

MSc Scholarship Opportunities at University of Dar es Salaam

1. Background

Fluoride contamination in groundwater remains a major public health challenge in northern Tanzania, particularly in Oldonyosambu and Oldonyowas wards of Arusha District. Many residents depend on groundwater sources with fluoride levels exceeding WHO's recommended limit (1.5 mg/L), leading to widespread dental and skeletal fluorosis. Rainwater harvesting (RWH) offers a low-cost and sustainable alternative for providing safe drinking water in these communities. Although several households privately implement rainwater harvesting systems, there is an urgent need to optimize system design, storage, and distribution at the sub village level for large-scale adoption and equitable access.

Applications are invited for a Master's-level Research Scholarship in Water Resources Engineering, Geospatial Engineering, or a related discipline, focusing on the design and optimization of rainwater harvesting systems to mitigate fluoride exposure in northern Tanzania. The scholarship aims to support innovative research that integrates engineering design, spatial analysis, and community-based water management for sustainable development. This scholarship is supported by the "Socio-Technical Assessment for Healthier Drinking Water in Tanzania (SAFEWATER) projected funded by the Water and Development Partnership Programme of the Dutch Government.

2. Research Projects

2.1 Designing Optimal Rainwater Harvesting Systems for Fluoride-Affected Communities in Arusha, Tanzania

The successful candidate will:

- Assess existing rainwater harvesting systems in Oldonyosambu and Oldonyowas wards.
- Use geospatial and hydrological modeling to identify optimal catchment, storage, and distribution configurations.
- Design technically feasible, cost-effective, and scalable RWH systems at the sub village level.
- Propose policy and implementation frameworks to enhance local adoption.

2.2 Integrated Fluorosis Management in Arusha (Oldonyosambu and Oldonyowas)

The successful candidate will:

- Assess spatiotemporal water availability in Oldonyosambu and Oldonyowas
- Evaluate the health and nutritional correlates of fluorosis and the effectiveness of dietary interventions for mitigation
- Design and test a community-centered socio-technical model for integrated fluorosis management.

3. Eligibility Criteria

Applicants must:

- Be a Tanzanian citizen.
- Hold a Bachelor's degree in Water Resources Engineering, Civil Engineering, Geospatial Engineering, Environmental Engineering, or a closely related field.
- Demonstrate strong analytical, GIS, and modeling skills (experience with QGIS, ArcGIS, R Software, Python, or SWAT is an asset).
- A minimum GPA of 3.5 (out of 5.0) in their undergraduate studies.
- Possess strong analytical and communication skills
- Admission into a relevant MSc programme at the University of Dar es Salaam (UDSM) - such as MSc in Water Resources Engineering, Environmental Engineering, or Integrated Water Resources Management - is considered an added advantage.

4. Scholarship Coverage

The scholarship will cover:

- Tuition fees for the duration of the scholarship (
- Research expenses (fieldwork, laboratory, and modeling)
- Monthly stipend for living costs for not more than eighteen (18) months
- Support for conference presentation and publication

5. Scholarship Duration

- Eighteen (18) months
- Expected start: November 2026

6. Host and Supervision

The project will be hosted jointly by:

- University of Dar es Salaam (UDSM) - Department of Water Resources Engineering
- Delft University of Technology (TU Delft)
- In collaboration with
 - Rural Water Supply and Sanitation Agency (RUWASA),
 - Arusha District Council and
 - Local community partners

7. Application Procedure

Interested candidates should submit the following (as a single PDF file):

1. Motivation letter (max. 2 pages) stating your interest and how your background fits the project.
2. Curriculum Vitae (CV) with referees' contacts (email and phone).

3. Two academic reference letters.
4. Proof of UDSM MSc programme admission (if already admitted).

8. Submission

- Submit applications by: *27 October 2025*
- Applications should be submitted via email to: fides@udsm.ac.tz cc magezijulian@yahoo.co.uk
- The subject line should read “Application for MSc Research – Integrated Fluorosis Management (SAFEWATER)”, OR “Application for MSc Research – Designing Optimal Rainwater Harvesting Systems for Fluoride-Affected Communities in Arusha, Tanzania (SAFEWATER)”