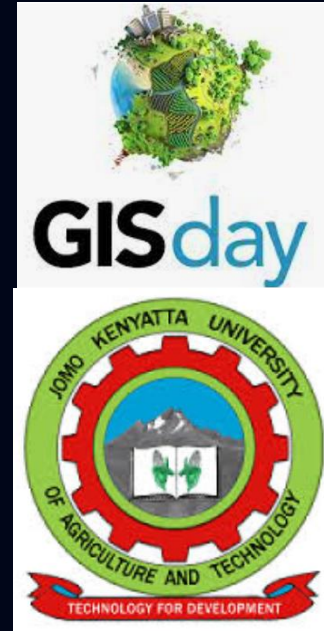




**Digital Earth**  
AFRICA



## **An introduction to DE Africa and the new learning platform**

**Dr. Kenneth Mubea**

User Engagement Manager

Digital Earth Africa

[kenneth.mubea@digitalearthafrika.org](mailto:kenneth.mubea@digitalearthafrika.org)

# Agenda

1. Introduction
2. DE Africa Datasets/Services, Platforms
3. Demos: DE Africa Maps, Sandbox
4. Use Cases
5. New learning platform & Help Desk
6. Questions and Open Discussion





A satellite image of a river delta, likely the Niger River, showing a complex network of channels and distributaries flowing into a large body of water. The land is green and brown, and the water is a mix of blue and green.

01

## What is Digital Earth Africa?



A satellite map of the Sahara Desert, showing the vast, arid landscape with its characteristic dunes and riverbeds. The map is centered on the continent of Africa, with the Sahara occupying most of the visible area. The colors are primarily shades of brown and tan, with some darker areas indicating vegetation or water. The map is used as a background for the text boxes.

## Our Vision

DE Africa will provide a routine, reliable and operational service, using Earth observations to deliver decision-ready products enabling policy makers, scientists, the private sector and civil society to address social, environmental and economic changes on the continent and develop an ecosystem for innovation across sectors.

Land degradation

Coastal erosion

Urbanisation

Water resources and flood risks

Agriculture and food security

# What is Digital Earth Africa?



Our platform and services provide free, open and accessible analysis ready satellite data.

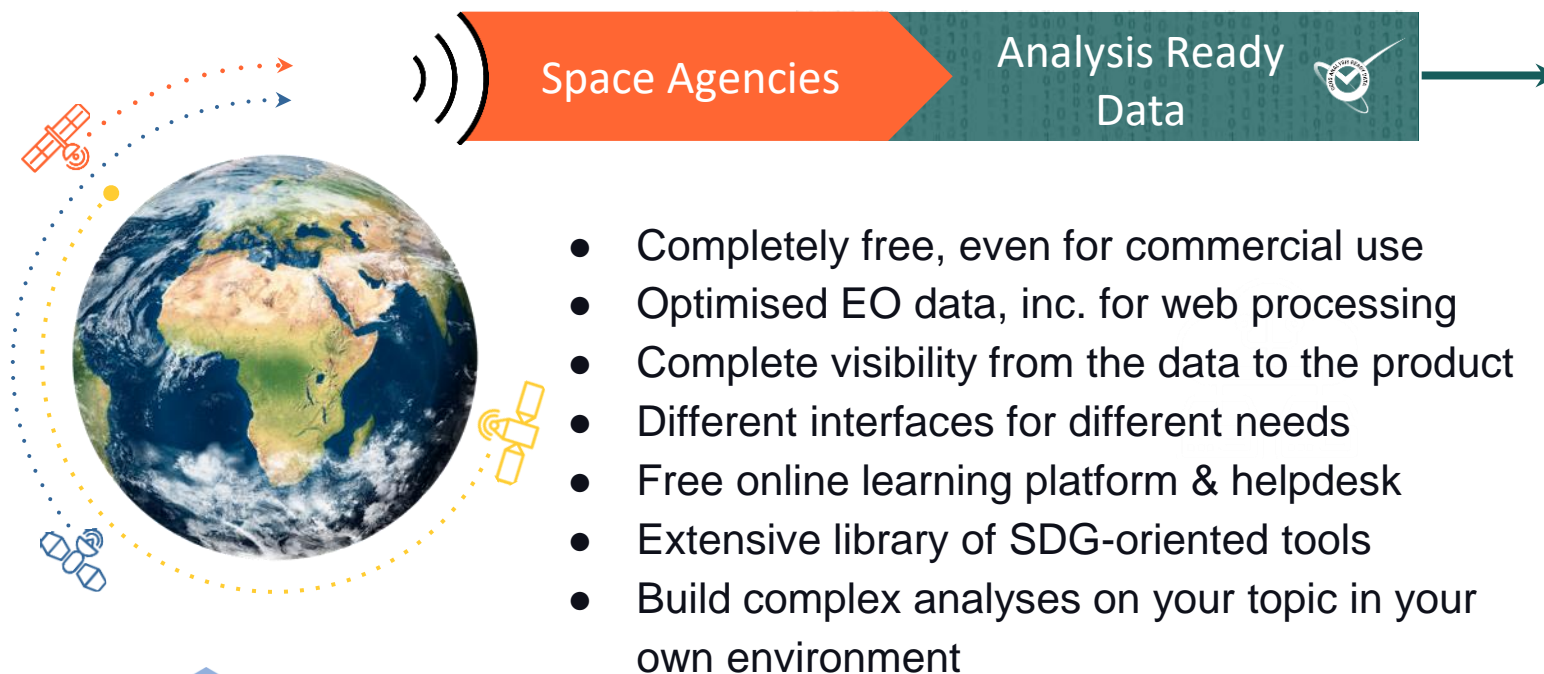
Our users, including African governments, industry and decision makers can use the Digital Earth Africa Map and Sandbox to track changes across the continent in unprecedented detail. This provides valuable insights for better decision making across many areas, including:

- Flooding
- Drought
- Soil and coastal erosion
- Agriculture
- Forest cover
- Land use and land cover change
- Water availability and quality
- Changes to human settlements

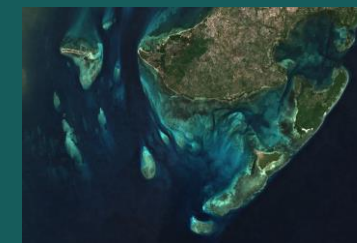




# Satellite data available through Digital Earth Africa



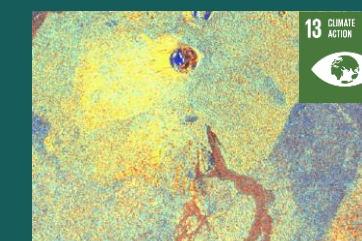
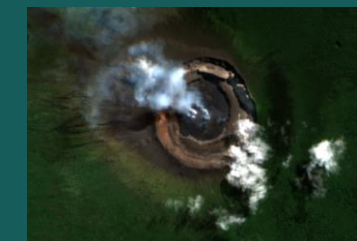
Find out more technical detail in [Digital Earth Africa Docs](#)



*Studying the Tanzanian Coastline with GeoMAD, 2019, RGB*



*Monitoring crops in Egypt 2001-2020, Landsat, RGB*



*Monitoring Mount Nyiragongo, 2018 Sentinel-2 RGB and 2021 Sentinel-1*



*Measuring water extent on rangelands in Etosha National Park, Namibia 1992-2021, Landsat, False Colour*

# DE Africa is diverse and inclusive



DE Africa is committed to ensuring our work promotes **geographic and language diversity** across the African continent, **gender equality**, and **inclusion of youth and people with disabilities**.

A satellite image of a river delta, likely the Niger River delta, showing a complex network of waterways and surrounding land. The text "Guiding Principle: Diversity and inclusion" is overlaid on the image.

**Guiding Principle:  
Diversity and inclusion**

DE Africa will seek to be an **exemplar of diversity and inclusiveness**. The governance framework will be mindful particularly of gender and geographic diversity in its makeup at all levels.

*DE Africa Governance Framework, 2019*

# How is DE Africa ensuring diversity and inclusion?



Our work is guided by the following principles:

- **Value diversity** and actively involve people from diverse groups and organisations.
- Prioritise initiatives that **align with DE Africa's strengths and value-add** to leverage its organisational expertise.
- Collaborate with and **support existing initiatives focused on diversity and inclusion.**
- Adopt a **twin track approach** of embedding diversity and inclusion considerations in all our work as well as undertaking targeted activities.
- **Generate knowledge and learning** and share this with partners.



# Who are we working with?



Digital Earth Africa is working with Partners across Africa:

- South African National Space Agency
- Regional Centre for Mapping for Resource Development (RCMRD), Kenya
- AGRHYMET Regional Centre, Niger
- African Regional Institute for Geospatial Science and Technology (AFRIGIST), Nigeria
- Centre de Suivi Ecologique (CSE), Senegal
- Observatoire du Sahara et du Sahel (OSS), Tunisia
- AfriGEO



REGIONAL CENTRE FOR  
MAPPING OF RESOURCES  
FOR DEVELOPMENT







**Datasets,  
services and  
platforms**



# Who can use the DE Africa Platform?

Everyone!

- DE Africa is based on the Open Data Cube model and is **free and accessible to all**.
- A Help Desk is available
- Groups we are assisting in data for decision making are: **governments, NGOs, researchers, students and the private sector**



State University of Zanzibar

# What products are available?



## Water Observations from Space (WOfS)

- from 1980s

## Crop Mask (ongoing development)

- Eastern, Southern, Northern, Western Africa

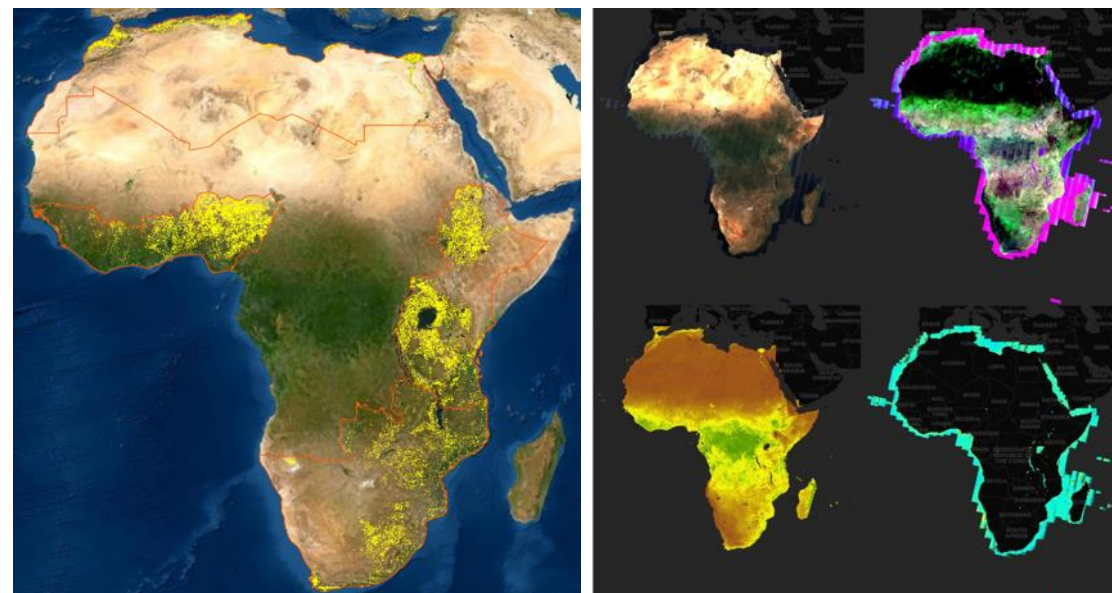
## Sentinel-2 & Landsat Annual GeoMAD

- cloud free composites

... and more

<https://www.digitalearthafrika.org/platform-resources/services-and-analysis-tools>

Digital Earth Africa – Awareness Raising





# How do I access the data?



There are many ways to access DE Africa data:

**View data**

**DE Africa Map**



<http://maps.digitalearth.africa/>

**Analyse data**

**DE Africa Sandbox**



<https://sandbox.digitalearth.africa/>

*Other platforms include:*

Access in GIS software

OWS Map Services

<https://ows.digitalearth.africa/>

Learn how to access & analyse data

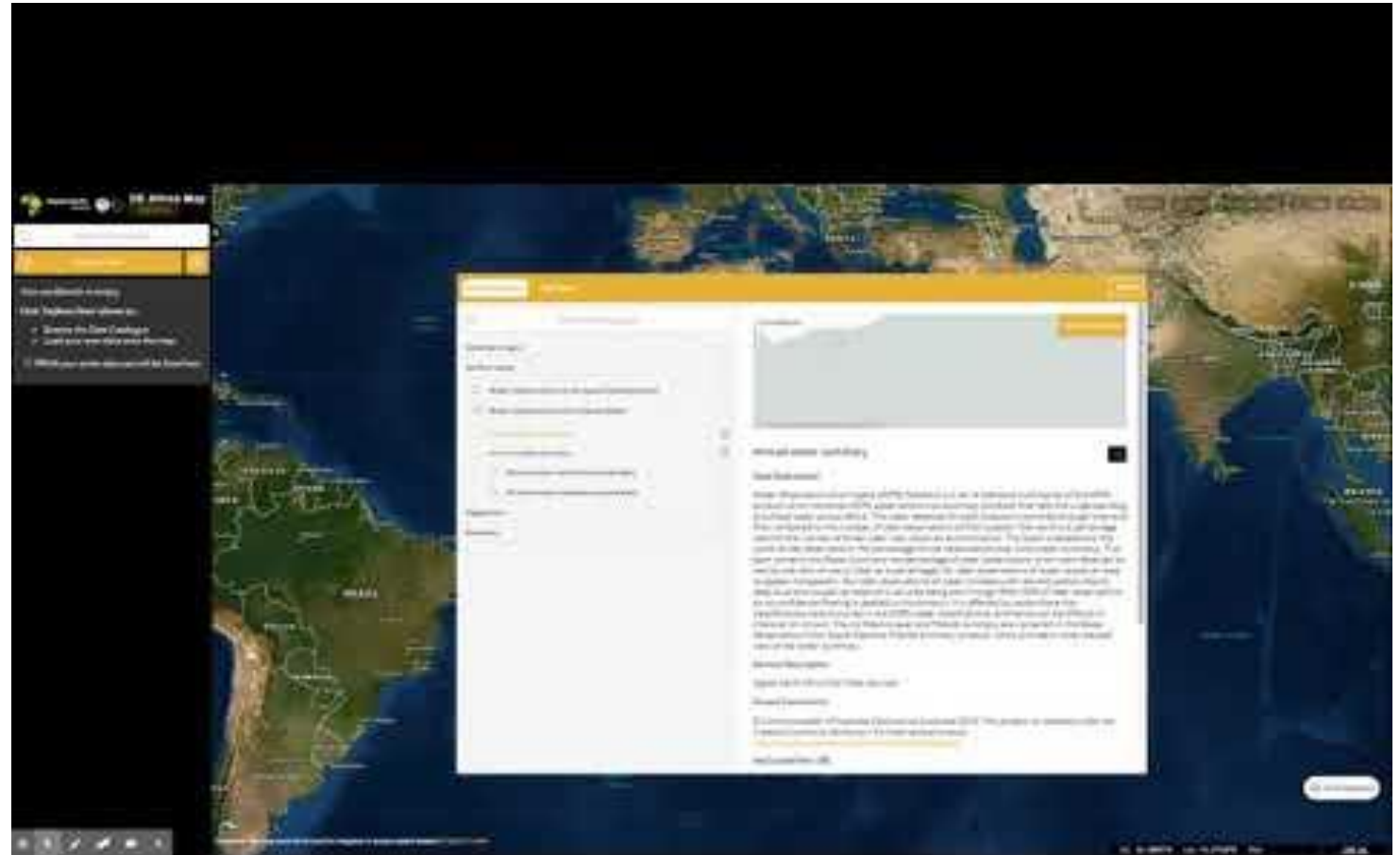
Digital Earth Africa Learning Platform

<https://learn.digitalearth.africa.org/>

# How do I explore the data?



You can see, explore and compare DE Africa Products and Services through DE Africa Map and Web Map Service (WMS) in your favorite GIS software





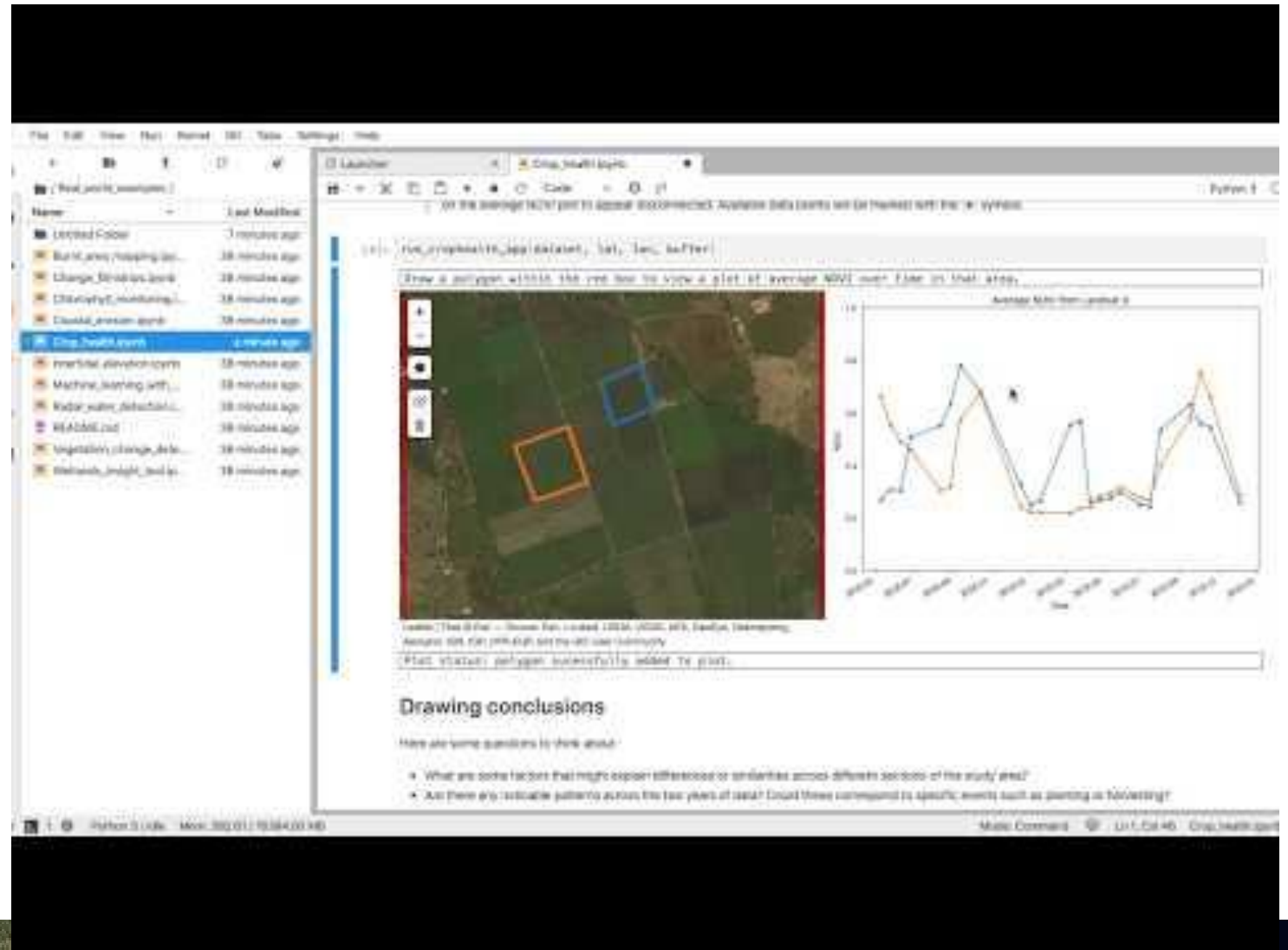
# Digital Earth Africa Map Demonstration

1. Lake Baringo <https://maps.digitalearth.africa/#share=s-ux2D5emrpMthNZTfoHEMMu9OiRr>
2. Urbanisation in Nairobi <https://maps.digitalearth.africa/#share=s-i71EUpuRCy7Bcp5aUgA1RRM2sWz>
3. Agriculture in Mwea, Kenya <https://maps.digitalearth.africa/#share=s-2KaKSOLu9koF6OFn9PTq97RMJVZ>

# How do I analyse the data?

Data is accessed through the  
DE Africa Sandbox

- Register to use the Sandbox
- Learn how to use the Sandbox with our EN and FR courses:
- Use Python code examples which are provided for free





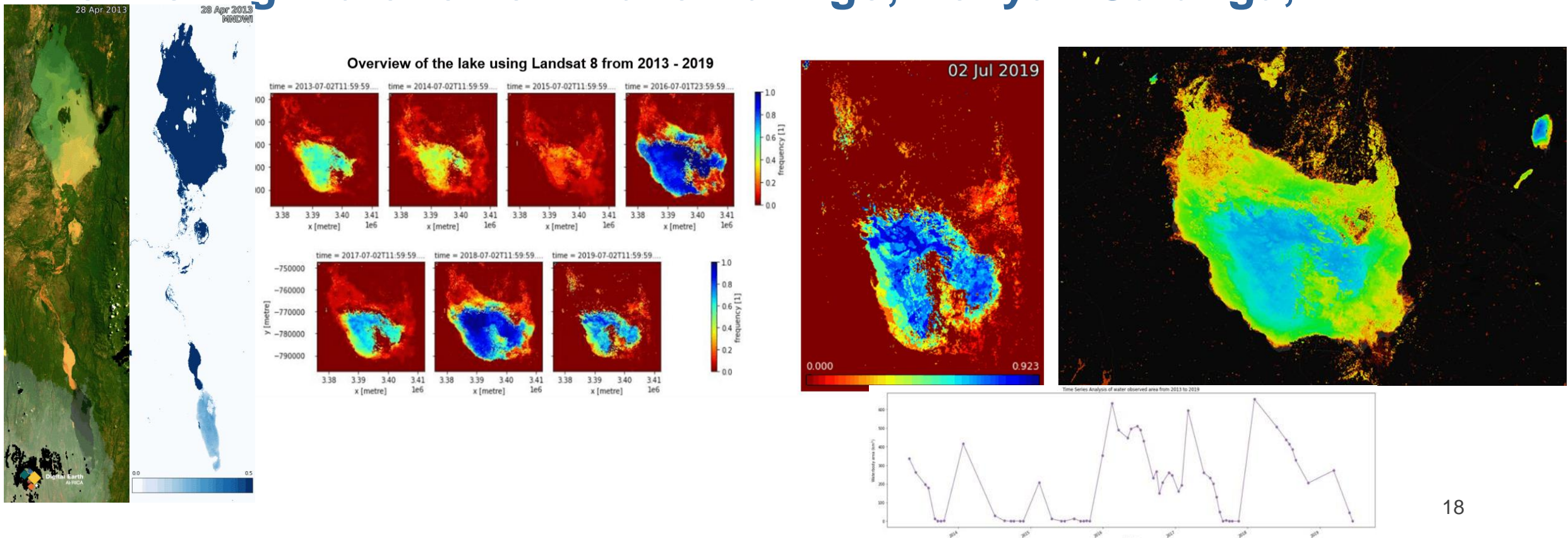


## Use cases



# Using satellite data to combat drought

## Monitoring Water extent Lake Baringo, Kenya - Sulunga,



# EO for conservation: rehoming giraffes on Lake Baringo, Kenya



Threatened wildlife, shrinking habitats, strong partnerships, technological excellence and local expertise - this story has it all. Most importantly, it demonstrates the power of Earth observation to enable genuinely life-changing decisions.



<https://youtu.be/zCbcoVYpsOo>

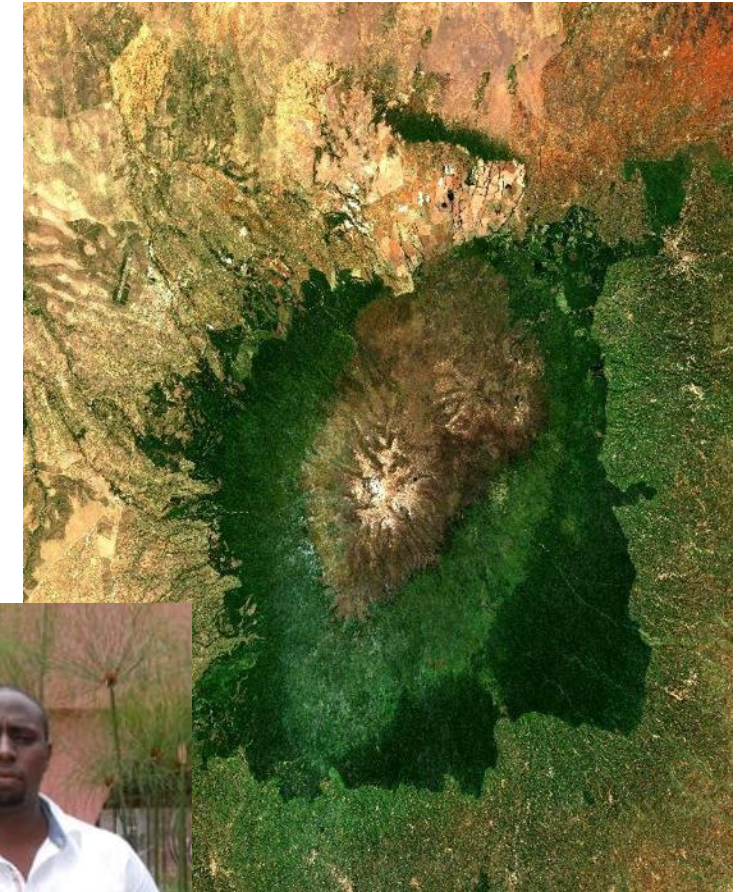
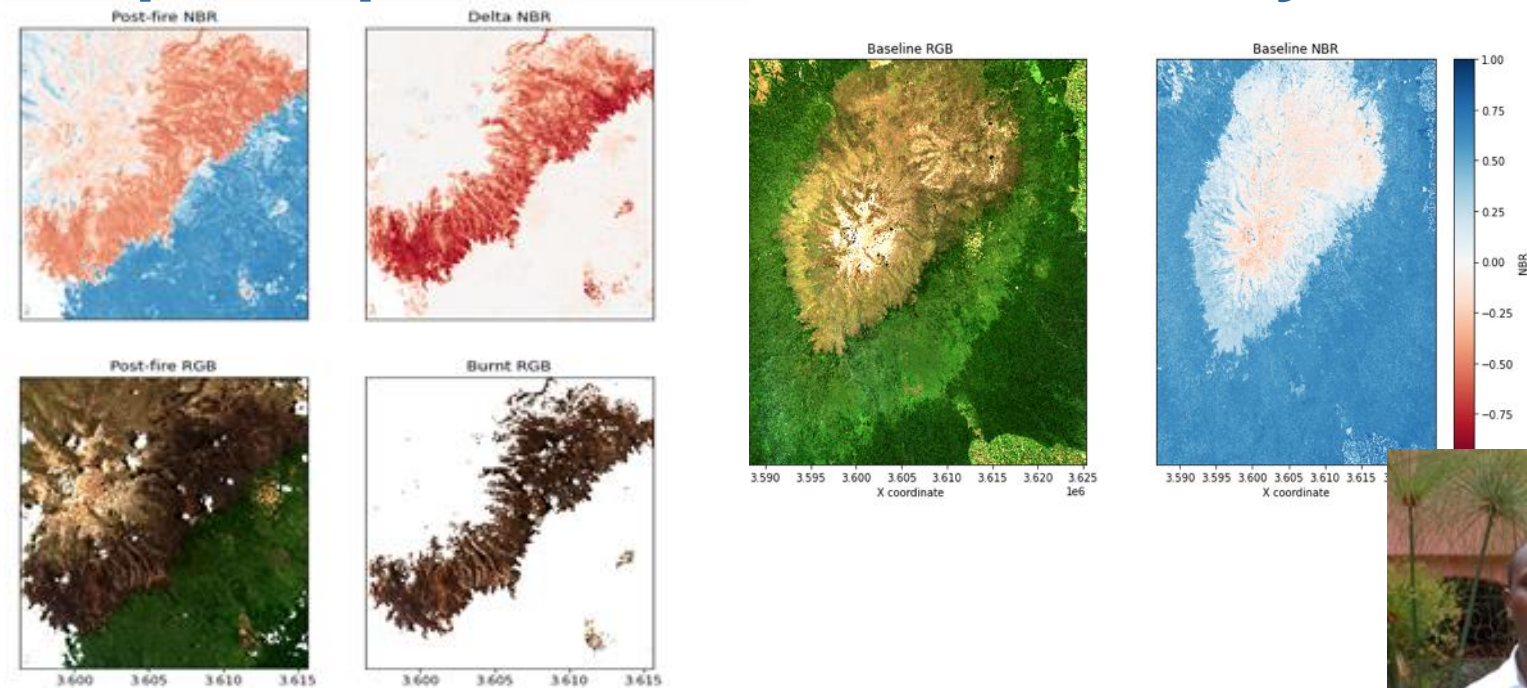


Foreground - Conservancy Warden James Cheptulel (left) and Ranger Michael Parkei (right)



# Mapping forest fires

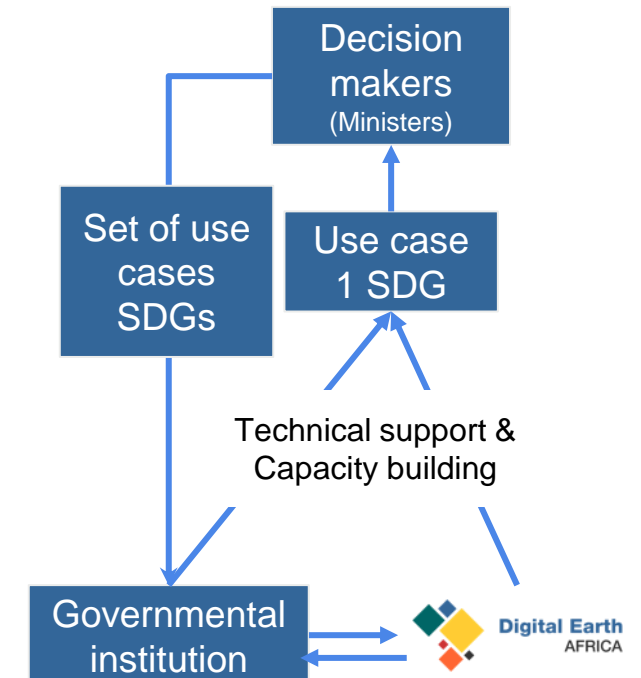
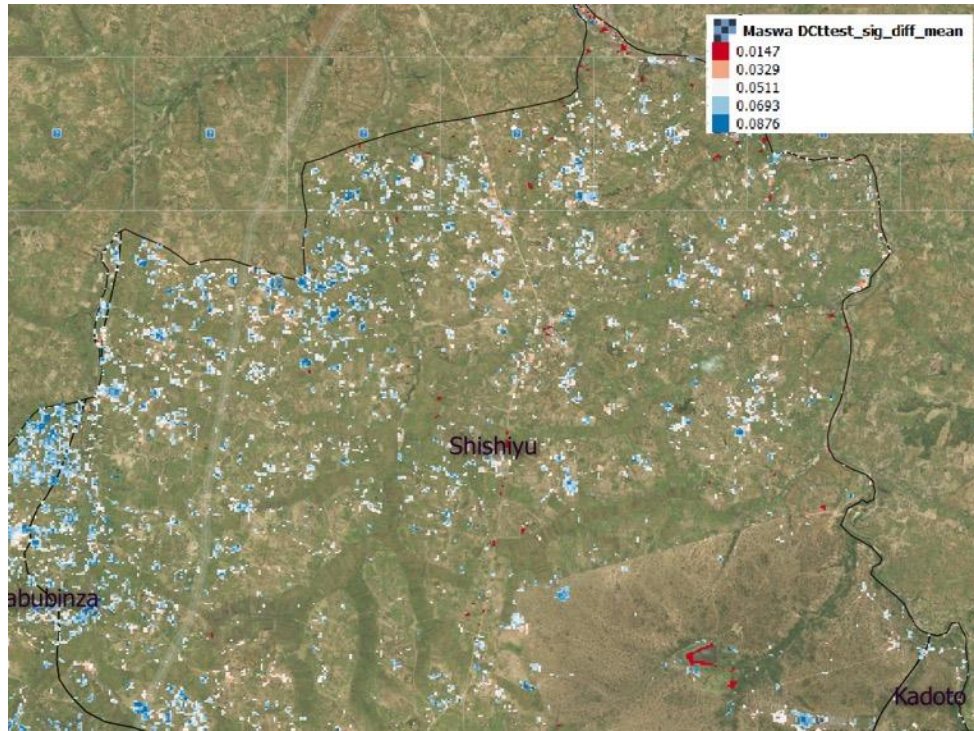
## Rapid impact assessment - Mt Kenya





# Co-developing Use Cases as Path to Decision Makers

## Cotton Farming in Simiyu District, Tanzania



Minister of Finance and Planning Dr  
Phillip S Mpango





03

**NEW DE Africa  
learning  
platform**



# DE Africa Learning Platform Available in French and English



## *“Introduction to the Digital Earth Africa Sandbox”*

## *“Introduction à la sandbox de Digital Earth Africa”*

➤ Session 1 - Introduction

➤ Session 2 - Datasets

➤ Session 3 - Composites

➤ Session 4 - Indices

➤ Session 5 - Vegetation analyses

➤ Session 6 - Water analyses

➤ Course conclusion

➤ Extra session: Python basics

➤ Session 1 - Introduction

➤ Session 2 - Données

➤ Session 3 - Composites

➤ Session 4 - Indices

➤ Session 5 - Analyses de la végétation

➤ Session 6 - Analyses de l'eau

➤ Conclusion du cours

➤ Session supplémentaire : Les bases de Python

Digital Earth Africa Learning Platform

This learning platform helps users understand the significance of Earth observations, explore Digital Earth Africa datasets through an interactive map, and get started on the basics of python coding for spatial analysis.

Digital Earth Africa makes Earth observation (EO) data readily available, delivering decision-ready products to the African continent. Data generated by Digital Earth Africa will provide valuable insights for better decision-making across many areas, including resource management, food security and urbanisation.

Courses

English

Digital Earth Africa  
DEA101-en  
Introduction to the Digital  
Earth Africa Sandbox  
Starts: Oct 19, 2021

Français

Digital Earth Africa  
DEA101-fr  
Introduction à la sandbox  
de Digital Earth Africa  
Starts: Oct 19, 2021

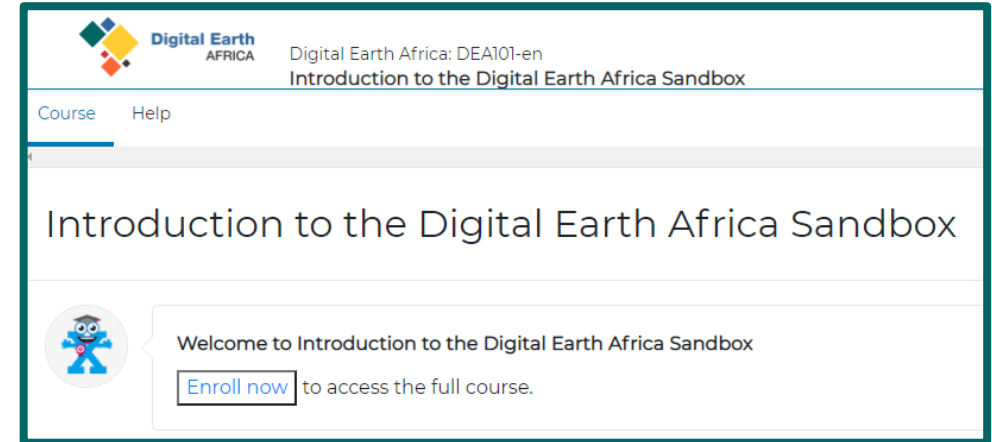
Email: [training@digitalearth africa.org](mailto:training@digitalearth africa.org)

# How do I complete the DE Africa training course?



- **Sign up!**
- **Enrol in “Intro to Sandbox” course (EN/FR)**
- **Self-paced, free-to-access, fully online:**
  - Videos, recorded tutorials, manuals
  - Hands-on exercises
  - English and French versions
  - 6 - 10 hours of content
- **Certificate of Completion is awarded upon completion of exercises**

Email: [training@digitalearthafrika.org](mailto:training@digitalearthafrika.org)



# How can I learn more about DE Africa?



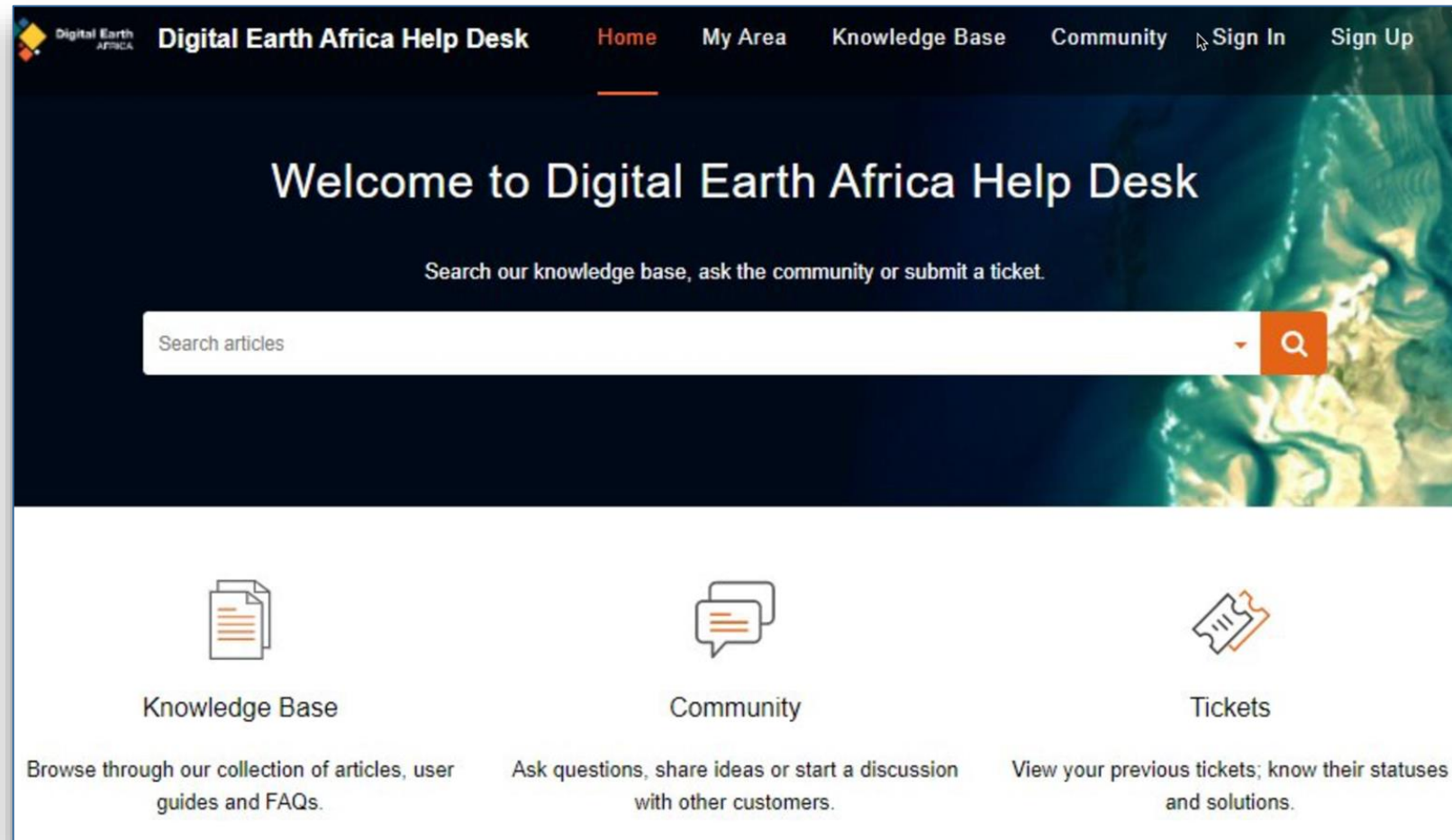
- Go to our website <https://www.digitalearthafrika.org>
- Subscribe to the DE Africa community to receive quarterly newsletters and invitations to attend events
- Sign up to the DE Africa weekly Live Learning Sessions: every Wednesday at 11am, GMT zero) - ask questions and connect: <https://us04web.zoom.us/j/5890793425>
- Email us [info@digitalearthafrika.org](mailto:info@digitalearthafrika.org)



# DE Africa Help Desk



<https://helpdesk.digitalearthafrika.org/portal/en/home>



# Questions and Open Discussion

*Please complete the workshop survey:*

# Acknowledgements





# THANK YOU

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