



MINISTRY OF FOREIGN AFFAIRS
OF DENMARK
Danida



University of Dar es Salaam



DMI



DTU



CBS



ECOFISH

7 PhD scholarships in Marine Sciences, climate and fishers communities

University of Dar es Salaam (UDSM), Institute of Marine Sciences (IMS), Zanzibar

SCHOLARSHIPS DESCRIPTION

University of Dar es Salaam, Institute of Marine Sciences (UDSM-IMS), Tanzanian Meteorological Authority (TMA), Danish Meteorological Institute (DMI), Tanzanian Fisheries Research Institute (TAFIRI), Technical University of Denmark, National Institute of Aquatic Resources (DTU Aqua), and Copenhagen Business School (CBS) are seeking 7 PhD candidates to work on the project **ECOFISH** (*Enhancing Resilience of Coastal Communities: Towards Sustainable Fisheries and a Healthy Marine Environment*) funded by the Ministry of Foreign Affairs of Denmark - Danida. The starting date is 1 January 2025. The PhDs will be co-supervised by Tanzanian and Danish experts. The main location of study will be at UDSM - IMS, Zanzibar or in Dar es Salaam (PhD1 & 2), but the PhD candidate will also spend ca. 1 month in Denmark with the Danish supervisor. The candidates will be a part of a multidisciplinary, international research team including other PhD students.

Responsibilities: The PhD student will be responsible for designing the study together with the supervisors and conducting the main parts of it and analysing and presenting the data in a form that can be submitted to international peer-reviewed journals. Also, the PhD student is expected to collaborate with the other PhD students and scientists in the project, and to participate in common project activities such as meetings and dissemination events.

Two PhD scholarships in Climate change projection scenarios and Marine weather forecast at TMA & DMI

PhD 1: Dynamical downscaling of climate change projection for coastal communities in Tanzania

The PhD student will produce downscaled marine environmental parameters to help the fishery sector to conduct their fishery in safe and productive way. The downscaled parameters should be able to inform the fishery sector on suitable oceanographic factors conducive for fishing such as sea surface temperatures, waves, wind stress and ocean currents. Additionally, the PhD project should produce the current, mid term and long term projections of these parameters under certain RCP climate scenarios (8.5 and 4.5) to inform the marine users of the future likelihood of the oceanographic key parameters for conducive fishing environment.

PhD 2: Use of Satellite and Circulation Models to detect cyclones, strong waves and winds for provision of forecast to the marine users

The PhD student will analyze satellite information and existing oceanographic models to detect the existence worsening of ocean states. The states include tropical cyclones, strong waves and strong winds all of which may lead to hazardous environmental conditions for the fishery and marine users. The aim is to provide forecast for the coastal domain of Tanzania, packaging the forecasts for dissemination to marine users. The PhD will also design platforms for disseminating marine weather information



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For PhD 1 and 2 We are looking for PhD candidates who have the following qualifications:

- Master of Science (2 yr) post graduate diploma in Meteorology, Oceanography, or closely related fields
- Proficiency in written and spoken English and Swahili
- Desire and capacity to work with a highly international, cross-disciplinary team
- Proficiency in using satellite data and numerical weather prediction models is desirable
- Proficiency use of programming language, e.g python, R, GrADs, or similar
- Experience use of climate data operator (cdo) tool for climate data analysis is desirable
- Knowledge in the use of High Performance Computing (HPC) system is an added advantage

Further information

Further information on the PhD projects 1 and 2 may be obtained from Dr. Sarah Osima sarah.osima@gmail.com, Dr. Kai Kombo kai.kombo@meteo.go.tz, Dr. Yohana Shaghude, yohanna.shaghude@gmail.com and Dr. Martin Stendel mas@DMI.dk

Two PhD scholarships in Marine Biodiversity, Contaminants and Climate Change at UDSM (IMS) and DTU Aqua

PhD 3: Seasonality of the structure and productivity at the base of the marine food web in a tropical nearshore ecosystem.

The PhD project will investigate the seasonality of the marine planktonic community at a coastal sampling location close to the university facilities. The study will include monthly or bi-monthly sampling for hydrography, nutrients and phyto-, microzoo- and zooplankton, as well as experimental incubations investigating the feeding and reproduction of the dominating zooplankton species. The results will be interpreted against a literature review on the seasonal dynamics of plankton in other tropical ecosystems, to assess the productivity, seasonality and functional diversity of the plankton community at the coastal waters of Zanzibar Channel.

Qualifications:

We are looking for candidates who have:

- Master of Science (MSc) – 2 years preferably within marine biology
- Proficiency in written and spoken English
- Desire and capacity to work with a highly international, cross disciplinary team
- Has independence and willingness for intensive field and laboratory work

Further information on PhD project 3 may be obtained from:

Dr. Margareth Kyewalyanga (mamakevin@gmail.com) and Prof. Torkel Gissel Nielsen (tgin@aqu.dtu.dk)

PhD 4: Effect of e-waste and PCBs in a marine tropical food web

The PhD project will focus on the effect of emergent contaminants on the tropical marine ecosystem, using e-waste and PCBs as example contaminants. The project will investigate the presence, effects



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and bioaccumulation potential of e-waste (using x as an indication of e-waste) and PCBs through a literature review, sample collection in a contaminated harbor area and laboratory incubations investigating the lethal and sub-lethal effects of contaminants at the base of the marine food web. The project will bring new knowledge on the state of the marine environment in the coast of Zanzibar as well as allow for assessing the harmful effects that human activities have in the marine environment.

Qualifications:

We are looking for candidates who have:

- Master of Science (MSc) – 2 years Preferably with a background in marine biology
- Proficiency in written and spoken English
- Desire and capacity to work with a highly international, cross disciplinary team
- Has independence and willingness for intensive field and laboratory work
- Experience with analytical organic chemistry is an advantage

Further information on the specific PhD projects may be obtained from:

Dr. Aviti John Mmochi (avitimmochi@gmail.com) and Prof. Marja Koski (mak@aqua.dtu.dk)

Two PhD scholarships in Marine Fish Ecology and Fisheries at UDMS IMS, TAFIRI and DTU Aqua

PhD 5: Trophic interactions of fish in the Zanzibar Channel

The PhD project will investigate feeding ecology of fish in the Zanzibar Channel and how this is influenced by climate-oceanographic conditions. A key focus of the study will be diet preference of selected key species of small pelagics and predatory fish at various life stages. Larval fish and zooplankton will be sampled in parallel along a transect across the Zanzibar Channel and information about diets of adults will be collected regularly at selected landing sites. Climatic and oceanographic effects on diets and fish productivity will be addressed using statistical analyses.

Qualifications:

We are looking for candidates that have:

- Master of Science (MSc) – 2 years, in a related field such as marine biology, fish ecology, plankton ecology, or oceanography.
- Interest and enthusiasm to learn about marine ecological processes affecting fish ecology
- Proficiency in written and spoken English
- Desire and capacity to work with a highly international, cross disciplinary team
- Has independence and willingness for intensive field and laboratory work

Further information on PhD project 5 may be obtained from:

Dr. Batuli Mohammed Yahya (batulymo@gmail.com), Dr. Alistidia Mwijage (zawadi2007@gmail.com) and Prof. Brian MacKenzie (brm@aqua.dtu.dk)

PhD 6: Larval fish biodiversity and reproductive seasonality

The project will investigate larval fish biodiversity, community composition and reproductive seasonality in the Zanzibar Channel. The student will sample fish larvae from a transect across the Zanzibar Channel on a quarterly basis and collect data from adults at selected landing sites. A key



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focus will be to describe using statistical analyses the seasonality and hydrographical dependency of fish reproduction and species composition, and to compare with previous studies in the region.

Qualifications:

We are looking for candidates that have:

- Master of Science (MSc) – 2 years, in a related field such as marine biology, fish ecology, plankton ecology, or oceanography.
- Interest and enthusiasm to learn about marine ecological processes affecting fish ecology
- Proficiency in written and spoken English
- Desire and capacity to work with a highly international, cross disciplinary team
- Has independence and willingness for intensive field and laboratory work

Further information on the PhD project 5 may be obtained from:

PhD2: Dr. Barnabas Tarimo (tarimobarnabas@yahoo.com), Dr. Baraka Sekadende (barakasekadende@tafiri.go.tz) and Dr. Tobias Mildenberger (tobm@aqu.dtu.dk)

PhD scholarship in Social Aspects of Weather and Climate Change in Marine Fishing Communities at UDSM (IMS) & CBS

PhD 7: Local knowledge and adaptation to climate change

You will examine 1) indigenous forecasting knowledge of weather and climate, as well as local knowledge and perceptions on pollution and fisheries 2) measures used by women and men in artisanal fishing communities to adapt to the experienced changes and 3) informal and formal institutions and regulations that influence the adaptation measures.

Qualifications:

We are looking for a candidate who has:

- Master of Science (MSc) 2 years. Preferably in the field of Natural Resources Management, Human Geography, Climate change and sustainable development, Environmental Anthropology, Environmental Sociology or other related fields.
- Proficiency in written and spoken English and Swahili
- Desire and capacity to work with a highly international, cross disciplinary team
- Has independence and willingness to work with local coastal communities
- Experience with Climate change & coastal livelihoods, marine fisheries knowledge in both qualitative & quantitative social research methods is a benefit

Further information on PhD project 7 may be obtained from:

Dr. Mwanahija Shalli mwanahija.shalli@udsm.ac.tz; mshalli2012@yahoo.com and Dr. Thilde Langevang thilde.langevang@cbs.dk



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Application procedures

You may apply prior to obtaining your master's degree but it must be completed by 1 September 2024.

All interested candidates irrespective of gender, race, disability, religion or ethnic background are encouraged to apply. Female applicants are strongly encouraged to apply.

Applications must be submitted as **one PDF file** containing all materials to be given consideration.

The file must include:

- A cover letter **clearly stating which PhD position** the application is intended for.
- Letter of motivation (max 2 pages)
- Curriculum vitae including publications and presentations
- Certified, grade transcripts of BSc/BA and MSc degree (in English)
- Birth certificate

Closing date: Your complete application must be submitted no later than **15 July 2024 23:59 TZ time**.

Applications received after the deadline will not be considered.

The PhD scholarship is subject to academic approval. Only shortlisted applicants will be invited for interviews that will take place late August/early September. The interview /will be conducted by the 2 co-supervisors and an independent officer from either DTU or UDSM.

Salary and appointment terms

The PhD is a full-time position and applicants must commit to register a full-time studies. The period of scholarship is 3 years and covers tuition fees, research expenses and other fees in accordance with UDSM regulations for PhD positions (IMS).

Applicants for PhD Scholarship should submit a combined PDF file via Email to the Director, Institute of Marine Sciences (director.ims@udsm.ac.tz) with a copy to Dr. Aviti John Mmochi (avitimmochi@gmail.com) and Dr. Sigrun Huld Jonasdottir (sjo@aqu.dtu.dk).