

PhD Studentship

The socio-ecological sustainability of the 'Tiyeni' conservation agriculture system in Malawi

Closing date: Friday 3rd March 2017

Interview date: Wednesday 22nd March 2017

Supervisory team

Director of Studies:

[Dr Alan Dixon](#), Institute of Science and the Environment, University of Worcester

Supervisors:

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The Project

Increasing interest in Conservation Agriculture (CA) over the last twenty years, particularly among development NGOs, has been fuelled by its promise of sustainable outcomes for people and the environment based on a reduced dependency on expensive external agricultural inputs and extension support services (Andersson & D'Souza, 2014). Despite its popularity, however, actual farmer adoption of CA across sub-Saharan Africa has reportedly been slow (Giller *et al.*, 2009). This has been attributed to various social, political, cultural and environmental constraints, which render CA adoption short-lived once the 'safety net' of NGO project interventions cease (Kassam *et al.*, 2014; Giller *et al.*, 2009). Conflicting evidence of CA's effectiveness (Giller *et al.*, 2009; Corbeels *et al.*, 2014) can also be attributed to the disparate nature of the studies undertaken, the lack of consistency in what is recognised as CA, and the range of local adaptations and modifications that exist. Critically, few have examined CA from an integrated socio-ecological systems perspective (Berkes *et al.*, 2003; Ostrom, 2009) that sees such phenomena as both dynamic and contextual, and hence there is clear need to understand CA as a function of site-specific inter-related environmental and social variables.

One specific example which encapsulates the issues and challenges surrounding the adoption, effectiveness and sustainability of CA in sub-Saharan Africa, is the case of Tiyeni – a small NGO based in Mzuzu, northern Malawi, which since 2005 has provided training and extension support to over 1000 subsistence farmers in its innovative 'deep-bed' CA system. Anecdotal field evidence suggests that the system has significant benefits in terms of enhanced food security in vulnerable areas, as well as a marked reduction in environmental degradation characterised by on-farm soil and water conservation. As reports of these benefits have spread throughout the region, farmer demand for the Tiyeni system has outstripped its capacity to supply its training and extension services. However, while many regard this as evidence of its impact and success, the lack of any systematic and rigorous research on the Tiyeni system which would enable a deeper understanding of its

socio-ecological impacts and the conditions in which it can be effective, represents a significant barrier to its wider promotion and adoption which could potentially benefit millions of smallholder subsistence farmers across the region who survive on less than \$1 per day.

This PhD project aims to address a significant gap in knowledge – both in terms of understanding the sustainability of the Tiyeni system as local adaptation of CA, but also situating this within the wider context of the claims and controversies of the CA movement. Drawing on an integrated and holistic socio-ecological systems framework, the project will specifically seek to examine the environmental, socio-economic and institutional dynamics and sustainability of the Tiyeni system, with a particular emphasis on identifying practical and transferable lessons for enhancing livelihood security throughout the region.

The project will require working closely with NGOs, government agencies and local communities in Malawi, and hence there is an expectation that the appointee will spend significant periods of time engaged in overseas fieldwork.

References

- Anderson, J. A., & D'Souza, S. D., (2014) From adoption claims to understanding farmers and contexts: A literature review of Conservation Agriculture (CA) adoption among smallholder farmers in southern Africa. *Agriculture, Ecosystems & Environment* 187, p116-132.
- Berkes, F., Colding, J., & Folke, C. (2003) *Navigating social-ecological systems: Building resilience for complexity and change*. Cambridge University Press: Cambridge.
- Corbeels, M., de Graaf, J., Ndah, T. H., *et al.* (2014) Understanding the impact and adoption of conservation agriculture in Africa: A multi-scale analysis. *Agriculture, Ecosystems and Environment* 187, p155-170.
- Giller, K. E., Witter, E., Corbeels, M. and Tittonell, P. (2009) Conservation agriculture and smallholder farming in Africa: The heretic's view. *Field Crops Research* 114, p23-34.
- Kassam, A., Friedrich, T., Shaxson, F., *et al.* (2014) The spread of Conservation Agriculture: Policy and institutional support for adoption and uptake. *Field Actions Science Reports* 7.
- Ostrom, E. (2009) A general framework for analyzing the sustainability of socio-ecological systems. *Science* 325, p419-422.

The University of Worcester

Research at the University of Worcester has grown significantly over the last 10 years. This growth is most clearly shown in the outcomes of the Research Excellence Framework (REF 2014). Worcester was the most improved University in the UK based on Research Fortnight's "Research Power" measure, reflecting a more than four-fold increase in the number of staff submitted compared to RAE 2008 and a commensurate increase in the quality of the research. As a consequence of its REF 2014 submission, Worcester's QR income for 2015-16 is up by 341% from 2014-15.

The University is committed to further developing its research profile in the coming period, through a strategic approach to its support for and investment in research. As part of this investment it is funding a number of full-time PhD studentships in its areas of particular research strength.

Institute of Science & Environment

The successful candidate will join the Institute of Science and the Environment (ISE), a dynamic, multi-professional Institute that has experienced significant growth in recent years, particularly in staffing and research output. Staff in the Institute contribute to the development of knowledge and practice by engaging in a wide range of research and consultancy activities. Working in collaboration with different disciplines and with other universities, private industry and the public sector, research is always grounded in the aim of achieving real-life benefits. We have research groups in the following areas: Biomedical Science, Atmospheric Science & Palynology, Plant Molecular Genetics, Crop Protection, River Science, Rural Research, Socio-ecological Systems and Sustainability, Ecology and Environment, and Archaeology.

Research School

The Research School is a focal point for all our research students. It provides:

- day-to-day support for our students, both administrative and practical, through our dedicated team
- a Research Student Study Space with both PCs and laptop docking station
- a comprehensive Researcher Development Programme for students and their supervisors
- a programme of student-led conferences and seminars

Details of the studentship

During the period of your studentship you will receive the following:

- a tax free bursary of £13,863 for a period of 3 years
- a fee-waiver for 4 years
- a laptop
- use of the Research Student Study Space in Research School
- access to the Research Student Support Scheme to cover costs and expenses related to your research

You will be expected to play an active role in the life of both the Research School and of the Institute of Science and the Environment. You will be given opportunities to gain experience in learning and teaching within the Institute under the guidance of your Director of Studies.

Qualifications needed

Essential:

Applicants should have or be able to evidence:

- A First or Upper Second (2.1) Honours Degree in a Geography, Environment or Sustainable Development related subject, or expect to receive one by October 2017;
- A sound understanding of, and interest in Environment and Development, and / or Sustainable Development in developing countries;
- Experience of relevant quantitative and qualitative research methods and skills;
- Ability to contribute to research study design;
- Computer literacy;
- Proficiency in oral and written English;
- Ability to organise and meet deadlines;
- Good interpersonal skills;
- Ability to work independently and contribute to a team;
- Commitment and an enthusiastic approach to completing a higher research degree;

Desirable:

- Education to Masters Degree level in a Geography, Environment or Sustainable Development related subject;
- Experience of undertaking fieldwork in a developing country.

As part of its mission statement the University is committed to widening participation for its higher degrees. Although most candidates will have an undergraduate and/or a Masters degree, the University is happy to accept applications from candidates with relevant professional qualifications and work related experience

The Interview

The interview will provisionally be held on 22nd March 2017. All successful applicants will be interviewed. You will be asked to make a short presentation on a topic related to the study. You will also be asked to provide an example of your written work (e.g. a dissertation) ahead of the interview.

For further information or an informal discussion on this project, please contact Dr Alan Dixon (Director of Studies) via email at a.dixon@worc.ac.uk

Application forms are available at:

<http://www.worcester.ac.uk/researchstudentships>

Completed application forms should be sent by email to: research@worc.ac.uk or sent via post to: Research School, Jenny Lind Building, Henwick Grove, St Johns, Worcester, WR2 6AJ