

CALL FOR APPLICATIONS FOR MSc SCHOLARSHIPS (x3) FOR 2025–2026: Supporting gender-inclusive investments in smallholder irrigation by private and public sectors: Linking water, energy, and food under climate change

The Centre for Transformative Agriculture and Food Systems (CTAFS) at the University of KwaZulu-Natal (UKZN), in partnership with the Institute of Natural Resources (INR), invites applications for three MSc research scholarships under the Water Research Commission (WRC)-funded project titled *“Supporting gender-inclusive investments in smallholder irrigation by private and public sectors: Linking water, energy, and food under climate change.”* The postgraduate students will be registered with the University of KwaZulu-Natal and co-supervised by external University associates. This project is implemented under the WEF Nexus Centre of Excellence and the Sustainable and Healthy Food Systems – Southern Africa (SHEFS-SA) programme. The appointed candidates will form part of the WEF CoE and SHEFS-SA Cohort.

Project Overview

This transdisciplinary project seeks to advance gender-inclusive, climate-resilient smallholder irrigation by integrating a Water–Energy–Food (WEF) Nexus framework across South Africa and Zimbabwe. Led by the Institute of Natural Resources NPC in partnership with UKZN–CTAFS, the project aims to address key barriers that constrain the expansion of smallholder irrigation, including water scarcity, energy costs, gender inequality, and climate-induced production risks.

The research is organised into five integrated work packages (WPs): (1) identifying investment opportunities for scalable, gender-inclusive irrigation systems; (2) spatially targeting appropriate irrigation systems to benefit women and youth; (3) developing capacity-building programmes across the irrigation value chain; (4) creating a WEF Nexus framework to optimise irrigation efficiency, reduce carbon emissions, and enhance climate resilience; and (5) promoting inclusive governance and cross-sectoral collaboration to strengthen decision-making and resource management.

The project contributes to Sustainable Development Goals (SDGs) 2, 5, 6, 7, 13, and 15 by developing decision-support tools and frameworks for evidence-based investments in sustainable irrigation. It emphasises empowerment of women and youth, sustainable natural resource management, and policy alignment with national development strategies in South Africa and Zimbabwe. Field activities will be conducted in KwaZulu-Natal, Limpopo, and Mpumalanga provinces in South Africa, and in Mashonaland East Province in Zimbabwe.

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Scholarship Description

These MSc positions form part of the project's human capital development objective to build transdisciplinary capacity in gender-responsive, climate-smart, and governance-oriented WEF Nexus research. Each student will contribute to specific work packages and collaborate with researchers across institutions and countries. The project offers a dynamic environment where students will engage in both applied and theoretical research that contributes to national and regional WEF Nexus implementation.

MSc Opportunity 1: Social and Gender Dimensions of Smallholder Irrigation

Work Packages: WP1, WP2, WP5

This MSc focuses on understanding gender and social dynamics in smallholder irrigation schemes. The study will assess how roles, responsibilities, and decision-making patterns influence equitable access and benefits from irrigation investments. The research aligns with Work Packages 1, 2, and 5, contributing to participatory stakeholder mapping, spatial targeting, and governance analysis to identify pathways for gender-responsive WEF Nexus implementation.

Key Responsibilities:

- Collect and analyse qualitative and quantitative data on gender roles, access, and decision-making.
- Conduct participatory fieldwork, focus group discussions, and policy dialogues.
- Contribute to the development of inclusive governance and gender mainstreaming frameworks.

Candidate Profile:

- Honors degree in Social Sciences, Rural Development, Agricultural Economics, or Gender Studies.
- Strong participatory research and communication skills.
- Demonstrated interest in gender analysis, irrigation development, or community-based research.

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MSc Opportunity 2: Climate Change and the Water–Energy–Food Nexus in Smallholder irrigation

Work Package: WP4

This MSc contributes to Work Package 4, which aims to develop and test a Water–Energy–Food (WEF) Nexus framework for sustainable and low-carbon irrigation systems. Investigating climate variability, energy use, irrigation efficiency, and CO₂ emissions, and supporting the design of sustainable, low-carbon irrigation solutions.

The student will analyse how climate variability affects irrigation efficiency and greenhouse gas emissions and explore adaptation strategies that support gender-inclusive and climate-resilient agricultural production.

Key Responsibilities:

- Gather and analyse climate, water, and irrigation data.
- Model irrigation efficiency and carbon emissions under climate scenarios.
- Contribute to developing a gender-inclusive WEF Nexus model for smallholder systems.
- Produce technical reports and policy briefs.

Candidate Profile:

- Honours degree in Environmental Science, Agricultural Engineering, or Climate Studies.
- Skills in data analysis, modelling, or GIS are advantageous.
- Keen interest in sustainability, climate adaptation, and system-based research.

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MSc Opportunity 3: Inclusive Governance of WEF Resources

Work Package: WP5

This MSc aligns with Work Package 5, which focuses on understanding governance and institutional arrangements that influence access to and management of water, energy, and food resources. The research will investigate multi-level governance structures, local decision-making processes, and institutional reforms needed to strengthen resilience and equity within the WEF Nexus.

Key Responsibilities:

- Conduct literature reviews and governance assessments.
- Analyse stakeholder networks, institutional frameworks, and policy dynamics.
- Support development of governance case studies and policy recommendations.

Candidate Profile:

- Honours degree in Agricultural Economics, Environmental Governance, or Development Studies.
- Strong analytical, writing, and communication skills.
- Experience with policy or institutional analysis will be an advantage.

Eligibility and Inherent Requirements

Applicants should be motivated, disciplined, and capable of working within a transdisciplinary and cross-country research team. Candidates must demonstrate competence in data analysis, communication, and independent research. A valid driver's license and willingness to travel to rural field sites are advantageous. Preference will be given to South African and SADC-region applicants under 35 years old.

Scholarship Package and Benefits

Each MSc scholarship offers a bursary of R80,000 per annum for two years (2026–2027). The bursary is intended to cover tuition and living expenses. All project-related research costs, including travel, accommodation during fieldwork, and materials, will be covered by the project. Students will have access to UKZN and INR facilities, field sites in South Africa and Zimbabwe, and mentorship from an experienced team of national and international researchers.

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Additional benefits include:

- Participation in transdisciplinary WEF Nexus research and policy dialogues.
- Capacity-building workshops, stakeholder engagement, and data analysis training.
- Opportunities for co-authorship of peer-reviewed publications.
- Networking through the WEF Nexus Centre of Excellence and international partners (CIMMYT, IWMI and Global WEF Nexus Community).

How to Apply

Interested candidates should submit a letter of motivation, 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), and info@inr.org.za. The one-page concept note should be a summary detailing how interested candidates plan to approach the research, including research problem(s), main research objective/question/hypothesis, specific objectives/questions/hypotheses, and a tentative methodology.

Contact for more details: For more details on the postgraduate opportunities, please contact: Dr Vimbayi Chimonyo (V.CHIMONYO@cgiar.org) or Zinhle Ntombela (zntombela@inr.org.za) or Dr Cuthbert Taguta (ctaguta@gmail.com).

Kindly note that the University of KwaZulu-Natal ("the University") is required to process any Personal Information (as defined by the Protection of Personal Information Act, 2013 "POPIA") submitted by candidates when applying for positions at the University. The University will endeavour to ensure that the appropriate security measures are in place and implemented for both electronic and paper-based formats that are used for processing the personal information recorded through this recruitment and selection process. We refer you to the University's relevant **Section 18 notice** at <http://vacancies.ukzn.ac.za/Libraries/General Documents/Section 18 Notice Employees and Potential Employees.sflb.ashx>

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