

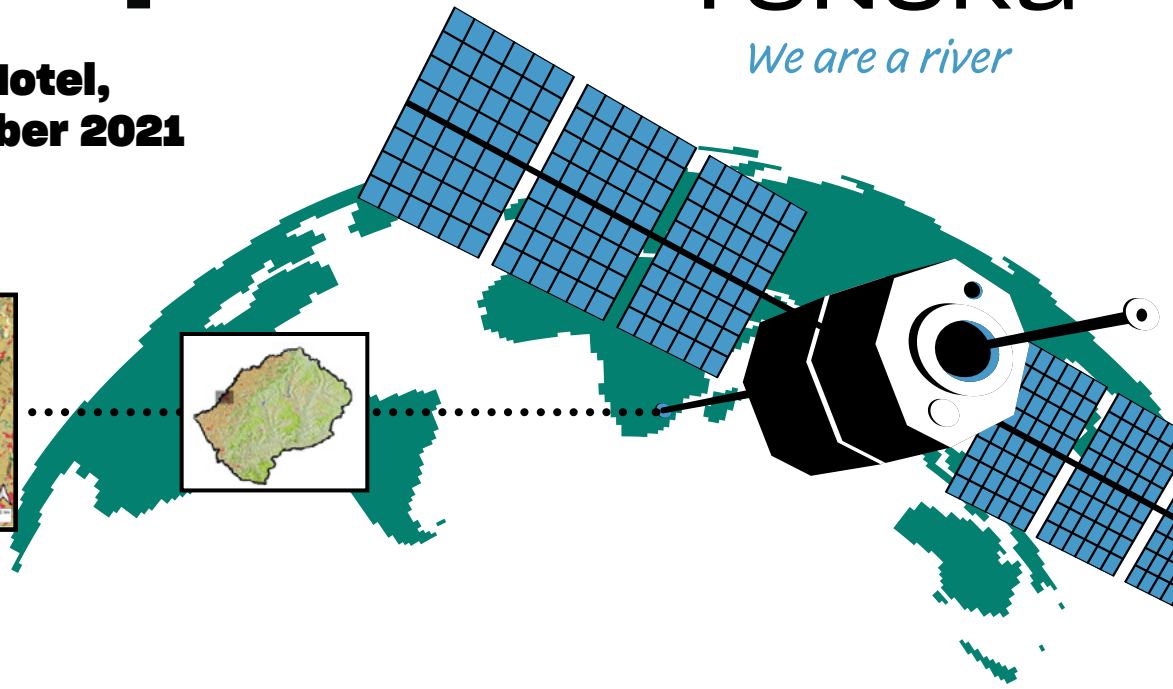
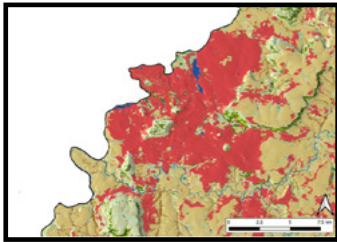
# EO-STAT Workshop



renoka

*We are a river*

**Avani Maseru Hotel,  
25 - 29th October 2021**



## Programme

**Objective of the training is to build capacity in technical experts in:**

- 1) Producing annual national land cover maps using FAO's newly developed methodology 2020
- 2) Extracting statistics from the land cover map at national and subnational level
- 3) Sharing geospatial products and statistics using web gis technology

### Course structure:

The course is structured over 4 modules distributed over a 5 days workshop.

#### Module I

- In this module trainees will be provided with a review of the land cover mapping principle which will allow them to gain a full picture of the concepts and typical workflow,
- Commonly used satellite image products and tools will be introduced to the audience

#### Module II

- The in-situ component will be addressed. The importance of the survey design for the scope of land cover mapping will be highlighted. GIS and statistical methods for optimal survey design will be explored as well as best practices in georeferencing data in the field
- A hands on exercise will be held outdoor in the surroundings of the workshop site to gather in-situ data using GPS, followed by migration of GPS data in GIS and QA-QC exercise

#### Module III

In this module, hands-on exercise will be carried out to guide the trainees through the entire process of producing a national land cover map for Lesotho. Google Earth Engine will be used. The main steps will include:

- Connecting to EO data (Sentinel2 data)
- Pre-processing the data into Analysis Ready Data
- Uploading in-situ data
- Defining land cover classes
- Training a classification algorithm (random forest).
- Producing and visualizing the land cover map
- Assessing accuracy of map
- Exporting map in gis format outside of Google Earth Engine

#### Module IV

This module will be dedicated to extracting statistics from the land cover map at national and subnational level using common GIS desktop software (free and open source) such as QGIS



The course is intended for technical experts interested in developing or strengthening their GIS analysis and mapping skills as well as data science skills.

	<b>Intended audience</b>
<b>Module I:</b>	All
<b>Module II:</b>	All. Could be of particular interest to experts who are involved in survey work and use or want to use GPS and drones
<b>Module III:</b>	GIS analysts, Data Scientist
<b>Module IV:</b>	GIS experts/analysis

## DAY 1: 25 October

<b>9:00 – 9:15</b>	<b>Welcome remarks,</b> <i>David Mwesigwa, FAOLS</i>
<b>9:15 – 10:00</b>	<b>Presentation of Workshop program and learning objectives</b> <i>Lorenzo De Simone, FAO HQ</i>
<b>9:30 – 10:00</b>	<b>FAO Land cover mapping: project status</b> <i>Lorenzo De Simone, FAO HQ</i>
<b>10:00 – 10:15</b>	<b>Break</b>
<b>10:15 – 12:15</b>	<b>Module I: Land Cover Mapping: principles, data, methods and tools – Part I</b> <i>Lorenzo De Simone FAO HQ, William Ouellette, FAOLS</i>
<b>12:15 – 13:15</b>	<b>Lunch</b>
<b>13:15 – 14:45</b>	<b>Module I: Land Cover Mapping: principles, data, methods and tools – Part II</b> <i>William Ouellette, FAOLS</i>
<b>14:45 – 15:00</b>	<b>Break</b>
<b>15:00 – 16:00</b>	<b>Module II: In situ data – survey design, georeferencing best practices – Part I</b> <i>William Ouellette, FAOLS</i>

## DAY 2: 26 October

<b>9:00 – 12:00</b>	<b>Module II: In situ data – hands on exercise outdoor, gathering data in the field – Part II</b> <i>William Ouellette, FAOLS</i>
<b>12:00 – 13:00</b>	<b>Lunch</b>
<b>13:00 – 14:45</b>	<b>Module II: In situ data – QA/QC, post-processing, importing field data in QGIS format – Part III</b> <i>Khotso Mathafeng, William Ouellette, FAOLS</i>
<b>14:45 – 15:00</b>	<b>Break</b>
<b>15:00 – 16:00</b>	<b>Module III: Land cover mapping using Google Earth Engine – Part I</b> <i>William Ouellette, FAOLS</i>

## DAY 3: 27 October

**9:00 – 11:00**     **Module III: Land cover mapping using Google Earth Engine – Part II**  
*William Ouellette, FAOLS*

**11:00 – 11:15**     **Break**

**11:15 – 12:15**     **Module III: Land cover mapping using Google Earth Engine – Part II**  
*William Ouellette, FAOLS*

**13:00 – 14:45**     **Module III: Land cover mapping using Google Earth Engine – Part III**  
*William Ouellette, FAOLS*

**14:45 – 15:00**     **Break**

**15:00 – 16:00**     **Module III: Land cover mapping using Google Earth Engine – Part III**  
*William Ouellette, FAOLS*

## DAY 4: 28 October

**9:00 – 11:00**     **Module III: Exporting and sharing Land Cover maps from Google Earth Engine**  
*William Ouellette, FAOLS*

**11:00 – 11:15**     **Lunch**

**11:12 – 12:15**     **Module IV: Extracting land cover statistics using QGIS – Part I**  
*Khotso Mathafeng, FAOLS*

**12:15 – 13:15**     **Lunch**

**15:00 – 16:00**     **Module IV: Extracting land cover statistics using QGIS – Part II**  
*Khotso Mathafeng, FAOLS*

## DAY 5: 29 October

**9:00 – 10:00**     **Review of training course and training quality questionnaire**  
*William Ouellette, FAOLS*

**10:00 – 10:45**     **FAO - ICM project status up-date**  
*Lorenzo De Simone, FAO HQ*

**10:45 – 11:00**     **Training closing remarks**  
*David Mwesigwa, FAO LS*