

# Geospatial expertise of UTU in research, teaching and development collaboration in Tanzania

*University of Turku has been working in Tanzania since 2003 with Tanzanian and international partners. Our collaborative research topics are broadly related to the analysis of human-nature dynamics with landscape and geospatial approaches.*

**UTU has research, education and development activities in:**

- Landscape, land cover and forest change mapping and geospatial analyses
- Participatory landscape service mapping and land use planning
- Livelihood strategies, agroforestry and food security
- Knowledge creation processes, globalization and development
- Environmental and climate change
- Geospatial business and entrepreneurship
- Geospatial competence development and higher education geospatial skills training



We link our research efforts with education in **Geography and Landscape Science, Geographical Information Systems (GIS), Remote Sensing, Participatory GIS and Landscape Management**. We collaborate with our partners in developing better spatial tools, methods and practices of sustainable landscape management and use and preservation of natural resources. Our main academic partners in Tanzania are **University of Dar es Salaam, University of Ardhi, State University of Zanzibar and Sokoine University of Agriculture**.

4 completed,  
4 ongoing  
PhD degrees

16 completed  
BSc/MSc

Regular staff  
& student  
visits

Tens of participatory  
campaigns and  
stakeholder  
meetings

## Recent publications and project references:

Käyhkö, N, Fagerholm, N, Khamis, M, Hamdan, SI & Muhammad JM (2018). **Collaborative, Participatory Process of Landscape Character Mapping for Land and Forest Planning in Zanzibar, Tanzania.** In Fairclough, G, Sarlov Herlin, I & Swanwick, C (Eds.) Routledge Handbook of Landscape Character Assessment: Current Approaches to Characterisation and Assessment. 118–127.

Kukkonen MO, Muhammad, J, Käyhkö N & Luoto M (2018). **Urban expansion in Zanzibar City, Tanzania: Analyzing quantity, spatial patterns and effects of alternative planning approaches.** Land Use Policy 71, 554-565.

Khamis Z, Kalliola R. & Käyhkö N (2017). **Geographical characterization of the Zanzibar Coastal Zone and its management perspectives.** Ocean and Coastal Management 149, 116-134.

Holvitie J, Vasankari T, Järvi A, Eilola S, Hyrynsalmi S, Käyhkö N & Makandi H (2017). **Platform-Driven Ecosystem Prefacing for Emerging Markets in Developing Countries.** Proceedings of the 9th International Workshop on Software Ecosystems. CEUR-WS.org 2053, 74-87.

Hooli L. J. (2017). **From warrior to beach-boy: Resilience of Maasai in Tanzanian tourism industry.** In Cheer, J. & Lew, A. A (eds.) Tourism, Resilience and Sustainability: Adapting to Social, Political and Economic Change, Routledge, 103-115.



Ulkoministeriö  
Utrikesministeriet  
Ministry for Foreign  
Affairs of Finland



BUSINESS  
FINLAND

- **Geospatial and ICT capacities in Tanzanian Higher Education Institutions (Geo-ICT)** (Ministry for Foreign Affairs of Finland / HEI-ICI, 2017-2020, with UDSM, Ardhi, SUZA and SUA, leaders Niina Käyhkö and Ville Leppänen)
- **Geospatial Business Ecosystem in Tanzania (GESEC)** (Tekes/BEAM preparatory funding 2016, leader Niina Käyhkö)
- **National spatial data infrastructure for integrated coastal and marine spatial planning in Zanzibar (ZAN-SDI)** (MFA/ICI project between Commission for Lands, Government of Zanzibar (COLA) and Finnish Environment Institute (SYKE) 2016-18. UTU subcontracted for geospatial training, leader Niina Käyhkö)
- **Forest plantation mapping in the Southern Highlands of Tanzania** (Food and Agricultural Organization (FAO) 2016, leader Niina Käyhkö).
- **Sustainability, scale relations and structure-function-benefit chains in the landscape systems of the Tanzanian Southern Highlands (SUSLAND)** (SA/Academy of Finland, Development Research 2014-2018, leader Niina Käyhkö)
- **HEI-GIS capacities in Geography education at the University of Dar es Salaam** (HEI-ICI/Ministry for Foreign Affairs of Finland, 2013-2015, leaders Niina Käyhkö and Phillip Mwanukuzi)
- **Knowledge Creation Processes (KREPRO)** (SA/Academy of Finland, 2012-2016, leader Jussi Jauhiainen)
- **North-South-South (NSS) networks** 2008-2010; 2011-2013 and 2013-15 on Sustainable development and human rights with UDSM and Zanzibar University.
- **Rural Settlement Development, Land Ownership and Food Security since Ujamaa era in eastern Tanzania** (SA/Academy of Finland, Development Research 2008-2010, leader Taimi Sitari)
- **Changing land use and forest management practices and multidimensional adaptation strategies in Zanzibar, Tanzania** (SA/Academy of Finland, Development Research 2010-2013, leader Niina Käyhkö)
- **Practical measures needed to tackle climate change** (Ministry for Foreign Affairs of Finland, 2008, leader Taimi Sitari)
- **Sustainable landscapes in Zanzibar** (MOSSE/Ministry for Foreign Affairs of Finland, 2005-2007, leader Niina Käyhkö)
- **Interaction between community, forest plantation and biodiversity** (MOSSE/Ministry for Foreign Affairs of Finland, 2003-05, leader Taimi Sitari)



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