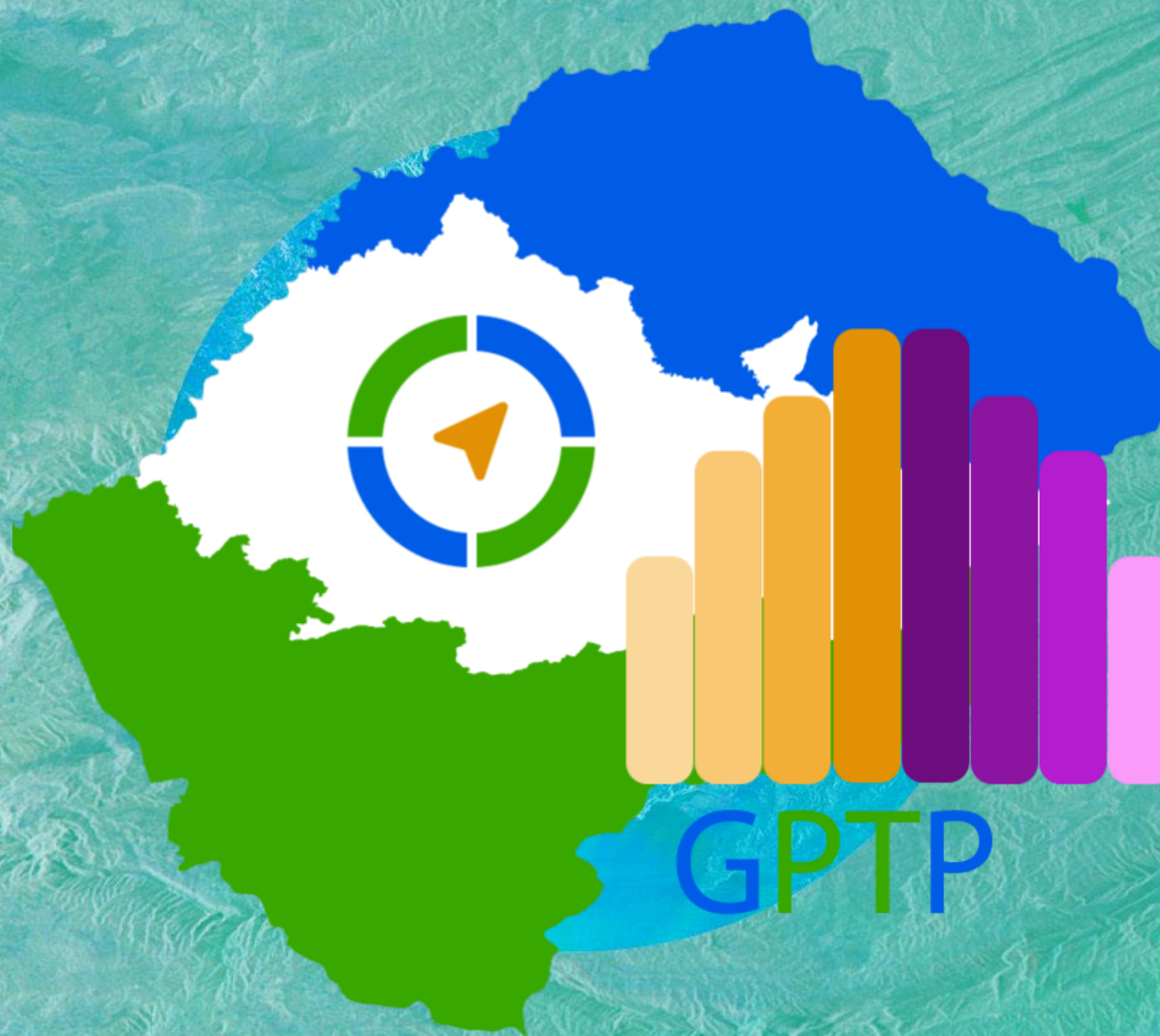


# GEO WEEK & MINISTERIAL SUMMIT 2023

Presentation

#TheEarthTalks



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Department:  
Science and Innovation  
REPUBLIC OF SOUTH AFRICA



GEO WEEK  
2023 MINISTERIAL  
SUMMIT

GEO GROUP ON  
EARTH OBSERVATIONS



**GEO  
WEEK  
2023**  
MINISTERIAL  
SUMMIT

# Lesotho Geospatial Platform for Territorial Planning

LGP4TP

#TheEarthTalks

GEO WEEK & Ministerial Summit 2023



Hein  
Zeelie



Pheello  
Ramotubei



Thuso  
Motselebane



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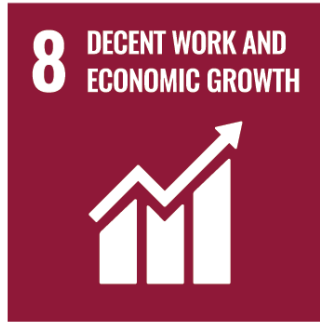
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# ABOUT WFP




# SUSTAINABLE DEVELOPMENT GOALS





# Lesotho's Geospatial Platform for Territorial Planning

A co-operative effort between the Government of Lesotho  
and the UN World Food Programme (WFP)



# Who is Involved (Pilot):

## **PRIME MINISTER:**

Requested in a letter (22 December 2021) that WFP support implementation of a national territorial planning system.

### **OPM:**

Primary client

### **Ministry of Local Government (Chief Surveyor):**

System administrator

### **Ministry of Communications:**

Host of system

### **Ministry of Agriculture/Forestry/Bureau of Statistics:**

Initial organizations to pilot this system.

### **All other Ministries & Agencies:**

Participation and support as requested by OPM.

### **WFP:**

Platform provider, foundation dataset provider and initial project manager

### **Egabi:**

External solution developer hired by WFP to customize and implement the system

### **Tech For All:**

Lesotho-based developers hired to help envision applications, provide capacity building, and support application development.

# Purpose of Platform

Enable a common operational overview within Government  
Enable a common environment for territorial (national) planning

## OPM

- Enable location-based project status and activity reporting (dashboards) on a national basis
- Enable evidence-based decision making (territorial planning) for national resource allocation and policy setting
- Set and monitor national KPIs

## Participating (pilot) Ministries/Bureaus

- Enable location-based project status and activity reporting (dashboards) for internal use and by OPM
- Enable information creation based on shared databases that can be used for territorial planning
- Enable internal (within ministry) and shared territorial planning activities and evidence-based decision making
- Set and monitor KPIs

# WFP Contribution

- **Platform infrastructure**
  - ESRI platform and custom-built extensions
- **Computers with geospatial software**
  - Computers for each contributing (pilot) agency to manage software
  - ESRI ArcGIS Pro software for appropriate computers
  - ESRI Image Analyst for appropriate computers
  - ESRI Portal for appropriate computers
  - Survey 1-2-3 for appropriate computers
- **Foundation (national coverage) data sets**
  - 50 cm resolution mosaic + 50 cm 5-band imagery collected in 2021
  - Location of each building in Lesotho extracted from 50 cm imagery
  - 2.5 m resolution Digital Terrain Model for topographic analysis
  - 5 m resolution MSS data: 4 seasonal coverages (Dec (2017 and 2021) and April (2018 and 2022) for change monitoring, LULC analysis, crop forecasting, etc.
  - All licensed for civil government use + public universities
- Platform implementation, example use cases, training and long-term application support







# Government Contribution

- **OPM:** overall leadership
- **Internal datasets** from ministries/bureau to populate system
- **Dashboards** from OPM and piloting ministries. Examples:
  - Project status (progress, money spent, etc.)
  - Initiative monitoring (weekly HIV outbreaks/ward, etc.)
  - Trees planted/terraces built/trees harvested, etc.
- **Piloting ministries:** create geospatial information products for territorial planning—for internal use and use by OPM. Examples:
  - Land suitable for planting new orchards or other crops
  - Arable land in danger of degradation
  - Population (houses) served by each clinic to determine where to put new clinics
- **All:** a commitment to use and contribute to this national initiative

# The role of



Data Cleaning

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Dashboard Development

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Geospatial Support

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Reporting

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## Data Cleaning

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- Creating the appropriate data schema for the use case
- Adding codes for locations
- Creating shapefiles from tabular data
- Ensuring attribute fields have the appropriate data format

## Dashboard Development

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- Identifying the user needs and the data limitations
- Understanding the conceptual solution in order implement the physical dashboard interface
- Configuring elements for clarity and leveraging map actions

## Geospatial Support

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- Upskilling government officers with GIS knowledge
- Support in applying platform capabilities to use cases
- Linking geospatial solutions to workflows

# Dashboards Developed with Ministry Support



**Ministry of  
Agriculture,  
Food Security  
and Nutrition  
(MAFSN)**

**Summer  
Cropping Areas**

**Soil Suitability**

**Commercial  
Farms**

**Sheep  
Vaccination**

**Ministry of Forestry  
Range and Soil  
Conservation (MFSRC)**

**Land Use and Land  
Change**

**Land Degradation**

**Tree and Forest  
Inventory**

**Bureau of  
Statistics**

**Lesotho  
Agricultural  
Census 2020**

**Office of the  
Prime Minister**

**OPM Overview  
Dashboard**



# Demonstration

# Lessons Learned From Dashboard Development

- Dashboards design depends on how the app will be used (expect variation)
- Dashboards can replace reports and PowerPoints within government
- The unified repository improves information sharing
- Data collection can be improved with platform support
- Data-handling can be simplified with a master database







# Improved Government Interventions

- Understanding location characteristics can inform interventions and improve service delivery
- Coordination between stakeholders can be supported by the platform.
- Turnaround time for decisions can be improved if key information is delivered effectively
- The platform improves accountability



# Challenges:

- Government users who have credentials do not access the platform to share their views and possible improvement
- There is a reluctance to share spatial datasets
- Meetings with the pilot ministries and departments do not occur regularly
- The pilot group which gives the platform direction and approves work done has not had regular physical meetings which facilitate open discussion



# Opportunities to Build on this Platform

**Develop national policies for storing and managing geospatial data.**

**A single database of all data, both statistical and geospatial (NSDI)**

**A national e-government platform**



Q & A

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