Call for PhD Scholarship Opportunities

Arba Minch University (AMU), in collaboration with Vrije Universiteit Brussel (VUB), has initiated a research project entitled "**A Multi-pronged Approach on Transforming Climate Resilient WASH (CR-WASH) and Agriculture (CR-AGR) for a Sustainable Future**," with support from the TEAM 2024 project under the VLIR-UOS grant. The program particularly focuses on improving WASH services and agricultural productivity in a sustainable manner under changing climate conditions in the Gamo Highlands. It aims to achieve this by integrating sustainable development goals through joint efforts of multiple institutions from both the Global North (VUB) and South (AMU), and by collaborating with various stakeholders. This approach is designed to contribute to and have a positive impact on several sustainable goals, including quality education, gender equality, climate action, and partnerships. As part of this initiative, two PhD projects have been proposed, to be conducted over a five-year period (2024 to 2029). We, therefore, invite interested applicants to apply for these positions based on the description outlined below.

PhD Position 1: Efficacy of Community-based Behavioral Change Program for Enhanced and CR-WASH Service Delivery

The proposed PhD project focuses on evaluating the effectiveness of community-based behavioral change programs aimed at enhancing service delivery in climate-resilient water, sanitation, and hygiene (CR-WASH). The PhD student will assess how the interventions that are designed to promote sustainable practices can improve access to safe water and sanitation in vulnerable communities of Gamo Zone facing climate-related challenges in WASH. This will involve a comprehensive analysis and assessment of the water supply services and access, baseline study on available water supply sources, protection and treatment mechanisms, and climate variability assessment on water supplies, water quality assessment, contaminants cycles and sources and associated community health risks. He/she is expected to conduct evaluation of the sanitation facilities, marketability, acceptability, adaptability and applicability options of latrines in consideration of the circular economy in the face of climate change. This will be integrated with the investigation of sanitation service delivery and access by identifying the potential intersection points through the evaluation of availability, accessibility, and functionality of sanitation facilities such as toilets, latrines and open defecation practices. By combining quantitative and qualitative methods, he/she will generate evidence-based insights that can inform the development of scalable and effective CR-WASH interventions. Furthermore, by conducting surveys, focus group discussions and participatory rural appraisal programs to gather local knowledge, preferences, and priorities, he/she will assess approaches

to improve gender power dynamics, ways of strengthening the enabling environment for CR-WASH services and impact of community-based participatory education on WASH service efficiency. The ultimate goal is to contribute to the global discourse on sustainable development by identifying best practices that can be adopted and replicated in similar contexts, thus enhancing the resilience of communities to climate change while ensuring equitable access to essential WASH services.

Qualifications: applicants should meet the following requirements:

- MSc in Water Supply and Environmental Engineering, Sanitary Engineering, Water Resources Engineering, Hydraulic Engineering or related fields.
- Highly motivated to undertake academic research in an international context
- Hard-working and able to manage a project independently, taking initiatives and meeting deadlines;
- Develop concept note (pre-proposal) based on the study scope
- Willing to respect the project agreements
- Believe in project confidentiality and have proper data handling and processing skills
- Good communication skill and the ability of working in different groups
- Be a staff member of AMU and willing to sign a job contract agreement with AMU during and beyond the PhD research project
- Female candidates are strongly encouraged to apply

Application Process

- For this position, the candidate will have a promotor Prof. Dr. ir Margaret Chen from VUB (Belgium) and local supervisor Dr. Ing.- Zelalem Abera from AMU (Ethiopia).
- Applications in the form of a CV, concept note, motivation letter and any other important documents should be submitted by e-mail to zelalem.abera@amu.edu.et
- Please use **'CR-WASH PhD Position'** as the subject line of the email for this application.

PhD Position 2: Enhancing Climate-Resilient Agriculture (CR-AGR) for Sustainable Food Security

This position focuses on developing innovative solutions to improve agricultural practices that promote resilience to climate change and ensure sustainable food security. To achieve this, the selected PhD candidate will investigate existing water use practices in agricultural settings by collecting data through surveys, interviews, and field observations. These efforts will target the optimization of irrigation methods, crop water requirements, and water management techniques. Building on this, the candidate will analyze the potential of various water sources for agriculture, providing a foundation for informed decision-making. Hydrological models will be applied to simulate water dynamics within agricultural watersheds, with calibration and validation using historical hydrological data and field measurements to enhance accuracy. From these models, optimal water use strategies under climate change will be identified, incorporating stakeholder input gathered through workshops and interviews to ensure alignment with community preferences. Further, agronomical modeling will be conducted, involving the development and validation of crop growth models tailored to site-specific crops. These models will simulate the effects of water availability and management practices on crop yields, water productivity, and resilience to climate variability. Validation against field trials and experimental data will refine the research methodologies. Finally, the candidate will assess community behavioral change in adopting climate-resilient water use practices and agricultural technologies, contributing to sustainable agricultural development in the face of evolving environmental challenges.

Qualifications: applicants should meet the following requirements:

- MSc in Irrigation and Drainage Engineering, Water Resources Engineering and management, hydrology, Hydraulic Engineering or related fields
- Highly motivated to undertake academic research in an international context
- Hard-working and able to manage a project independently, taking initiatives and meeting deadlines;

- Strong analytical skills, with experience in hydrological and agronomical modelling.
- Develop concept note (pre-proposal) based on the project scope
- Willing to respect the project agreements
- Believe in project confidentiality and have proper data handling and processing skills

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- Good communication skill and the ability of working in different groups
- Be a staff member of AMU and willing to sign a job contract agreement with AMU during and beyond the PhD research project.
- Female candidates are strongly encouraged to apply

Application Process

- For this position the candidate will have a promotor Prof. Dr. ir Margaret Chen from VUB (Belgium) and local supervisor Dr. Alemayehu Kasaye from AMU (Ethiopia).
- Application documents including CV, concept note, motivation letter and any other important documents should be submitted by e-mail to alemayehu.kasaye@amu.edu.et
- Please use **'CR-AGR PhD Position**' as the subject line of the email for this application.

Benefit packages for both PhD positions

The PhD candidate will receive a monthly allowance of 1,900 € when she/he is in Belgium for PhD scholarship for both PhD positions. During the research stay in Ethiopia, the candidates expense related to the PhD field work will be covered by the project.

Deadline

- Deadline for submission is on **13/11/2024**

Selection Process

- The project teams from VUB and AMU will evaluate the submitted concept notes and CV of the candidates. Potential candidates will be invited for interview.