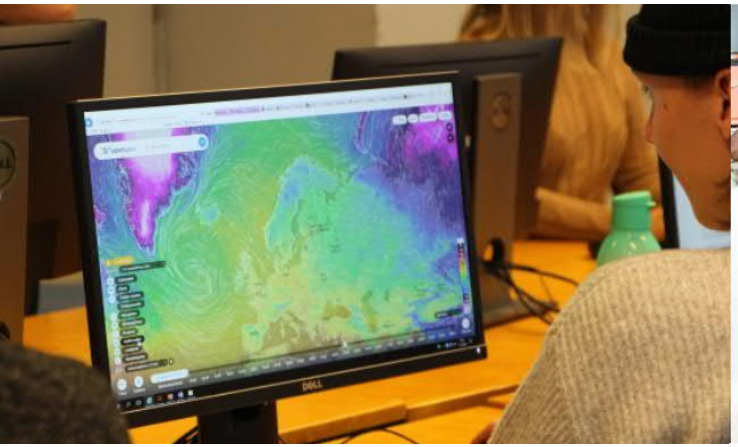

Geospatial and ICT data, technologies and skills for sustainable social innovations

Prof. Niina Käyhkö
Department of Geography and Geology
University of Turku, Finland

24.8.2021

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Transformative change happens in the social matrix, where local power combines with tech potential

”New generation university graduates need to be competent with novel technologies, but equally they need to master the interface between technologies’ potential and societies’ emerging needs”

OPEN GEOSPATIAL DATA AND TECHNOLOGIES AS TRANSITION ENABLERS

SUSTAINABLE LOCAL SOLUTIONS WITH LIFE-QUALITY IMPACTS

TRANSFORMATIVE SPACE FOR INNOVATIONS

NEW GENERATION GEOSPATIAL EXPERTS

DIGITAL RESEARH AND LEARNING ENVIRONMENTS

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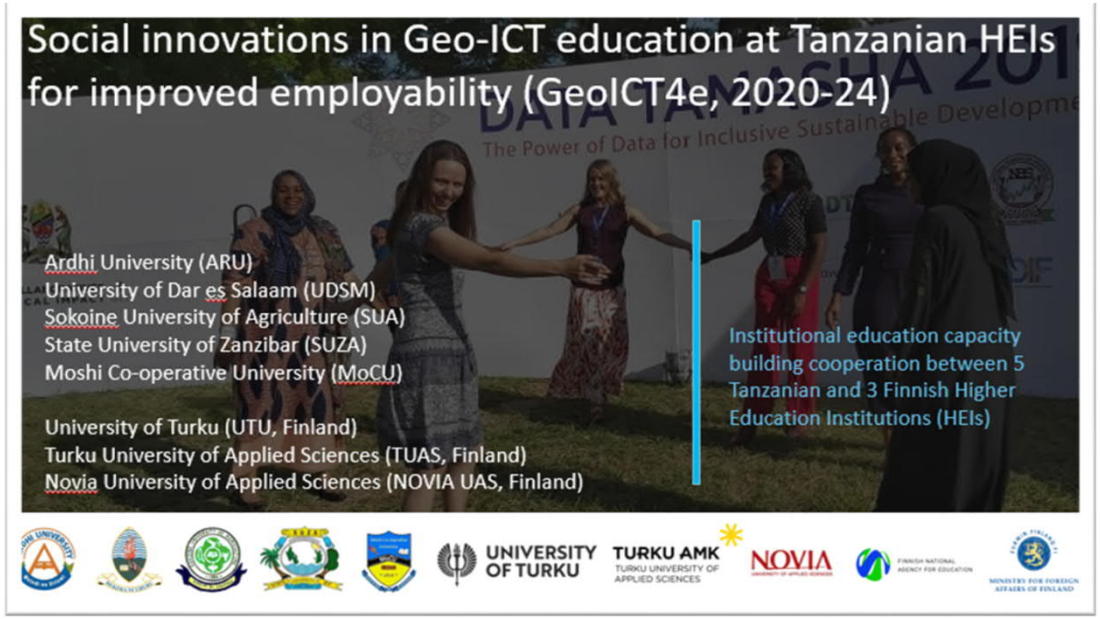
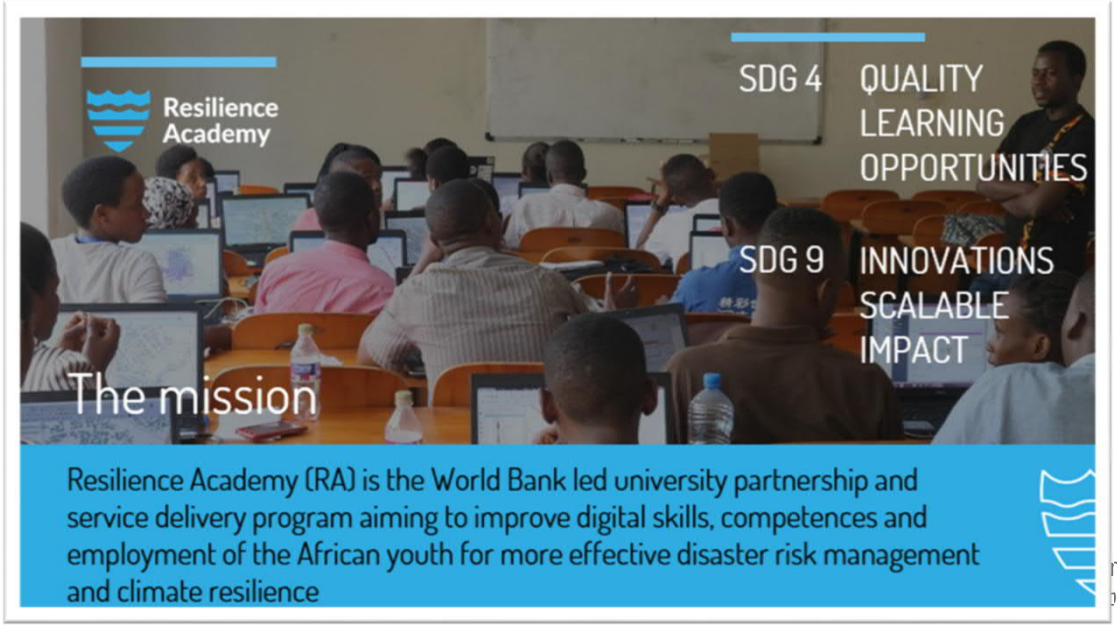


Geospatial and ICT skills and competence development through institutional research, education and development cooperation between Finnish and Tanzanian universities (since 2003-, https://tanzania.utu.fi/)



University partnership and service delivery to improve digital skills, competences and employment of the African youth for more effective disaster risk management and climate resilience (since 2018-, https://resilienceacademy.ac.tz/)

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Students are able to design climate-smart and resource-efficient solutions for social, environmental and economic sustainability and improved resilience

Climate, sustainability and resilience skills

Geospatial data and technology skills

Students are able to use digital geospatial data and open-source geo-ICT technologies in a novel and need-based manner

Students' competences develop via co-creative learning spaces organized in close cooperation with the innovation ecosystem actors and problem owners.

Students are capable of solving real, complex spatio-temporal problems of the surrounding society and in relation to the challenges presented for them

Theme-specific problem skills in space and time

Entrepreneurial and innovation skills

Students are able and professionally confident to work in teams towards innovative, contextually relevant and influential solutions

What transformative spaces have we co-created in GeoICT4e and Resilience Academy for social innovations?

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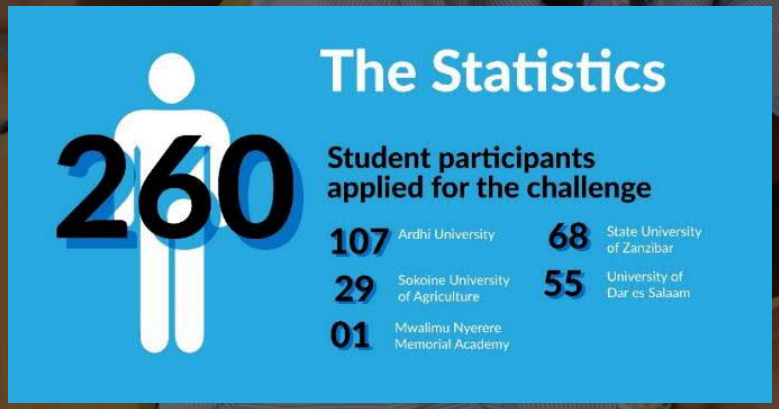
Resilience Academy Data Visualization Challenges

Resilience Academy

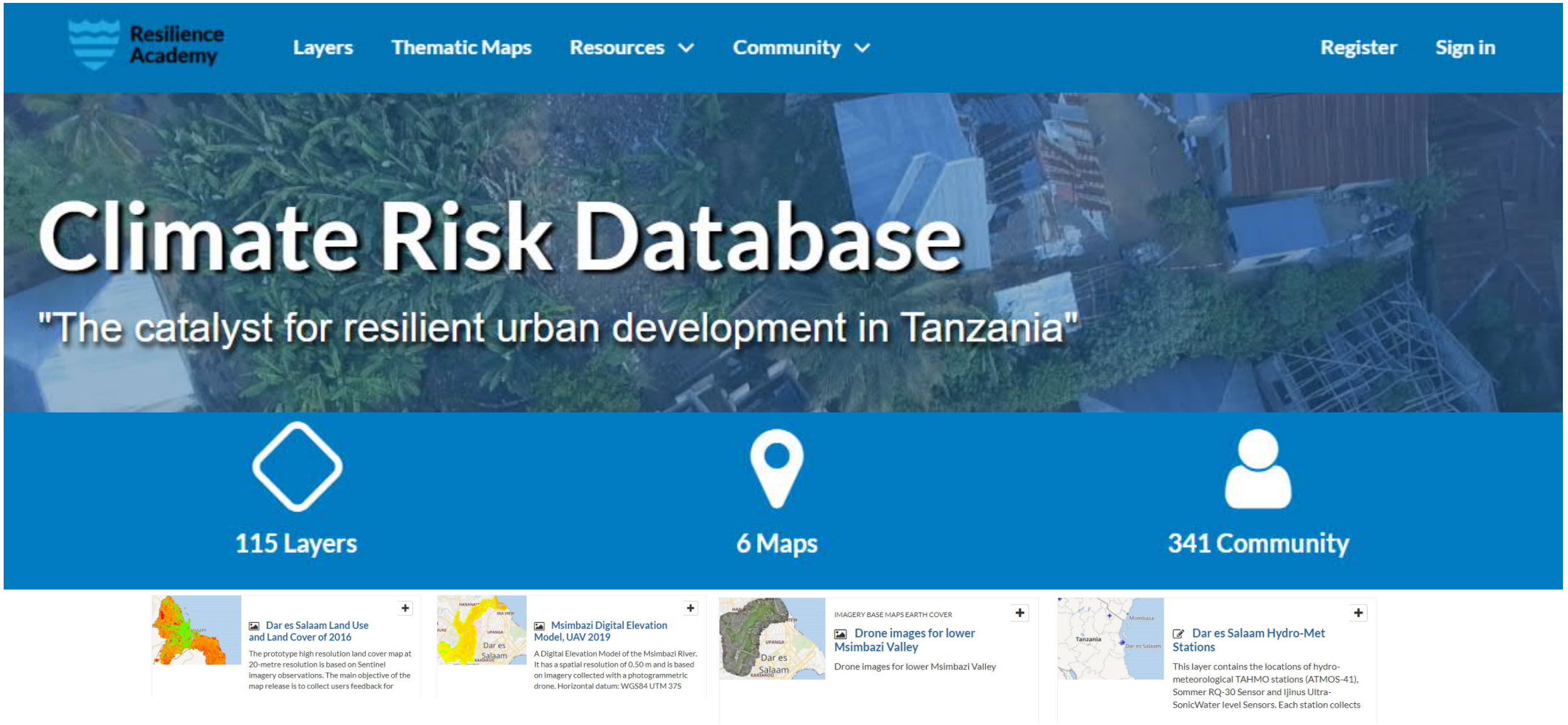
https://resilienceacademy.ac.tz/datviz

2019 statistics



Climate Risk Database (CRD) as a community maintained open data service

https://geonode.resilienceacademy.ac.tz/



Smart phones and mobile apps enable students to collect missing data: example of State University of Zanzibar student interns in 2019

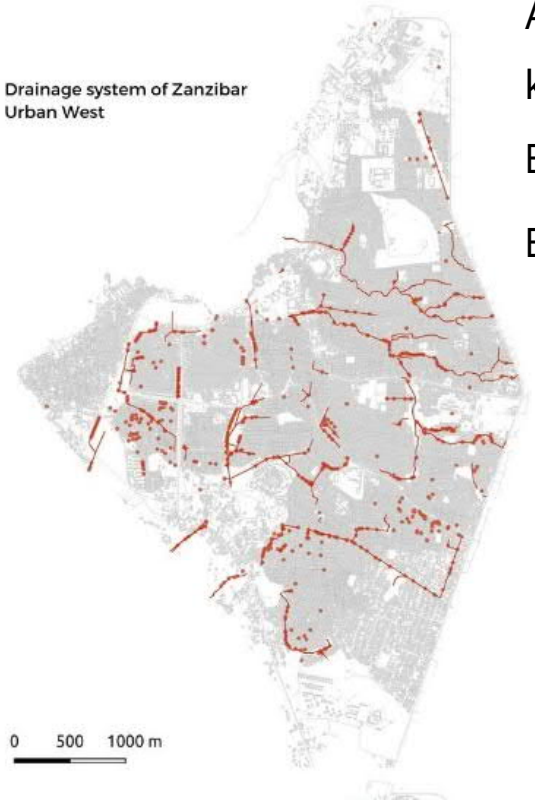
Students: 50

Time: 8 weeks

Municipalities mapped: 42

Community members: 300+

Skills obtained:

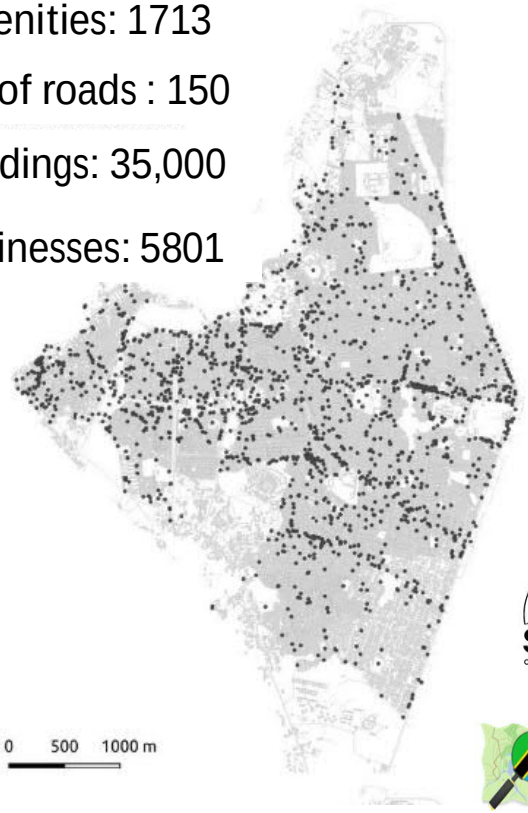


Amenities: 1713

km of roads : 150

Buildings: 35,000

Businesses: 5801



SPATIAL COLLECTIVE

OpenMap Development Tanzania

Resilience Academy

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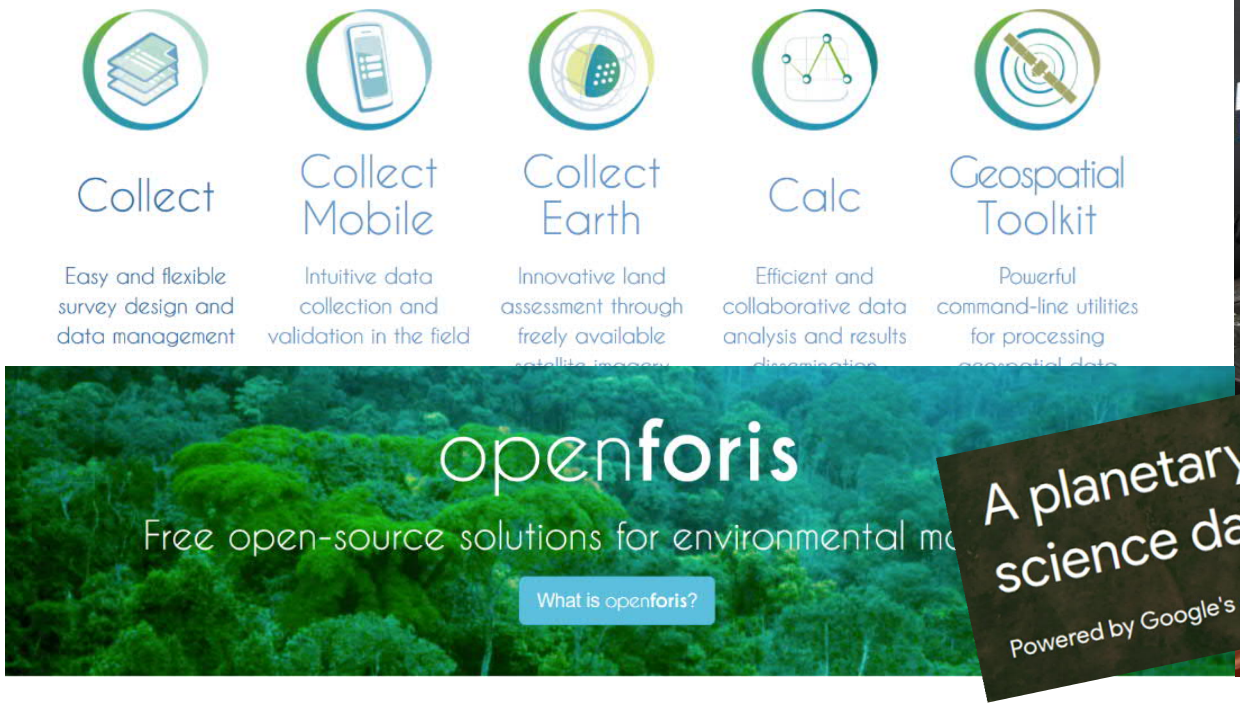
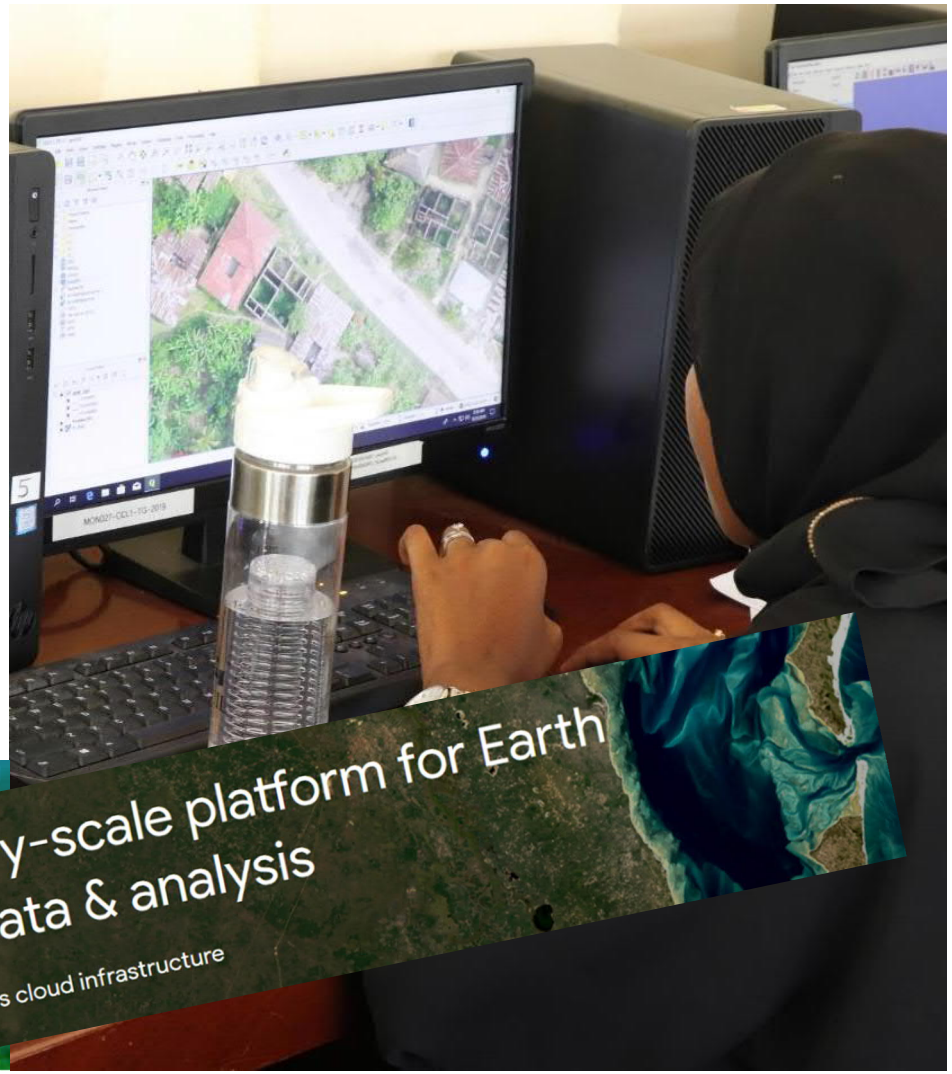
WORLD BANK GROUP

Cloud platforms as learning spaces of data science skills





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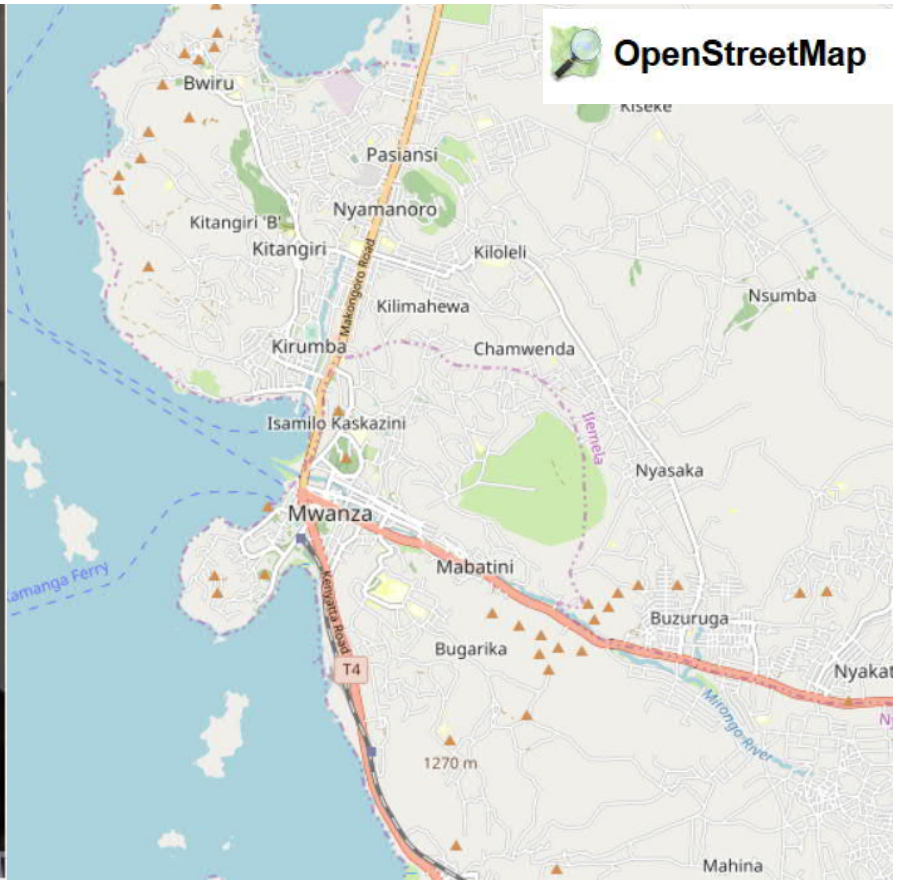

Mapathons as virtual learning and community action events

SANORD Webinar 2021 "Innovations for sustainable development"

STEAM Turku

egea TURKU

Resilience Academy

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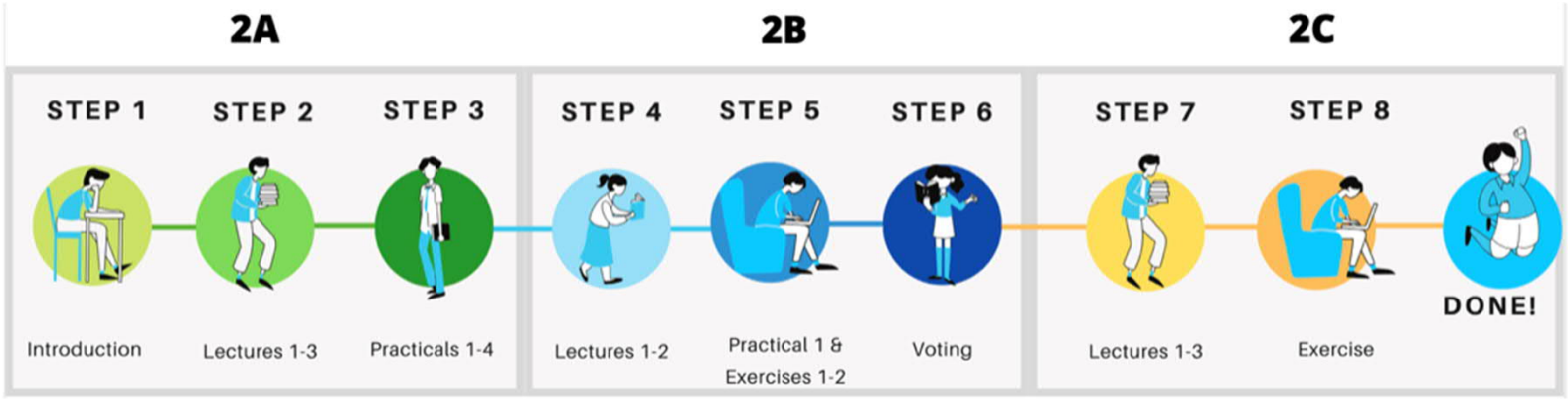
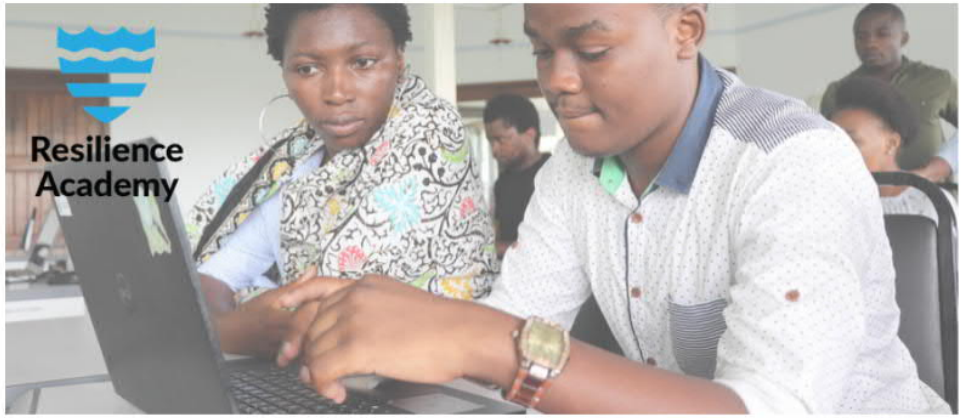
Mini-MOOCs as open-access virtual learning environments



Story-telling mini-lectures quizzes hands-on practical mini-exams



Welcome to module 2!

This is the second module of the Open Data for Resilience -theme. In here, we dive deep to the topics of data quality, metadata and data sharing, via interesting practicals and the supporting background theory. Stories, quizzes and reading materials help you to get closer to the subject and feel motivated through this online module.

https://digicampus.fi/course/view.php?id=493

. "Innovations for sustainable
lopment"

THEME 1: OPEN DATA FOR RESILIENCE

MODULE 1
Geospatial Content Management System – Geonode (3 ects)
This module aims to provide knowledge and practical experiences on principles, skills and practices on the Geonode Platform. It starts from the installation, usability and maintenance of Geonode to administration and customising the platform.

MODULE 2
Geospatial Data Quality and Management (2 ects)
This module aims to provide knowledge on principles, critical skills and good practices of geospatial data management and dissemination. The module includes information and methods on data description, maintenance, updating, quality assessment, and data sharing through an SDI, Geonode

MODULE 3
Geospatial Data Visualisation (1-3 ects)
This module includes geovisualisation principles, tools and methods. Students learn geospatial data visualisation principles and practical skills through an (Urban) Resilience Visualisation Challenge based on real visualisation needs coming from the actors.

Reflections

1 *“Digital data, teach and online learning tools are widely available, but only their successful ‘localization’ brings true impacts”*

2 *“Participation and community-driven actions generate genuine ownership and resilience to learning and local impacts”*

3 *“Magic often happens outside the confort zone – what is our capacity to take risks and innovate?”*

4 *“Success paths lie beyond any single project or initiative – how can we facilitate integration of actions for larger impacts?”*

Questions & discussion

https://tanzania.utu.fi/
https://www.geoict.org/
https://resilienceacademy.ac.tz/
https://geonode.resilienceacademy.ac.tz/

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