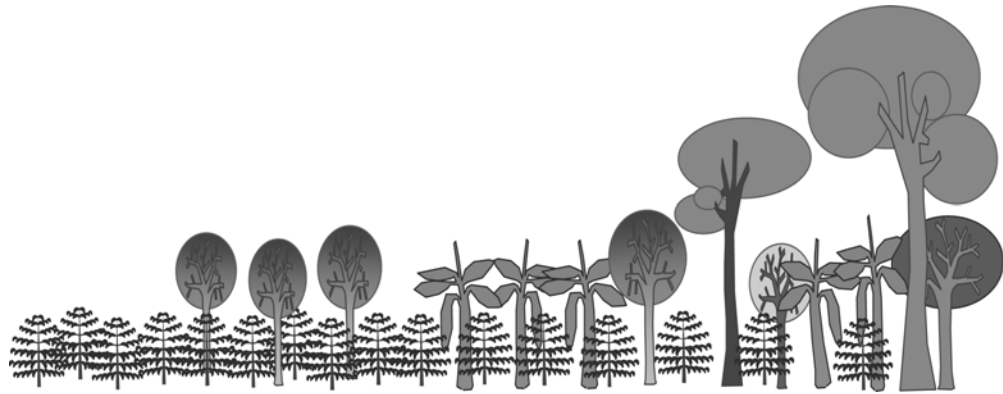




Consider this unique opportunity for undertaking PhD studies: Trade-offs and synergies in climate change adaptation and mitigation for Arabica coffee systems in Uganda and Tanzania

Rationale:

Studies have shown that climate change will have a massive impact on the Arabica coffee growing regions of Tanzania and Uganda. Not adapting to climate change is likely to have severe negative impacts on the national economies of this region with coffee exports generating some 20%-30% of the foreign exchange earnings of Uganda and Tanzania. Next to coffee being so important for the national economy, its production relies on smallholder farmers, a sector of society that has been identified as the most vulnerable to climate change. Coffee production has also resulted in massive deforestation. While there is high awareness of the potential effects of climate change and possible adaptation measures, the coffee industry is also increasingly concerned with the carbon footprint of production. For example, diversification of enterprises, shading based on principles of agroforestry or intensifying management and inputs, all represent measures for adapting to, and in some cases mitigating against, further climate change. The figure below represents some of the tradeoffs/and functions that must be considered in analysing such systems.



<i>Plot level functions</i>	Full sun monocrop	Shade tree monocrop	Banana / food intercrop	Polyculture system	Forest system
Yield quantity					
Yield quality					
External input use					
Nutrient recycling					
Production risks					
Plantation life					
Food security					
CC adaptation					
Carbon stock					
Ecological services					

light color = low → dark color = high

Objectives of this study:

The German Ministry for Economic Cooperation and Development (BMZ) has recently funded a collaborative project “Trade-offs and synergies in climate change adaptation and mitigation in coffee and cocoa systems” led by IITA and with partners from CIAT, the University of Göttingen and several research and extension institutions in the regions. The overall objective is to quantify and analyze the productivity, profitability and carbon footprint of various Arabica coffee systems in smallholder farming systems in Uganda and Tanzania. An outcome of this initiative is to develop climate smart technologies and strategies which will

be packaged into toolboxes to help inform and train farmers on best-bet climate change adaptation/mitigation options. Within this framework and along altitudinal gradients representing the farm types in the above figure, this PhD study will: (i) characterise the farming system by undertaking on-farm surveys and sampling to understand the key drivers/constraints; (ii) utilise existing predictive models (climate suitability, crop and tree models) at various scales to characterise yield gaps and predict where climate change will most affect production; (iii) undertake agronomic based trials to validate predictions or to develop new understanding of plant response to management (e.g. shade, increased nutrient status etc.). The key tools/skills the student will therefore develop and use include: interviews and survey techniques; climate data collation and analysis; use of predictive crop suitability models (e.g. Maxent, crop physiological models) at various scales, plot level agronomic experimental techniques.

Role and duration:

A well-qualified and highly motivated individual is sought to undertake his/her PhD studies enrolled through the University of Goettingen. Over the 3 years starting October 2013, the PhD student will spend at least 2 extended periods (6-8 months/trip) collecting field and survey data in Uganda and Tanzania in co-operation with the project partners and hosted by IITA. The balance of their time will be spent in Göttingen, Germany completing project proposal and course work requirements, data analysis and writing of the thesis. The doctoral thesis will be done as a series of manuscripts (chapters) published in English.

Salary and conditions:

Salary is on the basis of a 50% TVL13 position appointment at the University of Goettingen, resulting in ca. 1135 € net/per month. In addition, travel expenses and research costs will be covered during stays at the research sites.

Selection criteria:

The applicant must meet the criteria for enrolment into the International PhD Program for Agricultural Sciences (IPAG) (<http://www.uni-goettingen.de/en/103826.html>) for which a good masters degree (agronomy, plant physiology or a related field) and proof of proficiency in English are pre-requisites amongst others.

In addition to these requirements, other criteria we will consider favorably are:

- Demonstrated ability to work independently in the field
- Demonstrated ability to manage and analyse data from experiments and utilize crop or tree models.
- Good oral and written communication skills in English
- Experience in writing reports and papers

While the selection of candidates will be first and foremost based on scientific capacity by an independent academic committee of the university, we encourage suitably qualified young nationals from the project region to apply. In addition, the University of Göttingen and IITA are equal opportunity employers and particularly welcome applications from women candidates.

Applications:

Applicants should send as a single pdf file:

- (i) a covering letter outlining your motivation for this position;
- (ii) Curriculum Vitae, outlining your education, work history, publications and the names (with email addresses) of two references;
- (iii) Transcripts of your academic record from Bachelor and Masters level studies;

to the following three email addresses as soon as possible (closing date July 15, 2013)

awhitbr@gwdg.de; sgraefe@gwdg.de; p.vanasten@cgiar.org

For further information, please contact one of the following people:

Prof. Anthony Whitbread (awhitbr@gwdg.de), Crop Productions Systems in the Tropics, Georg-August University, Göttingen, Germany; see www.uni-goettingen.de/en/106511.html

Dr. Sophie Graefe (sgraefe@gwdg.de), Tropical Silviculture and Forest Ecology, Georg-August University, Göttingen, Germany; see www.uni-goettingen.de/en/67092.html

Dr. Piet van Asten (p.vanasten@cgiar.org), Systems Agronomist, International Institute of Tropical Agriculture (IITA), Uganda; see www.iita.org and www.cialca.org