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SASSCAL GRADUATE STUDIES PROGRAMME
INTEGRATED WATER RESOURCES MANAGEMENT

SASSCAL
Southern African
Science Service Centre for
Climate Change and
Adaptive Land Management
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SASSCAL GRADUATE STUDIES PROGRAMME: INTEGRATED WATER RESOURCES MANAGEMENT (IWRM)

SASSCAL RESEARCH CHAIRS CALL

2022 - 2024

HOSTED BY

NAMIBIA UNIVERSITY
OF SCIENCE AND TECHNOLOGY

IN COLLABORATION WITH

ICWRGC
International Centre
for Water Resources and
Global Change

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1 WATER RESOURCES CONTEXT OF SOUTHERN AFRICA

Adequate availability of clean water is indispensable for food and energy security, sanitation and health and hence key for the development of the African societies and economies. For most Southern African countries, water demand exceeds available water resources due to changes in water availability induced by the effects of climate change coupled with demographic and socioeconomic growth. With increasingly unreliable water availability, partitioning of water for domestic, industrial and agricultural, as well as other forms of water use, is becoming a subject of serious concern in Southern Africa.

An increase in extreme climate events is contributing to the vulnerability of the water sector severely affecting food and energy security and socio-economic stability at household, national and regional levels. Given these challenges, the sustainable management of limited water resources is becoming a major priority.

The Southern African Development Community (SADC), is challenged by increasingly stressed water resources and the need to provide reliable access to water of acceptable quantity and quality in the face of increased urbanisation, a changing and unpredictable climate, and economic instability.

Moreover, 40% of the 280 million population in SADC has no access to an adequate safe drinking water supply, whilst 60% has no access to adequate sanitation services (SADC, 2016). The water insecurity is a hindrance to efforts on poverty reduction, economic growth and regional stability.

The SADC Water Development Framework and its supporting strategies and plans highlights that the concept of Integrated Water Resources Management (IWRM) offers solutions to deal with interlinked socio-economic, institutional, and ethical challenges by assessing and managing water resources in space and time through an interdisciplinary and multi-sectoral approach. However, there is a limited capacity required to support an approach for sustainable water resources management and water security that contributes to sustainable socio-economic development in SADC.

2 SASSCAL GRADUATE STUDIES PROGRAMME IN INTEGRATED WATER RESOURCES MANAGEMENT (SGSP – IWRM)

In support of SASSCAL's research agenda and the expressed needs of the regional water sector for highly qualified professionals, SASSCAL, together with the Namibia University of Science and Technology (NUST) established the SASSCAL Graduate Studies Programme in Integrated Water Resources Management (SGSP – IWRM).

The programme is implemented by NUST in partnership with the International Centre of Water Resources and Global Change (ICWRGC) based at the Institute of Hydrology in Koblenz Germany. SASSCAL's financing activities towards the SGSP-IWRM are backed up by the German Government through the Federal Ministry of Education and Research (BMBF) which is the main funder of voluminous SASSCAL Programmes.

3 AIMS AND OBJECTIVES OF THE SGSP-IWRM

The overarching objective of the SGSP-IWRM is the development and deployment of innovative, excellent and collaborative education and research at PhD degree level complemented by selected tailor-made training programmes for decision makers and industry.

The programme endeavours to:

- Increase the number of highly qualified IWRM experts and knowledge in the region by providing scholarships to excellent PhD students;
- Promote innovation in interdisciplinary education and research;
- Transfer know- how and diffuse new methods, practices and tools for IWRM through offering tailor-made short-courses and specialized training to practitioners;
- Provide a national platform for knowledge sharing, policy development and advice, thereby integrating and coordinating regional initiatives;
- Support the internationalization of research and human capacity development in Southern Africa; and
- Design and accredit an innovative demand-based integrated PhD curriculum in IWRM.

4 ABOUT THE SGSP-IWRM RESEARCH CHAIRS PROGRAMME

The SGSP-IWRM aims at contributing to the development of regional capacity by implementing inter/multi/trans-disciplinary research, education, and training programme within the identified priorities at SADC, SASSCAL and national levels.

A list of broad research priority areas that will be translated into PhD topics and projects is provided below.

Water and Wastewater Systems and Technology

Hydrology and Geohydrology

- Basic and advanced hydrology including analysis of environmental flows.
- Integrated surface water-groundwater interactions/modelling.
- Geohydrological, chemical, and biological process analysis.
- Hydrological/hydrogeological modelling and forecasting/ simulations.

Water Security under Climate and environmental changes

- Ecological assessment of water systems, modelling, multi-criteria statistical analysis.
- Effectiveness of environmental and social impact assessment processes, including sanitation/wastewater management models (including smart/green technologies/cities concepts).
- Socio-economic dynamics implications on water security/ resilience at local, national, and/or regional levels.
- Transboundary Water Systems and Governance matters.

Sustainable Water, Energy and Food Security (WEF Nexus)

- Modelling, analysis of water, and energy food nexus approaches.

- Risk assessments and decision support systems for WEF nexus.
- Investigation/analysis of agricultural and other land uses on water availability and supply, including water efficient food production systems.

4.1 Call for Applications

The SGSP-IWRM is seeking two exceptional scholars to fill SASSCAL Research Chair positions under the overarching framework of Water Security defined by UNESCO as "Water security is defined here as the capacity of a population to safeguard sustainable access to adequate quantities of acceptable quality water for sustaining livelihoods, human well-being, and socio-economic development, for ensuring protection against water-borne pollution and water-related disasters, and for preserving ecosystems in a climate of peace and political stability".

Hence the SASSCAL Research Chairs will be focuses on the following two separate, yet interlinked areas:

- SASSCAL Research Chair in Water Resource Quantity and Availability; and
- SASSCAL Research Chair in Water Resources Reliability and Quality.

4.2 Research Costs and Envisaged Research Outputs

The Chairs will effectively provide guidance regarding research plans and related costs and execution in support of the SGSP-IWRM candidates.

4.3 Expected Outputs

Each SASSCAL Research Chair will work closely with respective supervisors the SGSP-IWRM PhD candidates with support of the research fellows and guidance from the ASAC.

4.4 Expected Outcomes

The key outcomes of the SASSCAL Research Chairs include the following:

- Increased number of funded research grants that address (i) water resource quantity and availability, and (ii) water resources reliability and quality;
- Increased research outputs aligned to the themes/topics
- Increased number of SGSP-IWRM PhD students publishing in 'A' rated scientific journals;
- Increased regional and international partnerships established; and
- Increased recognition of the SGSP-IWRM's research and innovation excellence, and impact.

4.5 Duration of the Chairs

The advertised SASSCAL Research Chairs will be applicable for one 3-year term each, with a possibility of renewal, subject to excellent performance, availability, and ability to raise funds in support of the SGSP-IWRM thematic research areas.

4.6 Eligible Countries

All SASSCAL countries are eligible to apply (Angola, Botswana, Namibia, South Africa and Zambia).

4.7 Minimum Requirements

- Employee of an academic institution in one of the SASSCAL countries (Angola, Botswana, Namibia, South Africa, and Zambia);
- A research doctorate in a relevant IWRM related field;
- An international reputation for research excellence in a relevant IWRM related discipline;
- A demonstrated track record in establishing and leading successful research teams in support of IWRM in Southern Africa;
- Experience establishing and driving IWRM research and innovation programmes in Southern Africa;
- A proven track record in mobilising competitive research funding;
- A substantial record of successful supervision of postgraduate research students (Masters and PhD level); and
- Proven leadership excellence.

5 HOW TO APPLY

Applicants are required to follow the guidelines below:

- Applicants should submit a proposal following SGSP-IWRM template outlined in Annexure
- The proposal should not exceed 10 pages, excluding annexes;
- The application should be accompanied by a letter of support from the Vice-Chancellor, Rector, or President of the host academic institution;
- Detailed CV of the applicant including key achievements relevant to the SASSCAL Research Chair position; and
- Three letters of support from partners (e.g. government, academic institutions, international cooperating partners, Non-Governmental Organisations etc.).

6 SELECTION PROCESS

- Shortlisting will be conducted by the Academic and Scientific Advisory Committee (ASAC)
- Shortlisted candidates will be interviewed by the SASSCAL Sub-Committee

Enquiries and details regarding this post, may be directed to **sgsp-iwrm@nust.na**

Closing date for receipt of applications is 28 March 2022.

Successful candidates are expected to commence duties from 14 April 2022.

Follow this link for the SGSP-IWRM Science Plan: https://www.nust.na/sites/default/files/announcement/SGSP-IWRM_Science_Plan_FNL.pdf

ANNEXURE A: PROPOSAL GUIDELINE

Each proposal should follow the structure outlined below:

1. Introduction
2. Context, and justification
3. Objectives
4. Expected results at the national, regional and international level
5. Visibility of the project activities
6. Transfer of knowledge
7. Proposed schedule of major activities
8. Envisaged partnerships
9. Institutional support
10. Other support to be mobilised

(Maximum length: Six pages, font size: Calibri 11, line spacing: 1,15).