

EARTH OBSERVATION TOOLKIT

USER GUIDE



INTRODUCTION

The EO Toolkit is a web-based platform designed to support development projects by integrating Earth Observation (EO) data, AI-powered tools, and interactive mapping. It helps users across agriculture, water, and infrastructure portfolios make informed decisions at various stages of the project lifecycle. By providing streamlined access to spatial datasets, analytical tools, and training resources, the tool empowers stakeholders—including project teams, and implementing agencies—to make data-driven, location-specific decisions.

EO Toolkit serves as:

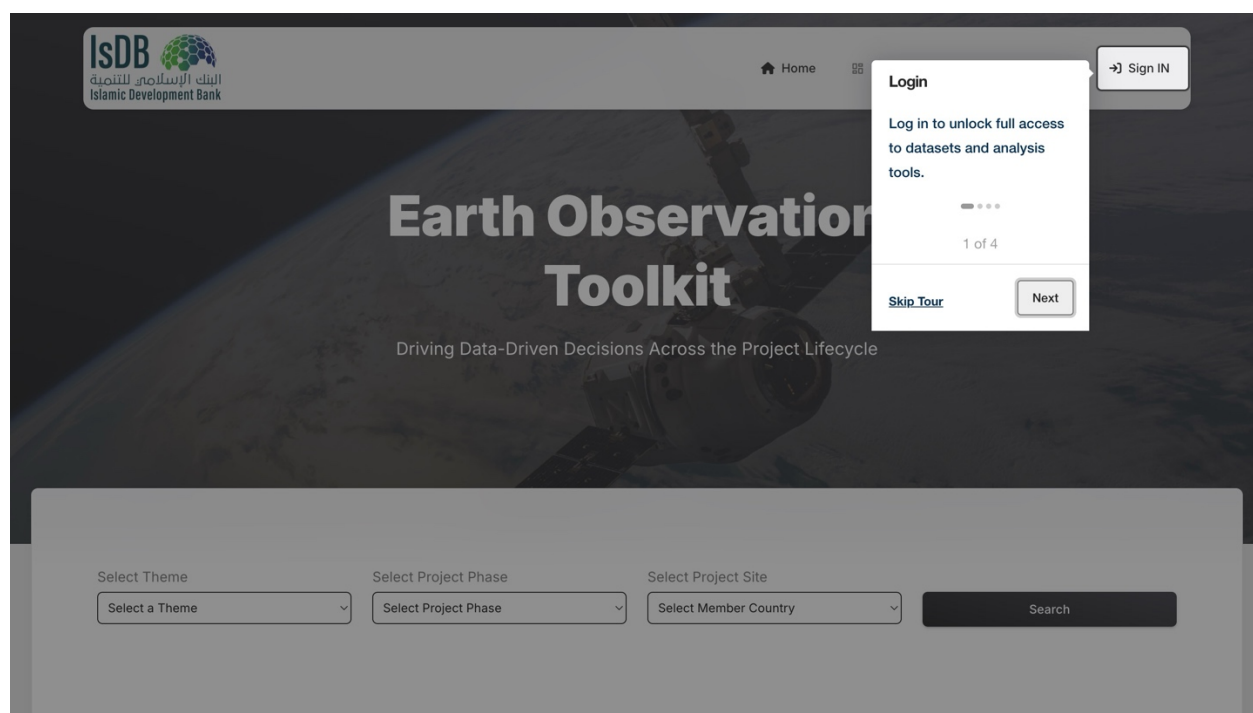
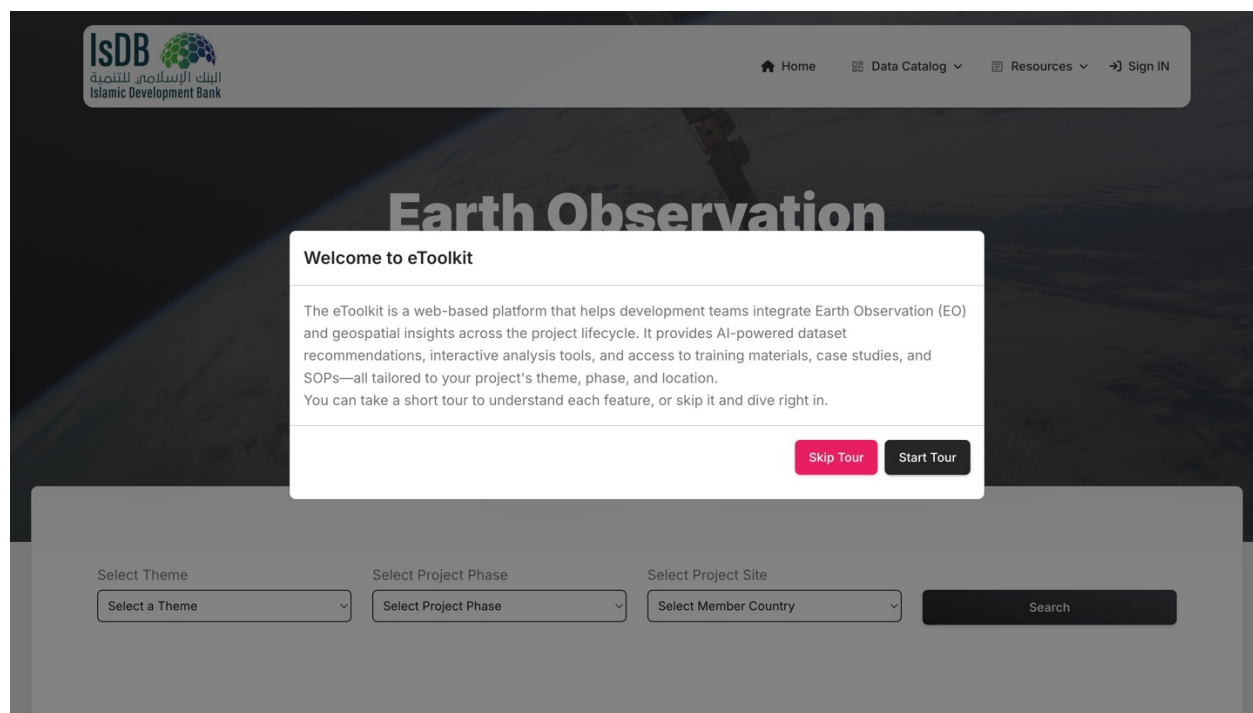
- A Web-based GIS platform showcasing the application of EO technologies across multiple sectors in IsDB projects.
- A knowledge hub summarizing past and ongoing EO-based initiatives in agriculture, water management, climate resilience, and infrastructure development.
- A resource center offering EO datasets, methodologies, case studies, learning materials, tools, SOPs, and best practices to facilitate the integration of Earth Observation across various stages of the IsDB project lifecycle.

Key Features:

- Thematic Data Catalog
 - Curated collection of EO datasets relevant to IsDB sectors such as water, agriculture, climate, disaster risk, and infrastructure.
- Training Course Catalog
 - A comprehensive repository of learning materials, video tutorials, and guides.
 - Covers topics like crop mapping, water accounting, remote sensing, machine learning, and climate resilience.
- Case Studies Catalog
 - Real-world examples of EO applications across IsDB member countries.
 - Highlights successful use of geospatial analysis in planning, monitoring, and evaluating development interventions.
- Interactive Filters and Search
 - Users can filter content by theme, region, phase, and source.
 - Keyword-based search for intuitive exploration.
- Web-based Visualization
 - Interactive maps to explore geospatial layers, and statistics.
- AI-powered recommendations
 - Context-aware suggestions based on user actions and selected AOIs, powered by OpenAI integration.

GETTING STARTED

When you open EO Toolkit for the first time, you'll be guided through a quick walkthrough that introduces you to the platform's key features. This interactive tour helps you get familiar with how to explore data, use tools, and generate insights.



Resources

FAQ's, User Guide and contact support when needed.

2 of 4

[Skip Tour](#)

[Next](#)

Earth Observation Toolkit

Driving Data-Driven Decisions Across the Project Lifecycle

Select Theme

Select a Theme ▾

Select Project Phase

Select Project Phase ▾

Select Project Site

Select Member Country ▾

Search

Data Catalog

Browse thematic EO datasets, training materials, and case studies relevant to your needs.

3 of 4

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Earth Observation Toolkit

Driving Data-Driven Decisions Across the Project Lifecycle

Select Theme

Select a Theme ▾

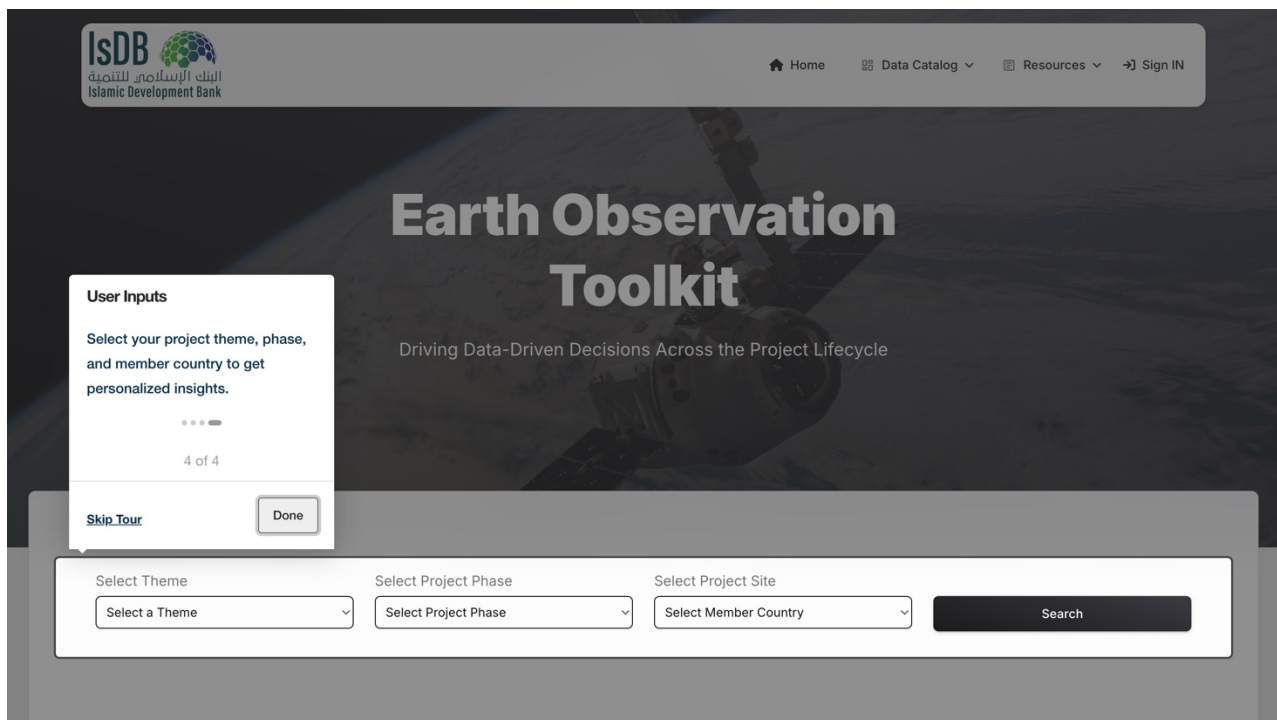
Select Project Phase

Select Project Phase ▾

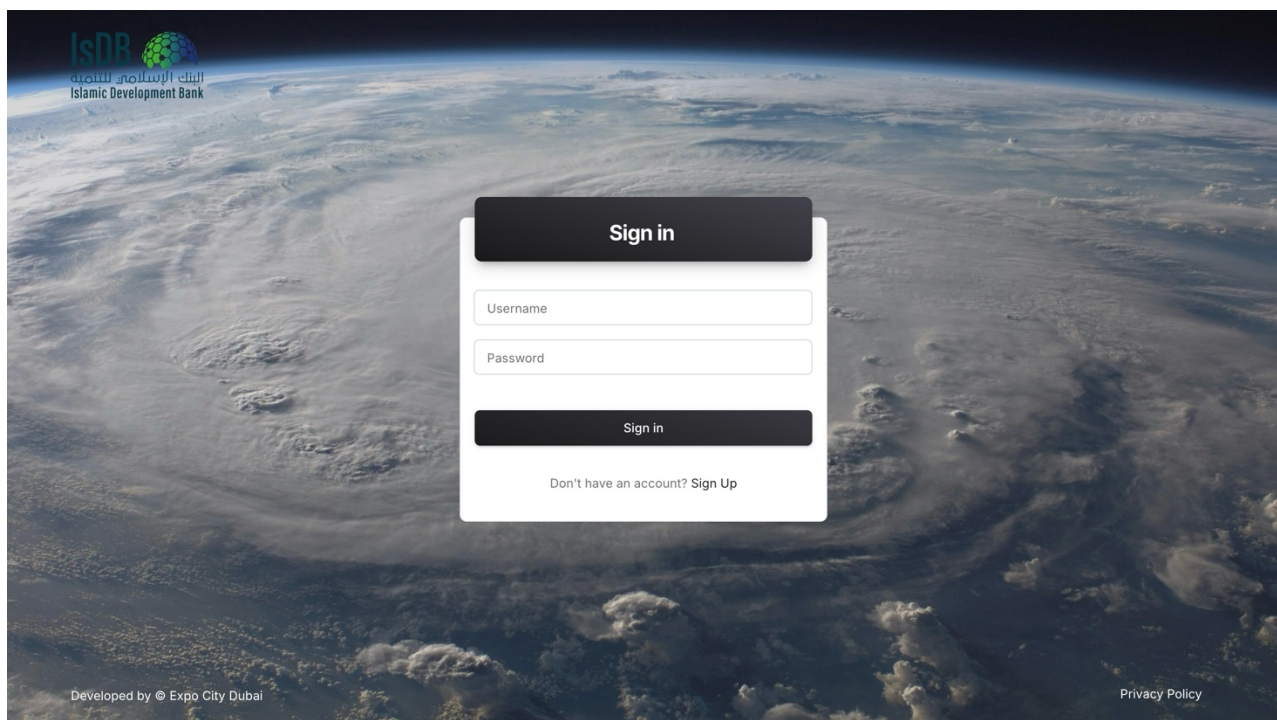
Select Project Site

Select Member Country ▾

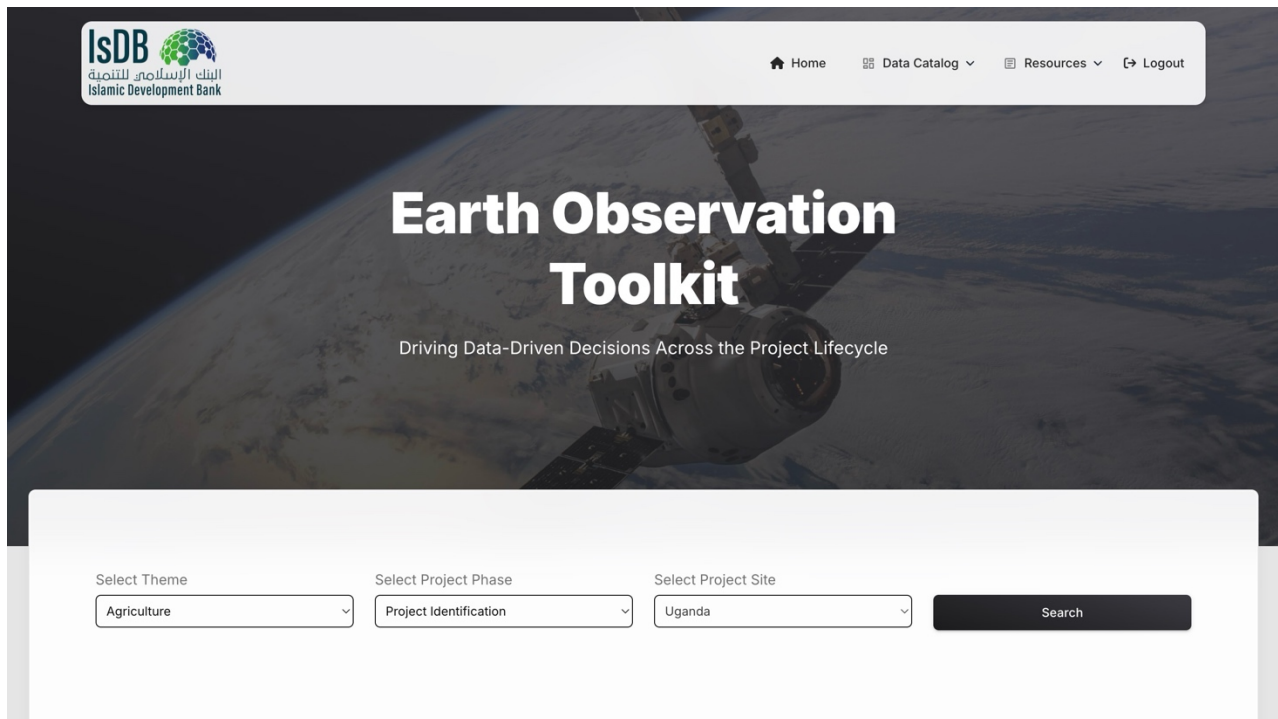
Search



To access the full dashboard and datasets, please **log in using your credentials**.



Theme, Phase, and Country Selection: Begin by selecting your project’s sector, lifecycle phase, and geographic region. This drives relevant data filtering.



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Earth Observation Toolkit

Driving Data-Driven Decisions Across the Project Lifecycle

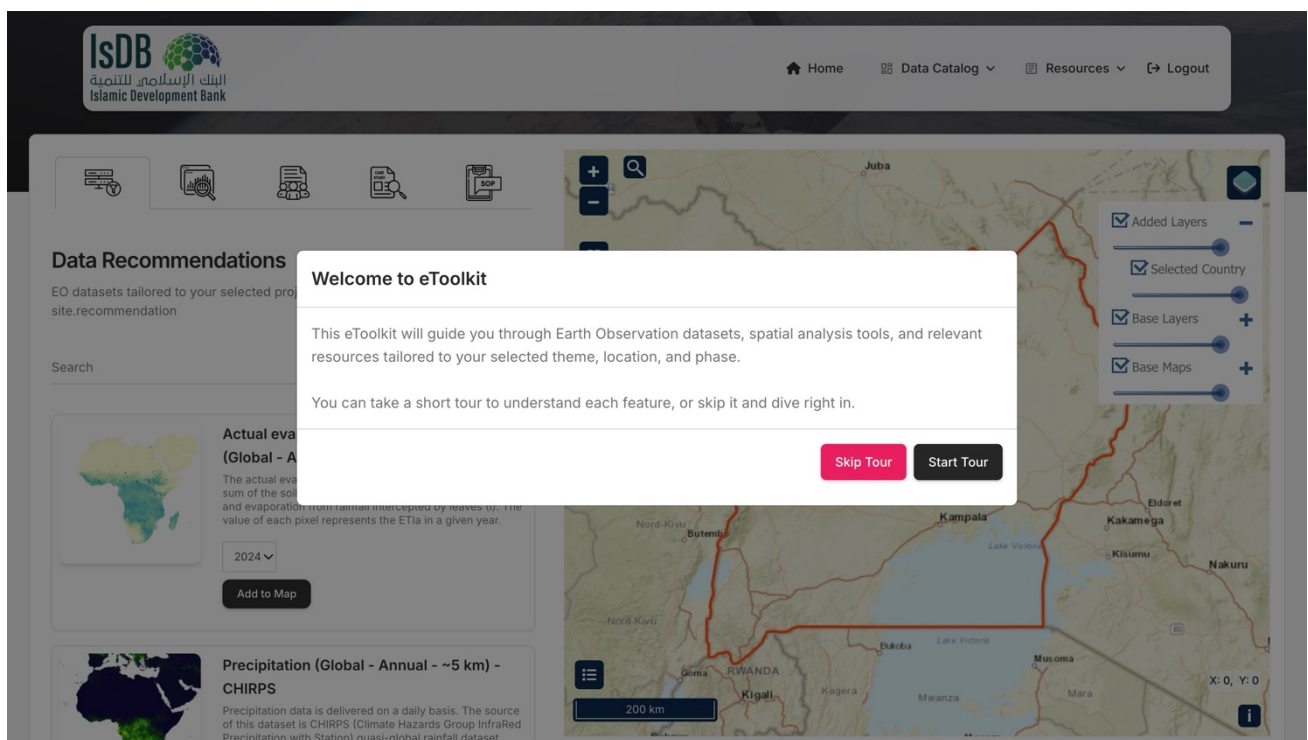
Select Theme: Agriculture

Select Project Phase: Project Identification

Select Project Site: Uganda

Search

Take a tour to get familiar with the platform’s mapping features like: Zoom controls, Location search, Distance and area measurement, Drawing tools to mark your Area of Interest (AOI) etc.



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Welcome to eToolkit

This eToolkit will guide you through Earth Observation datasets, spatial analysis tools, and relevant resources tailored to your selected theme, location, and phase.

You can take a short tour to understand each feature, or skip it and dive right in.

[Skip Tour](#) [Start Tour](#)

Data Recommendations

EO datasets tailored to your selected project location. [View Recommendation](#)

Search

Actual evapotranspiration (Global - Annual) - CHIRPS

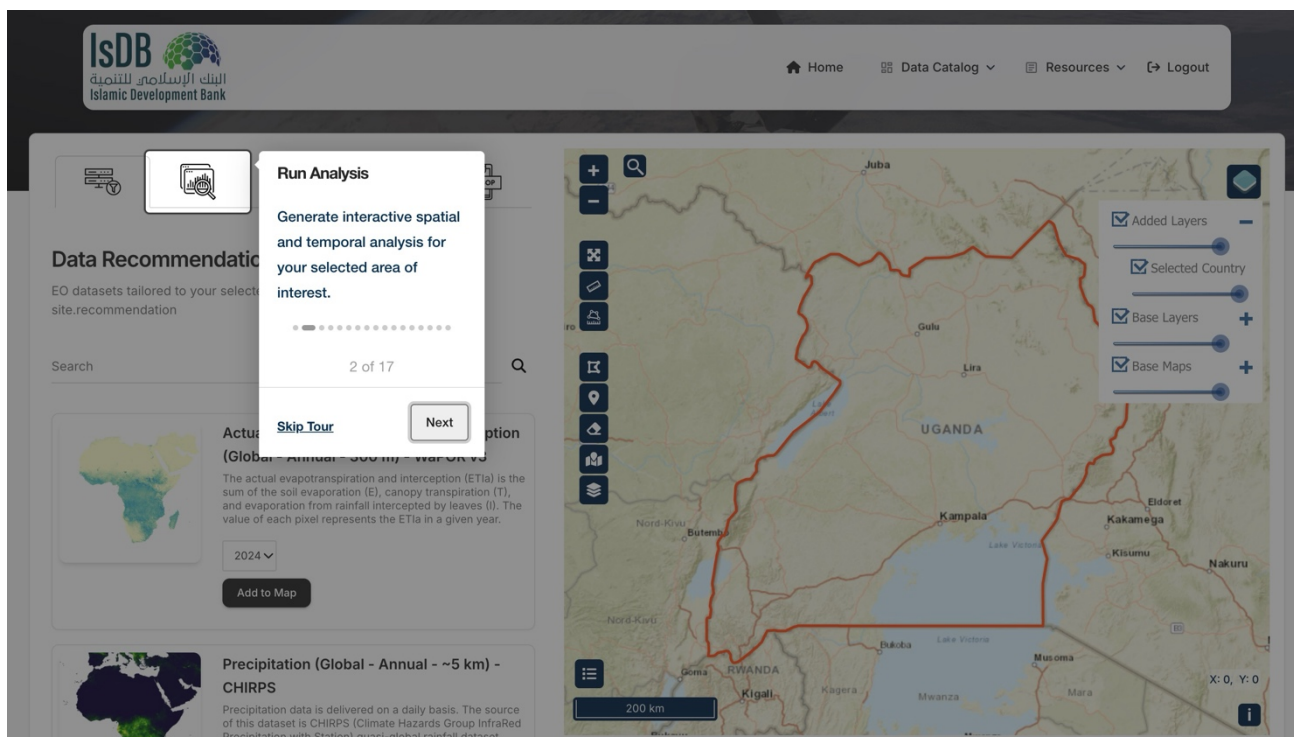
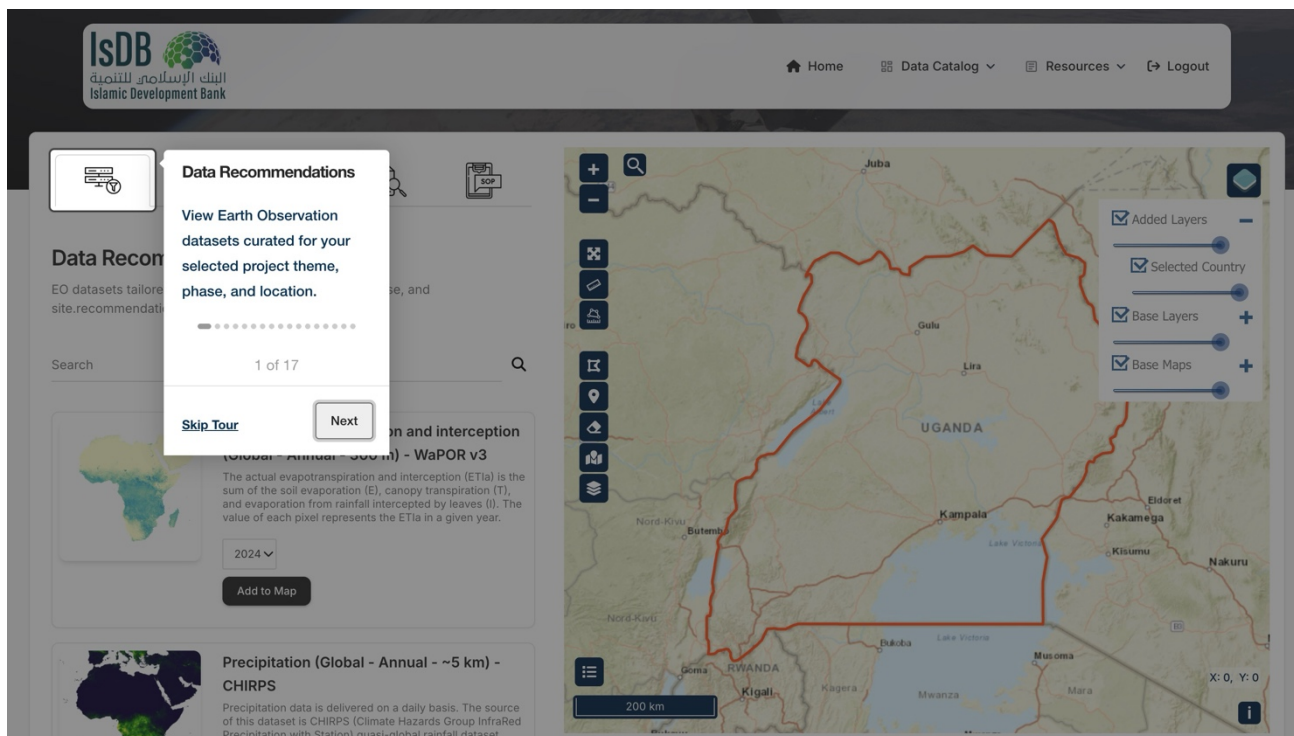
The actual evapotranspiration (AET) is the sum of the soil and vegetation evaporation. The value of each pixel represents the AET in a given year.

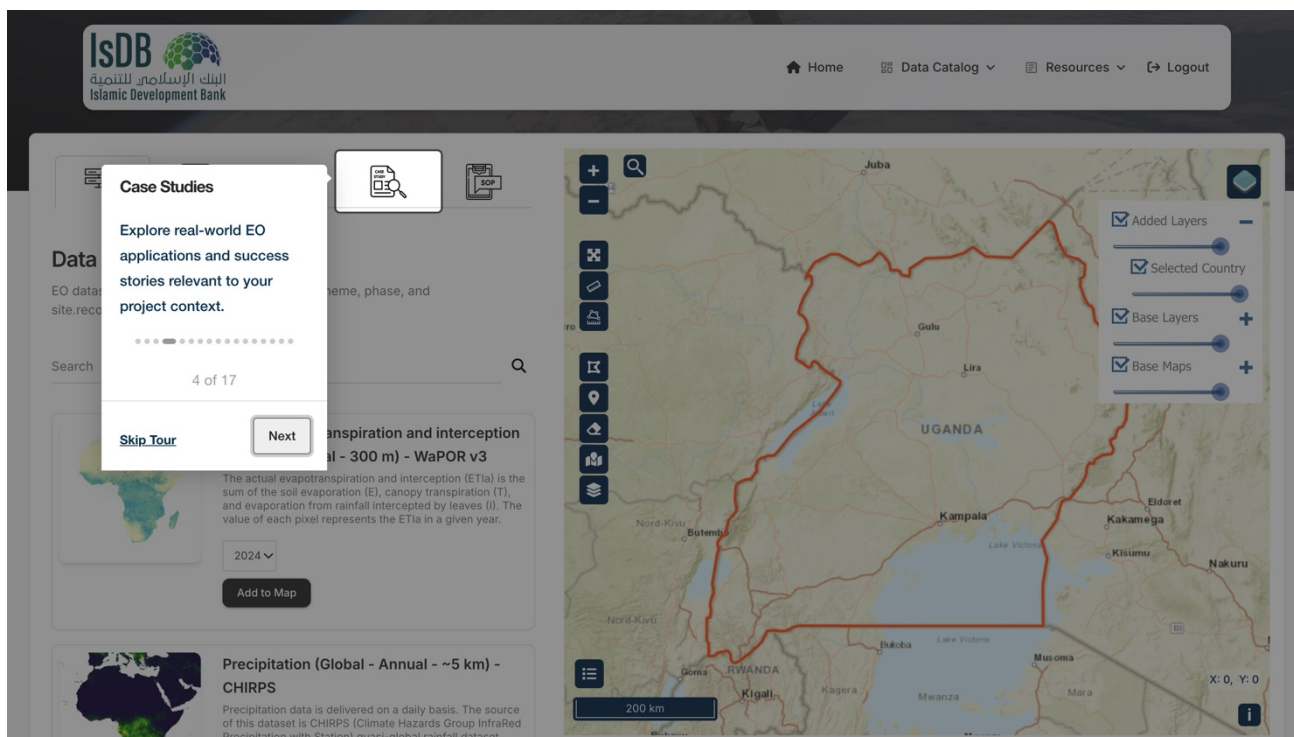
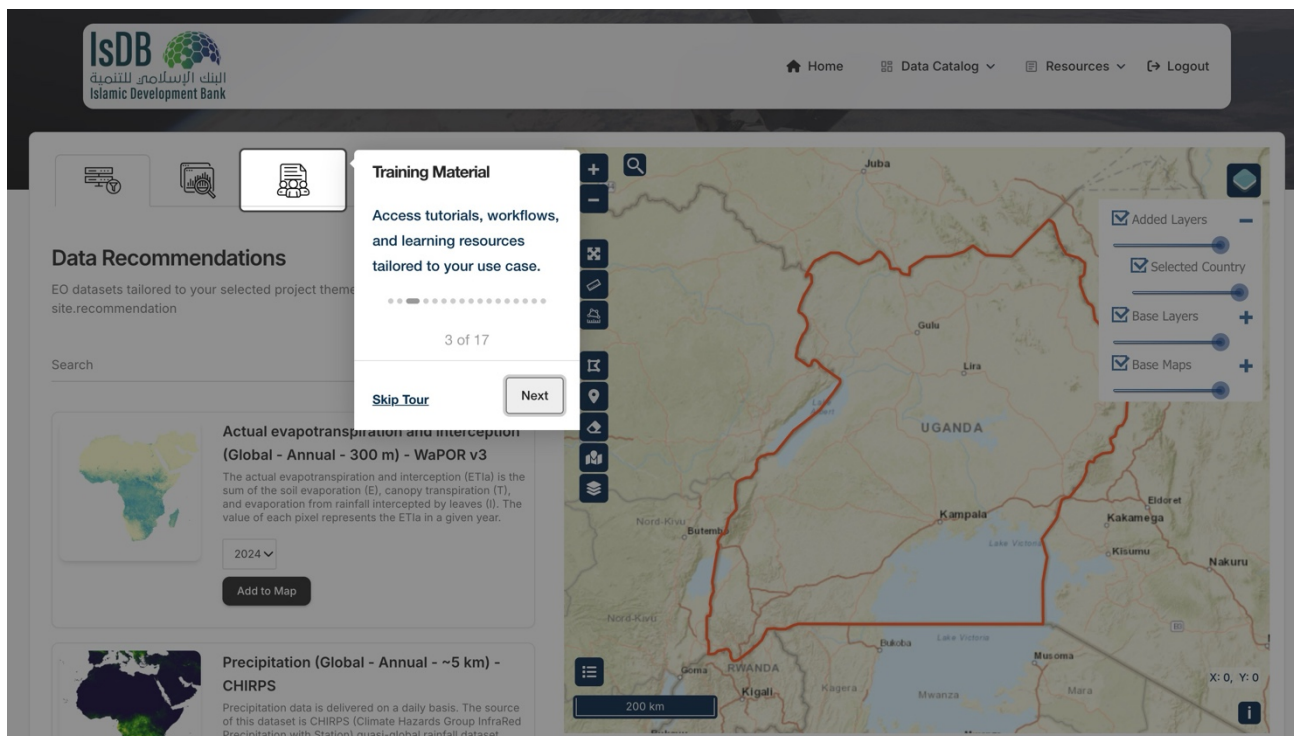
2024

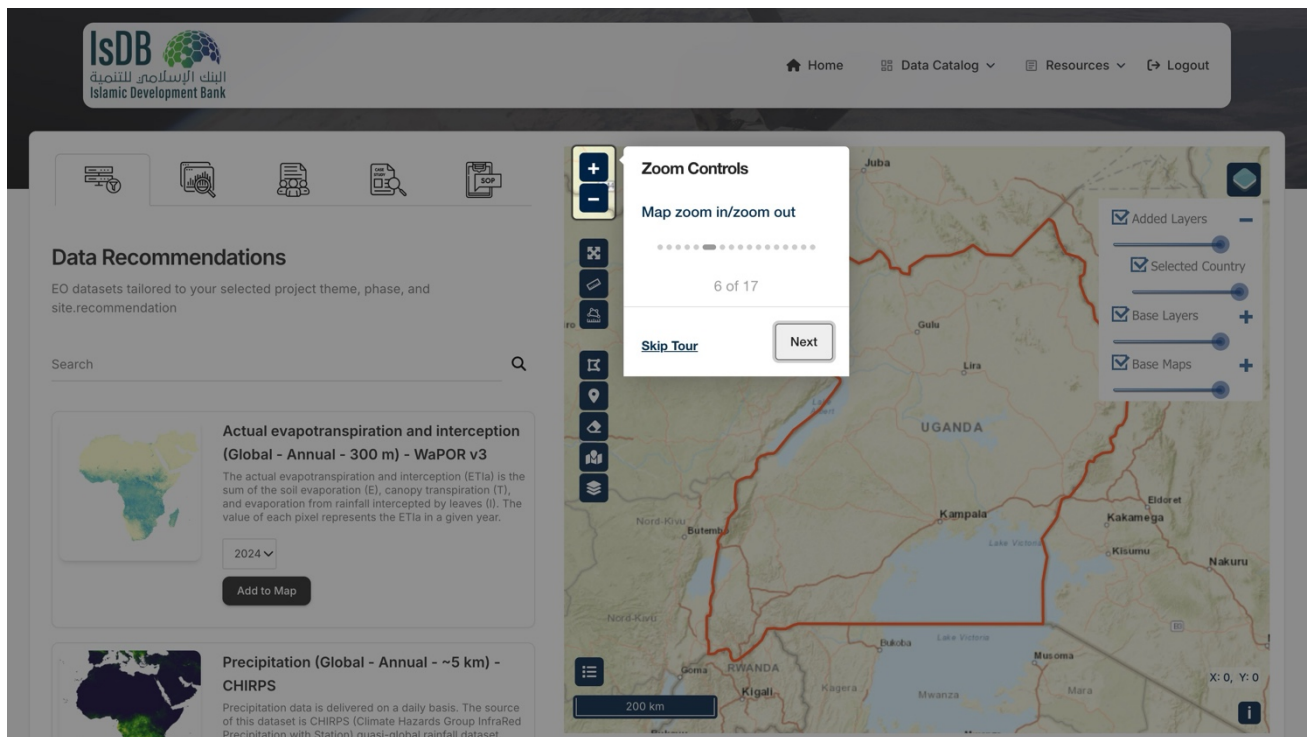
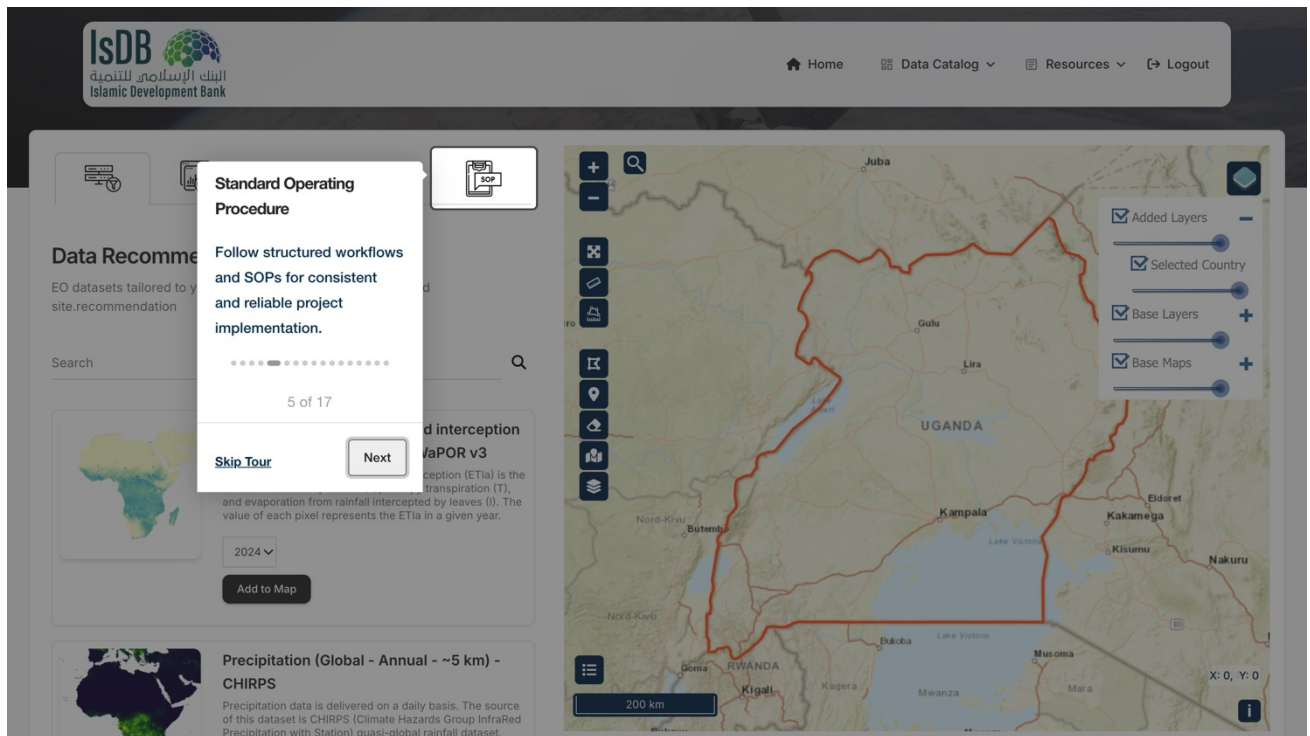
[Add to Map](#)

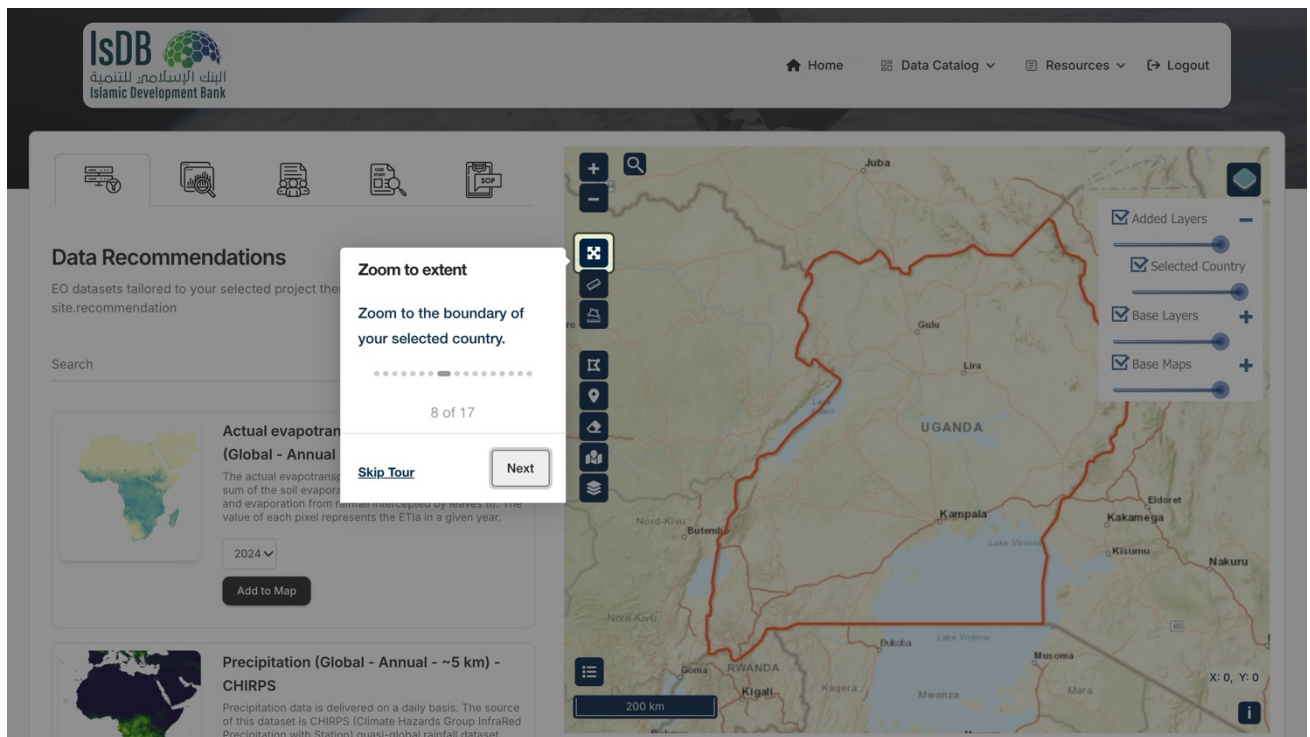
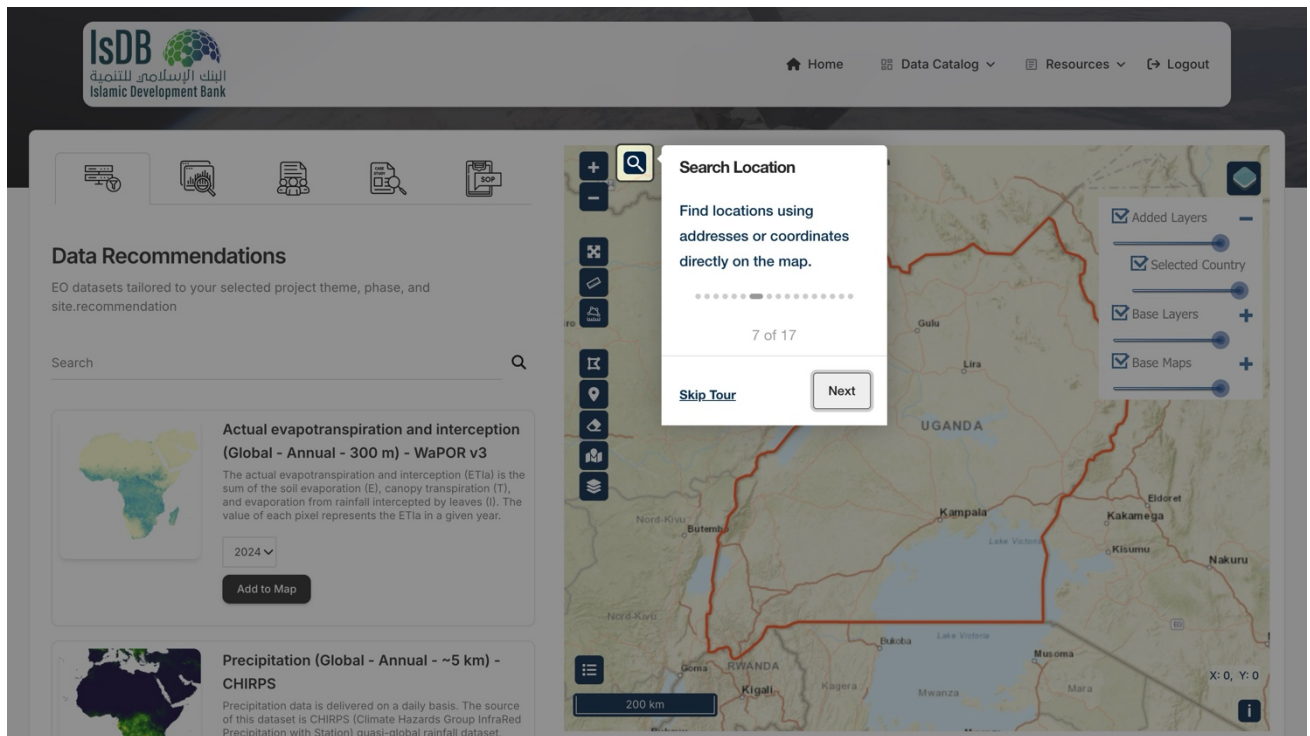
Precipitation (Global - Annual - ~5 km) - CHIRPS

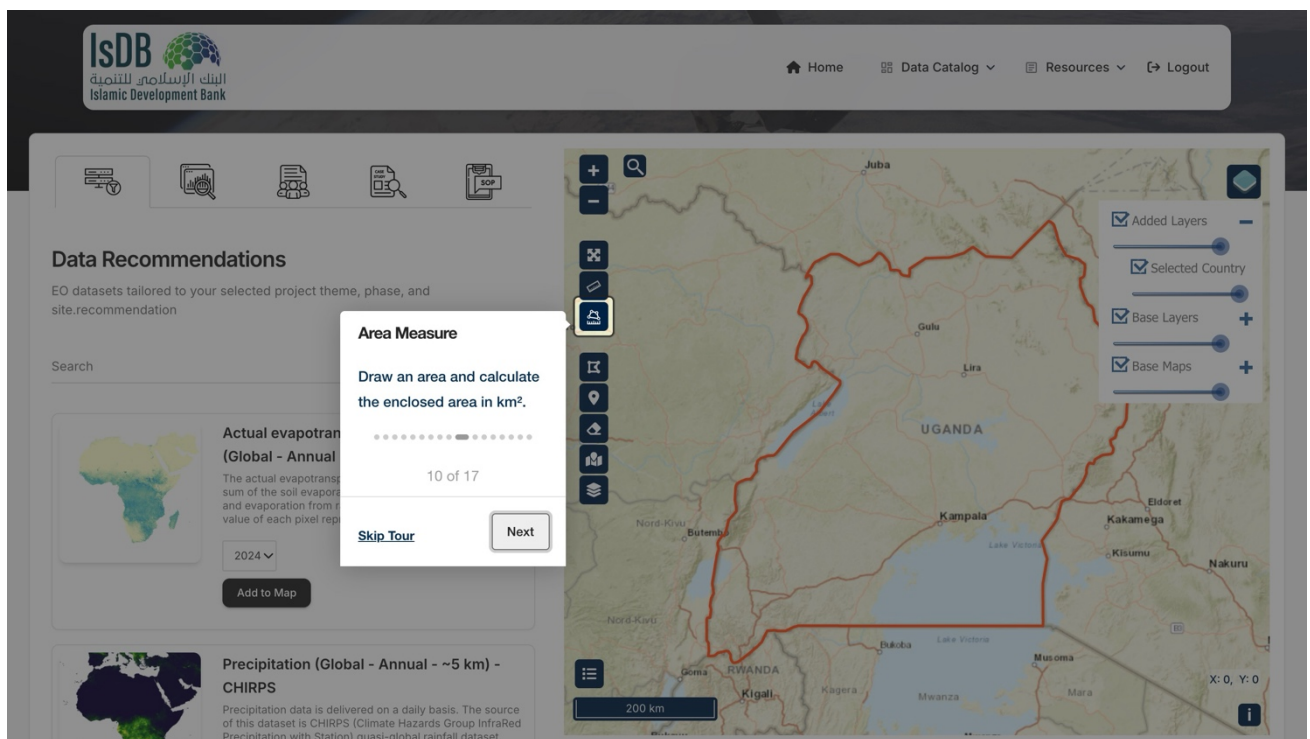
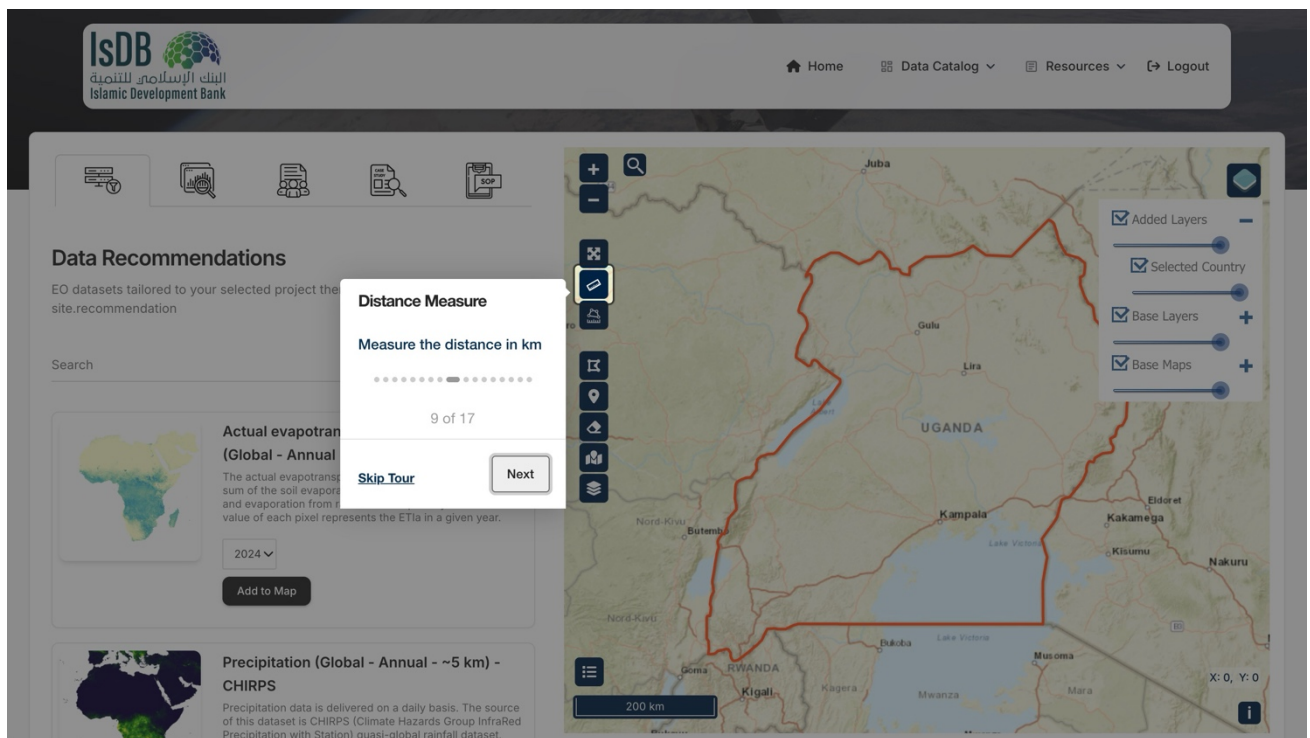
Precipitation data is delivered on a daily basis. The source of this dataset is CHIRPS (Climate Hazards Group InfraRed Precipitation with Station) quasi-global rainfall dataset.

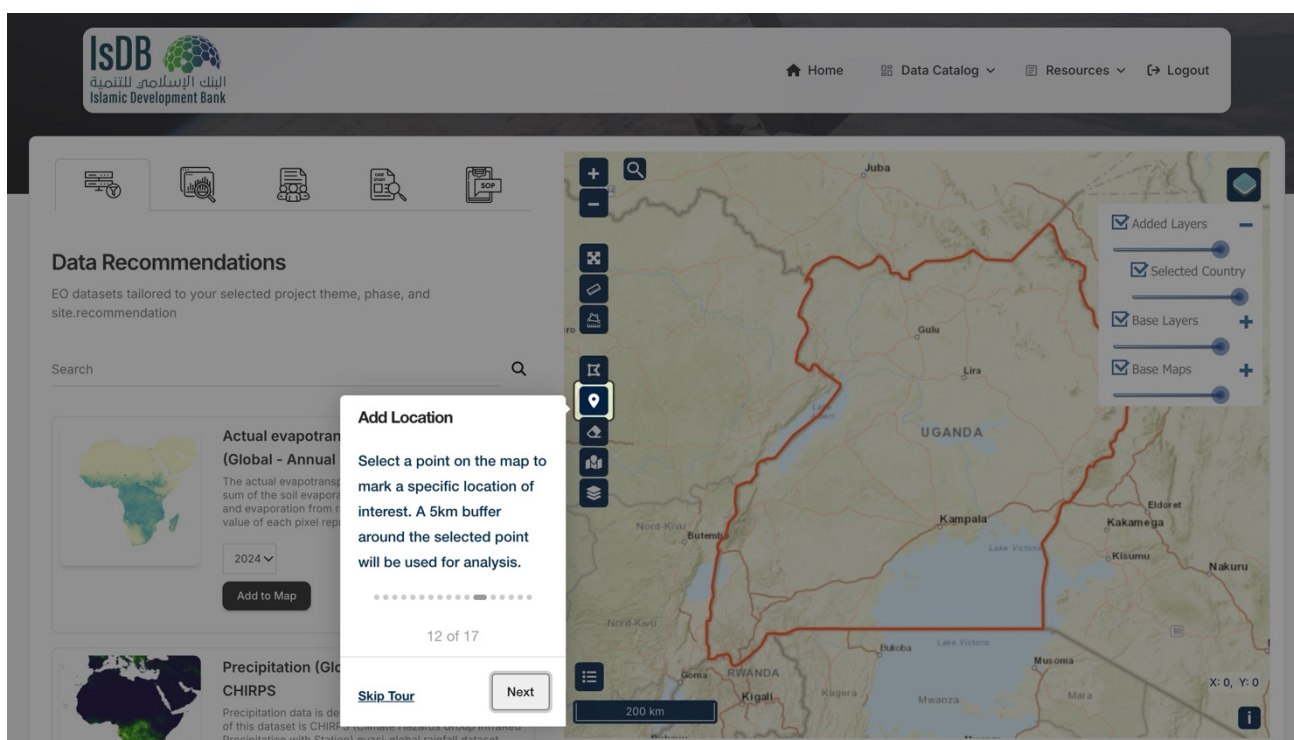
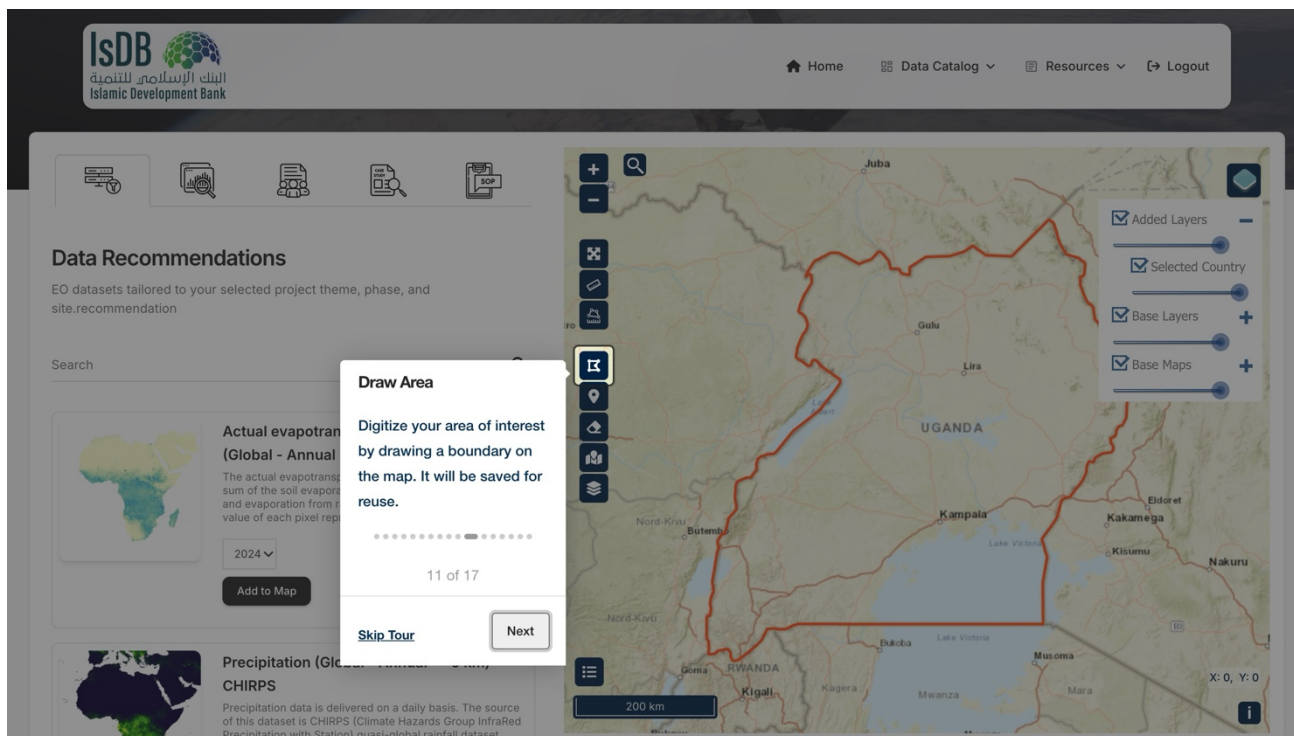


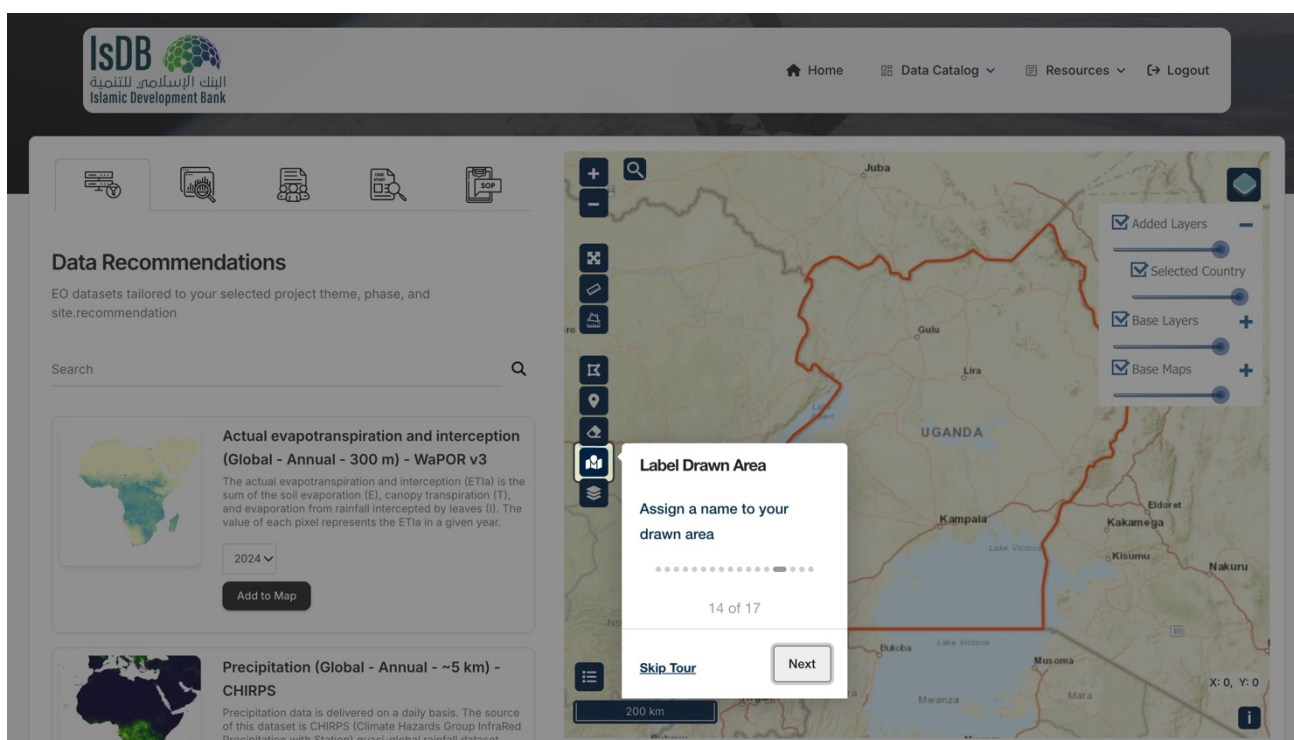
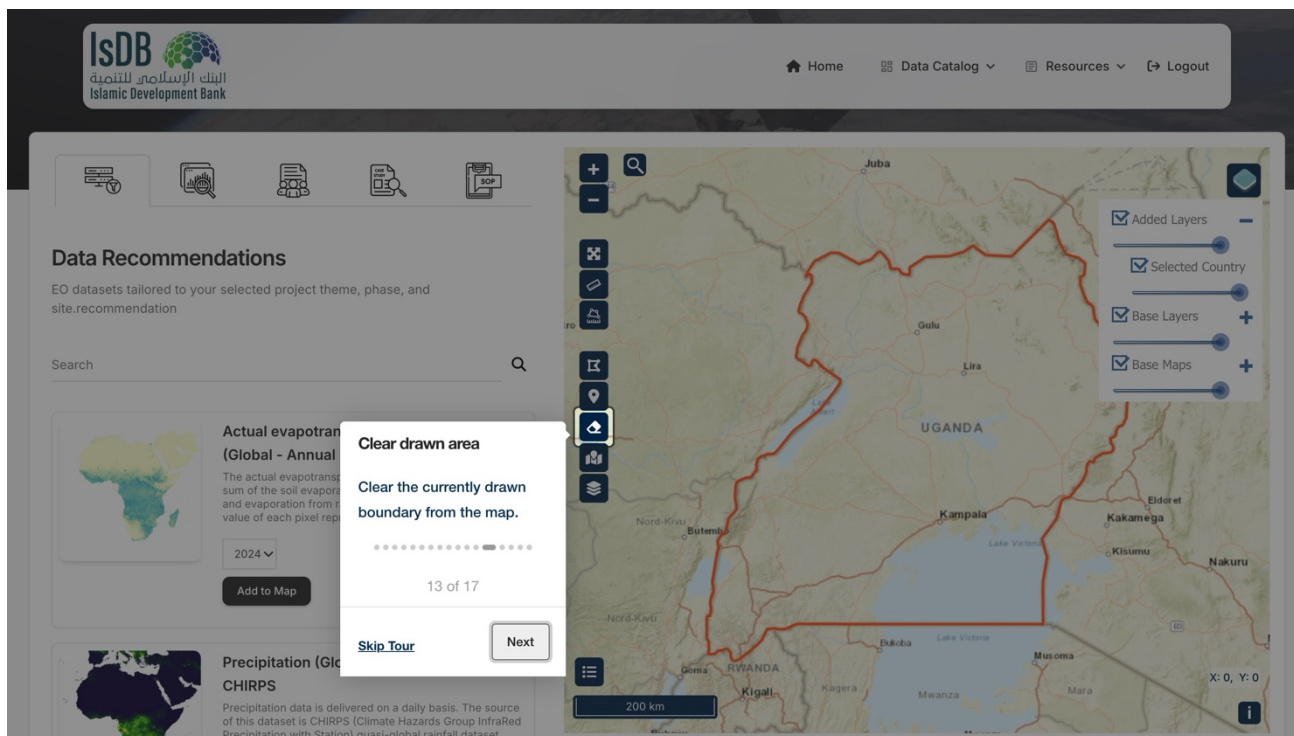


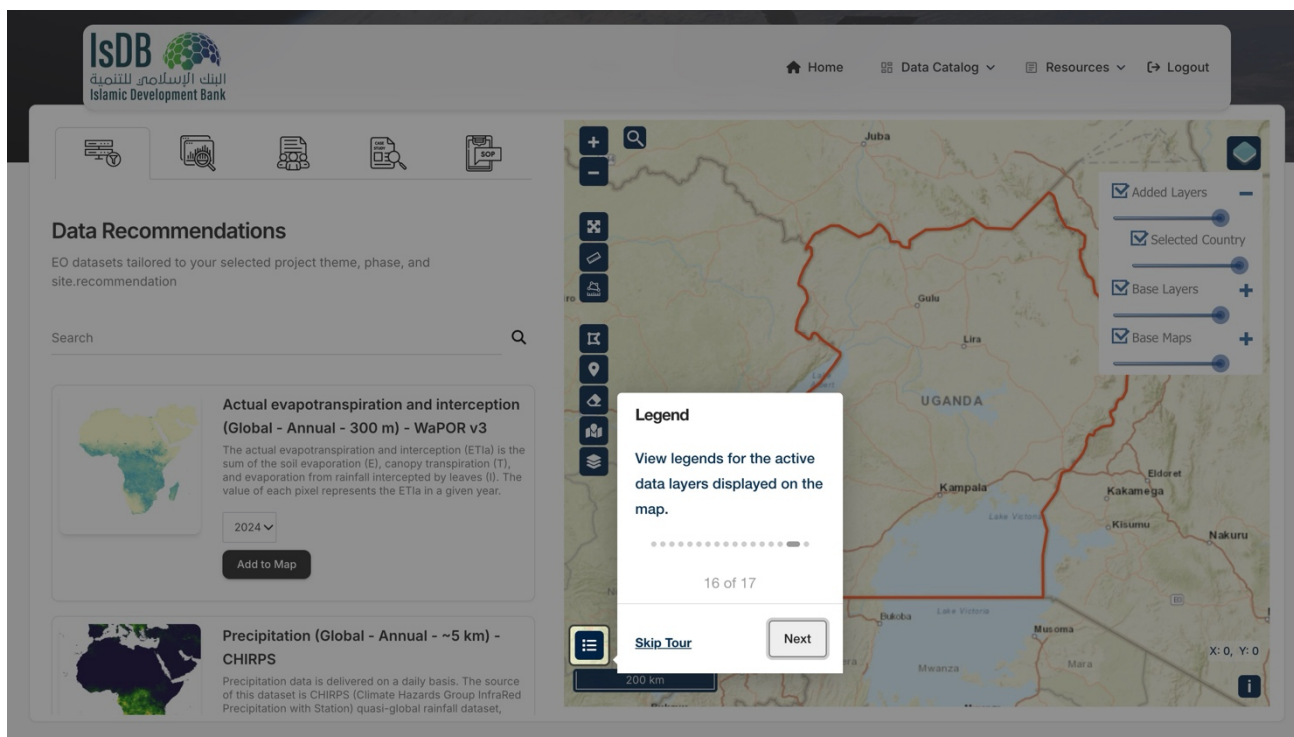
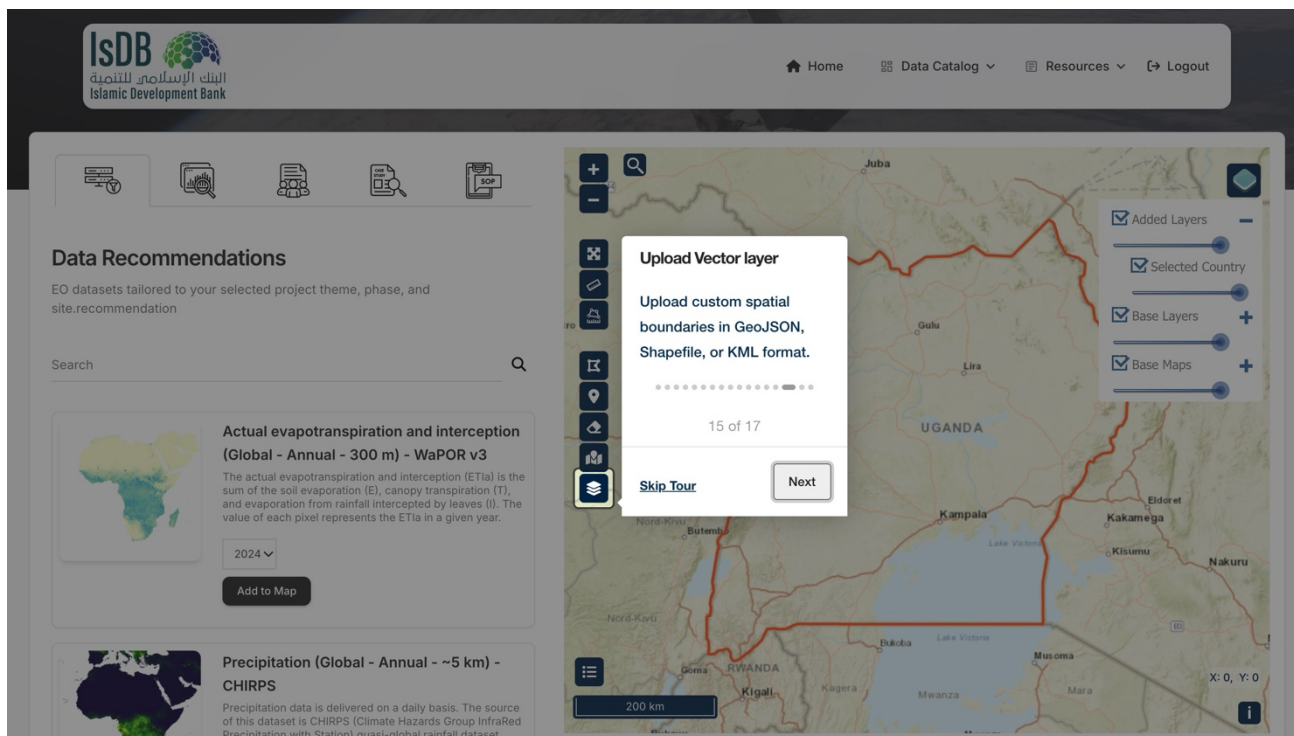

















Base maps:




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Data Recommendations


EO datasets tailored to your selected project theme, phase, and site recommendation



Actual evapotranspiration and interception (Global - Annual - 300 m) - WaPOR v3

The actual evapotranspiration and interception (ETaI) is the sum of the soil evaporation (E), canopy transpiration (T), and evaporation from rainfall intercepted by leaves (I). The value of each pixel represents the ETaI in a given year.


[Add to Map](#)



Precipitation (Global - Annual - ~5 km) - CHIRPS

Precipitation data is delivered on a daily basis. The source of this dataset is CHIRPS (Climate Hazards Group InfraRed Precipitation with Error).


[Add to Map](#)



Global - Annual - 300 m - WaPOR v3

The actual evapotranspiration and interception (ETaI) is the sum of the soil evaporation (E), canopy transpiration (T), and evaporation from rainfall intercepted by leaves (I). The value of each pixel represents the ETaI in a given year.


[Add to Map](#)



Precipitation (Global - Annual - ~5 km) - CHIRPS





Precipitation data is delivered on a daily basis. The source of this dataset is CHIRPS (Climate Hazards Group InfraRed Precipitation with Error).

[Add to Map](#)




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Data Recommendations

EO datasets tailored to your selected project theme, phase, and site recommendation



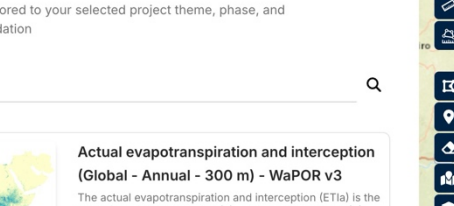
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Precipitation (Global - Annual - ~5 km) - CHIRPS

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☒ Added Layers

☒ Selected Country

☒ Base Layers

☒ Base Maps

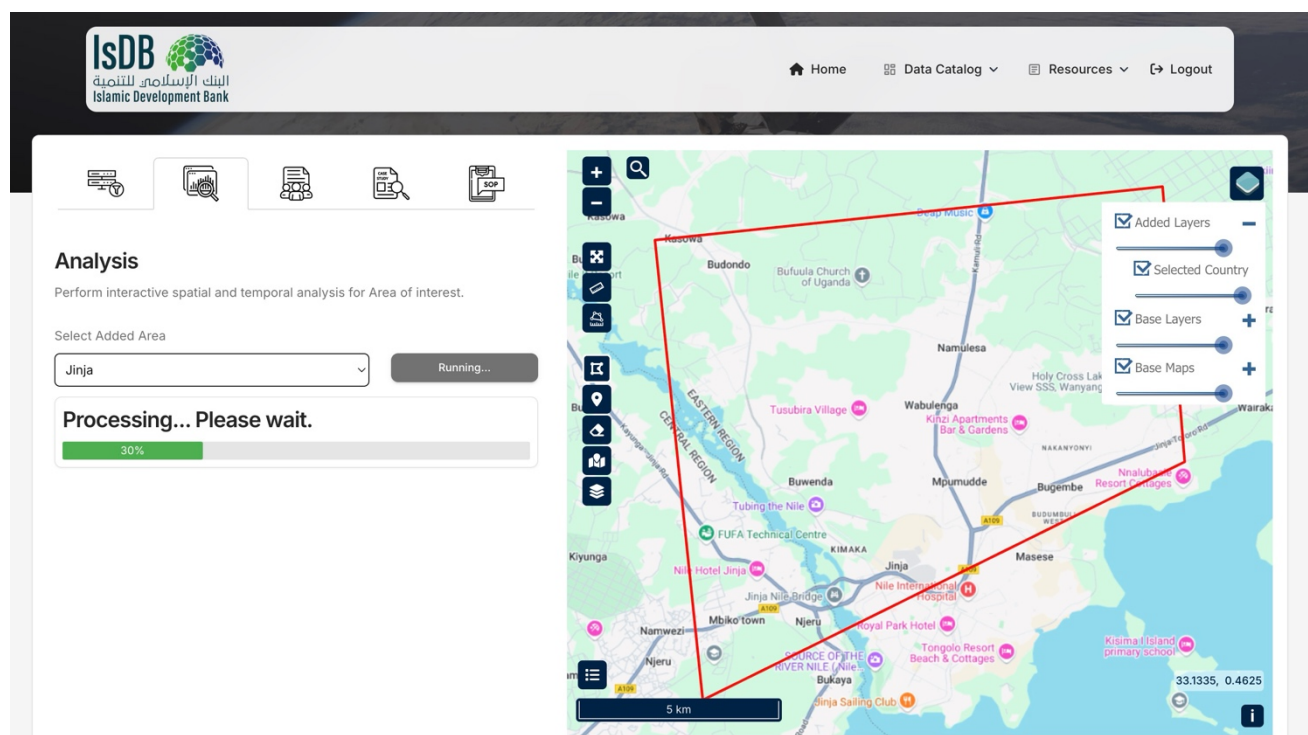
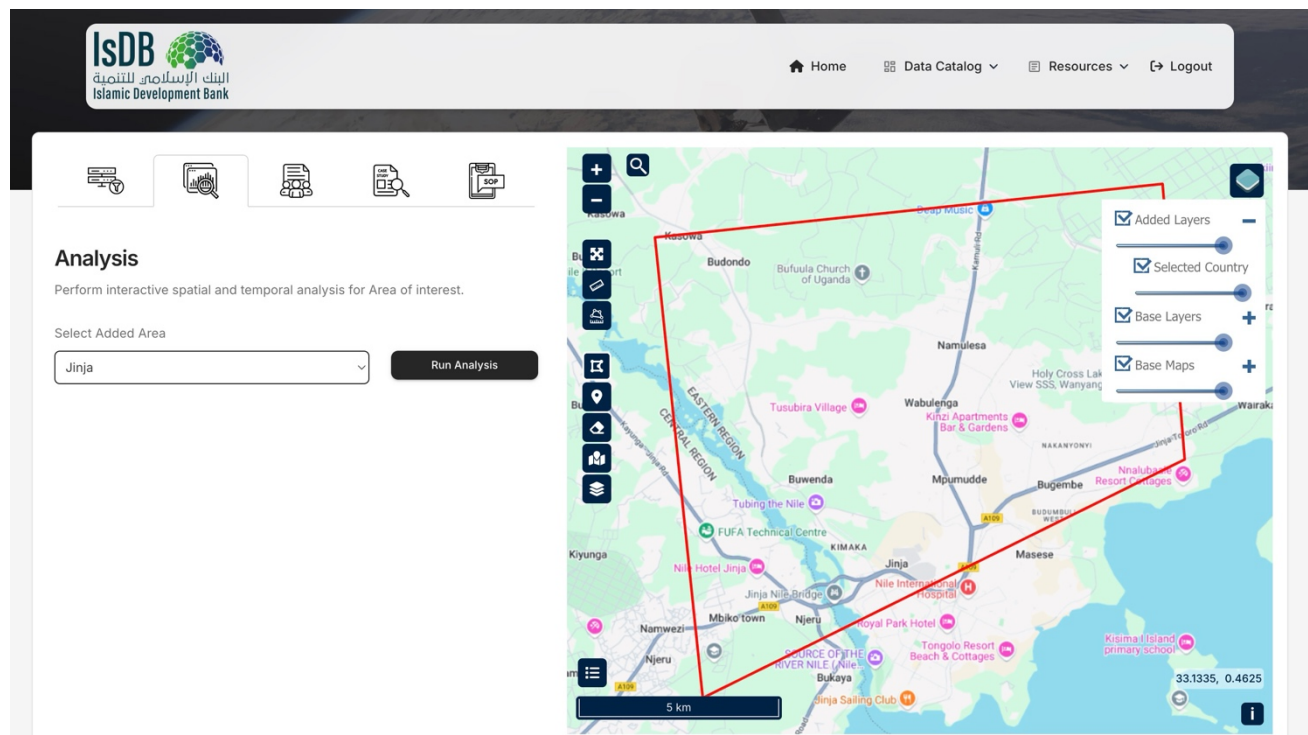
Add recommendation data to the map.

The screenshot shows the IsDB (Islamic Development Bank) Data Recommendations interface. The top navigation bar includes links for Home, Data Catalog, Resources, and Logout. The main content area is titled "Data Recommendations" and features a search bar and a "CLEAR ALL" button. A list of recommended datasets is displayed, with the "ESA WorldCover 10m v100" dataset highlighted. This dataset is described as a global land cover map for 2020 at 10m resolution, based on Sentinel-1 and Sentinel-2 data. A red "Remove" button is visible next to the dataset. On the right, a map of East Africa is shown with a yellow and green land cover overlay. A legend on the left side of the map lists land cover classes: Tree cover, Shrubland, Grassland, Cropland, Built-up, Bare / sparse vegetation, Snow and ice, Permanent water bodies, and Herbaceous wetland. A sidebar on the right contains a "Layers" panel with checkboxes for "Added Layers", "Landcover", "Selected Country", "Base Layers", and "Base Maps". The map includes a scale bar (200 km) and a coordinate display (32.4699, 1.6618).

Draw your Area of Interest (AOI) and save:

The screenshot shows the IsDB Analysis interface. The top navigation bar includes links for Home, Data Catalog, Resources, and Logout. The main content area is titled "Analysis" and features a "Select Added Area" dropdown menu. A map of East Africa is shown with a red outline indicating a digitized feature. A modal window titled "Digitized feature" is open, showing a form to enter the feature's name. The name "Jinja" has been entered. The modal window has "Close" and "Add feature" buttons. On the right, a "Layers" panel is visible, showing checkboxes for "Added Layers", "Base Layers", and "Base Maps". The map includes a scale bar (5 km) and a coordinate display (33.1492, 0.5192).

Select your area of Interest and generate the analysis. The analysis may take some time to complete, depending on the size of your selected area.



The analysis includes an overview and a summary of key insights, covering Land Use/Land Cover (LULC), precipitation and evapotranspiration trends, future climate change projections (rainfall and temperature), and AI-powered recommendations. You can export the full analysis as a downloadable PDF report.



Analysis

Perform interactive spatial and temporal analysis for Area of interest.

Select Added Area

Jinja

Run Analysis

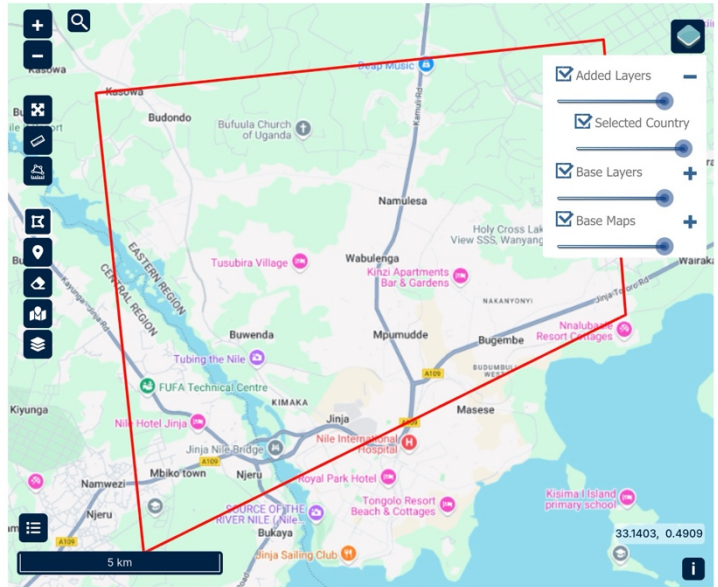
Delete Area

Delete Analysis

View PDF

1. Overview

Jinja, located in the Eastern Region of Uganda, is renowned for its unique biophysical and climatic characteristics. Geographically positioned along the northern shores of Lake Victoria, Jinja benefits from a diverse mix of elevations, ranging from the lakeshore to elevated terrains northward. The site's spatial extent falls within the longitude coordinates from 33.148°E to 33.267°E and latitude from 0.418°N to 0.533°N. This positioning places Jinja within a tropical climatic zone classified as tropical rainforest according to the



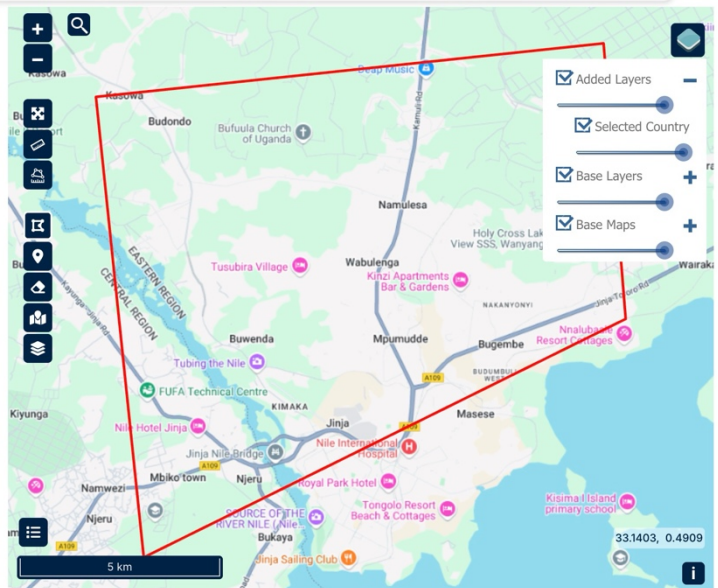
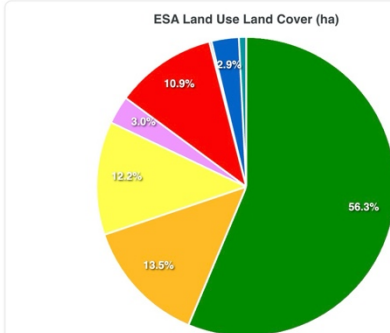
Analysis

Perform interactive spatial and temporal analysis for Area of interest.

Select Added Area

Jinja

Run Analysis





Training Material

Tutorials, guides, and learning resources relevant to your selected use case.

Search



Towards Zero Hunger - Agriculture & Livestock

EO COLLEGE

Welcome to the module "Agriculture & Livestock" of Towards Zero Hunger. Here, you have the chance to learn about the application of Earth observation technology for...

View

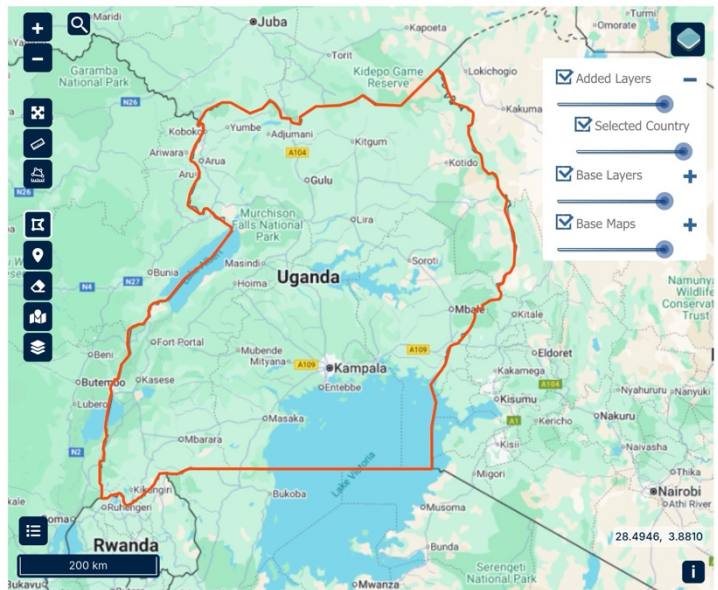


Land in Focus - Agriculture & Food

EO COLLEGE

Agriculture provides for and impacts human life in a variety of ways, from shaping how the earliest cities were built to now providing resources for...

View



Case Studies

Real-world applications and success stories aligned with your project context.

Search



Mapping Report

ISDB

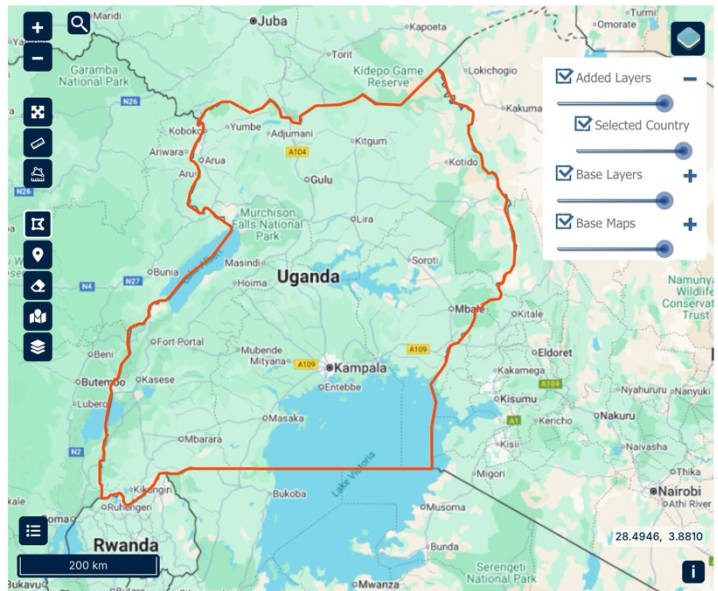
MAPPING AFFORDABLE AND TRANSFERRABLE CLIMATE-SMART TECHNOLOGIES FOR SMALLHOLDER FARMERS
Food and Agriculture Organization of the United Nations
International Fund for Agricultural Development Islamic Development Bank Cairo, 2024 Required citation: FAO, IFAD and IsDB. 2024. Mapping affordable and transferrable climate-smart technologies for smallholder farmers.

Read




Mapping affordable and transferrable climate-smart technologies for smallholder farmers

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Thematic Data Catalog:



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Data Catalog

Discover and access curated Earth Observation datasets tailored for development projects across key thematic areas.

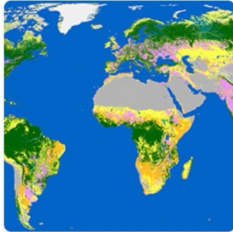
Theme / Sector

- ☐ Agriculture
- ☐ Climate Resilience
- ☐ Disaster Risk
- ☐ Infrastructure
- ☐ Land Management
- ☐ Water Resources

Project Phase

Keywords

Search




LANDUSE-LANDCOVER

ESA WorldCover 10m v100

The European Space Agency (ESA) WorldCover 10 m 2020 product provides a global land cover map for 2020 at 10 m resolutio...

[View Dataset](#)

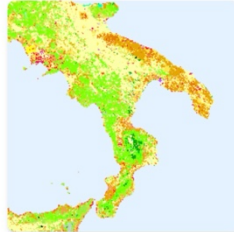


LANDUSE-LANDCOVER

GlobCover: Global Land Cover Map

GlobCover 2009 is a global land cover map based on ENVISAT's Medium Resolution Imaging Spectrometer (MERIS) Level 1B dat...

[View Dataset](#)




LANDUSE-LANDCOVER

Copernicus CORINE Land Cover

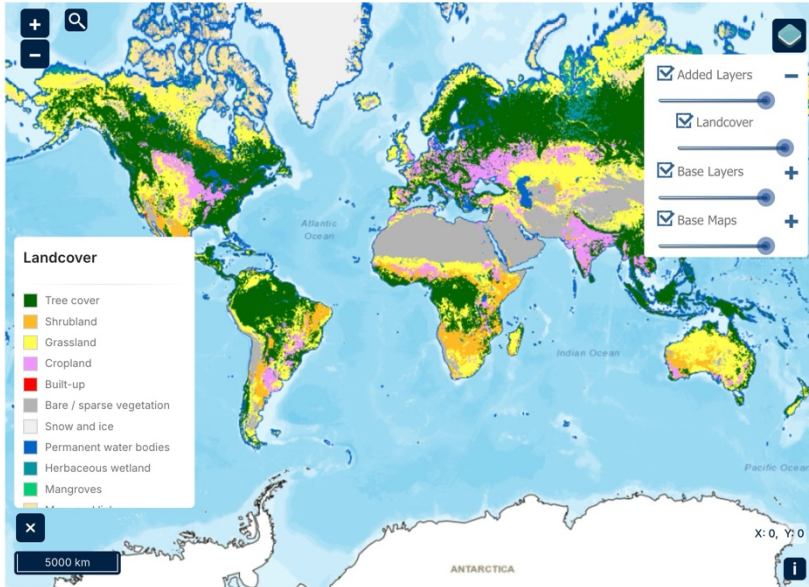
The CORINE (coordination of information on the environment) Land Cover (CLC) inventory was initiated in 1985 to standard...

[View Dataset](#)



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Landcover

- Tree cover
- Shrubland
- Grassland
- Cropland
- Built-up
- Bare / sparse vegetation
- Snow and ice
- Permanent water bodies
- Herbaceous wetland
- Mangroves

Added Layers

- ☒ Landcover
- ☒ Base Layers
- ☒ Base Maps

ESA WorldCover 10m v100

Dataset Availability:
2020-01-01 to 2021-01-01

Description:
The European Space Agency (ESA) WorldCover 10 m 2020 product provides a global land cover map for 2020 at 10 m resolution based on Sentinel-1 and Sentinel-2 data. The WorldCover product comes with 11 land cover classes and has been generated in the framework of the ESA WorldCover project, part of the 5th Earth Observation Envelope Programme (EOEP-5) of the European Space Agency. See also: * [ESA WorldCover website](#) * [User Manual](#) and [Validation Report](#)


Bands:
Pixel Size: 10m

| Band | Description |
|------|-----------------|
| Map | Landcover class |

Data Providers:

- ESA WorldCover Consortium
- Google Earth Engine

Training Course Catalog:



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Training Course Catalog

Access hands-on training materials and tutorials designed to build your skills in remote sensing, GIS, and Earth observation applications. Ideal for both beginners and professionals.

Category

Source

Language

EO COLLEGE 8 LESSONS

EO COLLEGE 1 LESSON

EO COLLEGE 7 LESSONS

Introduction to Machine Learning for Earth Observation

What is this course about? Throughout this course, you'll embark on an enlightening journey into the realm of Machine Le...

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Towards Zero Hunger - Agriculture & Livestock

Welcome to the module "Agriculture & Livestock" of Towards Zero Hunger. Here, you have the chance to learn about the app...


[Know More](#)

Towards Zero Hunger - Food Security Risks

Welcome to the module "Food Security Risks" of Towards Zero Hunger. Here, you have the opportunity to explore the factor...

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Case Studies Catalog:



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Case Studies

Discover real-world applications of Earth Observation through documented case studies. Learn how EO data drives impact across regions and sectors.

Publisher

Type

☐ American Economic Association
 ☐ Elsevier
 ☐ IOP Publishing
 ☐ IWA Publishing
 ☐ IsDB
 ☐ MDPI
 ☐ Program on Forests (PROFOR)
 ☐ Taylor and Francis
 ☐ World Bank

AN ANALYSIS OF ENVIRONMENTAL INDICATORS IN TOGO

ISDB 2022

An Analysis of Environmental Indicators in Togo

Ministry of Environment and Forest Resources National Environmental Management Agency (ANGE) Togolese

Timely data for the Sustainable Development Goals: SENEGAL

ISDB 2022

Timely data for the Sustainable Development Goals

Motivated by this sense of urgency, and the opportunity of new technologies, the Global Partnership for Sustainable

ENERGY SECTOR POLICY

ISDB 2018

Energy Sector Policy 2018

This policy is dictated by a changing global energy landscape characterized by a growing sense of energy insecurity, incre...