

CALL FOR APPLICATIONS FOR DOCTORAL (x3) AND MASTERS (x5) SCHOLARSHIPS FOR 2022 INTEGRATED CLIMATE-DRIVEN MULTI-HAZARD EARLY WARNING SYSTEM (ICMHEWS)

REF: ICMHEWS SCOLARSHIPS02/2021

Application deadline: 28 January 2022.

Start date: 1st Semester (February) 2022

APPLICANTS WHO PREVIOUSLY APPLIED NEED NOT APPLY

A collaborative effort between The South African Weather Service (SAWS), the University of KwaZulu-Natal (UKZN) and the Central University of Technology (CUT)

PRINCIPAL INVESTIGATORS: Prof Tafadzwa Mabhaudhi (Lead-PI), Dr Joel Botai (UKZN), Prof Masinde Muthoni (CUT)

OVERVIEW

South Africa and southern Africa are highly vulnerable to extreme weather events because of their dependence on climate-sensitive sectors of the bioeconomy; these include ecotourism, agriculture, hydro energy, and fisheries. Recurring severe events such as droughts, strong winds, hailstorms and floods continue to impact the vulnerable rural livelihoods and degrade the environment. The severity of extreme weather events in the region is exacerbated by poor levels of preparedness, and low adaptive and response capabilities, which also impact recovery. Whilst weather extremes and hazards are inevitable, the preparedness to manage such hazards determines their impact, whether they become disasters and the direct and indirect economic and social costs.

The main goal of the Integrated Climate-Driven Multi-hazard Early Warning System (ICMHEWS) project is to support three district municipalities in South Africa to become resilient to climate-driven shocks through the development of an integrated climate-driven multi-hazard early warning system for identified climate risks and hazards such as drought, heatwaves, lightning, flooding among others. The target District Municipalities are uMgungundlovu District Municipality in KwaZulu-Natal, Vhembe District Municipality in Limpopo, and Lejweleputswa District Municipality. The intended beneficiaries of the ICMHEWS include disaster management centres as well as communities, farmers and individuals living within these three district municipalities.

PRIMARY OBJECTIVES

The ICMHEWS will be capable of disseminating early warnings at various levels, i.e. district disaster management centres, ward-based disaster management war rooms, and communities in the target locations. This will be accompanied by an inclusive gender-sensitive programme of capacity development at the institutional, community and individual levels to ensure effective response capabilities. The primary objectives of the project are as follows:

- To investigate options for increased risk knowledge and awareness
- To implement methods for providing sector-specific severe weather and climate information through the enhancement of the technical modelling and prediction capabilities. This will include:
 - Historical trends and future climate projections
 - User-inspired historical and projected climate information & knowledge
 - implement Weather Forecasting systems for suitability over a small domain with high resolution
 - Impact-based severe weather forecasting
- Integrated Climate Multi-hazard Early Warning System and Data Visualization Architecture
- Capacity building, stakeholder engagement, dissemination and communication.

Partners: The South African Weather Services, Central University of Technology (CUT) uMgungundlovu, Vhembe and Lejweleputswa District municipalities, uMngeni Resilience Project,

Department of Forestry, Fisheries and Environment, Department of Water and Sanitation, Department of Cooperative Governance and Traditional Affairs, Department of Economic Development, Tourism and Environment, South African National Biodiversity Institute, The Council for Scientific and Industrial Research, and others.

SCHOLARSHIPS DESCRIPTION

PhD Scholarships (3): The project is seeking creative, self-motivated, and energetic PhD students to be trained in various aspects of this exciting emerging field of research. The successful candidates should be driven, disciplined, and be able to work as a member of a transdisciplinary research team and set and meet deadlines.

Masters Scholarships (5): An aspect of the project is to develop transdisciplinary research capacity and train postgraduate students for the future who can deal with complex and dynamic systems. To that end, ICMHEWS seeks to appoint five (5) Masters within any relevant topic directly related to and in support of ICMHEWS objectives.

ELIGIBILITY

PhD Scholarships: Must have an MSc in any of the following areas: atmospheric sciences, agricultural and/or hydrological modelling; computer science; numerical methods and/or geospatial data analysis; water management/ circular economy; biodiversity use or restoration, ecosystem services evaluation; systems thinking/modelling; socio-ecological systems; socio-ecological relations/political ecology, development studies, geography, economics, social sciences, political science, law, philosophy, psychology, public health.

Skills sought include writing clearly, including technical reports & peer-reviewed scientific publications; presentation skills for internal team meetings and scientific conferences; capacity to participate in team-based research and lead various aspects of the work, including project coordination. Ability to interact and mentor MSc students affiliated with the project will be critical to the duties.

MSc Scholarship: The candidate is expected to have a suitable 4-year degree (or equivalent) in any relevant natural and social sciences, including law. Possession of a valid driver's licence (with appropriate driving experience) is a prerequisite. Proficiency in English, both verbal and written, is also required.

SCHOLARSHIPS PACKAGE

Competitive stipends will be offered to the successful candidates. For PhD students, the scholarships will be to the values of R120 000, and for Masters, it is R80 000/annum. The candidates will be expected to find private accommodation and cover all living expenses, including travel to/from the University, out of this funding. However, all project-related expenses will be covered by the project.

HOW TO APPLY

Completed applications with a cover letter and motivation (explaining how the candidate meets the requirements for the position), comprehensive CV (with at least three traceable references), copies of relevant qualifications (certified copies will be required for successful candidates) and a sample of your writing to Nopayi Mkhize MkhizeN34@ukzn.ac.za.

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We will continue to review applications for unfilled positions until the positions are filled.