



FUNDED BY THE

Federal Ministry
of Education
and Research



Call for PhD Scholarships 2021

HOSTED BY



NAMIBIA UNIVERSITY
OF SCIENCE AND TECHNOLOGY

IN COLLABORATION WITH



International Centre
for Water Resources and Global Change
under the auspices of UNESCO



Background

The Southern Africa Science Service Centre for Climate Change and Adaptive Land Management (SASSCAL) is an initiative of Angola, Botswana, Namibia, South Africa, Zambia, and Germany in response to the challenges of Global Change. SASSCAL is committed to establishing excellent and innovative education and research programmes related to global change topics in Southern Africa.

In an effort to address the capacity needs of the regional water sector for highly qualified professionals, SASSCAL is establishing the SASSCAL Graduate Studies Programme in Integrated Water Resources Management (SGSP – IWRM) at the Namibia University of Science and Technology (NUST, <https://www.nust.na/>). 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. The SGSP-IWRM is fully funded by the Federal Ministry of Education and Research (BMBF).

With this call for PhD candidates, SASSCAL aims to strengthen the water resources management by enhancing the research capacity with highly qualified early career scientists in Southern Africa. The main objective of the SGSP – IWRM is to develop and deploy an innovative and excellent regional collaborative education and research programme at PhD Degree level that is complemented by selected tailor-made short and refresher courses for decision makers in the public and private sector. The use of ICT, including virtual and online platforms will be key in this effort to support future capacity development.

The Prestigious SGSP-IWRM Programme at NUST

The SGSP-IWRM is implemented by NUST,

in cooperation with the International Centre for Water Resources and Global Change (ICWRGC) at the Federal Institute of Hydrology (BfG) in Koblenz, Germany as the German partner, as well as other academic and technical partners in southern Africa. ICWRGC provides the link to the German university and research institute network in integrated water resources management and other related fields needed to strengthen the research development, teaching, student supervision and implementation of the compulsory student mobility to Germany.

The programme is designed to focus on the overarching theme of Integrated Water Resources Development and Management: Sustainable Water Security in Southern Africa.

The Namibia University of Science and Technology (NUST) is offering related academic programmes by research at PhD level, which will form the initial suite of programmes for the GSP-IWRM. Taking this into account, the GSP-IWRM will follow an interdisciplinary approach with a strong focus on the research areas in the following respective qualifications:

a. PhD in Natural Resources Sciences

The PhD in Natural Resources Sciences is a fully NQA registered and compliant academic programme with 360 Credits purely attained by research with a few selected courses to strengthen the research capacities of students.

As part of the GSP-IWRM, this programme will admit candidates who may be interested in conducting research in water for food production, water conservation and ecosystem approaches, ecological assessment etc., related to water resources management and or water resource economics and governance.

b. PhD in Engineering (Water and Environment)

The PhD in Engineering is a NQA Level 10, registered and compliant academic programme with 360 Credits purely attained by research. It is aimed at producing scientific researchers in various sub-fields of learning related to engineering. Integrated in the programme are a few selected courses to strengthen the research capacities of students.

This qualification is selected as part of the GSP-IWRM to admit students with an engineering background to conduct research related to water and wastewater infrastructure, technology and environmental aspects as means of increasing supply and efficiency.

c. PhD in Spatial Sciences

The PhD in Spatial Sciences is a fully NQA registered and compliant academic programme with 360 Credits purely attained by research with a few selected courses to strengthen the research capacities of students.

As part of the GSP-IWRM, this programme will admit candidates who may be interested in very intense application of geo-spatial science concepts and tools (i.e., application of GIS and remote sensing tools) in various integrated water resources management. Working closely with Informatics and Natural Resources Science, this balances the requirements to design innovative tools for IWRM.

d. PhD in Informatics

The PhD in Informatics is a fully NQA registered and compliant academic programme with 360 Credits purely attained by research with a few selected courses to strengthen the research capacities of students. The programme focuses on application of IT in business processes that may include water sector.

As part of the GSP-IWRM, this programme will admit candidates who may be interested in application of innovative tools such as AI concepts in building IT systems to enhance water resources modelling, application development and management at different levels.

Benefit of the being part of the SGSP-IWRM PhD Programme

The competitive advantage of the SGSP-IWRM PhD Programme is that it forms part of the greater network of thematic centres of excellence in the SASSCAL countries. The implementing partners are committed to the highest quality of international academic standards. The SGSP-IWRM draws on the vast range of intellectual and academic resources at its disposal at NUST in order to ensure the successful delivery of this unique graduate studies programme based on innovation and academic excellence of international repute. NUST, in comparison to many peer universities, has a robust learning environment that fosters student's academic development and progress. It boasts of a solid ITC infrastructure, modern research, teaching and learning facilities, a strong network of international partners, a pool of qualified researchers underpinned by an effective academic administration support.

The PhD programmes in which candidates will be enrolled in are research-based but the SGSP-IWRM beneficiary students will be offered selected common IWRM courses plus a compulsory international scientific mobility to a Germany institution to enhance their academic and professional experience. SGSP-IWRM candidates will also be exposed to an international network and experts in IWRM giving them an added competitive advantage.

Research Intervention areas of the Call

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 representative list of broad research priority areas that will be translated into PhD topics and projects is provided below. However, candidates may also propose innovative topics aligned to related cross cutting issues in these research intervention areas below:

Water and Wastewater Systems and Technology

- Water conservation and optimisation approached in water abstraction and utilisation.
- Water systems engineering including irrigation, supply, storage, sanitation and wastewater treatment/recycling, water harvesting technologies, water for energy.
- Development and deployment of Information and Communications Technology Applications (e.g., role of artificial intelligence) in the IWRM sector, including tools for the general public.

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

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.

The Call for Application for PhD Scholarships

SGSP-IWRM is offering fifteen (15) PhD scholarships to successful candidates to be enrolled full time at NUST in the four PhD programmes indicated in section 2. All successful candidates will be funded on a full-time basis and are expected to be in residence in Windhoek. In addition, candidates are expected to spend a considerable amount of time in the field to collect data in one or more of the five SASSCAL countries. All PhD candidates in addition will undertake a compulsory research/science mobility to a Germany institution for a period of at least three months.

The Scholarship Package

The SGSP-IWRM Scholarship for the first Cohort of 15 Candidates will cover the following:

- An adequate monthly allowance that includes accommodation
- Academic fees, such as
 - a. Tuition fees
 - b. Registration fees
- Research expenses depending on the topic, which may include
 - a. Field work
 - b. Equipment including a laptop
 - c. Conference/workshop attendance
- Insurance cost
 - a. Health
 - b. Travel
- Travel and visa expenses
 - a. Flight tickets (pending COVID-19 travel restrictions)
 - b. Study Visa and resident permit costs related to the programme

Eligibility Criteria

General Eligibility

In order to participate in the SGSP-IWRM PhD Programme, a candidate must be:

- a. A national or resident of the five SASSCAL Countries (Angola, Botswana, Namibia, South Africa and Zambia)
- b. Not a beneficiary of another funded scholarship at the time of application
- c. Must not have received a PhD scholarship or bursary for the same or similar study in the last 5 years
- d. Preferably be employed by or linked to a public or private institution in the water or related sector. A letter confirming that candidate will be released from work to study full time will be needed

Specific Academic Requirements

The nature of IWRM requires a transdisciplinary approach to research. The SGSP-IWRM seeks candidates who can conduct research in diverse disciplines which require different academic qualifications, experiences, and skills. The list below is not exhaustive but intended to suggest the minimum requirements.

- a. M.Sc. or equivalent from an accredited university in the following fields: [e.g., engineering, natural sciences, geography, GIS/Remote, natural resources management, environmental management, agricultural sciences, earth sciences, resource economics, climate science, geohydrology, hydrology, informatics or similar, etc.] with a strong focus in IWRM.
- b. Excellent English communication skills (written and spoken)
- c. For non-English speaking countries, a demonstration of the command of English. To such candidates, extra English courses will be offered as part of the programme
- d. Strong independent and critical thinking skills
- e. Demonstrate potential to independently design and execute research
- f. Plus, specific requirements as per research intervention area:
 - Programming skills
 - Medium to advanced statistical skills
 - Experience in automated data analysis.
 - Experience in modelling and GIS/remote sensing applications

Application Procedure

Candidates who meet the eligibility and academic requirements are welcome to apply via the online application platform at <https://emecw.gis.lu.se/apply/?lot=SASSCAL-IWRM>

To apply, candidates are required to submit online the following documents:

- a. An application letter articulating the motivation to study in the SGSP-IWRM, how you intend to apply the acquired knowledge and skills in your career and in your country
- b. A resume/cv (two-page (maximum) that includes core competencies, experience, publications, and specific unique abilities you possess that makes you a suitable candidate
- c. Certified copies of your academic, professional, and other qualifications relevant for this programme including academic transcripts/records
- d. A copy of a publication in which you are listed as author/co-author in one of the SGSP-IWRM research intervention areas
- e. Three signed reference letters from each of the following: employers if applicable, academic institution (from a professor and head of department/institute), and an individual who knows your character

Admission Process

Applicants who hold qualifications from recognised institutions at NQF level 9 in a relevant and/or related cognate areas will be considered for admission to this programme. Applicants need to provide evidence of having conducted supervised research at master degree level. In addition, applicants will be requested to attend a pre-selection interview at the discretion of the SGSP-IWRM Academic and Scientific Advisory Committee in accordance with NUST admission process. The applicants may be requested to make up specific deficiencies at the discretion of the Dean, through the respective Head of Departments and aligned to a research intervention area of the SGSP-IWRM.

The Postgraduate Studies Committee (PGSC) will approve the final selection for admission in accordance with the regulations as specified by Rules for Postgraduate Studies of the NUST Yearbook (Volume 1). For additional information, candidates may consult the Guidelines for the Supervision and Examination of Masters and Doctoral Programmes of the NUST.

All these documents can be found at <https://admission.nust.na/>.

Submission Due Date

27 October 2021

Enquiries

e: sgsp-iwrm@nust.na



**SASSCAL
GRADUATE
STUDIES
PROGRAMME**

**INTEGRATED WATER
RESOURCE MANAGEMENT**

