

## **Call for Applications: Funding Opportunities for MSc students**

**Project title:** Effects of Active Rifting and Thermal Uplift on Climate, Soil, Water and Agriculture in Southern Main Ethiopian Rift: Implementing Strategies for Recovery Improvement

**Institution:** Joint project with Arba Minch University (AMU), Wolaita Sodo University (WSU) and Space Science and Geospatial Institute (SSGI)

### **Number of Positions:**

**Three (3) MSc students** - one student per thematic call

### **About the project**

In Ethiopia, agricultural activities play a pivotal role in the economy, employing a significant portion of the population and contributing to the country's GDP. However, volcano-tectonic activities influenced human evolution in the past on vast topographical and chronological scales. The volcano-tectonic activities in the Main Ethiopian Rift System are mainly associated with material movements and energy transfer from the Earth's inner layers to the surface of the Earth's crust. Such geological processes change the state of thermal radiation at the surface of the earth's crust and adversely affect soil properties, crop growth, agriculture productivity and socioeconomic status of the rural communities. In response to these pressing issues, the **project** aim to evaluate the effect of active rifting and thermal uplift on soil physiochemical properties, to assess various crop yield status under thermally stressed and their impact on the socioeconomic activity, to implement effective recovery strategies and practices that promote sustainable land management in the region, of the project area. By focusing on the restoration of degraded Soils, and landscapes, SP3 seeks to enhance the resilience of rural communities, ultimately leading to improved soil productivity, agricultural yields, sustainable utilization of natural resources and their livelihood status. By integrating local knowledge and promoting capacity building, SP3 aims to empower communities to tackle impacts of volcano-tectonic proactively. The project's focus on the South segment of great Ethiopia rift valley highlights through collaborative efforts which strives to foster sustainable management practices that not only mitigate resources degradation but also enhance the quality of life for rural communities.

## **CALL 1: Modeling on Active Rifting, Thermal Uplift, and Their Impacts on Agriculture and Atmosphere**

### **Thematic Focus**

This position focuses on developing models that simulate active rifting and thermal uplift and evaluate their impacts on local agriculture, temperature variations, microclimates, and atmospheric conditions in the Southern Main Ethiopian Rift.

### **Research Expectations**

- ✓ Develop or apply geospatial, thermal, or climate models, analyze thermal anomalies, heat flux patterns, and rift-related land deformation and assess model outputs in relation to crop stress, soil heating, and atmospheric changes.

## **Required Background**

MSc students in:

Soil Science, Agronomy, Watershed Management, GIS/Remote Sensing, Environmental Science, Geophysics, Hydrology, or related fields.

## **CALL 2: Assessing Crop Yield Performance under Thermally Stressed Environments**

### **Thematic Focus**

This position addresses how thermal uplift and rifting-induced heat affect crop performance, crop physiology, yield variation, and field productivity.

### **Research Expectations**

- ✓ Conduct field measurements under thermally stressed zones, evaluate crop growth parameters, yield components, and stress responses, identify crop types resilient to high-temperature and geothermal-influenced soils, recommend climate-resilient agricultural practices and management strategies.

## **Required Background**

MSc students in:

Agronomy, Horticulture, Soil Science, Watershed Management, or related agricultural sciences.

## **CALL 3: Impacts of Active Rifting and Thermal Uplift on Socioeconomic and livelihoods**

### **Thematic Focus**

This position investigates the extent and severity of active rifting and thermal uplift and their impacts on socioeconomic activities, such as: livelihoods, land use, resource management, agriculture, water availability, and community resilience.

### **Research Expectations**

- ✓ Conduct socioeconomic surveys, interviews, and livelihood assessments, map affected communities using GIS and field data, determine how thermal uplift affects land use, farming systems, migration, and income sources, propose community-based adaptation and resilience strategies.

## **Required Background**

MSc students in:

Agricultural Economics, RDAE, Environment & Development, Watershed Management Sociology, Geography, or related social and environmental fields.

### **General Evaluation Criteria (applies to all three calls)**

Research relevance to SP3 objectives, Strong methodology (fieldwork, lab analysis, modeling, GIS, socioeconomic tools), potential restoration strategies and practical applications, integration of local knowledge, innovation and novelty and quality of proposal

### **General Requirements and Qualifications**

- ✓ Must be an active MSc student at AMU, WSU and SSGI in eligible fields.
- ✓ Must have completed coursework and be ready to begin research.
- ✓ Demonstrated motivation to work on soil, crop, climate, or socioeconomic challenges.
- ✓ Experience in fieldwork, GIS, modeling, lab analysis, or socioeconomic studies is advantageous.
- ✓ Strong analytical, communication, and teamwork abilities.

### **Application Procedure (for all three calls)**

- ✓ Submit the following documents: Research proposal aligned with one of the three thematic calls, CV, academic transcripts and credentials (scanned), any supporting documents

### **Submit to:**

**Dr. Dereje Tsegaye (SP3 Leader)**

**Email: [dereje.tsegaye@amu.edu.et](mailto:dereje.tsegaye@amu.edu.et)**

### **Deadline:**

Within 15 consecutive days from the date of this announcement (closing at 10:00 PM local time)

### **Notification of Results**

Final results: **Mid-January 2026**

Start of MSc research support: **End of January 2026**