Multifunctional Landscapes under Climate Change” (MultiLand)**

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**Application Deadline September 8, 2021 - Start Scholarship/Programme in Cottbus: April 1, 2022**

The idea of "multifunctional landscapes" is a promising concept for reconciling food production with the provision of ecosystem services and the protection of biodiversity. This idea is related to the concept of “ecological intensification” which according to a definition by FAO may be considered as “a knowledge-intensive process that requires optimal management of nature’s ecological functions and biodiversity to improve agricultural system performance, efficiency and farmers’ livelihoods.” In this research cluster, we investigate selected aspects of multifunctional landscapes respectively ecological intensification as a concept for combining food production with ecosystem service preservation (in particular pest control) and biodiversity conservation under climate change. Our study systems are fruit orchards in Brandenburg, Germany.

The research cluster combines the work of four PhD students from the fields of economics, ecology, climate science and modelling. All PhD students investigate the study system from a joint perspective but applying their disciplinary knowledge. Supervisors have excellent networks all over the world and all supervisors and PhD students work closely together. This call is for one PhD scholarship in atmospheric processes and one in ecological-economic modelling. Participants in the research cluster are as follows:

#### **Department of Atmospheric Processes, Prof. Katja Trachte**

**Topic 1 “Spatio-temporal microclimates and feedback effects at the land surface - atmosphere interface of fruit orchards”:** Spatially explicit microclimatic conditions and land surface properties shall be derived using climate model data and remote sensing products to assess environmental impacts on agricultural products and the distribution of animal and plant pests.

The ideal candidate has good knowledge in the field of environmental sciences with a focal point on e.g. microclimatology, eco-climatology and good knowledge in the application of remote sensing and spatial data analysis (e.g. machine learning approaches). Experiences in programming (Python or R) is advantageous.

#### **Helmholtz Centre for Environmental Research - UFZ, Dept. of Ecological Modelling, and Hon. Prof. of Ecological-Economic Modelling at BTU, Prof. Martin Drechsler**

**Topic 2 “Ecological-economic modelling of biological pest control measures including adjacent semi-natural ecosystems in fruit orchards in a changing climate”:** A spatially explicit agent-based model shall be developed to integrate information from the ecological, economic and climatological subprojects of MultiLand, taking into account, among others, spatial interactions and human behaviour. The model shall be used to evaluate strategies for biological pest control.

The ideal candidate has good knowledge in the mathematical modelling of spatio-temporal processes, and computer programming in at least one higher language like C++, Python or Java. Some knowledge of one or more of the fields of economics, game theory and ecology is an advantage.

#### **Department of Environmental Economic, Prof. Frank Wätzold**

#### **Department of Ecology, Prof. Klaus Birkhofer**

The PhD Programme ERM offers an integrated approach to current national and international environmental issues helping to improve the quality of professional environmental management for the 21st century. The Programme is a full-time three-year structured programme with 180 ECTS awarded, 30 of which are completed in a [mandatory curriculum](#). Upon successful graduation (dissertation, curriculum and defense), the degree of "PhD in Environmental Sciences" is conferred by the Faculty of Environment and Natural Sciences.

The 2 scholarships starting in 2022 will be awarded by the [German Academic Exchange Service \(DAAD\)](#) within the [Graduate School Scholarship Programme](#) upon completion of a **multi-stage selection process**:

1. Applicants submit their complete application to BTU by September 8, 2021 the latest
2. Video-based interview for a selection of short listed candidates conducted by BTU
3. BTU nominates selected candidates to DAAD
4. Selected candidates submit their complete application to DAAD via the DAAD online portal

DAAD awards the scholarship for the duration of 3 to a maximum of 4 years based on a yearly progress report by the candidate and a report by the supervisor.

### VALUE OF THE SCHOLARSHIP

- Currently € 1,200/month plus travel allowance
- Payments towards health, accident and personal liability insurance cover
- A research allowance of currently € 460/year (for candidates from [emerging countries](#)), or € 230/year (for candidates from industrialized countries)

*Under certain circumstances, candidates may receive the following additional benefits:*

- Allowance for accompanying family members (about € 200 per child/month and about € 275 marriage allowance/month)
- German language course (if needed; a reasonable knowledge of German is required for fieldwork and study of grey literature)

### GENERAL APPLICATION REQUIREMENTS

- You show an excellent academic profile matching either Topic 1 or Topic 2
- You meet BTU's application requirements for the PhD Programme in ERM (see below)
- and submit your complete application before the deadline
- At the time of nomination to DAAD, the last final exam (Master Degree or equivalent) must have taken place no more than six years ago and applicants must not have resided in Germany for more than 15 months
- According to DAAD policies, qualified applicants from [emerging countries](#) are given priority

### APPLICATION DOCUMENTS

1. Completed and signed [application form](#)
2. Up-to-date and complete **CV**
3. **1 page letter of motivation** showing that you understand our research focus and how you fit in with your academic profile and experience
4. **1 page summary of your knowledge, capacities and experience either on Topic 1 or Topic 2**
5. **2 reference letters by professors from your home university** [\[template\]](#)
6. **[Certified copies](#) of your higher education entrance qualification (e.g. high school diploma) and complete and final Bachelor and Master certificates and transcript of records** (including a grading scale by your university) – *BTU only accepts candidates who have completed university degrees (Bachelor and Master combined) of at least 300ECTS and with a final grade of 2.3 or better according to the German grading scale*
7. **Certificate of English proficiency** (*for accepted tests, levels and possible exemptions see here*)
8. Completed and signed [declaration](#)
9. If applicable: Certificates of internships, list of publications, German language certificates

Please submit your complete application **in one single pdf-file** to [phd-application\[at\]b-tu.de](mailto:phd-application@b-tu.de) by September 8, 2021 the latest. **Incomplete or late applications or submitted in multiple pdf-files will not be considered.**

### CONTACT

Prof. Katja Trachte [katja.trachte\[at\]b-tu.de](mailto:katja.trachte@b-tu.de) and Prof. Martin Drechsler [martin.drechsler\[at\]b-tu.de](mailto:martin.drechsler@b-tu.de)  
<https://www.b-tu.de/en/environmental-and-resource-management-phd/news/scholarship-call-2022>

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**DAAD**

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