RE-ADVERTISEMENT

CALL FOR APPLICATIONS FOR DOCTORAL (x1) SCHOLARSHIP FOR 2026: Enhancing the Harmonisation of Water-Energy-Food-Environment-Health (WEFEH) Sector Policies and Advancing Cross-Sectoral Management of Related Resources Through Scenarios and Pathways Development in South Africa (funded by the Water Research Commission, South Africa)

The Water-Energy-Food Nexus Centre of Excellence (WEF Nexus CoE) in the Centre for Transformative Agriculture and Food Systems (CTAFS) at the University of KwaZulu-Natal (UKZN) in Pietermaritzburg is seeking to recruit a purpose-driven PhD student to participate in research on policy integration and harmonization using a stakeholder-driven and data-informed nexus approach. The postgraduate student will register with and be supervised by the University of KwaZulu-Natal at the Pietermaritzburg campus in South Africa.

Project overview: Water, energy, food and land are fundamentals for socio-ecological and socio-economic sustainability, human and environmental health, dignity and prosperity. However, South Africa's Sustainable Development Goal (SDG) Index Score of 64.1% (ranks 111th out of 167 in the global list) is below the global average of 68.4%. The country is facing significant challenges in achieving SDG#6 (clean water and sanitation) with a moderately improving trend, and major challenges with stagnating trends in achieving SDG#7 (affordable and clean energy) and SDG#2 (zero hunger). Consequently, some South African households lack access to safe water, electricity, and adequate and nutritious food. A key determinant of the security of **w**ater, **e**nergy, **f**ood, **e**nvironment, and **h**ealth (WEFEH)-related resources and services amidst multiple drivers of change is how society plans, develops and manages resources through policy and governance in response to demand or scarcity. In South Africa, such a policy framework includes the National Development Plan 2030 (NDP2030) and National Infrastructure Plan 2050 (NIP2050), which seek to enhance the universal security of WEFEH-related resources and services through several measures. Critiques blame the fragmented and conventional siloed and incoherent monitoring and oversight models for the suboptimal delivery of services, duplication, and failure to address the triple challenges of poverty, inequality and employment in South Africa. Thus, this project seeks to enhance the harmonisation of WEFEH-related sector policies and to inform the advancement of cross-sectoral management of WEFEH-related resources through the development of scenarios and pathways in South Africa. Such harmonisation of policies will potentially lead to integrated WEFEH-related programmes and cross-sectoral WEFEH-related resource management towards improved security of WEFEH resources and services for all.

Scholarships description: An aspect of the project is to develop transdisciplinary research capacity and train postgraduate students who can address complex and dynamic systems now and in the future. To that end, we seek to appoint one (1) PhD student who will undertake a series of interconnected work packages designed to generate actionable knowledge, inform policy, and support systems transformation. The selected candidate will contribute to the following work packages and specific objectives:

- WORK PACKAGE 2: To quantify trade-offs and identify synergies across the WEFEH sectors in relation to South Africa's developmental agenda.

    - Specific objective 2: To improve the iWEF model through consideration of human health and environmental integrity.

- WORK PACKAGE 4: To co-develop an integrative WEFEH nexus scenario planning tool for South Africa with a focus on policy outcomes and implementation.
    - Specific objective 4: To co-develop and apply an integrative WEFEH nexus scenario planning tool for South Africa with a focus on policy outcomes and implementation.

- WORK PACKAGE 5: To develop stakeholder-driven, data-informed and policy-based integrated WEFEH nexus scenarios and devise feasible pathways for harmonized WEFEH policy development and implementation for sustainable WEFEH systems transformation in South Africa.
    - Specific objective 5: To develop stakeholder-driven, data-informed and policy-based integrated WEFEH nexus scenarios and devise feasible pathways for harmonized WEFEH policy development and implementation for sustainable WEFEH systems transformation in South Africa.

Eligibility and inherent requirements: The project seeks a disciplined, self-motivated, and intellectually curious candidate with a demonstrated ability to work independently and as part of a transdisciplinary research team. Applicants must exhibit a strong work ethic, the capacity to think critically across disciplinary boundaries, and the commitment to meet demanding deadlines. Candidates must be prepared to engage rigorously with complex systems research and contribute meaningfully to the project's objectives.

The candidate is expected to have a technical background and a Master's degree (or equivalent) in any relevant natural sciences, and demonstrated competence in the following skills, abilities and capacities:

- numerical methods and techniques, including modelling,
- policy review and analysis,
- data collection, including designing and conducting qualitative and quantitative surveys,
- data analyses (quantitative and qualitative) and visualisation using any established statistical package,
- geospatial analysis (GIS),
- narrative and discourse analyses,
- writing clearly,
- stakeholder engagement,
- participate in team-based research,
- proficiency in English, both verbal and written, and
- a valid driver's licence (with appropriate driving experience).

Preference will be given to applicants:

- under 35 years,
- with demonstrated academic output, such as a peer-reviewed publication, and proven presentation and communication skills,
- able to work independently with minimal supervision, and
- who can clearly demonstrate readiness to contribute to high-level scientific outputs and actively engage in transdisciplinary research processes.

Scholarship package and benefits: Competitive stipends will be offered to successful candidates. The candidates will be expected to find private accommodation and cover all living expenses from the stipend, including travel to/from the University. However, the project will cover all project-related expenses, including fieldwork and travel to/from the University to the experimental sites. PhD Scholarships are for up to three (3) years based on satisfactory performance. The successful candidates will belong to an international, diverse research working group that forms part of the WEF Nexus CoE and join an exciting cohort of students working on various nexus topics in Africa and Asia. They will become part of a knowledgeable, high-achieving, and experienced team, with the opportunity to publish a PhD thesis and peer-reviewed journal articles.

Contact for more details: For more details on the postgraduate opportunities, please contact: Dr Cuthbert Taguta (TagutaC@ukzn.ac.za) or Prof Tafadzwa Mabhaudhi (mabhaudhi@ukzn.ac.za).

How to apply: Interested candidates should submit a letter of motivation and a one-page concept note, accompanied by a detailed CV (listing academic publications), academic transcript(s), expressing their interest and suitability to Nopayi Mkhize (mkhizen34@ukzn.ac.za), CC Dr Cuthbert Taguta (TagutaC@ukzn.ac.za). The one-page concept note should be a summary detailing how interested candidates plan to approach the research, including the research problem(s), the main research objective/question/hypothesis, the specific objectives/questions/hypotheses, and a tentative methodology.

Application deadline: Applications must be received by 30 March 2026.