PhD-project

Agro-ecological intensification of mixed crop-livestock systems in southern Mali

This “sandwich” PhD project is part of a project led Wageningen University, funded by the McKnight Foundation, in collaboration with CIRAD (Centre de Coopération Internationale en Recherche Agronomique pour le Développement), ICRISAT (International Crops Research Institute for the Semi-Arid Tropics), IER (Institut d’économie rurale) and AMEDD (Association Malienne d’Eveil au Développement Durable. This PhD project will be executed in close collaboration with a second PhD in the same project.

Job description

Agroecological intensification (AEI) is described as a promising way to increase agricultural productivity and nutritious food production, while maintaining healthy ecosystems and equitably improving livelihoods. AEI options can target the various components of the farming systems (crops, trees, soils, livestock, grazing lands, etc.) and are not limited to technologies, but include farm management, institutional arrangements and marketing improvements. Farming systems analysis that is participatory and based on adaptive learning cycles is well positioned to identify AEI options that are tailored to the multi-dimensional and multi-scale context in which farmers operate.

The research relies on a combination of on-farm experiments, modelling and stakeholder engagement to identify baskets of AEI solutions. Performance indicators such as agricultural productivity, income and food self-sufficiency will be complemented with information on nutrition, labour requirements, resilience and risk as well as indicators for environmental health, including soil fertility, land use/cover and biodiversity. Approaches for analysing the trade-offs between various AEI domains will be refined and applied in stakeholder consultations.

To understand and alleviate bottlenecks to AEI on smallholder farms constraints and opportunities will be determined for different farm types, male and female farmers, and various other actors along the value chain. This includes an assessment of the risks each actor is facing when investing in agriculture, and the information that is lacking to make strategic, tactical, and operational decisions. The project then plays a facilitating role in connecting farmers with upstream and downstream value chain actors, and feeding information into the discussions between them. A tool will be developed to aid farmers with farm planning and budgeting.

AEI pathways will be conceived together with various stakeholders during village and higher-level workshops based on an understanding of biophysical, demographic and socio-economic drivers and trends, and the information on AEI options. Visualizing the multi-criteria outcomes at farm, community and regional level will allow gathering feedback from stakeholders and refining pathways in an iterative process.

We ask

For this interdisciplinary project we look for an enthusiastic person with an appropriate MSc degree in agronomy, livestock science or (agricultural) economics with strong analytical skills and interest in participatory research with farmers and other stakeholders. Experience with experimental work and/or modelling is an advantage. The candidate should be able to combine broad multi-disciplinary aspects with more detailed aspects of agricultural production systems. Good communication skills and proficiency in English and French (both oral and written) are a prerequisite. Candidates from West African countries are eligible for this position.

We offer

A sandwich PhD study of four years, including an allowance of 1190 €/month while in Wageningen (max. 18 months) and 600 €/month while in Mali with health insurance cover for the whole four year period. Bench and University fees will also be covered. As part of the sandwich PhD, you have to broaden your knowledge as specified in a Training and Supervision Plan (see www.pe-rc.nl for further information), including refresher courses, advanced PhD courses, presentation of posters and talks at conferences.
We are
The Plant Production Systems (PPS) group uses systems analysis to understand the soil-crop interactions with the aim to achieve sustainable food production. Using concepts of systems analysis, we develop methods that allow integrated analysis and design of alternative futures at local (farm), regional, national, international and global scales. We thus contribute to a mission that strives to provide grounded quantitative analysis to underpin responses to urgent societal issues such as global food security, agricultural and environmental policies, competition for natural resources, food-feed-fuel interactions and global environmental change.

Further information
More information about the vacancy can be obtained from:
Dr Katrien Descheemaeker, email: katrien.descheemaeker@wur.nl, Tel: +31 (0)317 486102
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Information about the hosting chair group Plant Production Systems can be found at the website: http://www.wageningenur.nl/en/Expertise-Services/Chair-groups/Plant-Sciences/Plant-Production-Systems-Group.htm.

You can apply until the 15th of August. Please submit your application (including your curriculum vitae and a one page motivation letter) to the office of PPS via email: office.pp@wur.nl and include the title of the project in your motivation letter and email.

Acquisition regarding this vacancy is not appreciated.