

▲TRENDS.EARTH — **PRODUCTION AND PROTECTION OF ECOSYSTEMS** — **INDICATOR 15.3.1** — **PROPORTION OF LAND DEGRADED OVER TOTAL LAND AREA**. This indicator is derived from the **Global Forest Resources Assessment (GFRA)** and the **Global Land Use and Land-Use Change (GLUEC)** project. It is calculated as the ratio of the area of degraded land to the total land area. The indicator is measured in percentage and is reported at the global, regional, and national levels. The data is derived from the **Global Forest Resources Assessment (GFRA)** and the **Global Land Use and Land-Use Change (GLUEC)** project. The indicator is measured in percentage and is reported at the global, regional, and national levels. The data is derived from the **Global Forest Resources Assessment (GFRA)** and the **Global Land Use and Land-Use Change (GLUEC)** project.

Global Forest Resources Assessment (GFRA) and Global Land Use and Land-Use Change (GLUEC) project.

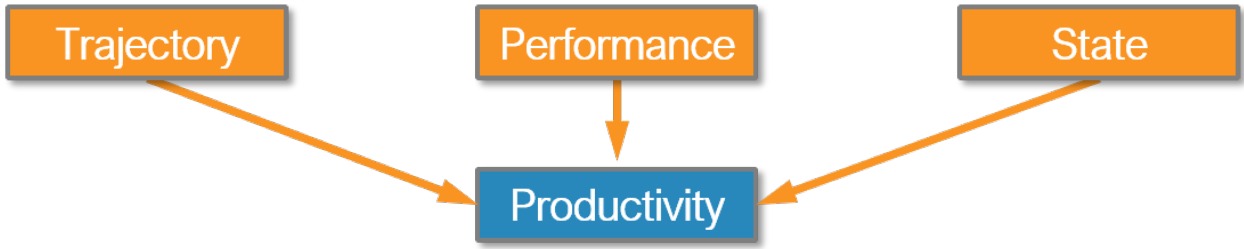
Global Forest Resources Assessment (GFRA) and Global Land Use and Land-Use Change (GLUEC) project.

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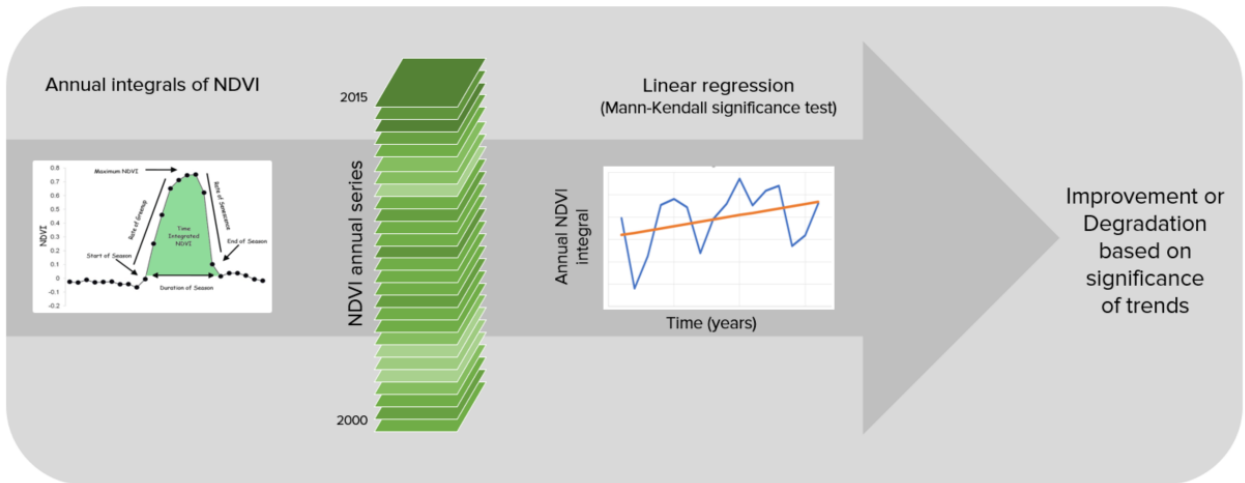
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The analysis of the NDVI annual integrals is performed using the **▲TRENDS.EARTH** software, which allows for the detection of trends in the data. The results are presented in the form of a line graph showing the annual NDVI integrals over time. The graph includes a linear regression line and a Mann-Kendall significance test. The significance level is $p \leq 0,05$.



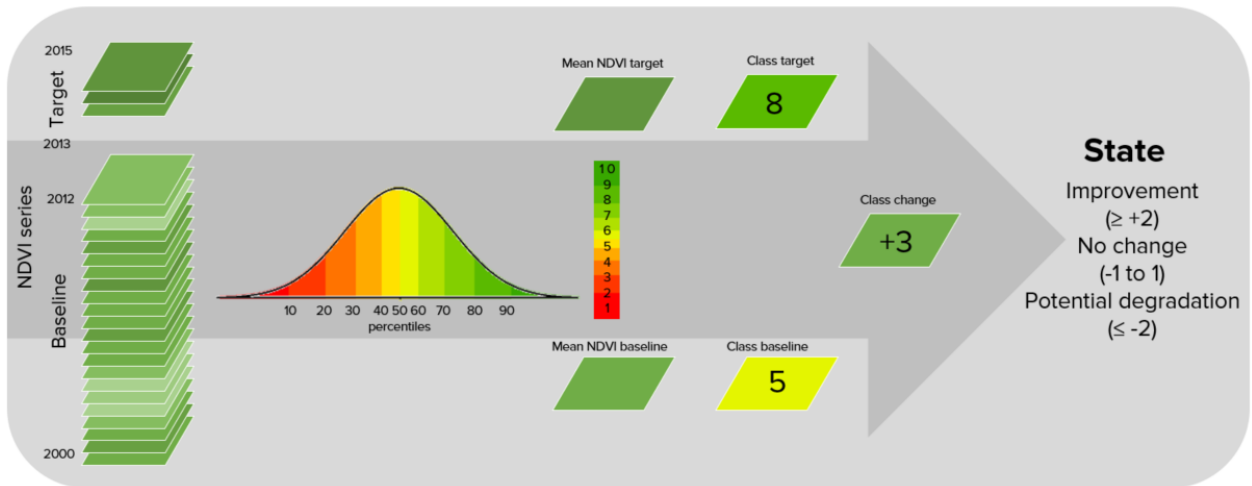
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(RESTREND): RESTREND software allows for the detection of trends in the data. The results are presented in the form of a line graph showing the annual NDVI integrals over time. The graph includes a linear regression line and a Mann-Kendall significance test. The significance level is $p \leq 0,05$.



4. [REDACTED]
5. [REDACTED]
6. [REDACTED]
7. [REDACTED]



[REDACTED] [TRENDS.EARTH](#) [REDACTED]:

[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
NDVI	AVHRR/GIMMS	1982-2015	8 [REDACTED]	[REDACTED]	[REDACTED] NDVI * 10000
NDVI	MOD13Q1-coll6.1	2001-2024	250 [REDACTED]	[REDACTED]	[REDACTED] NDVI * 10000



Indicator	Source	Period	Resolution	Frequency	Scale
NDVI	AVHRR/GIMMS	1982-2015	8 km	Monthly	NDVI * 10000
NDVI	MOD13Q1-coll6.1	2001-2024	250 m	Monthly	NDVI * 10000
ESA CCI	ESA CCI	1992-2022	300 m	Monthly	NDVI * 10000
Global Land Productivity (GLP)	GLP - 10000	1982-2022	250 m	Monthly	GLP * 10000

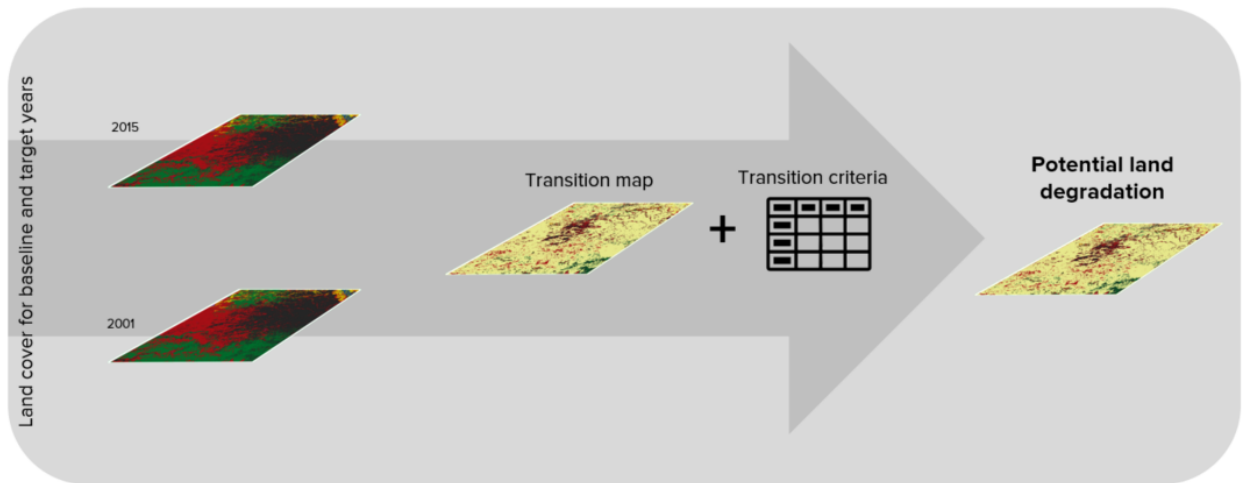


The Global Land Productivity (GLP) is a composite index that combines the Normalized Difference Vegetation Index (NDVI) and the Normalized Difference Water Index (NDWI) to measure land productivity. It is derived from the AVHRR/GIMMS and MOD13Q1-coll6.1 datasets. The GLP is calculated as follows:

$$GLP = NDVI * 10000 + NDWI * 10000$$
 The GLP is a composite index that combines the Normalized Difference Vegetation Index (NDVI) and the Normalized Difference Water Index (NDWI) to measure land productivity. It is derived from the AVHRR/GIMMS and MOD13Q1-coll6.1 datasets. The GLP is calculated as follows:

Aggregating Land Productivity metrics

Trend	State	Performance	5 Classes	3 Classes
Improving	Improving	Stable	Improving	Improving
Improving	Improving	Degrading	Improving	Improving
Improving	Stable	Stable	Improving	Improving
Improving	Stable	Degrading	Improving	Improving
Improving	Degrading	Stable	Improving	Improving
Improving	Degrading	Degrading	Moderate decline	Degrading
Stable	Improving	Stable	Stable	Stable
Stable	Improving	Degrading	Stable	Stable
Stable	Stable	Stable	Stable	Stable
Stable	Stable	Degrading	Stressed	Stable
Stable	Degrading	Stable	Moderate decline	Degrading
Stable	Degrading	Degrading	Degrading	Degrading
Degrading	Improving	Stable	Degrading	Degrading
Degrading	Improving	Degrading	Degrading	Degrading
Degrading	Stable	Stable	Degrading	Degrading
Degrading	Stable	Degrading	Degrading	Degrading
Degrading	Degrading	Stable	Degrading	Degrading
Degrading	Degrading	Degrading	Degrading	Degrading



Soil carbon is a critical component of the global carbon cycle and plays a significant role in climate change mitigation. Soil Organic Carbon (SOC) is the carbon stored in soil, and its levels are influenced by various factors, including land use, climate, and soil management practices. Understanding SOC dynamics is essential for assessing soil health and its potential to sequester carbon.

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1. **Soil carbon is a critical component of the global carbon cycle and plays a significant role in climate change mitigation. Soil Organic Carbon (SOC) is the carbon stored in soil, and its levels are influenced by various factors, including land use, climate, and soil management practices. Understanding SOC dynamics is essential for assessing soil health and its potential to sequester carbon.** [TRENDS.EARTH](https://www.trends.earth/) provides a global map of SOC. The map shows SOC levels in 2001 and 2015, with a 30-year trend. The map is based on the SoilGrids dataset, which provides global soil data at a 30m resolution. The map is available at [trends.earth](https://www.trends.earth/).
2. **Soil carbon is a critical component of the global carbon cycle and plays a significant role in climate change mitigation. Soil Organic Carbon (SOC) is the carbon stored in soil, and its levels are influenced by various factors, including land use, climate, and soil management practices. Understanding SOC dynamics is essential for assessing soil health and its potential to sequester carbon.** The UNCCD (United Nations Convention to Combat Desertification) provides a global map of SOC. The map shows SOC levels in 2001 and 2015, with a 7-year trend. The map is based on the SoilGrids dataset, which provides global soil data at a 30m resolution. The map is available at [unccd.int](https://www.unccd.int/).
3. **Soil carbon is a critical component of the global carbon cycle and plays a significant role in climate change mitigation. Soil Organic Carbon (SOC) is the carbon stored in soil, and its levels are influenced by various factors, including land use, climate, and soil management practices. Understanding SOC dynamics is essential for assessing soil health and its potential to sequester carbon.** The FAO (Food and Agriculture Organization) provides a global map of SOC. The map shows SOC levels in 2001 and 2015, with a 7-year trend. The map is based on the SoilGrids dataset, which provides global soil data at a 30m resolution. The map is available at [fao.org](https://www.fao.org/).



Aggregating SDG 15.3.1 sub-indicators - IOAO

Land Productivity	Land Cover	SOC	SDG 15.3.1
Improving	Improving	Improving	Improving
Improving	Improving	Stable	Improving
Improving	Improving	Declining	Declining
Improving	Stable	Improving	Improving
Improving	Stable	Stable	Improving
Improving	Stable	Declining	Declining
Improving	Declining	Improving	Declining
Improving	Declining	Stable	Declining
Improving	Declining	Declining	Declining
Stable	Improving	Improving	Improving
Stable	Improving	Stable	Improving
Stable	Improving	Declining	Declining
Stable	Stable	Improving	Improving
Stable	Stable	Stable	Stable
Stable	Stable	Declining	Declining
Stable	Declining	Improving	Declining
Stable	Declining	Stable	Declining
Stable	Declining	Declining	Declining
Declining	Improving	Improving	Declining
Declining	Improving	Stable	Declining
Declining	Improving	Declining	Declining
Declining	Stable	Improving	Declining
Declining	Stable	Stable	Declining
Declining	Stable	Declining	Declining
Declining	Declining	Improving	Declining
Declining	Declining	Stable	Declining
Declining	Declining	Declining	Declining



15.3.1 «...» ... (...) ... ».

15.3.1 ... 15.3.1 ... (...) ... ».

Note

«...» ... 15.3.1, ... (...) == ... 2015 ...).

15.3.1 ... 3 x 3.



		PERIOD ASSESSMENT		
		DEGRADED	STABLE	IMPROVED
BASELINE	DEGRADED	1 - Persistent Degradation	3 - Baseline Degradation	6 - Recent Improvement
	STABLE	2 - Recent Degradation	4 - Stability	6 - Recent Improvement
	IMPROVED	2 - Recent Degradation	5 - Baseline Improvement	7 - Persistent Improvement

Expanded version of the "Status Matrix" showing land condition that results from the comparison of the baseline (rows) and the period assessment (columns): degraded (purple), stable (yellow), and improved (green).

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Note

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How population exposure to drought is represented in Trends.Earth

The SO 3-2 Exposure summary output in Trends.Earth is a multi-band raster file. Bands are organised in pairs, one pair per drought reporting period (each period is by default 4 years). Within each pair:

- The **first band** contains the most severe SPI value recorded during that period — the minimum SPI across all years in the period. A negative SPI indicates a precipitation deficit relative to the long-term mean, i.e., drought conditions.
- The **second band** contains the population count for the pixel at the time of the most severe drought, with the *sign* of the value encoding drought exposure:
 - A **negative** population value indicates that the pixel experienced drought during that period (minimum SPI < 0).
 - A **positive** population value indicates that the pixel experienced above-average precipitation during that period (SPI ≥ 0 throughout the entire period).
 - Pixels over water bodies are set to no-data, in line with UNCCD reporting requirements.

For the final drought period only, if sex-disaggregated population data are available, two additional bands follow the standard pair: a female population band and a male population band, both using the same sign convention described above.

This encoding makes it straightforward to derive exposure statistics from a single band: the absolute values of all valid pixels give the total population, while the absolute values of the negative pixels alone give the drought-exposed population.

SO3 Level III (SO 3-3 Vulnerability)

The SO 3-3 Vulnerability summary output in Trends.Earth is a multi-band raster file. Bands are organised in pairs, one pair per drought reporting period (each period is by default 4 years). Within each pair:

(Drought Vulnerability Index, DVI) — the DVI is a composite index of three factors: i) the minimum SPI value recorded during that period; ii) the population count for the pixel at the time of the most severe drought; iii) the population count for the pixel at the time of the most severe drought. The DVI is a composite index of three factors: i) the minimum SPI value recorded during that period; ii) the population count for the pixel at the time of the most severe drought; iii) the population count for the pixel at the time of the most severe drought. The DVI is a composite index of three factors: i) the minimum SPI value recorded during that period; ii) the population count for the pixel at the time of the most severe drought; iii) the population count for the pixel at the time of the most severe drought.

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Note

Figure 11.3.1 (2019) **Urban population growth rate** (SDG 11.3.1) **Indicator**: **Urban population growth rate** (APGR), **Population growth rate** (ALGR), **Urban population**.

Urban population growth rate (ALCR) is calculated as the percentage change in the number of people living in urban areas over a specific period. It is derived from the urban population and the urban population growth rate (APGR). The indicator is measured as the percentage change in the number of people living in urban areas over a specific period.

Urban population growth rate (ALGR) is calculated as the percentage change in the total population over a specific period. It is derived from the total population and the total population growth rate (ALGR). The indicator is measured as the percentage change in the total population over a specific period.

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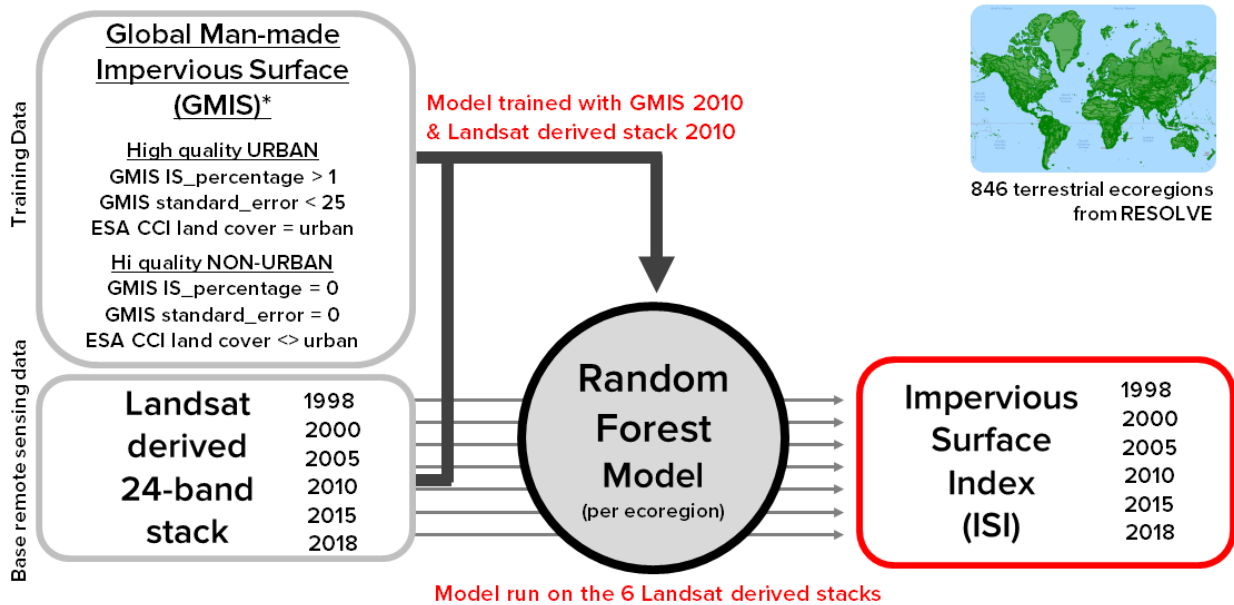
Figure 11.3.1 **Urban population growth rate** (SDG 11.3.1) **Indicator**

Urban population growth rate (ALCR) is calculated as the percentage change in the number of people living in urban areas over a specific period. It is derived from the urban population and the urban population growth rate (APGR). The indicator is measured as the percentage change in the number of people living in urban areas over a specific period.

$$SDG 11.3.1 = \frac{ALCR_{t1-t2}}{APGR_{t1-t2}}$$
$$ALCR_{t1-t2} = \frac{\ln\left(\frac{Urb_{t2}}{Urb_{t1}}\right)}{t_2 - t_1}$$
$$APGR_{t1-t2} = \frac{\ln\left(\frac{Pop_{t2}}{Pop_{t1}}\right)}{t_2 - t_1}$$

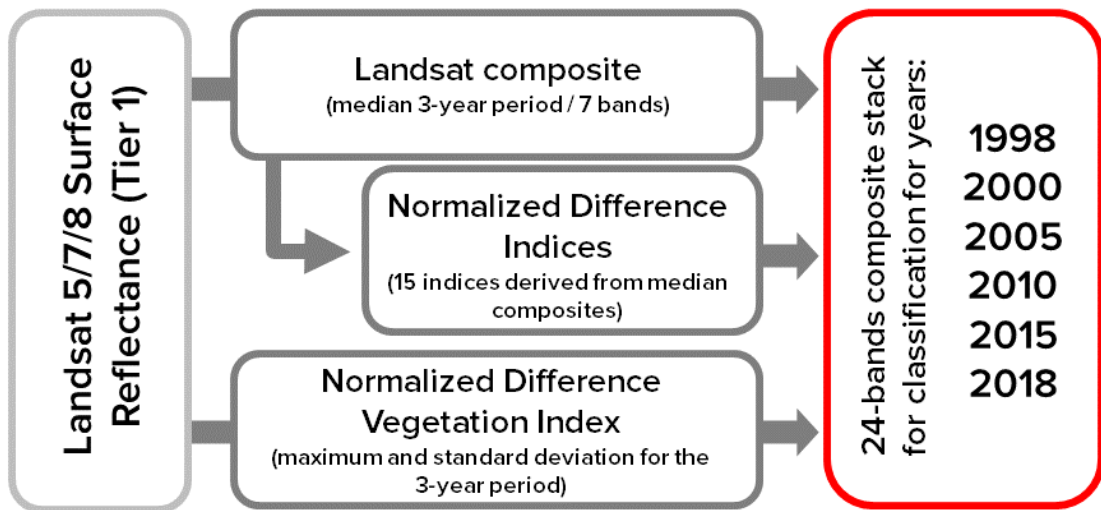
ISI Trends.Earth

Global Man-made Impervious Surface (GMIS, Brown de Colstoun et al 2017) — Global Man-made Impervious Surface (GMIS, Brown de Colstoun et al 2017) (Breiman 2001) Google Earth Engine (Gorelick et al 2017), 2,3 Landsat (1,15 -1997-2019). GMIS ESA CCI 2010, 3. 24 Landsat, 1998, 2000, 2005, 2010, 2015 2018 846 RESOLVE (Dinerstein et al 2017).



3: 846 terrestrial ecoregions from RESOLVE. GMIS ESA CCI, 24 Landsat, 1998, 2000, 2005, 2010, 2015 2018.

2005 2004, 2005 2006). 24 Landsat 7 (3-), 15, 7, 2 NDVI, 3- 1998, 2000, 2005, 2005, 2010, 2015 2018.



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GMIS , (RMSE)

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Trends.Earth Urban Mapper

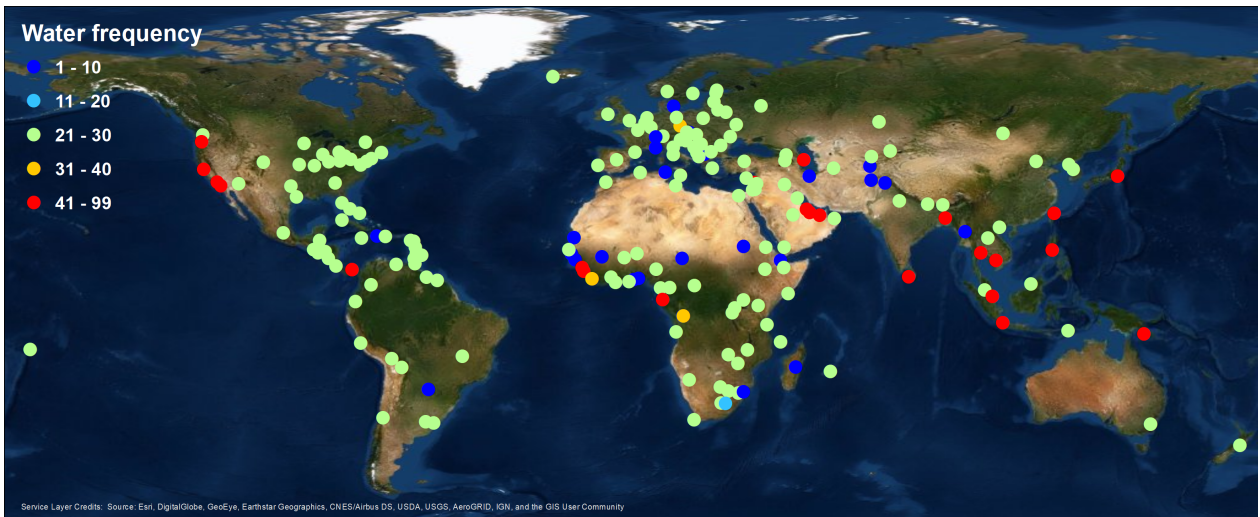
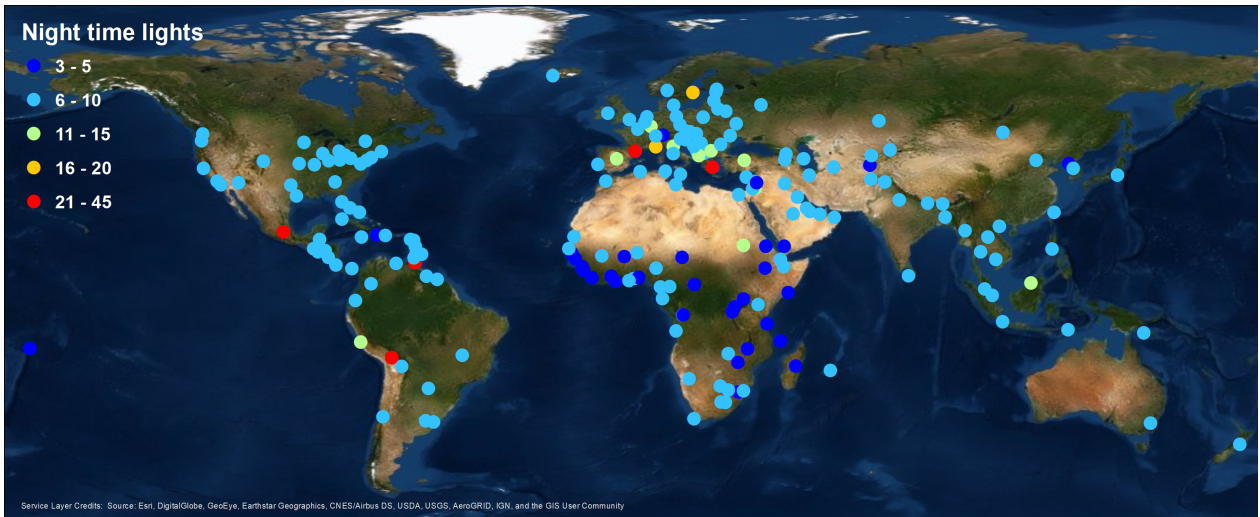
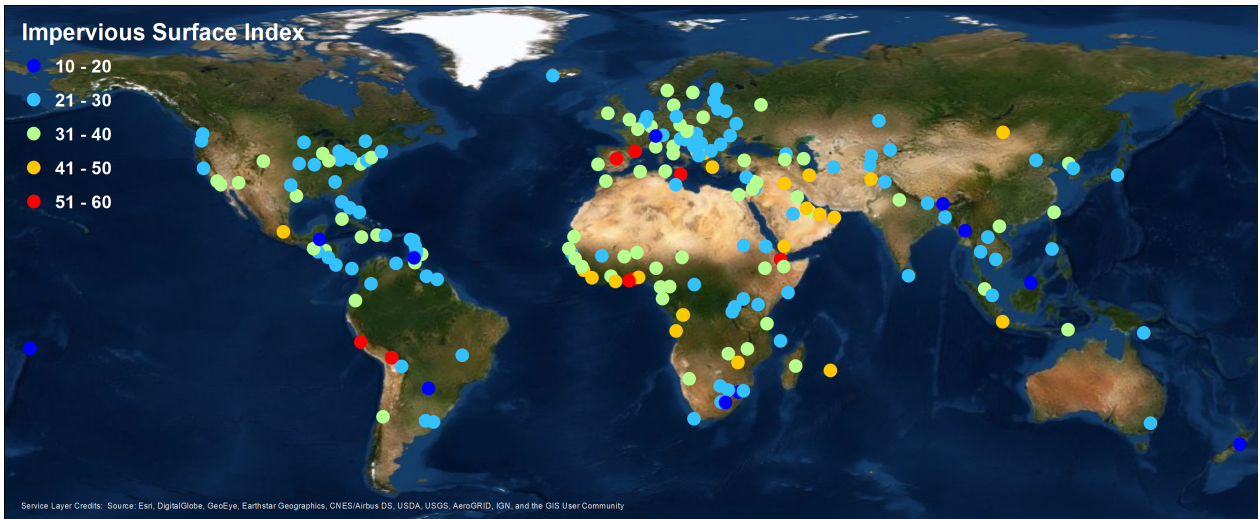
<<https://geflanddegradation.users.earthengine.app/view/trendsearth-urban-mapper>>

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[Trends.Earth Urban Mapper](#),



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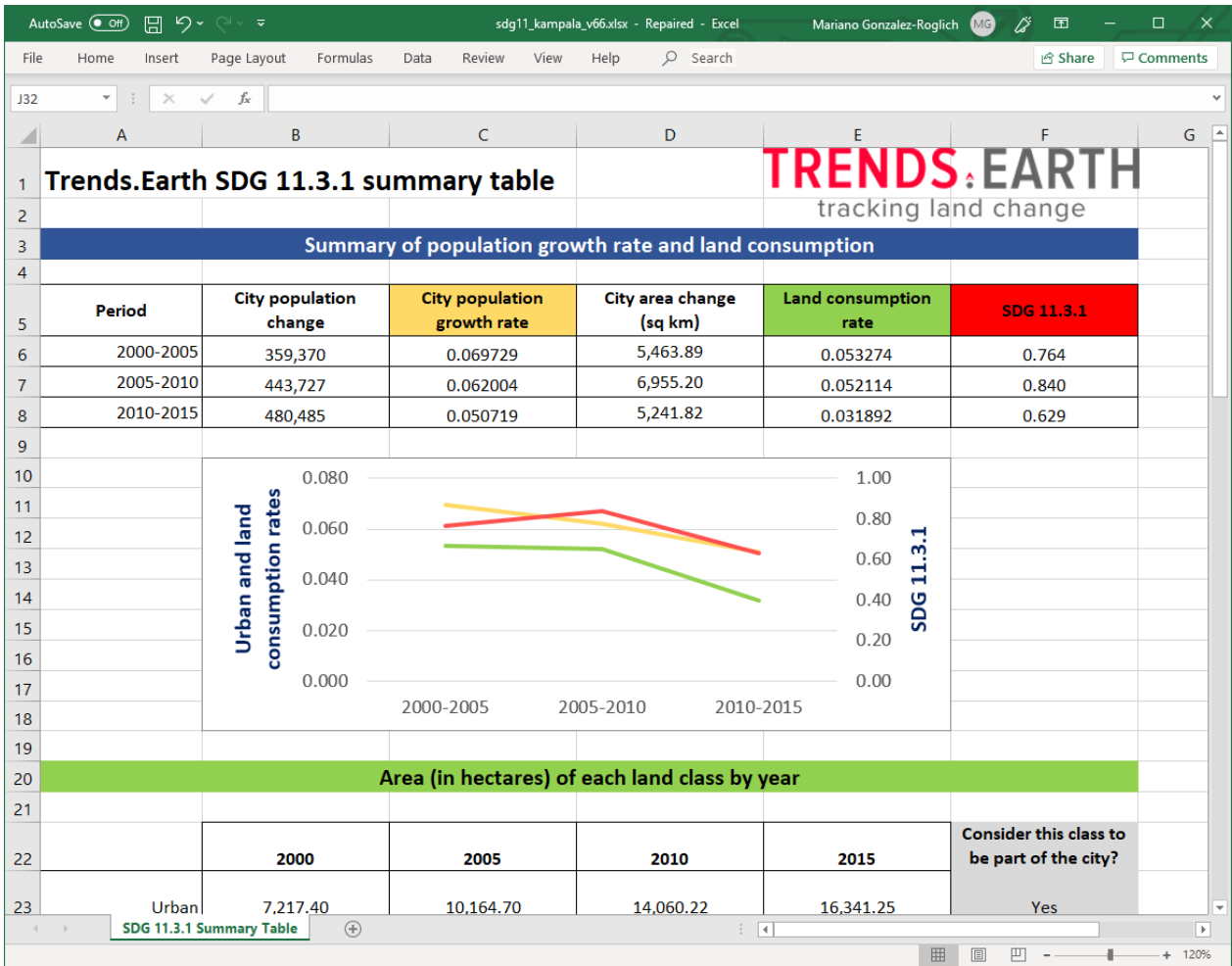
Trends.Earth

▲TRENDS.EARTH 1, Gridded Population of the World V4 (GPWv4, CIESIN, 2016) ▲TRENDS.EARTH GPWv4,

11.3.1

SDG 11.3.1 ▲TRENDS.EARTH:

1. 10 11, 5
2. 11.3.1,



« 11: Trends.Earth SDG 11.3.1
 ▲TRENDS.EARTH SDG 11.3.1, SDG 11.3.1 ».

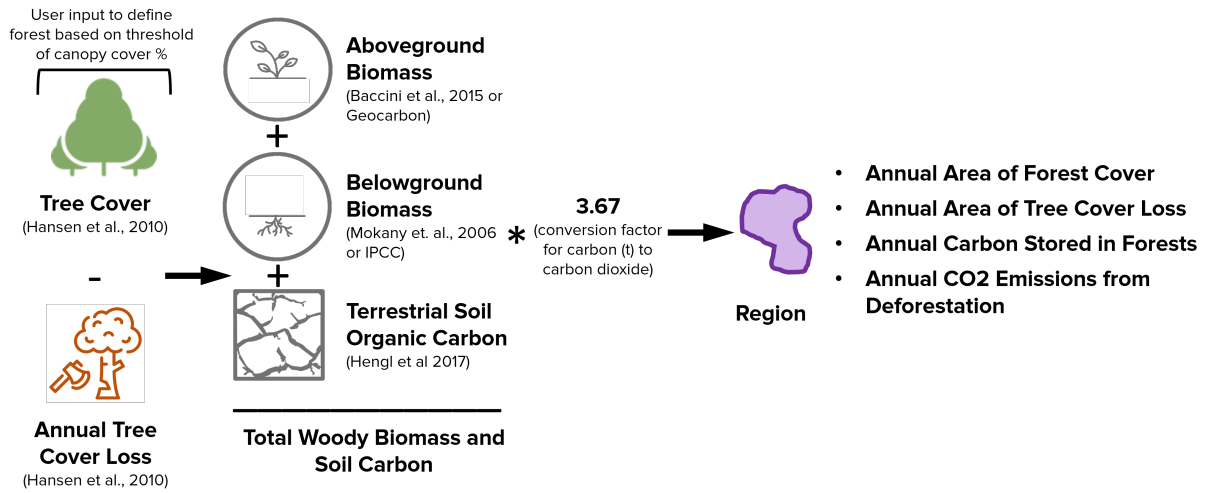
Note

Trends.Earth SDG 11.3.1

Wong, K., 2001. *Journal of Machine Learning*, 45, 5-32. <https://doi.org/10.1023/a:1010933404324>

Wong, K., 2017. *Geospatial Information Science* (GMIS) Landsat. *Journal of Machine Learning*, 45, 5-32. <https://doi.org/10.7927/H4P55KKF>

CIESIN. 2016. *Global Population and Urbanization Data*, Version 4 (GPWv4): *Journal of Machine Learning*, 45, 5-32. <https://doi.org/10.7927/H4P55KKF>



Trends.Earth:

Dataset	Spatial	Extent	Units/Description
Woods Hole Research Center	30m	Global	A global map of aboveground live woody biomass (AGB) density for the year 2000, estimated by calculating thousands of points using LiDAR with regional allometric equations, then using those to train a wall-to-wall model based on Landsat imagery.
GEOCARBON	1 km	Global	Harmonized map of aboveground biomass in forests, using integrated pan-tropical map of aboveground biomass in woody vegetation and the boreal forest biomass map.

The aboveground biomass (AGB) density is a key indicator of forest carbon storage. It is measured in tonnes of carbon per hectare (tC/ha). The GEOCARBON dataset provides a global map of AGB density at a 1 km resolution. This data is used to estimate the total carbon stored in forests worldwide. The annual area of forest cover and tree cover loss are also tracked to understand the dynamics of forest carbon storage. The annual CO2 emissions from deforestation are calculated based on the loss of forest carbon.

Note

geoBoundaries, Trends.Earth, CC BY 4.0. Trends.Earth,

Trends.Earth

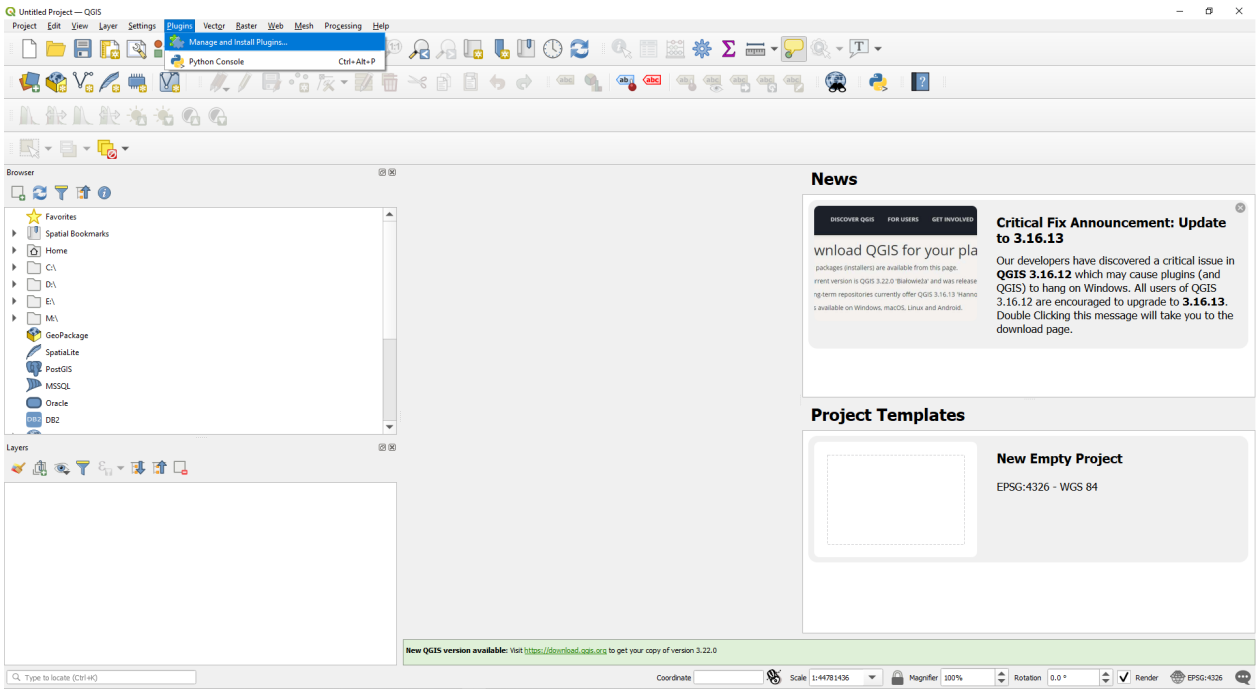
Trends.Earth 8 CO2.

The screenshot displays an Excel spreadsheet with the following structure:

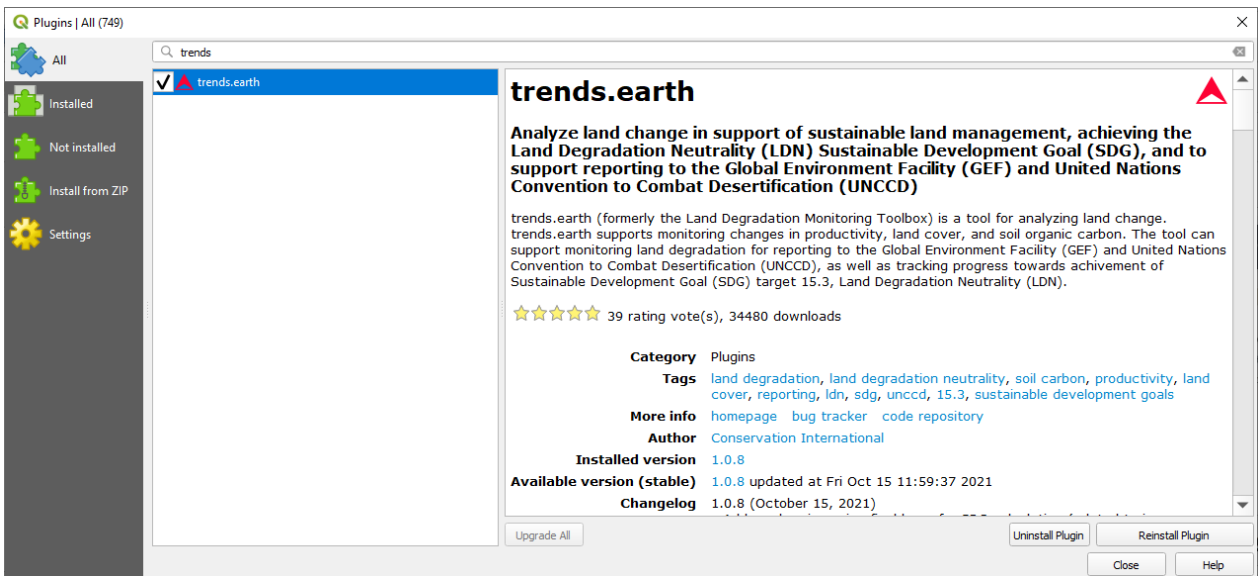
- Summary of chosen area of interest:**

	Value	Units
Total area of polygon:	1,976,949	hectares
Time since initiation of restoration:	20	years
Initial biomass:	469,599,198	tonnes CO2e
- Change in biomass with restoration:**

Restoration approach	Change in biomass compared to pre-restoration levels (tonnes CO2e)	Final total biomass (tonnes CO2e)
Natural regeneration	262,184,396	731,783,594
Agroforestry	84,383,729	553,982,927
Teak plantation	741,147,435	1,210,746,632
Eucalyptus plantation	1,138,912,308	1,608,511,505
Oak plantation	255,044,033	724,643,231
Other broadleaf plantation	524,978,847	994,578,045



«trends.earth»



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▲TRENDS.EARTH:

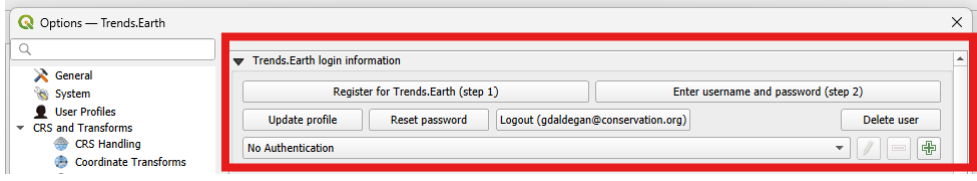
- **QGIS** **plugin** **installation** **steps**
- **QGIS** **plugin** **installation** **steps**, **installation** **steps** **Trends.Earth** **plugin** **installation** **steps**. **installation** **steps** **Trends.Earth** **plugin** **installation** **steps** **<(https://docs.qgis.org/3.22/en/docs/user_manual/plugins/plugins.html#the-installed-tab >`_.** **installation** **steps** **Trends.Earth** **plugin** **installation** **steps**, **installation** **steps** **Trends.Earth** **plugin** **installation** **steps** **trends.earth@conservation.org.**

installation **steps** **Trends.Earth** **plugin** **installation** **steps** (**installation** **steps** **Trends.Earth** **plugin** **installation** **steps**)

installation **steps** **Trends.Earth** **plugin** **installation** **steps**. **installation** **steps** **Trends.Earth** **plugin** **installation** **steps**. **installation** **steps** **Trends.Earth** **plugin** **installation** **steps** **README** **installation** **steps** **Trends.Earth** **plugin** **installation** **steps**.

Trends.Earth

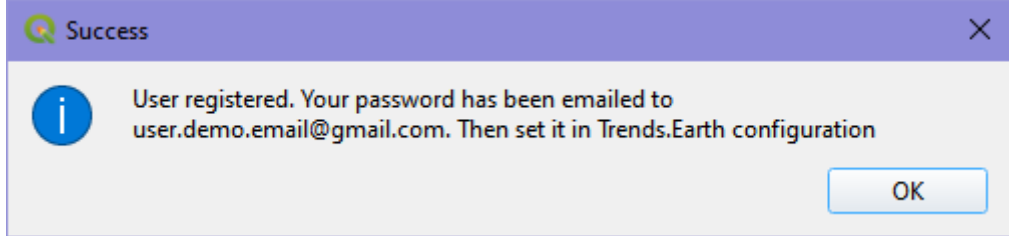
1. **installation** **steps** **Trends.Earth** **plugin** **installation** **steps**, **installation** **steps** **Trends.Earth** **plugin** **installation** **steps** **Trends.Earth** (**installation** **steps** **Trends.Earth** **plugin** **installation** **steps** 1) **installation** **steps** **Trends.Earth** **plugin** **installation** **steps** **installation** **steps** **Trends.Earth** **plugin** **installation** **steps** **installation** **steps** **Trends.Earth** **plugin** **installation** **steps**.



2. **installation** **steps** **Trends.Earth** **plugin** **installation** **steps**, **installation** **steps** **Trends.Earth** **plugin** **installation** **steps**, **installation** **steps** **Trends.Earth** **plugin** **installation** **steps** **installation** **steps** **Trends.Earth** **plugin** **installation** **steps**.

 A screenshot of the 'Register new user' dialog box. It has a title bar with 'Register new user' and a close button. The dialog contains several input fields: 'Email:', 'Name:', 'Organization:', and 'Country/Region:'. The 'Country/Region' dropdown menu is set to 'Afghanistan'. There is a 'Privacy Policy' link and 'OK' and 'Cancel' buttons at the bottom.

3. **installation** **steps** **Trends.Earth** **plugin** **installation** **steps**, **installation** **steps** **Trends.Earth** **plugin** **installation** **steps**, **installation** **steps** **Trends.Earth** **plugin** **installation** **steps** **installation** **steps** **Trends.Earth** **plugin** **installation** **steps**.



4. After registering, you will receive an email from api@trends.earth with your password. If you don't see the email in your inbox after 15-20 seconds, please check your spam folder in case the email was sent



Options — Trends.Earth

- General
- System
- CRS and Transforms
 - CRS Handling
 - Coordinate Transforms
 - User Defined CRS
- Data Sources
 - GDAL
- Rendering
- Canvas & Legend
- Map Tools
 - Digitizing
- 3D
- Colors
- Layouts
- Variables
- Authentication
- Network
- GPS
 - GPSLabel
 - Locator
 - Acceleration
- IDE
 - Code Editor
 - Python Console
 - Animation Workbench
 - Trends.Earth**
 - Processing
 - Advanced

Trends.Earth login information

Register for Trends.Earth (step 1) Enter username and password (step 2)

Update profile Reset password Delete user

Region of interest

Country / Region

First level: France

Second level: Region: All regions City: Agen (Aquitaine)

Disclaimer: The provided boundaries are from [Natural Earth](#), and are in the [public domain](#). The boundaries and names used, and the designations used, in Trends.Earth do not imply official endorsement or acceptance by Conservation International Foundation, or by its partner organizations and contributors.

Point

longitude: 0.0 latitude: 0.0

Area from file

Click "Browse" to choose a file... Browse

Apply a buffer to the chosen area

Buffer size (kilometers): 1000.0

Area name: france-all-regions-buffer-1000.000

Custom Land Cover Classes

Land Cover Class Editor

Name: Artificial

Parent: Artificial

Color:

Code: 5

OK Cancel Help

Trends.Earth

Trends.Earth. The provided boundaries are from [Natural Earth](#), and are in the [public domain](#). The boundaries and names used, and the designations used, in Trends.Earth do not imply official endorsement or acceptance by Conservation International Foundation, or by its partner organizations and contributors.

Trends.Earth login information

Register for Trends.Earth (step 1) Enter username and password (step 2)

Update profile Reset password Delete user





▼ Region of interest

Country / Region

First level

Second level

Region:

City:

Disclaimer: The provided boundaries are from [Natural Earth](#), and are in the [public domain](#). The boundaries and names used, and the designations used, in Trends.Earth do not imply official endorsement or acceptance by Conservation International Foundation, or by its partner organizations and contributors.

Point

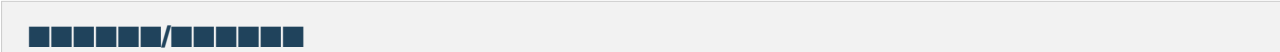
longitude: latitude:

Area from file

Apply a buffer to the chosen area

Buffer size (kilometers):

Area name:



geoBoundaries, Trends.Earth, CC BY 4.0. Trends.Earth, Conservation International Foundation, and its partner organizations and contributors.

Note

geoBoundaries, Trends.Earth, CC BY 4.0. Trends.Earth, Conservation International Foundation, and its partner organizations and contributors.

Trends.Earth, Conservation International Foundation, and its partner organizations and contributors.

[Redacted]

[Redacted]

[Redacted]

[Redacted]















[Redacted]. Supported formats: shapefile, kml, kmz [Redacted] geojson.

Note

[Redacted]

[Redacted]

[Redacted]

Custom Land Cover Classes		
Name	Code	Parent
 Tree-covered	1	 Tree-covered
 Grassland	2	 Grassland
 Cropland	3	 Cropland
 Wetland	4	 Wetland
 Artificial	5	 Artificial
 Other land	6	 Other land
 Water body	7	 Water body

Add class... Load... Save... Restore Import CSV

[Redacted]

- [Redacted]
- [Redacted]
- [Redacted]
- [Redacted]

[Redacted]



Custom Land Cover Classes

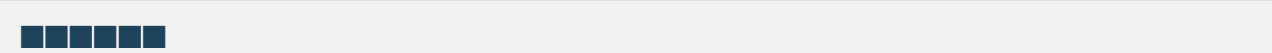
Land Cover Class Editor

Name

Parent  Artificial

Color 

Code



« ».

Reports

Template search path

Common Report Information

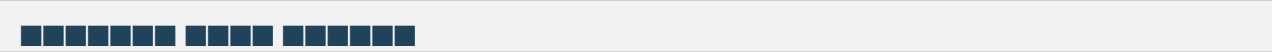
Organization logo

Organization name

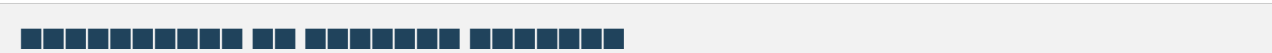
Footer text

Disclaimer text

Log warnings in output directory



(qpt-). [base_data_directory]/reports/templates, , .



, , .

Note

██████████
██████████
██████████ (██████████)

a. Organization Logo — ██████, ██████

`trends_earth_logo_bl_small.png`, QGIS
`te_report_organization_logo`.

b. Organization Name — ██████

QGIS
`te_report_organization_name`.

c. Footer Text — ██████

QGIS `te_report_footer`.

d. Disclaimer Text — ██████

██████████:

██████████ `geoBoundaries (www.geoboundaries.org)` ██████
██████████ `CC BY 4.0`. ██████ `Trends.Earth`
██████████, ██████████
██████████
██████████, ██████████
██████████.

QGIS
`te_report_disclaimer`.

██████████

html-██████████, ██████████
██████████, ██████████
██████████

██████████

██████████, ██████████
Trends.Earth.



▼ Advanced

Base data directory ...

Filter remote jobs according to local base data directory

Enable debug mode (saves detailed logging information)

Download remotely-generated datasets automatically

Poll remote processing server periodically

Polling frequency (seconds)

Use binaries for faster processing

Binaries are not loaded.



These instructions describe how to set up the Trends.Earth software. Before starting, make sure you have installed the software correctly. The software is installed on your computer, and you have access to the Trends.Earth website. The software is installed on your computer, and you have access to the Trends.Earth website. The software is installed on your computer, and you have access to the Trends.Earth website.

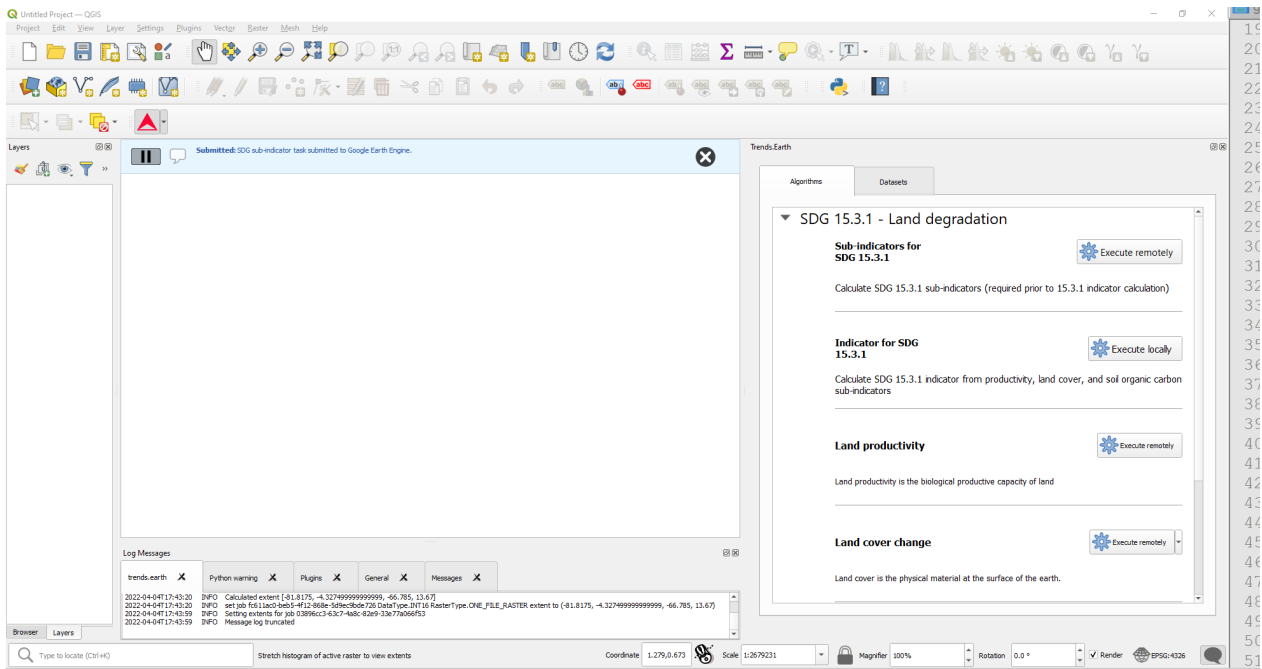
Before starting, make sure you have installed the software correctly. The software is installed on your computer, and you have access to the Trends.Earth website. The software is installed on your computer, and you have access to the Trends.Earth website.

Before starting, make sure you have installed the software correctly.

1. Before starting, make sure you have installed the software correctly.
2. Before starting, make sure you have installed the software correctly.
3. Before starting, make sure you have installed the software correctly.
 - Before starting, make sure you have installed the software correctly.
 - Before starting, make sure you have installed the software correctly.
4. Before starting, make sure you have installed the software correctly.
 - Before starting, make sure you have installed the software correctly.
 - Before starting, make sure you have installed the software correctly.
 - Before starting, make sure you have installed the software correctly.
5. Before starting, make sure you have installed the software correctly.



- Before starting, make sure you have installed the software correctly.



Note

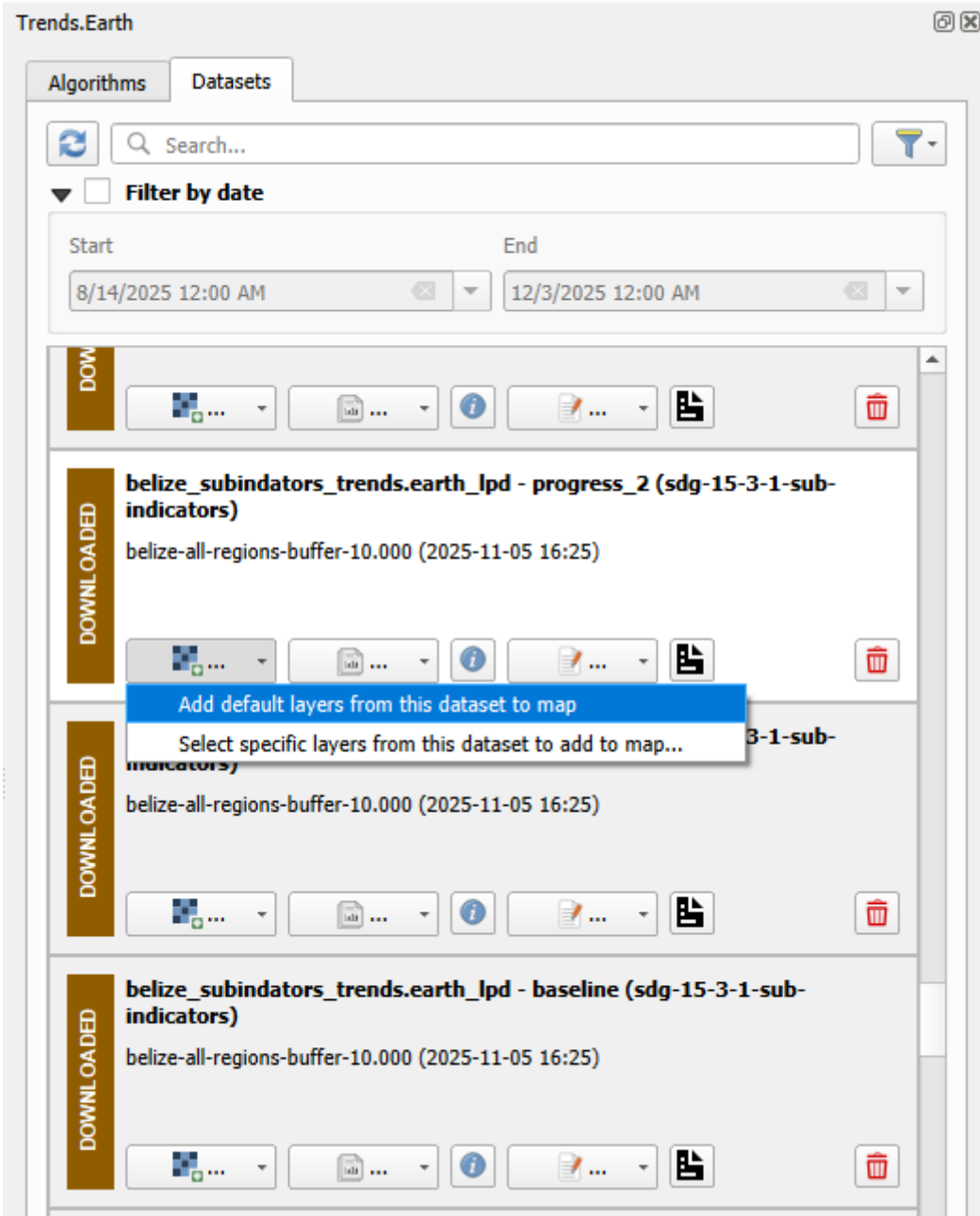
1. **SDG 15.3.1** **Trends.Earth**, **(GPG)** **(UNCCD)**.

7. **«Trends.Earth»** **«** **»**. **«** **»**.

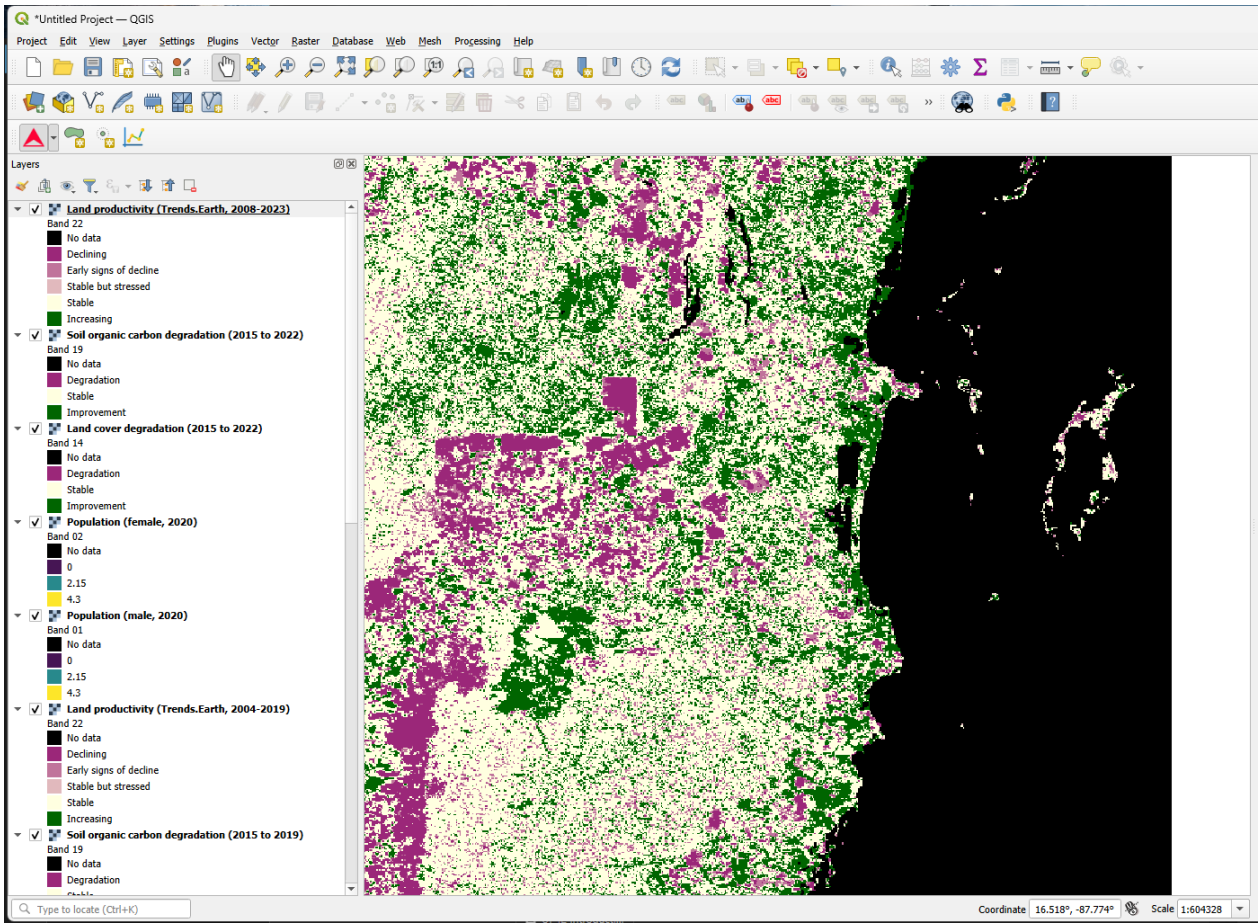
Note

« **»**.

- **«** **»**.



9. **[REDACTED]**: **[REDACTED]**, **[REDACTED]**, **[REDACTED]**, **[REDACTED]**. **[REDACTED]**



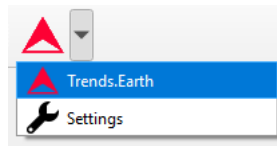
15.3.1 2-3

- **15.3.1**: **2-3** **15.3.1** **2-3**
- ****** **20**
- ****** ******

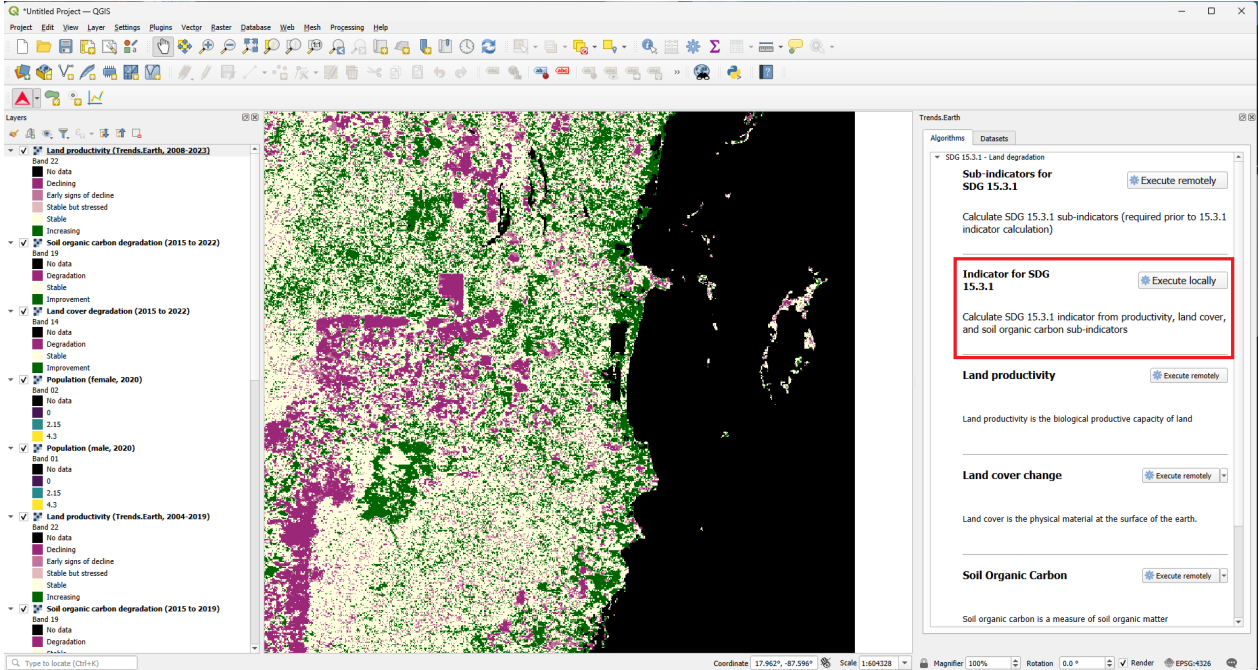
Note

SOC.

1. **Trends.Earth** **QGIS** **«Trends.Earth».**



2. «Trends.Earth». «» «15.3.1 —
» «»
«15.3.1».



3. .
«».
«»
» «»
»

Note
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SDG 15.3.1 Indicator (Summary) | Land Degradation

Land productivity data

- Trends.Earth land productivity dynamics
- FAO-WOCAT
- Pre-calculated land productivity dynamics (from JRC)

Baseline dataset

belize-all-regions-buffer-10.000 - Belize_subindicators - baseline (sdg-15-3-1-sub-indicators) - 2025-11-25 15:25

Advanced (baseline)

Productivity

Trend (degradation)

Belize_subindicators - baseline - belize-all-regions-buffer-10.000 - Land productivity trend degradation (2001 to 2015) - 2025-11-25 15:25

Performance (degradation)

Belize_subindicators - baseline - belize-all-regions-buffer-10.000 - Land productivity performance degradation (2001 to 2015) - 2025-11-25 15:25

State (degradation)

Belize_subindicators - baseline - belize-all-regions-buffer-10.000 - Land productivity state degradation (2001-2012 vs 2013-2015) - 2025-11-25 15:25

Land cover (degradation)

Belize_subindicators - baseline - belize-all-regions-buffer-10.000 - Land cover degradation (2000 to 2015) - 2025-11-25 15:25

Soil carbon (degradation)

Belize_subindicators - baseline - belize-all-regions-buffer-10.000 - Soil organic carbon degradation (2000 to 2015) - 2025-11-25 15:25

Population (required to calculate population exposed by degradation)

- Population broken down by sex

Female population: Belize_subindicators - baseline - belize-all-regions-buffer-10.000 - Population (female, 2015) - 2025-11-25 15:25

Male population: Belize_subindicators - baseline - belize-all-regions-buffer-10.000 - Population (male, 2015) - 2025-11-25 15:25

Total population

Total population: No layers available in this region

Include reporting period(s) for comparison to baseline

Progress dataset #1

belize-all-regions-buffer-10.000 - Belize_subindicators - reporting_1 (sdg-15-3-1-sub-indicators) - 2025-11-25 15:25

Advanced (reporting period) #1

Productivity

SDG Indicator 15.3.1

As part of the "2030 Agenda for Sustainable Development", Sustainable Development Goal (SDG) 15 is to:

"Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss"

Each SDG has specific targets addressing different components, in this case, of life on land. Target 15.3 aims to:

"By 2030, combat desertification, restore degraded land and soil, including land exposed by desertification, drought and floods, and strive to achieve a land degradation-neutral world"

Indicators will be used then to assess the progress of each SDG target. In the case of SDG 15.3 the progress towards a land degradation neutral world will be assessed using indicator 15.3.1:

"proportion of land that is degraded over total land area"

As the custodian agency for SDG 15.3, the United Nations Convention to Combat Desertification (UNCCD) has developed a [Good Practice Guidance \(GPG\)](#), providing recommendations on how to calculate SDG Indicator 15.3.1.

Execute locally Cancel Help

SDG 15.3.1 Indicator (Summary) | Land Degradation

Include reporting period(s) for comparison to baseline

Progress dataset #1

belize-all-regions-buffer-10.000 - Belize_subindicators - reporting_1 (sdg-15-3-1-sub-indicators) - 2025-11-25 15:25

Advanced (reporting period) #1

Productivity

Trend (degradation)

Belize_subindicators - reporting_1 - belize-all-regions-buffer-10.000 - Land productivity trend degradation (2004 to 2019) - 2025-11-25 15:25

Performance (degradation)

Belize_subindicators - reporting_1 - belize-all-regions-buffer-10.000 - Land productivity performance degradation (2004 to 2019) - 2025-11-25 15:25

State (degradation)

Belize_subindicators - reporting_1 - belize-all-regions-buffer-10.000 - Land productivity state degradation (2004-2016 vs 2017-2019) - 2025-11-25 15:25

Land cover (degradation)

Belize_subindicators - reporting_1 - belize-all-regions-buffer-10.000 - Land cover degradation (2015 to 2019) - 2025-11-25 15:25

Soil carbon (degradation)

Belize_subindicators - reporting_1 - belize-all-regions-buffer-10.000 - Soil organic carbon degradation (2015 to 2019) - 2025-11-25 15:25

Population (required to calculate population exposed by degradation)

- Population broken down by sex

Female population: Belize_subindicators - reporting_1 - belize-all-regions-buffer-10.000 - Population (female, 2019) - 2025-11-25 15:25

Male population: Belize_subindicators - reporting_1 - belize-all-regions-buffer-10.000 - Population (male, 2019) - 2025-11-25 15:25

Total population

Total population: No layers available in this region

Reporting period #2

belize-all-regions-buffer-10.000 - Belize_subindicators - reporting_2 (sdg-15-3-1-sub-indicators) - 2025-11-25 15:25

Advanced (reporting period) #2

Productivity

Trend (degradation)

Belize_subindicators - reporting_2 - belize-all-regions-buffer-10.000 - Land productivity trend degradation (2008 to 2023) - 2025-11-25 15:25

Performance (degradation)

Belize_subindicators - reporting_2 - belize-all-regions-buffer-10.000 - Land productivity performance degradation (2008 to 2023) - 2025-11-25 15:25

SDG Indicator 15.3.1

As part of the "2030 Agenda for Sustainable Development", Sustainable Development Goal (SDG) 15 is to:

"Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss"

Each SDG has specific targets addressing different components, in this case, of life on land. Target 15.3 aims to:

"By 2030, combat desertification, restore degraded land and soil, including land exposed by desertification, drought and floods, and strive to achieve a land degradation-neutral world"

Indicators will be used then to assess the progress of each SDG target. In the case of SDG 15.3 the progress towards a land degradation neutral world will be assessed using indicator 15.3.1:

"proportion of land that is degraded over total land area"

As the custodian agency for SDG 15.3, the United Nations Convention to Combat Desertification (UNCCD) has developed a [Good Practice Guidance \(GPG\)](#), providing recommendations on how to calculate SDG Indicator 15.3.1.

Execute locally Cancel Help

SDG 15.3.1 Indicator (Summary) | Land Degradation

belize-all-regions-buffer-10.000 - Belize_subindicators - reporting_2 (sdg-15-3-1-sub-indicators) - 2025-11-25 15:25

Advanced (reporting period) #2

Productivity

Trend (degradation)
 Belize_subindicators - reporting_2 - belize-all-regions-buffer-10.000 - Land productivity trend degradation (2008 to 2023) - 2025-11-25 15:25

Performance (degradation)
 Belize_subindicators - reporting_2 - belize-all-regions-buffer-10.000 - Land productivity performance degradation (2008 to 2023) - 2025-11-25 15:25

State (degradation)
 Belize_subindicators - reporting_2 - belize-all-regions-buffer-10.000 - Land productivity state degradation (2008-2020 vs 2021-2023) - 2025-11-25 15:25

Land cover (degradation)
 Belize_subindicators - reporting_2 - belize-all-regions-buffer-10.000 - Land cover degradation (2015 to 2022) - 2025-11-25 15:25

Soil carbon (degradation)
 Belize_subindicators - reporting_2 - belize-all-regions-buffer-10.000 - Soil organic carbon degradation (2015 to 2022) - 2025-11-25 15:25

Population (required to calculate population exposed by degradation)

Population broken down by sex

Female population: Belize_subindicators - reporting_2 - belize-all-regions-buffer-10.000 - Population (female, 2020) - 2025-11-25 15:25

Male population: Belize_subindicators - reporting_2 - belize-all-regions-buffer-10.000 - Population (male, 2020) - 2025-11-25 15:25

Total population

Total population: No layers available in this region

Add reporting period for comparison to baseline

Current region: belize-all-regions-buffer-10.000 [Change region]

Execution name:

Notes:

SDG Indicator 15.3.1

As part of the "2030 Agenda for Sustainable Development", Sustainable Development Goal (SDG) 15 is to:

"Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss"

Each SDG has specific targets addressing different components, in this case, of life on land. Target 15.3 aims to:

"By 2030, combat desertification, restore degraded land and soil, including land exposed by desertification, drought and floods, and strive to achieve a land degradation-neutral world"

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"proportion of land that is degraded over total land area"

As the custodian agency for SDG 15.3, the United Nations Convention to Combat Desertification (UNCCD) has developed a [Good Practice Guidance \(GPG\)](#), providing recommendations on how to calculate SDG Indicator 15.3.1.

Execute locally Cancel Help

- [REDACTED] QGIS, [REDACTED]
 [REDACTED]
 [REDACTED]

Note

[REDACTED]
 [REDACTED]

4. [REDACTED] « [REDACTED] », [REDACTED] [REDACTED]
 [REDACTED], [REDACTED] « [REDACTED] »
 ([REDACTED] [REDACTED] [REDACTED], [REDACTED] [REDACTED] [REDACTED])»,
 [REDACTED] [REDACTED] [REDACTED] 2-3 [REDACTED], [REDACTED] [REDACTED], [REDACTED]
 [REDACTED], [REDACTED] [REDACTED] [REDACTED] <<https://prais4-reporting-manual.readthedocs.io/en/latest/SO2.html#so-2-3-trends-in-population-exposure-to-land-degradation-disaggregated-by-sex>>. [REDACTED] [REDACTED] [REDACTED] « [REDACTED] » [REDACTED]
 « [REDACTED] [REDACTED] », [REDACTED] [REDACTED] « [REDACTED] [REDACTED] », [REDACTED] [REDACTED]
 [REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED]. ▲TRENDS.EARTH
 [REDACTED] [REDACTED] [REDACTED] «WorldPop», [REDACTED] [REDACTED]
 [REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED] 2-3.



SDG 15.3.1 Indicator (Summary) | Land Degradation

Land productivity data

- Trends.Earth land productivity dynamics
- FAO-WOCAT
- Pre-calculated land productivity dynamics (from JRC)

Baseline dataset

belize-all-regions-buffer-10.000 - Belize_subindicators - reporting_2 (sdg-15-3-1-sub-indicators) - 2025-11-25 15:25

Advanced (baseline)

Productivity

Trend (degradation)

belize_subindicators - reporting_2 - belize-all-regions-buffer-10.000 - Land productivity trend degradation (2008 to 2023) - 2025-11-25 15:25

Performance (degradation)

belize_subindicators - reporting_2 - belize-all-regions-buffer-10.000 - Land productivity performance degradation (2008 to 2023) - 2025-11-25 15:25

State (degradation)

belize_subindicators - reporting_2 - belize-all-regions-buffer-10.000 - Land productivity state degradation (2008-2020 vs 2021-2023) - 2025-11-25 15:25

Land cover (degradation)

belize_subindicators - reporting_2 - belize-all-regions-buffer-10.000 - Land cover degradation (2015 to 2022) - 2025-11-25 15:25

Soil carbon (degradation)

belize_subindicators - reporting_2 - belize-all-regions-buffer-10.000 - Soil organic carbon degradation (2015 to 2022) - 2025-11-25 15:25

Population (required to calculate population exposed by degradation)

- Population broken down by sex
 - Female population: belize_subindicators - reporting_2 - belize-all-regions-buffer-10.000 - Population (female, 2020) - 2025-11-25 15:25
 - Male population: belize_subindicators - reporting_2 - belize-all-regions-buffer-10.000 - Population (male, 2020) - 2025-11-25 15:25
- Total population
 - Total population: No layers available in this region

SDG Indicator 15.3.1

As part of the "2030 Agenda for Sustainable Development", Sustainable Development Goal (SDG) 15 is to:

"Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss"

Each SDG has specific targets addressing different components, in this case, of life on land. Target 15.3 aims to:

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Indicators will be used then to assess the progress of each SDG target. In the case of SDG 15.3 the progress towards a land degradation neutral world will be assessed using indicator 15.3.1:

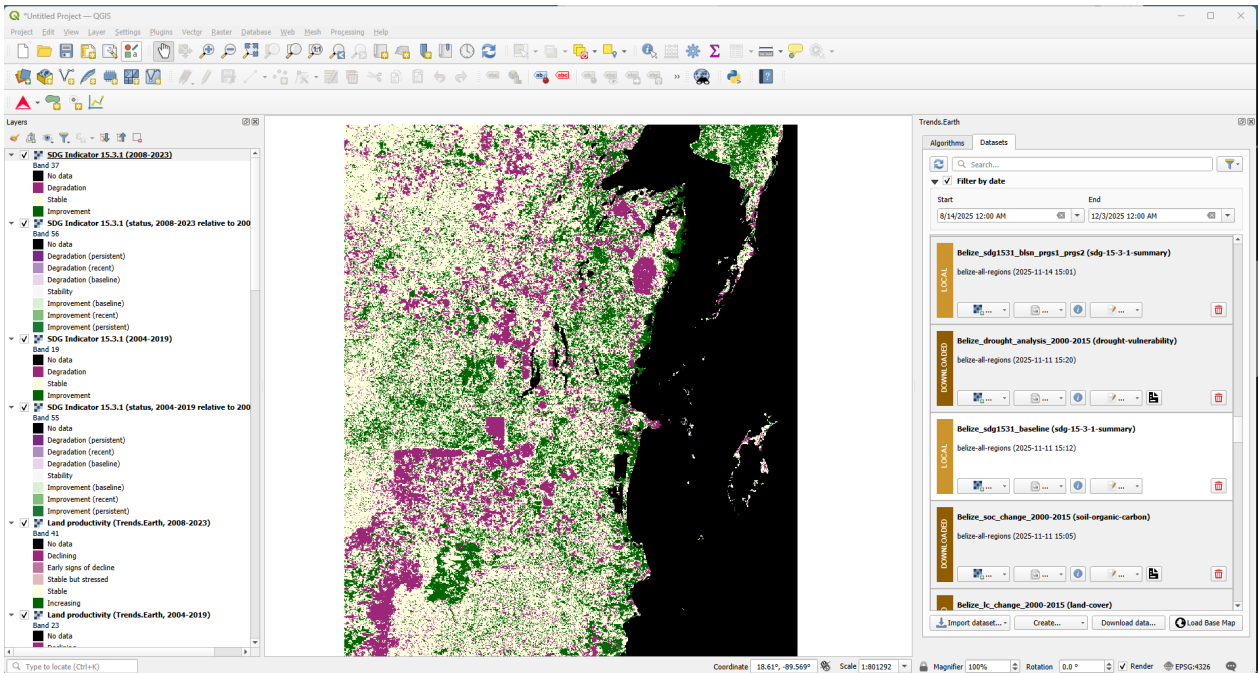
"proportion of land that is degraded over total land area"

Execute locally Cancel Help

5. « ».

6. , « ».

7. « » « » QGIS».



Note

15.3.1

15.3.1

- Trends.Earth, 15.3.1.
- 25
- **

Note

PDF <../pdfs/Trends.Earth_Tutorial08_The_Summary_Table.pdf>`_

Note

15.3.1 « 15.3.1 ». 15.3.1 2-3

■■■■■■■■ ■■■■■■■■

1. ■■■■■■ ■■■■■■■■ ■■■■■■■■■■ ■■■■ ■■■■ 15.3.1 ■■■■■■■■■■ ■■■■■ Excel ■■■
■■■■■■■■ ■■■■■■■■■■. ■ ■■■■■ «■■■■■■■■ ■■■■■■■■» ■■■■■■■■■ «■■■■■■■■ ■■■■■■■■
■■■■■■■■ ■■■■■■■■».



Trends.Earth


Algorithms Datasets

Search...

Filter by date

Start: 8/14/2025 12:00 AM End: 12/3/2025 12:00 AM

LOCAL Belize_sdg1531_blsn_prgs1_prgs2 (sdg-15-3-1-summary)
belize-all-regions (2025-11-14 15:01)

 View dataset details

DOWNLOADED Belize_drought_analysis_2000-2015 (drought-vulnerability)
belize-all-regions (2025-11-11 15:20)

LOCAL Belize_sdg1531_baseline (sdg-15-3-1-summary)
belize-all-regions (2025-11-11 15:12)

DOWNLOADED Belize_soc_change_2000-2015 (soil-organic-carbon)
belize-all-regions (2025-11-11 15:05)


DOWNLOADED Belize_lc_change_2000-2015 (land-cover)

Import dataset... Create... Download data... Load Base Map

Magnifier 100% Rotation 0.0° Render EPSG:4326



Dataset Details

Name: Belize_sdg1531_blsn_prgrs1_prgrs2
ID: 2233f691-45e7-4958-ad7e-1fb2c84e3425
State: GENERATED_LOCALLY
Created at: 2025-11-14 15:01
Available paths: prgs1_prgrs2_sdg-15-3-1-summary_belize-all-regions.vrt 
Generated by algorithm: sdg-15-3-1-summary

Algorithm Details



Comments:
Baseline 2001_2015
1 prgs 2015-2019
2 prgs 2015-2023

Input:

- periods: (3 items)
 - [0]: (2 keys)
 - [1]: (2 keys)
 - [2]: (2 keys)

Output:

- name: "land_condition_summary"
- rasters: (1 keys)
 - Int16: (6 keys)
- uri: (2 keys)
 - uri: "C:\Users\gdaldegan\trends_earth_dat..."
 - etag: null
- data: (1 keys)
 - report: (3 keys)
- type: "RasterResults"

 Delete dataset  Export as a ZIP



AutoSave Off | belize_sdg1531_blsn_prgrs1_prgrs2_sdg-15-3-1-summary_belize-all-regions_progress_2 | No Label

File Home Insert Draw Page Layout Formulas Data Review View Automate Help Unit4 Excelerator

Clipboard Font Alignment Number Cell Styles Conditional Formatting Insert Delete Format Cells Editing Sensitivity Add-ins Analyze Copilot Data

A1 Trends.Earth soil organic carbon summary table

Trends.Earth soil organic carbon summary table									
Summary of change in soil organic carbon									
		Area (sq km)		Percent of total land area					
Total land area:		21,409.7		100.00%					
Land area with improved soil organic carbon:		1.10		0.01%					
Land area with stable soil organic carbon:		21,319.81		99.58%					
Land area with degraded soil organic carbon:		22.47		0.10%					
Land area with no data for soil organic carbon:		66.34		0.31%					
Percent change in soil organic carbon storage from initial year to final year:						-0.19%			
Soil organic carbon change from initial year to final year									
	Initial soil organic carbon (tonnes / ha)	Final soil organic carbon (tonnes / ha)	Initial area (sq. km)	Final area (sq. km)	Initial soil organic carbon (tonnes)	Final soil organic carbon (tonnes)	Change in soil organic carbon (tonnes)	Change in soil organic carbon (percent)	
Tree-covered	107.37	108.98	17,674	17,178	189,767,864	187,204,001	-2,563,863.37	-1%	
Grassland	93.43	90.46	671	724	6,269,340	6,552,521	283,181.16	5%	
Cropland	87.92	81.68	2,482	2,929	21,822,242	23,923,686	2,101,443.51	10%	

SDG 15.3.1 Productivity Soil organic carbon Land cover Population +

Ready Accessibility: Investigate Display Settings 100%

6. **..... « » ,
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.....:

- **..... (..... %).**
- **..... (.....).**



The screenshot shows an Excel spreadsheet titled "Trends.Earth population affected by degradation summary table". The table is titled "Summary of population by land degradation class" and is located in the "Population" worksheet. The table has five columns: "Land Area (sq km)", "Percent of total land area", "Population", and "Percent of total population". The data is as follows:

	Land Area (sq km)	Percent of total land area	Population	Percent of total population
Total:	22,299.3	100.00%	352,156	100.00%
Improved land:	5,714.8	25.63%	101,021.00	28.69%
Stable land:	3,621.9	53.61%	151,001.00	42.88%
Degraded land:	3,621.9	16.24%	89,160.00	25.32%
No data:	1,008.1	4.52%	10,974.00	3.12%

8. **UNCCD Reporting Format** **SDG 15.3.1** **Productivity** **Soil organic carbon** **Land cover** **Population**

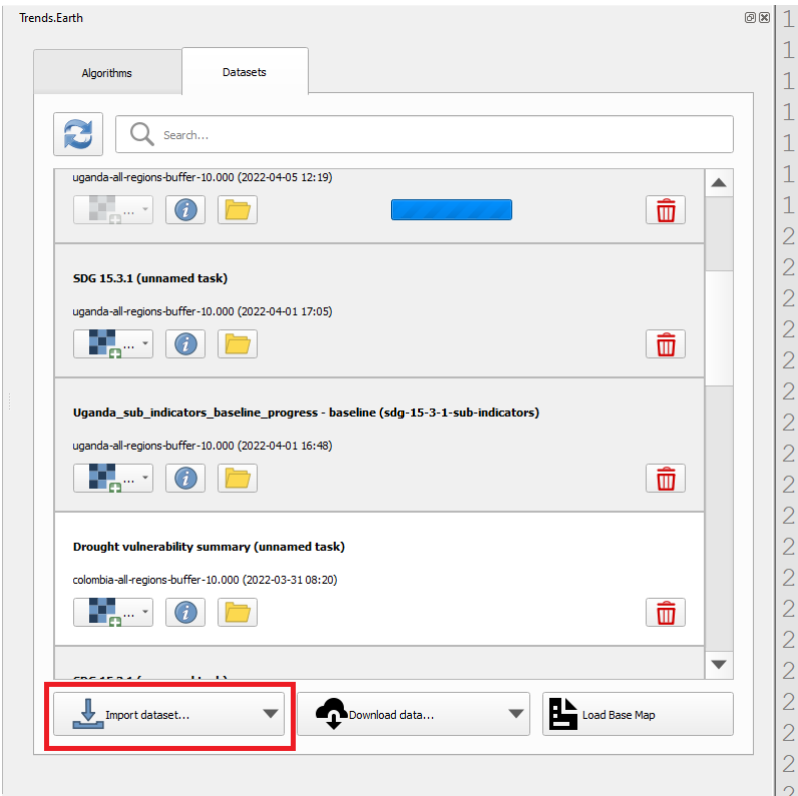
The screenshot shows an Excel spreadsheet titled "trends.earth output summarized in UNCCD reporting format". The spreadsheet is divided into two sections: "Page 3 of 34 - Country Profile" and "Page 4 of 34 - SO1-1 Trends in land cover".

Page 3 of 34 - Country Profile

Year	Total land sq. km	Water bodies sq. km	Total country area sq. km
2000	204,519.14	37,298.82	241,817.97
2001	204,493.39	37,324.58	241,817.97
2002	204,489.30	37,328.67	241,817.97
2003	204,483.65	37,334.31	241,817.97
2004	204,484.89	37,333.08	241,817.97
2005	204,480.54	37,337.42	241,817.97
2006	204,482.53	37,335.44	241,817.97
2007	204,482.90	37,335.07	241,817.97
2008	204,483.70	37,334.26	241,817.97
2009	204,484.07	37,333.89	241,817.97
2010	204,483.70	37,334.26	241,817.97
2011	204,483.33	37,334.64	241,817.97
2012	204,483.21	37,334.76	241,817.97
2013	204,483.27	37,334.70	241,817.97
2014	204,483.46	37,334.51	241,817.97
2015	204,483.46	37,334.51	241,817.97

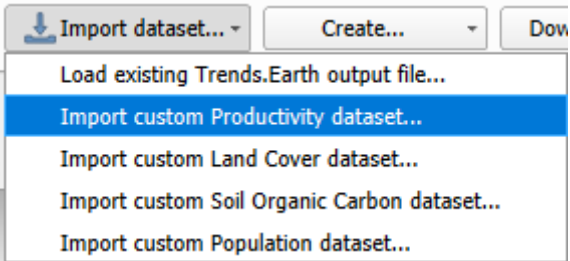
Page 4 of 34 - SO1-1 Trends in land cover

Year	Tree-covered areas	Grassland	Cropland	Wetland	Artificial surfaces	Other land
2000	48,910.64	40,295.28	111,220.54	3,859.05	232.34	1.30
2001	49,153.35	39,670.95	111,521.34	3,856.37	290.07	1.30

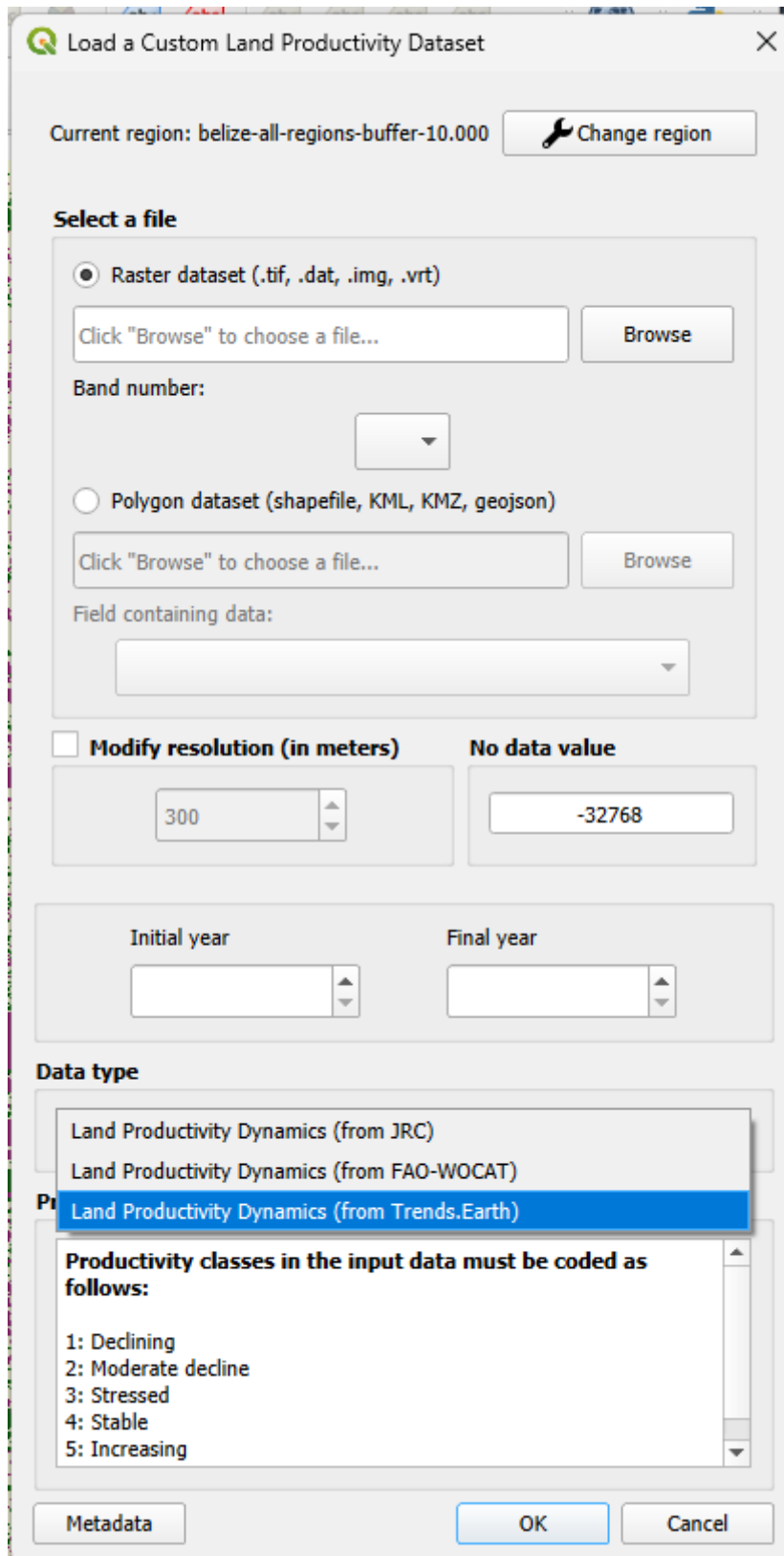


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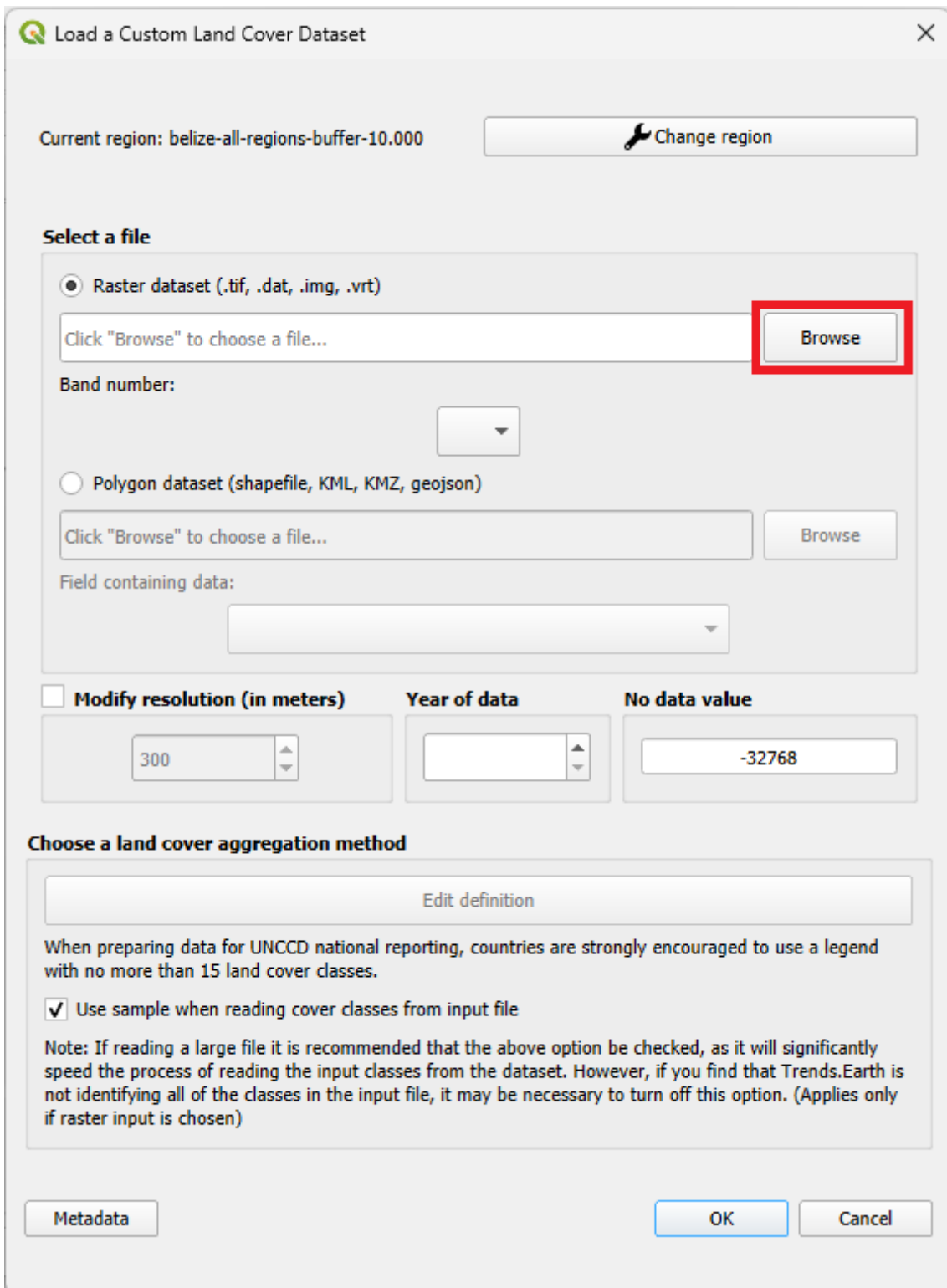
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4. **File** > **Open** > **Open Recent** > **Open Recent List** > **Open Recent List**



- 4.

«
»



Setup aggregation of land cover data

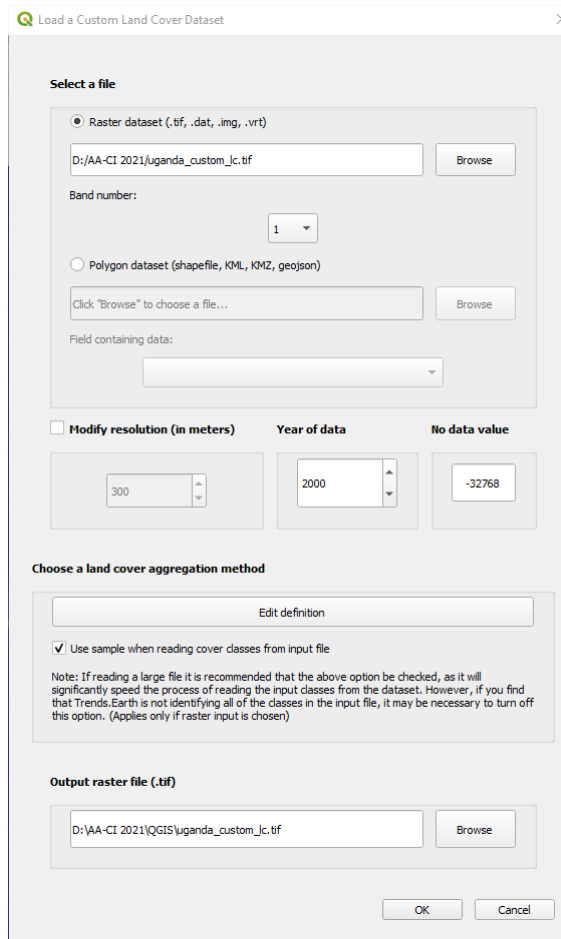
Input code	Input class	
10	Cropland, rainfed	Tree-covered
11	Herbaceous cover	Grassland
12	Tree or shrub cover	Cropland
20	Cropland, irrigated or post-flooding	Wetland
30	Mosaic cropland (>50%) / natural vegetation (tree, shrub, herbaceous cover) (<50%)	Artificial
40	Mosaic natural vegetation (tree, shrub, herbaceous cover) (>50%) / cropland (<50%)	Other land
50	Tree cover, broadleaved, evergreen, closed to open (>15%)	Water body
60	Tree cover, broadleaved, deciduous, closed to open (>15%)	Cropland
61	Tree cover, broadleaved, deciduous, closed (>40%)	Cropland
62	Tree cover, broadleaved, deciduous, open (15-40%)	Tree-covered
70	Tree cover, needleleaved, evergreen, closed to open (>15%)	Tree-covered
71	Tree cover, needleleaved, evergreen, closed (>40%)	Tree-covered
72	Tree cover, needleleaved, evergreen, open (15-40%)	Tree-covered
80	Tree cover, needleleaved, deciduous, closed to open (>15%)	Tree-covered
81	Tree cover, needleleaved, deciduous, closed (>40%)	Tree-covered
82	Tree cover, needleleaved, deciduous, open (15-40%)	Tree-covered
90	Tree cover, mixed leaf type (broadleaved and needleleaved)	Tree-covered

Reset to default

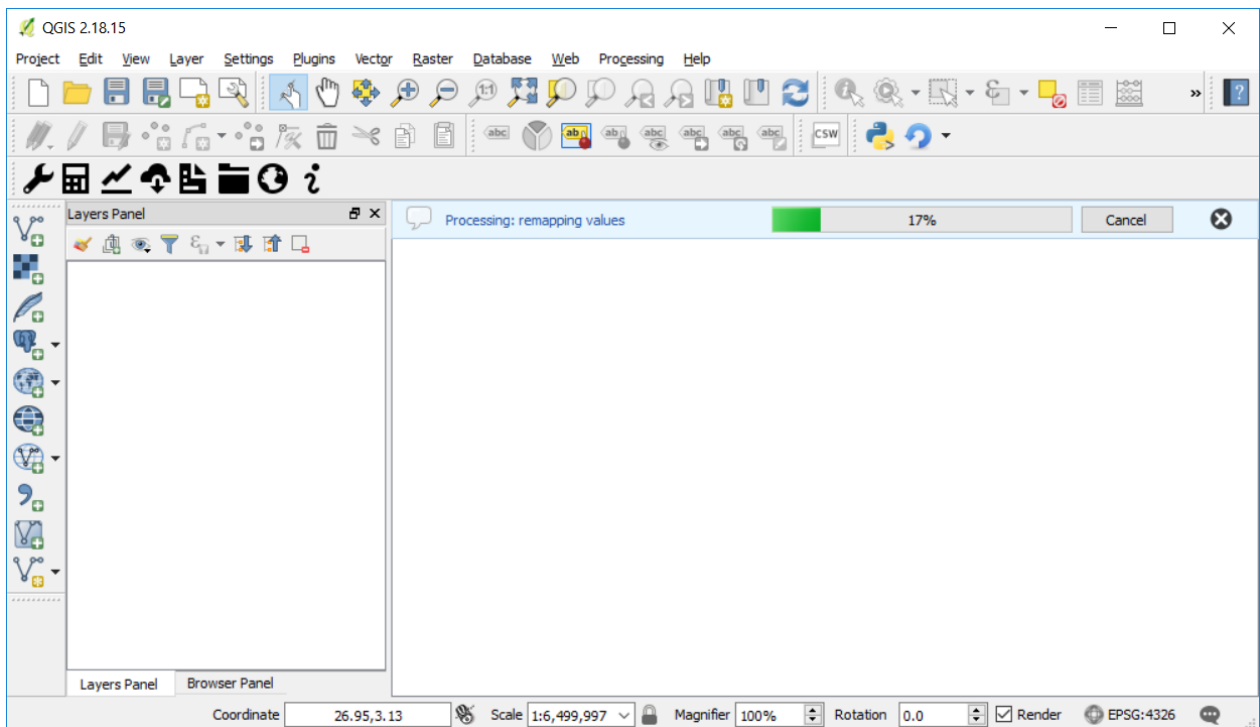
Load definition from file Save definition to file

Save

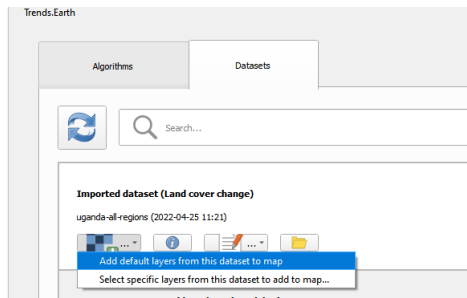
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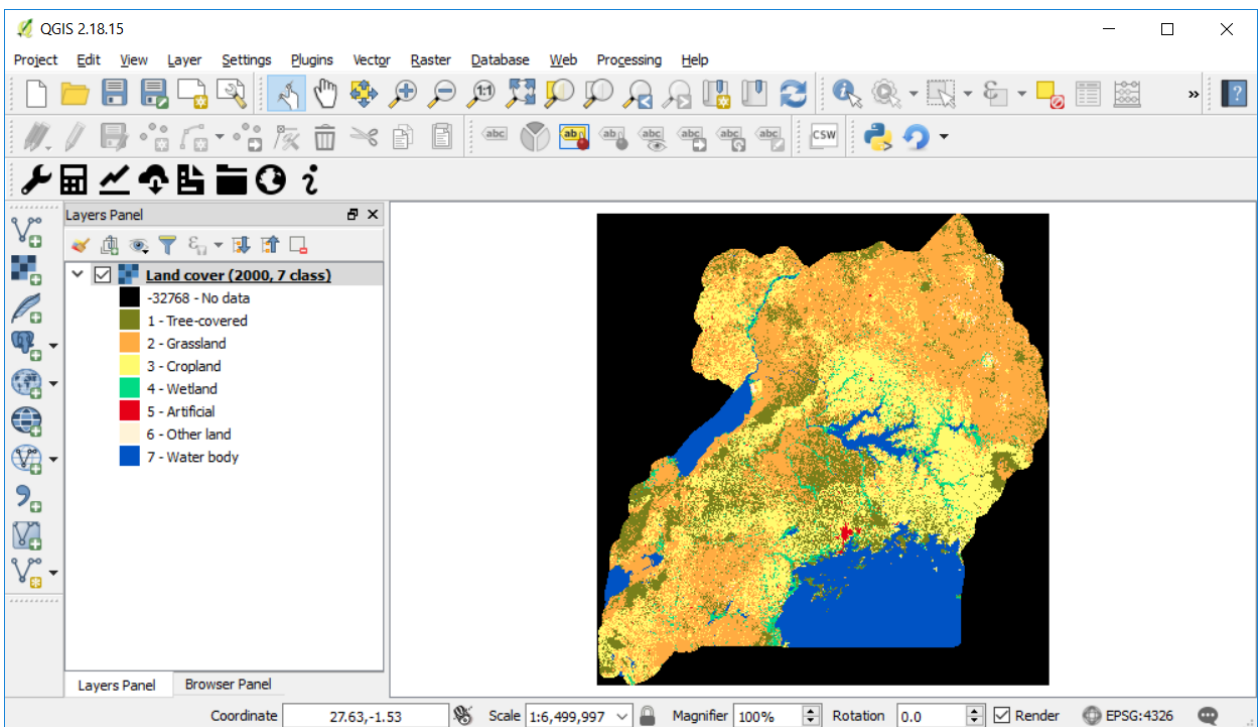
8.  ,  .

9. «Trends.Earth» «Land cover change (uganda-all-region (2000-2015))», «QGIS».



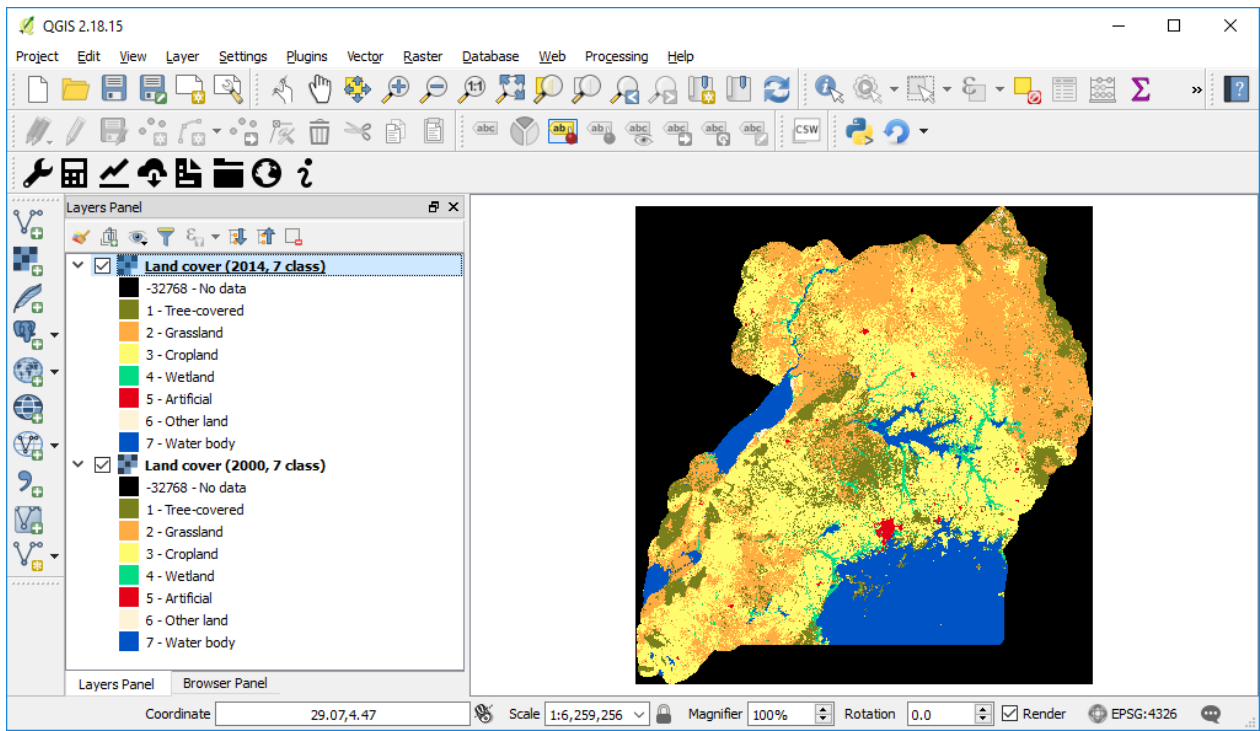
■ QGIS.



Note

«Land cover change (uganda-all-region (2000-2015))», «QGIS».

10 «Land cover change (uganda-all-region (2000-2015))», «QGIS».



1. [REDACTED], [REDACTED] Trends.Earth, [REDACTED]



Trends.Earth

Algorithms Datasets

▼ SDG 15.3.1 - Land degradation

Sub-indicators for SDG 15.3.1 Execute remotely

Calculate SDG 15.3.1 sub-indicators (required prior to 15.3.1 indicator calculation)

Indicator for SDG 15.3.1 Execute locally

Calculate SDG 15.3.1 indicator from productivity, land cover, and soil organic carbon sub-indicators

Land productivity Execute remotely

Land productivity is the biological productive capacity of land

Land cover change Execute remotely

Land cover is the physical material at the surface of the earth.

Land cover change

Land cover is the physical material at the surface of the earth.

- Execute remotely
- Execute remotely
- Execute locally

2. [Redacted text]



Land Cover | Land Degradation

Initial year layer: uganda-all-regions-buffer-10.000 - Land cover (2001, 7 class) - 2022-04-05 13:29

Target year layer: uganda-all-regions-buffer-10.000 - Land cover (2015, 7 class) - 2022-04-01 17:05

Current region: uganda-all-regions-buffer-10.000 Change region

Execution name: UGA_LandCover_SubIndicator_CustomDataset

Notes: Calculating Land Cover sub-indicator using custom dataset representing land cover classes for 2000 & 2015

Advanced configuration

Land cover in target year

	Tree-covered	Grassland	Cropland	Wetland	Artificial	Other land	Water body
Tree-covered	0	-	-	-	-	-	0
Grassland	+	0	+	-	-	-	0
Cropland	+	-	0	-	-	-	0
Wetland	-	-	-	0	-	-	0
Artificial	+	+	+	+	0	+	0
Other land	+	+	+	+	-	0	0
Water body	0	0	0	0	0	0	0

Legend

Degradation: - (purple box) Stable: 0 (yellow box) Improvement: + (green box)

*The "Grassland" class consists of grassland, shrub, and sparsely vegetated areas (if the default aggregation is used).

Execute locally Cancel Help

Land cover

To assess changes in land cover users need land cover maps covering the study area for the baseline and target years. These maps need to be of acceptable accuracy and created in such a way which allows for valid comparisons. Trends.Earth uses ESA CCI land cover maps as the default dataset, but local maps can also be used. The indicator is computed as follows:

1. Reclassify both land cover maps to the 7 land cover classes needed for reporting to the UNCCD (forest, grassland, cropland, wetland, artificial area, bare land and water).
2. Perform a land cover transition analysis to identify which pixels remained in the same land cover class, and which ones changed.
3. Based on your local knowledge of the conditions in the study area and the land degradation processes occurring there, use the table below, in the advanced section, to identify which transitions correspond to degradation (- sign), improvement (+ sign), or no change in terms of land condition (zero).
4. Trends.Earth will combine the information from the land cover maps and the table of degradation typologies by land cover transition to compute the land cover sub-indicator.

[More information on the Land Cover SDG 15.3.1 Sub-indicator](#)

- [Redacted text]

Note

[Redacted text]

3. [Redacted text]

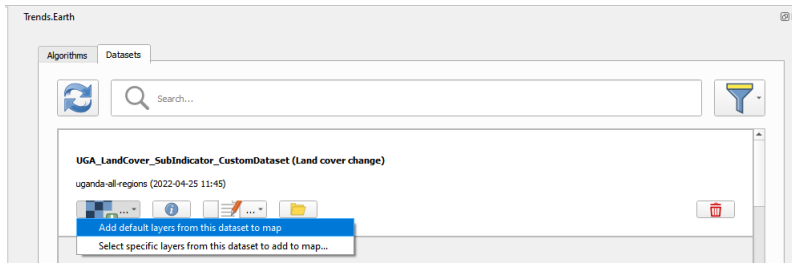
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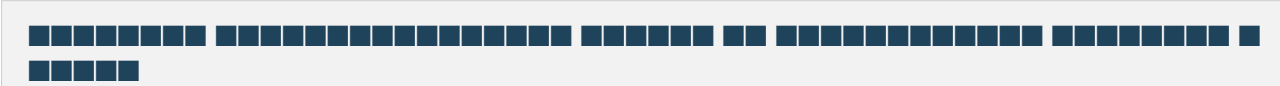
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— SOC

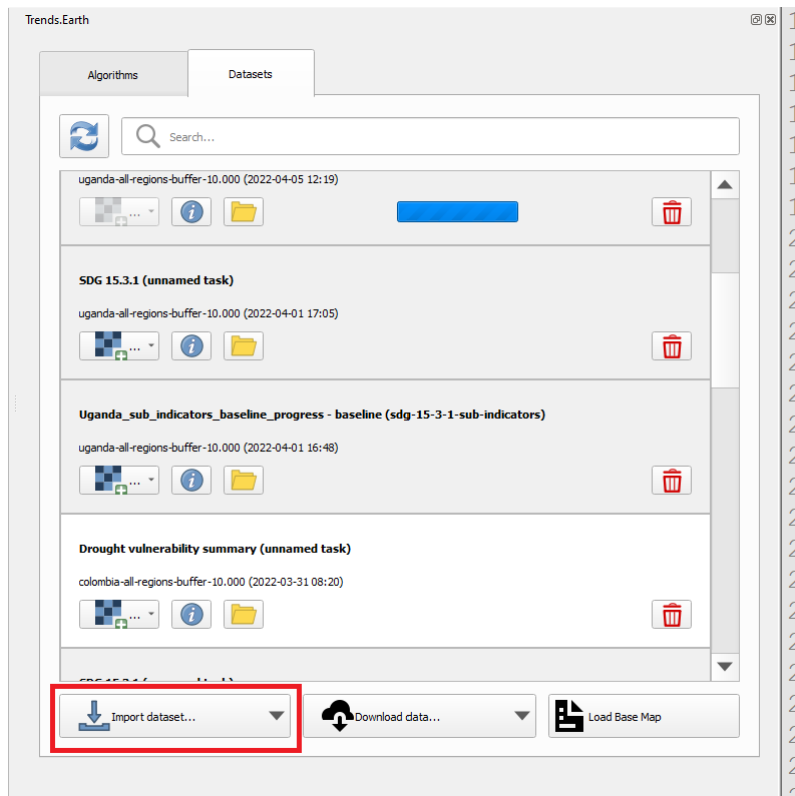
- **Dataset:** UGA_LandCover_Subindicator_CustomDataset (Land cover change) Trends.Earth.
- **** Number of layers:** 20
- **** Number of layers to add:** 1



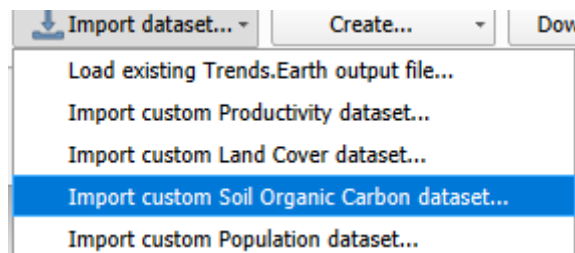
Note

The dataset 'UGA_LandCover_Subindicator_CustomDataset (Land cover change)' is a custom dataset created in Trends.Earth. It contains 20 layers representing land cover changes in Uganda for the period 2000-2020. The layers are named 'UGA_LandCover_Subindicator_CustomDataset (Land cover change) - [Year]'. The dataset is available in the 'Datasets' tab of Trends.Earth.

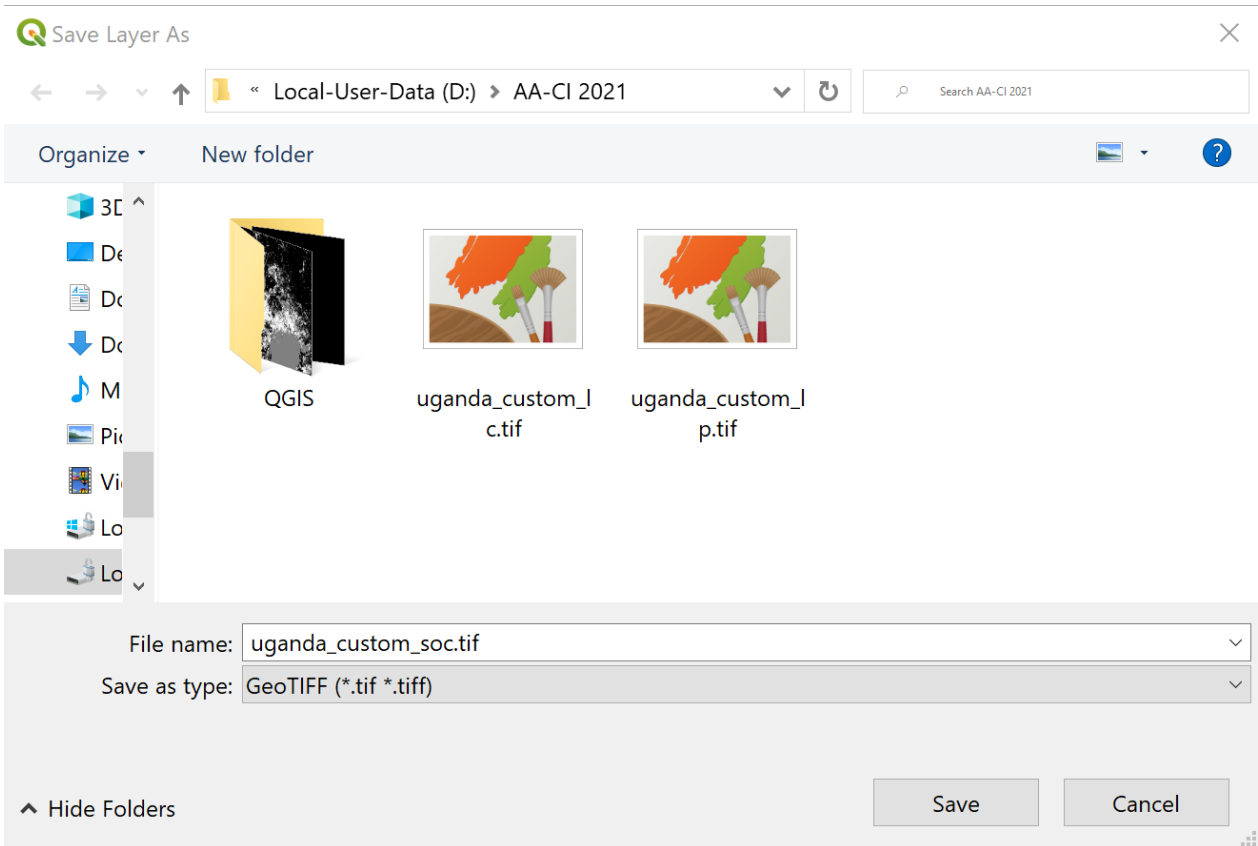
1. The dataset 'UGA_LandCover_Subindicator_CustomDataset (Land cover change)' is a custom dataset created in Trends.Earth. It contains 20 layers representing land cover changes in Uganda for the period 2000-2020. The layers are named 'UGA_LandCover_Subindicator_CustomDataset (Land cover change) - [Year]'. The dataset is available in the 'Datasets' tab of Trends.Earth.



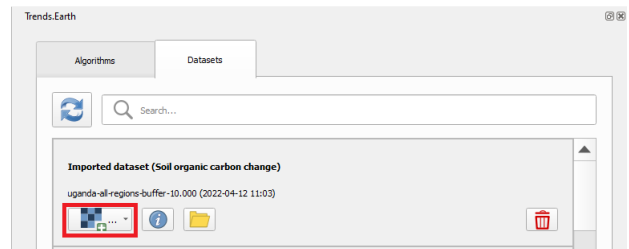
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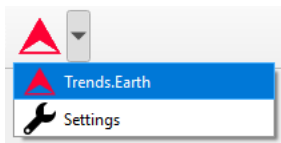
8. [REDACTED]
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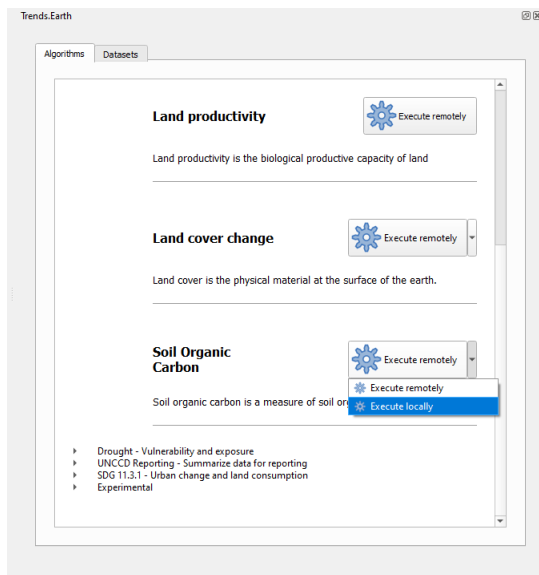
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1. [redacted] Trends.Earth [redacted] QGIS [redacted]
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2. [redacted] Trends.Earth. [redacted] 15.3.1-
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Soil Organic Carbon | Land Degradation

Initial year layer: uganda-all-regions-buffer-10.000 - Land cover (2001, 7 class) - 2022-04-05 13:29

Target year layer: uganda-all-regions-buffer-10.000 - Land cover (2015, 7 class) - 2022-04-01 17:05

Current region: uganda-all-regions-buffer-10.000 Change region

Execution name: UGA_custom_SOC_sub-indicator

Notes: Calculating SOC sub-indicator using custom initial soil organic carbon dataset

Advanced configuration

Climate regime

- Default (determined per-pixel using global climate data)
- Specify regime: Temperate dry (FI = 0.80)
- Custom value

Additional files to download

- Download annual land cover layers (only first and last land cover layer are downloaded by default)
- Custom initial soil organic carbon dataset

Imported dataset - uganda-all-regions-buffer-10.000 - Soil organic carbon (2000, tons / ha) - 2022-04-12 11:03

Execute locally Cancel Help

Soil organic carbon

The third sub-indicator for monitoring land degradation as part of the SDG process quantifies changes in soil organic carbon (SOC) over the reporting period. Changes in SOC are particularly difficult to assess for several reasons, some of them being the high spatial variability of soil properties, the time and cost intensiveness of conducting representative soil surveys and the lack of time series data on SOC for most regions of the world. To address some of the limitations, a combined land cover/SOC method is used in Trends.Earth to estimate changes in SOC and identify potentially degraded areas. The indicator is computed as follows:

1. Determine the SOC reference values. Trends.Earth uses SoilGrids 250m carbon stocks for the first 30 cm of the soil profile as the reference values for calculation (NOTE: SoilGrids uses information from a variety of data sources and ranging from many years to produce this product, therefore assigning a date for calculations purposes could cause inaccuracies in the stock change calculations).
2. Reclassify the land cover maps to the 7 land cover classes needed for reporting to the UNCCD (forest, grassland, cropland, wetland, artificial area, bare land and water). Ideally annual land cover maps are preferred, but at least land cover maps for the starting and end years are needed.
3. To estimate the changes in C stocks for the reporting period C conversion coefficients for changes in land use, management and inputs are recommended by the IPCC and

4. [REDACTED]



Initial year layer: uganda-all-regions-buffer-10.000 - Land cover (2001, 7 class) - 2022-04-05 13:29

Target year layer: uganda-all-regions-buffer-10.000 - Land cover (2015, 7 class) - 2022-04-01 17:05

Current region: uganda-all-regions-buffer-10.000

Change region

Execution name: UGA_custom_SOC_sub-indicator

Notes: Calculating SOC sub-indicator using custom initial soil organic carbon dataset

Advanced configuration

Climate regime

- Default (determined per-pixel using global climate data)
- Specify regime
 - Temperate dry (FI = 0.80)
 - Temperate moist (FI = 0.69)
 - Tropical dry (FI = 0.58)**
 - Tropical moist (FI = 0.48)
 - Tropical montane (FI = 0.64)
- Custom value

Additional files to download

- Download annual land cover layers (only first and last land cover layer are downloaded by default)
- Custom initial soil organic carbon dataset
 - Imported dataset - uganda-all-regions-buffer-10.000 - Soil organic carbon (2000, tons / ha) - 2022-04-12 11:03

many years to produce this product, therefore assigning a date for calculations purposes could cause inaccuracies in the stock change calculations).

2. Reclassify the land cover maps to the 7 land cover classes needed for reporting to the UNCCD (forest, grassland, cropland, wetland, artificial area, bare land and water). Ideally annual land cover maps are preferred, but at least land cover maps for the starting and end years are needed.
3. To estimate the changes in C stocks for the reporting period C conversion coefficients for changes in land use, management and inputs are recommended by the IPCC and the UNCCD. However, spatially explicit information on management and C inputs is not available for most regions. As such, only land use conversion coefficient can be applied for estimating changes in C stocks (using land cover as a proxy for land use). The coefficients used were the result of a literature review performed by the UNCCD and are presented at the [Trends.Earth website](#). Those coefficients represent the proportional in C stocks after 20 years of land cover change. Changes in SOC are better studied for land cover transitions involving agriculture, and for that reason there is a different set of coefficients for each of the main global climatic regions: Temperate Dry (f = 0.80), Temperate Moist (f = 0.69), Tropical Dry (f = 0.58), Tropical Moist (f = 0.48), and Tropical Montane (f = 0.64).
4. Compute relative different in SOC between the baseline and

Execute locally Cancel Help

5. [REDACTED]



Soil Organic Carbon | Land Degradation

Initial year layer: uganda-all-regions-buffer-10.000 - Land cover (2001, 7 class) - 2022-04-05 13:29

Target year layer: uganda-all-regions-buffer-10.000 - Land cover (2015, 7 class) - 2022-04-01 17:05

Current region: uganda-all-regions-buffer-10.000 Change region

Execution name: UGA_custom_SOC_sub-indicator

Notes: Calculating SOC sub-indicator using custom initial soil organic carbon dataset

Advanced configuration

Climate regime

Default (determined per-pixel using global climate data)

Specify regime: Temperate dry (F = 0.80)

Custom value

Additional files to download

Download annual land cover layers (only first and last land cover layer are downloaded by default)

Custom initial soil organic carbon dataset

Imported dataset - uganda-all-regions-buffer-10.000 - Soil organic carbon (2000, tons / ha) - 2022-04-12 11:03

many years to produce this product, therefore assigning a date for calculations purposes could cause inaccuracies in the stock change calculations).

2. Reclassify the land cover maps to the 7 land cover classes needed for reporting to the UNCCD (forest, grassland, cropland, wetland, artificial area, bare land and water). Ideally annual land cover maps are preferred, but at least land cover maps for the starting and end years are needed.

3. To estimate the changes in C stocks for the reporting period C conversion coefficients for changes in land use, management and inputs are recommended by the IPCC and the UNCCD. However, spatially explicit information on management and C inputs is not available for most regions. As such, only land use conversion coefficient can be applied for estimating changes in C stocks (using land cover as a proxy for land use). The coefficients used were the result of a literature review performed by the UNCCD and are presented at the [Trends.Earth website](#). Those coefficients represent the proportional in C stocks after 20 years of land cover change. Changes in SOC are better studied for land cover transitions involving agriculture, and for that reason there is a different set of coefficients for each of the main global climatic regions: Temperate Dry (f = 0.80), Temperate Moist (f = 0.69), Tropical Dry (f = 0.58), Tropical Moist (f = 0.48), and Tropical Montane (f = 0.64).

4. Compute relative different in SOC between the baseline and

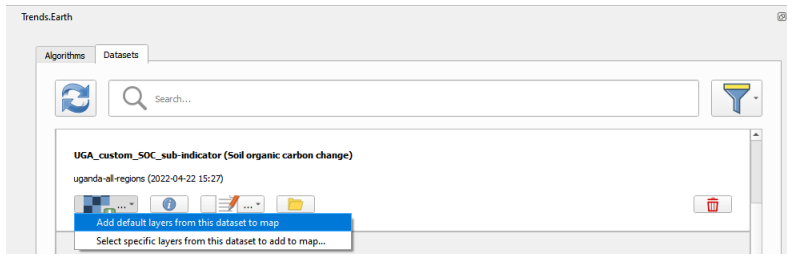
Execute locally Cancel Help

6. **Export the results to a file format that can be used in QGIS.**

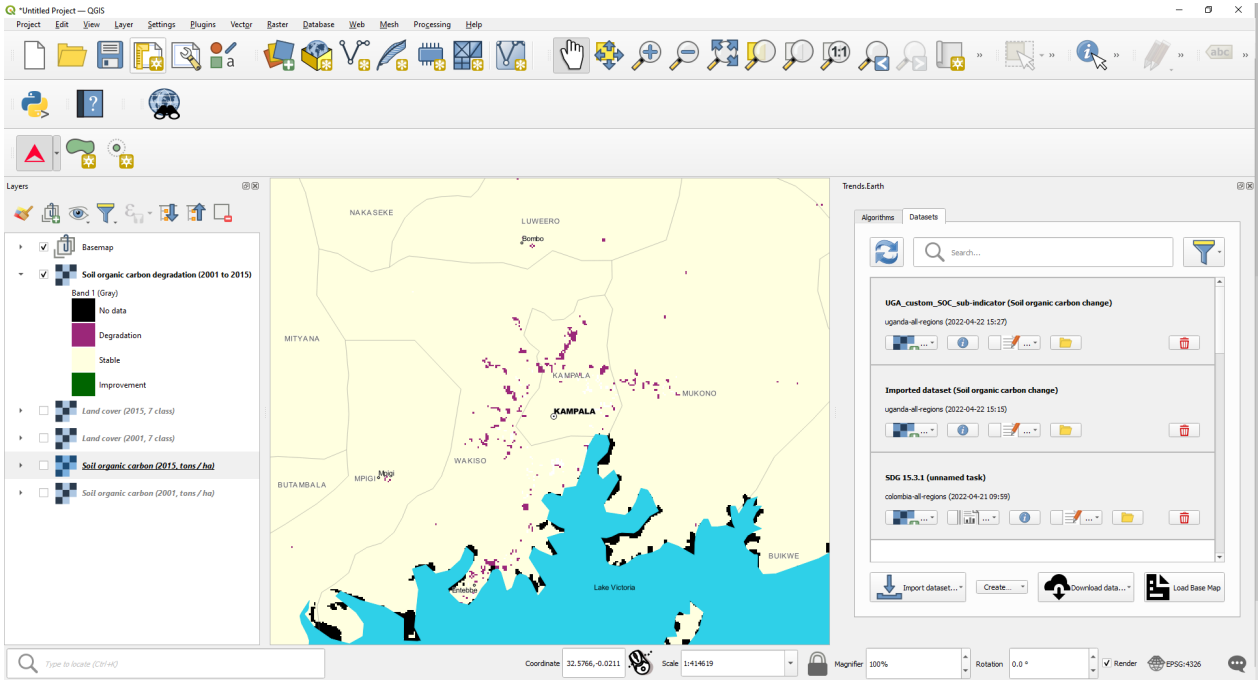
Project Edit View Layer Settings Plugins Vector Raster Mesh Help

Layers Processing: calculating change in soil organic carbon 32% Cancel

7. **Open the results in QGIS.**



9. **Soil organic carbon (SOC) is a key indicator of soil health and fertility. It is the carbon contained in soil organic matter (SOM), which is the non-living component of soil that is derived from plant and animal residues. SOC is a critical component of the global carbon cycle, and its loss can lead to soil degradation and increased greenhouse gas emissions.**



Note

Soil organic carbon (SOC) is a key indicator of soil health and fertility. It is the carbon contained in soil organic matter (SOM), which is the non-living component of soil that is derived from plant and animal residues. SOC is a critical component of the global carbon cycle, and its loss can lead to soil degradation and increased greenhouse gas emissions.

NDVI (Normalized Difference Vegetation Index)

- **Normalized Difference Vegetation Index (NDVI)**

NDVI is a simple index that is used to assess the health and density of vegetation. It is calculated by subtracting the near-infrared (NIR) band from the red band and dividing the result by the sum of the two bands.

SO 3 (Soil Organic Carbon 3)

- **Soil Organic Carbon (SOC) is a key indicator of soil health and fertility. It is the carbon contained in soil organic matter (SOM), which is the non-living component of soil that is derived from plant and animal residues. SOC is a critical component of the global carbon cycle, and its loss can lead to soil degradation and increased greenhouse gas emissions.**

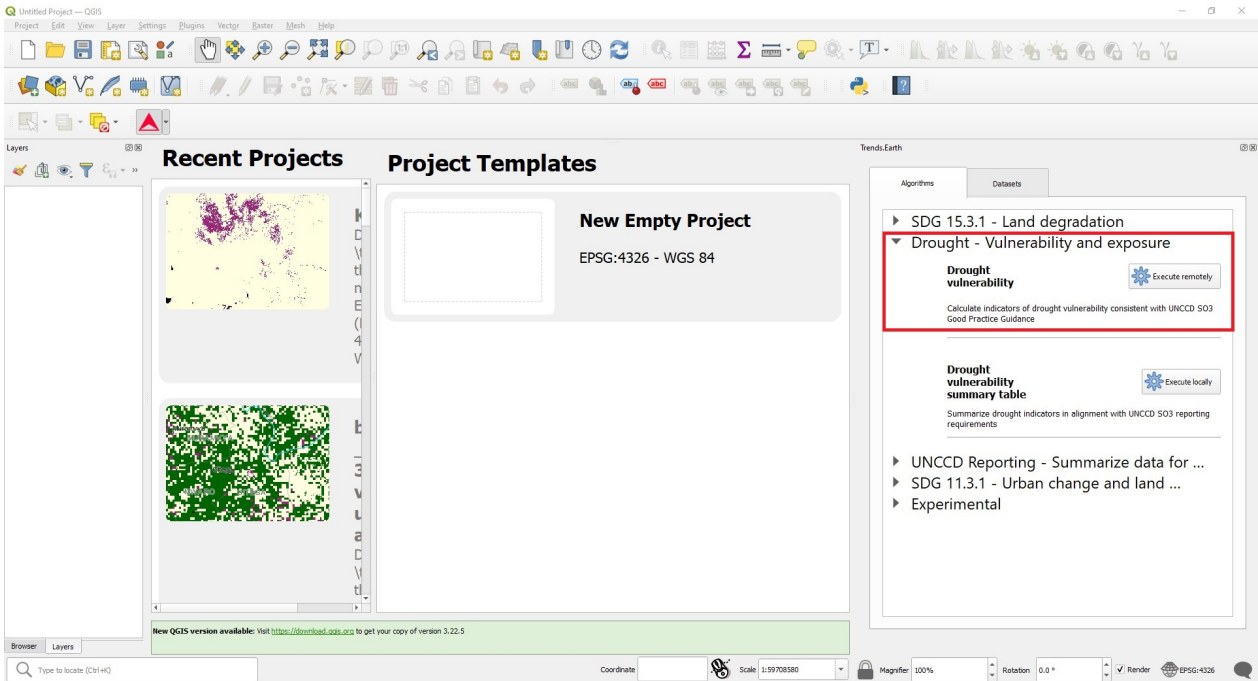


WorldPop (GPC), and the Global Precipitation Climatology Project (GPCP) (JRC). The Global Precipitation Climatology Project (GPCP) is a joint effort of the Global Precipitation Climatology Project (GPCP) and the Global Precipitation Climatology Project (GPCP).

- The Global Precipitation Climatology Project (GPCP) is a joint effort of the Global Precipitation Climatology Project (GPCP) and the Global Precipitation Climatology Project (GPCP).

- ** The Global Precipitation Climatology Project (GPCP) is a joint effort of the Global Precipitation Climatology Project (GPCP) and the Global Precipitation Climatology Project (GPCP). **

1. The Global Precipitation Climatology Project (GPCP) is a joint effort of the Global Precipitation Climatology Project (GPCP) and the Global Precipitation Climatology Project (GPCP).

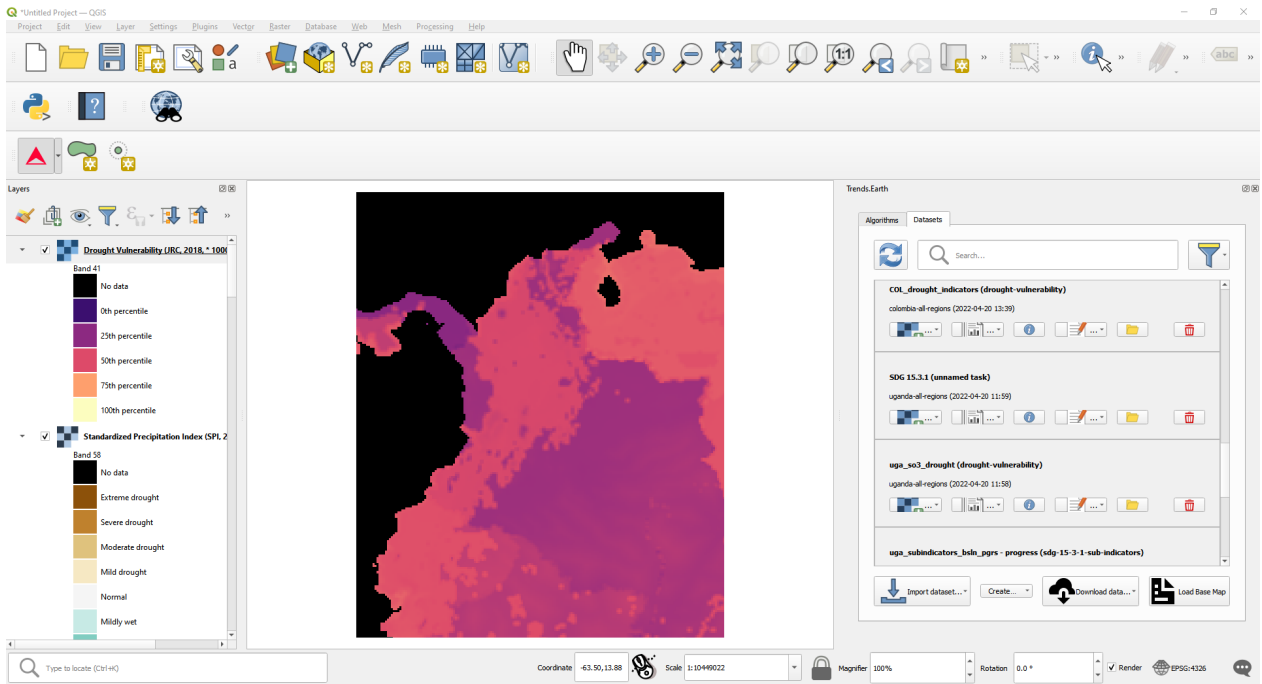


- The Global Precipitation Climatology Project (GPCP) is a joint effort of the Global Precipitation Climatology Project (GPCP) and the Global Precipitation Climatology Project (GPCP).

Note

The Global Precipitation Climatology Project (GPCP) is a joint effort of the Global Precipitation Climatology Project (GPCP) and the Global Precipitation Climatology Project (GPCP).

3. The Global Precipitation Climatology Project (GPCP) is a joint effort of the Global Precipitation Climatology Project (GPCP) and the Global Precipitation Climatology Project (GPCP).



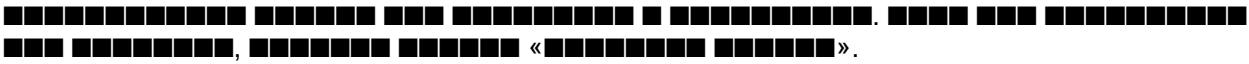
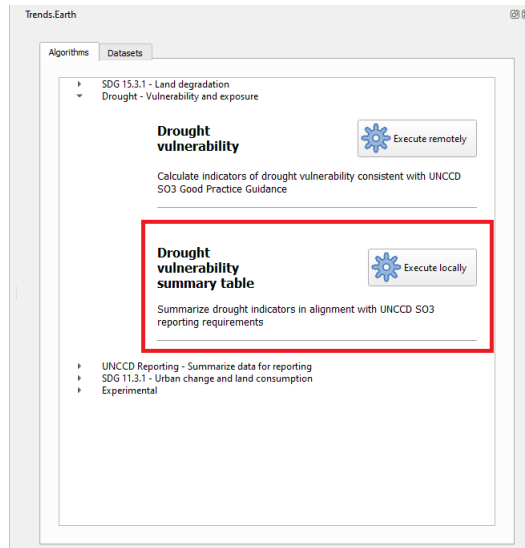
SO 3

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- [Redacted text] SO3 [Redacted text]
- [Redacted text]: 15 [Redacted text]
- ** [Redacted text] ** [Redacted text]

Note

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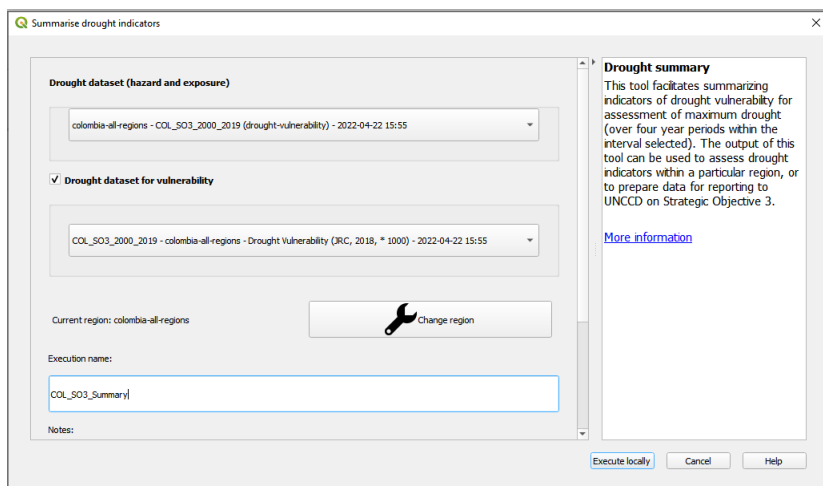
1. [Redacted text] Trends.Earth [Redacted text] QGIS, [Redacted text] Trends.Earth.
2. [Redacted text] Trends.Earth. [Redacted text] — [Redacted text]



Note

The **Drought vulnerability summary table** tool is used to summarize drought indicators in alignment with UNCCD SO3 reporting requirements. It is available in Trends.Earth as a free tool.

3. **Execute locally** to generate the **Drought vulnerability summary table** (UNCCD SO3 Summary Data Table) in the current region.
4. **UNCCD SO3 Summary Data Table** is a table that summarizes drought indicators in alignment with UNCCD SO3 reporting requirements. It is available in Trends.Earth as a free tool. To generate the **UNCCD SO3 Summary Data Table**, use the **Drought vulnerability summary table** tool in Trends.Earth.



5. **Execute locally** to generate the **UNCCD SO3 Summary Data Table**.
5. **UNCCD SO3 Summary Data Table** is a table that summarizes drought indicators in alignment with UNCCD SO3 reporting requirements. It is available in Trends.Earth as a free tool. To generate the **UNCCD SO3 Summary Data Table**, use the **Drought vulnerability summary table** tool in Trends.Earth.



SDG 15.3.1 Indicator (Summary) | Land Degradation

Dataset for Strategic Objectives 1 and 2

COL - sdg-15-3-1-summary (sdg-15-3-1-summary) - 2022-

Dataset for Strategic Objective 3 (tiers 1 and 2)

Dataset for Strategic Objective 3 (tier 3)

Execution name:
COL_LPD_SDG_15_3_1

Notes:

Generate UNCCD Report
Calculate report on UNCCD Strategic Objectives 1, 2, and 3

Execute locally Cancel Help

3. Trends.Earth provides a free, open access, online platform for the generation of land degradation indicators. The platform is designed to be user-friendly and accessible to a wide range of users, including researchers, policymakers, and the general public. It provides a comprehensive set of indicators and tools for monitoring and assessing land degradation, and is available in multiple languages.

Note

The platform is designed to be user-friendly and accessible to a wide range of users, including researchers, policymakers, and the general public. It provides a comprehensive set of indicators and tools for monitoring and assessing land degradation, and is available in multiple languages.

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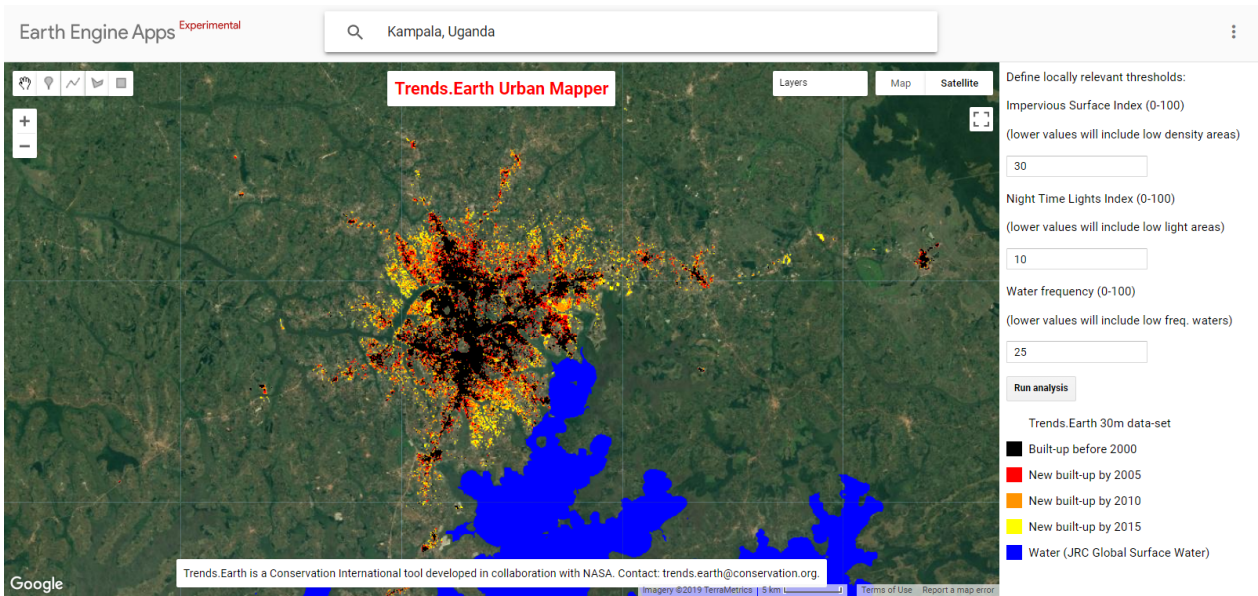
4. The platform is designed to be user-friendly and accessible to a wide range of users, including researchers, policymakers, and the general public. It provides a comprehensive set of indicators and tools for monitoring and assessing land degradation, and is available in multiple languages.

QUESTION 4

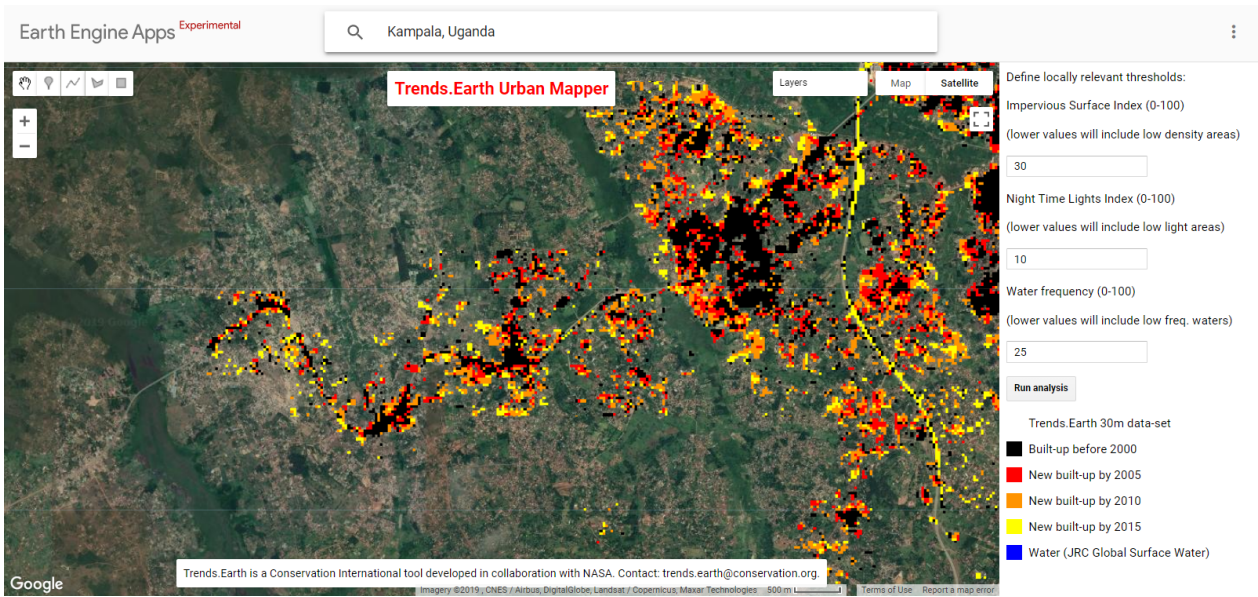
The Urban Mapper tool in Trends.Earth is used to identify and map urban areas. It uses satellite imagery and various indices to detect urban growth and changes over time. The tool is particularly useful for monitoring rapid urbanization in developing regions.

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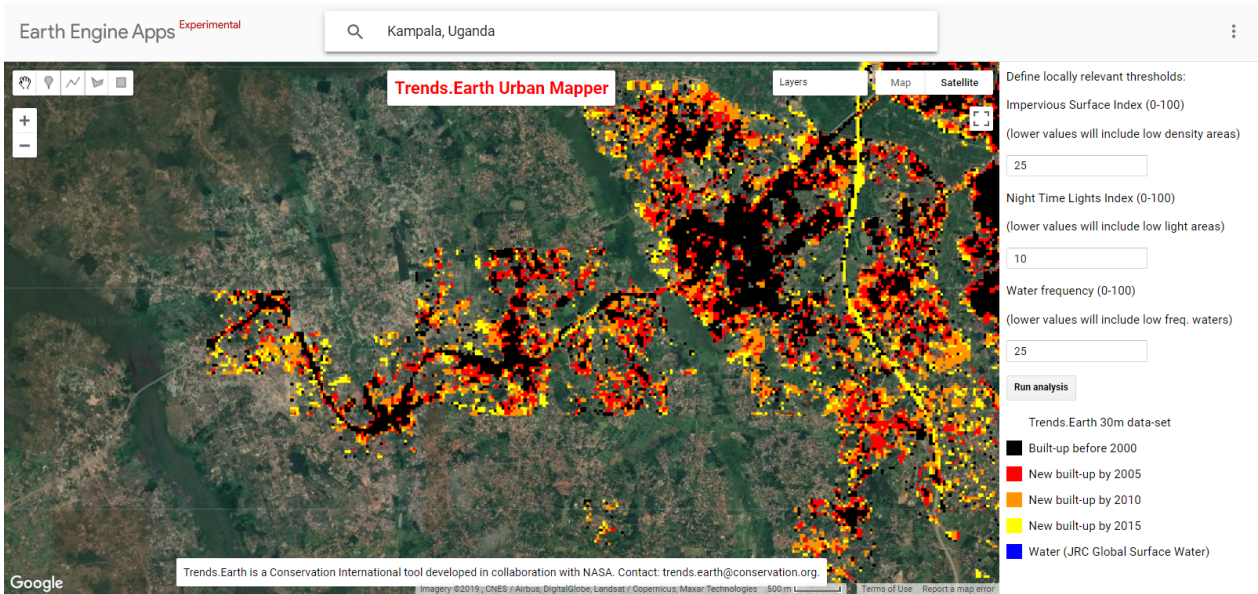
- **Legend:** Built-up before 2000
- **Legend:** New built-up by 2005
- **Legend:** New built-up by 2010
- **Legend:** New built-up by 2015



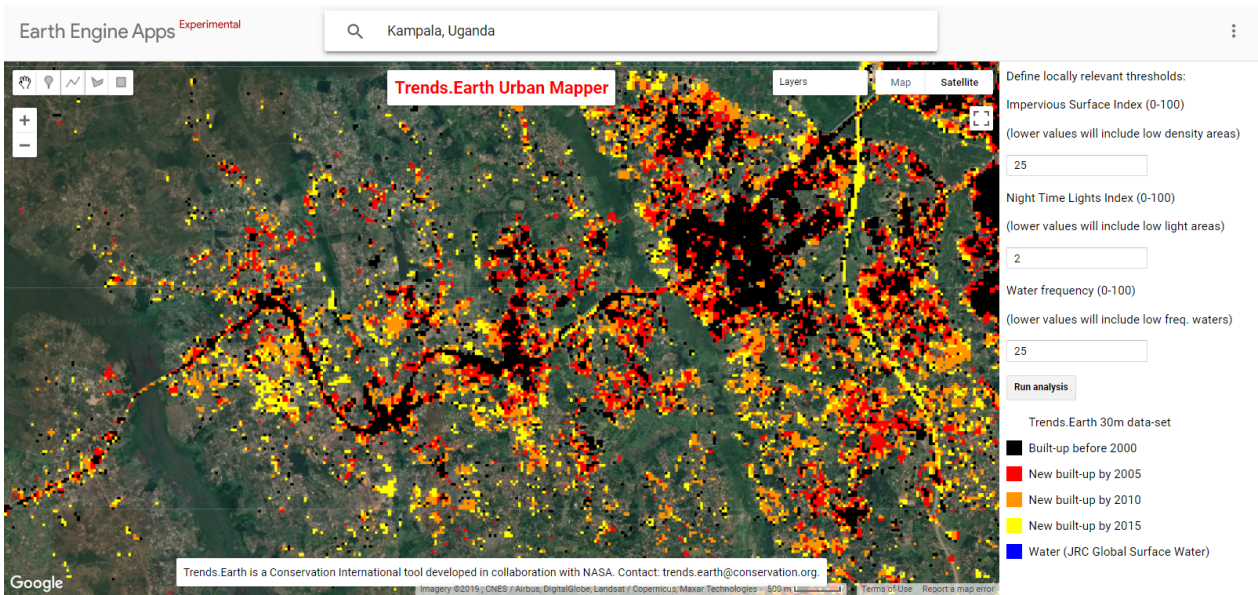
4. The Urban Mapper tool is used to identify and map urban areas. It uses satellite imagery and various indices to detect urban growth and changes over time. The tool is particularly useful for monitoring rapid urbanization in developing regions. The tool is used to identify and map urban areas. It uses satellite imagery and various indices to detect urban growth and changes over time. The tool is particularly useful for monitoring rapid urbanization in developing regions. (ISI: 30, NTL: 10, WFR: 25):



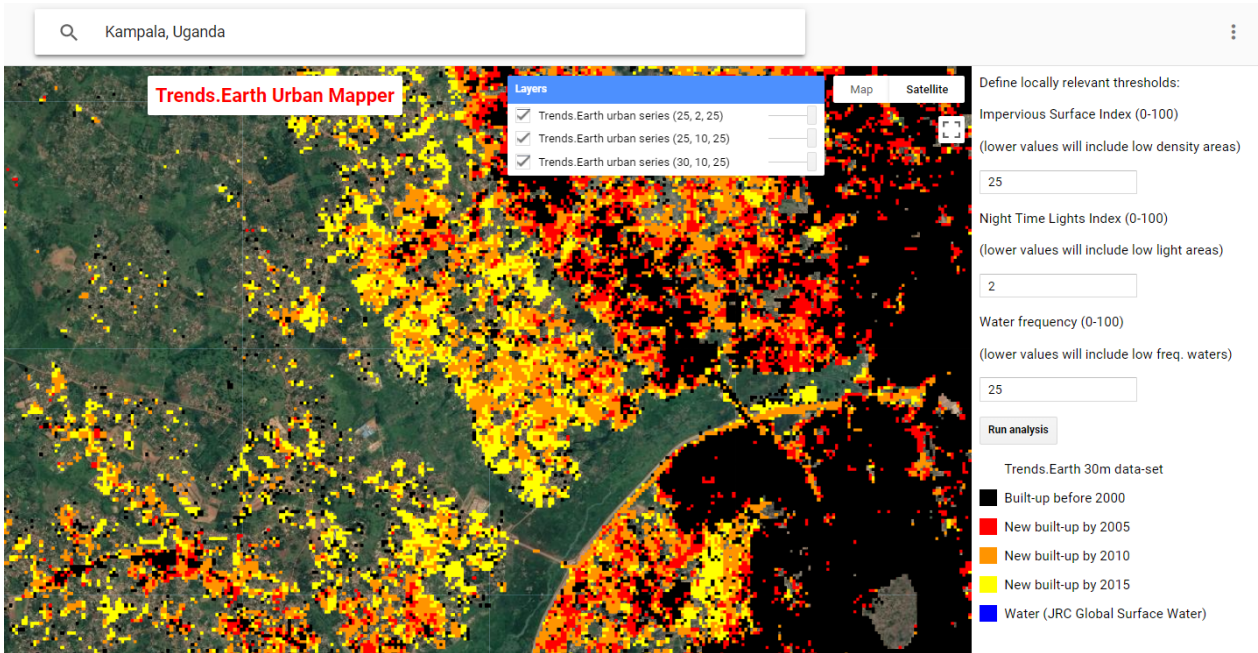
5. **Impervious Surface Index (ISI)** is a measure of the amount of built-up area in a landscape. It is calculated as the ratio of the number of pixels that are built-up to the total number of pixels in the landscape. In this case, the threshold is set to 30, meaning that only areas with an ISI of 30 or higher are considered built-up. The legend indicates that areas built-up before 2000 are shown in black, areas built-up between 2000 and 2005 in red, areas built-up between 2005 and 2010 in orange, and areas built-up between 2010 and 2015 in yellow.



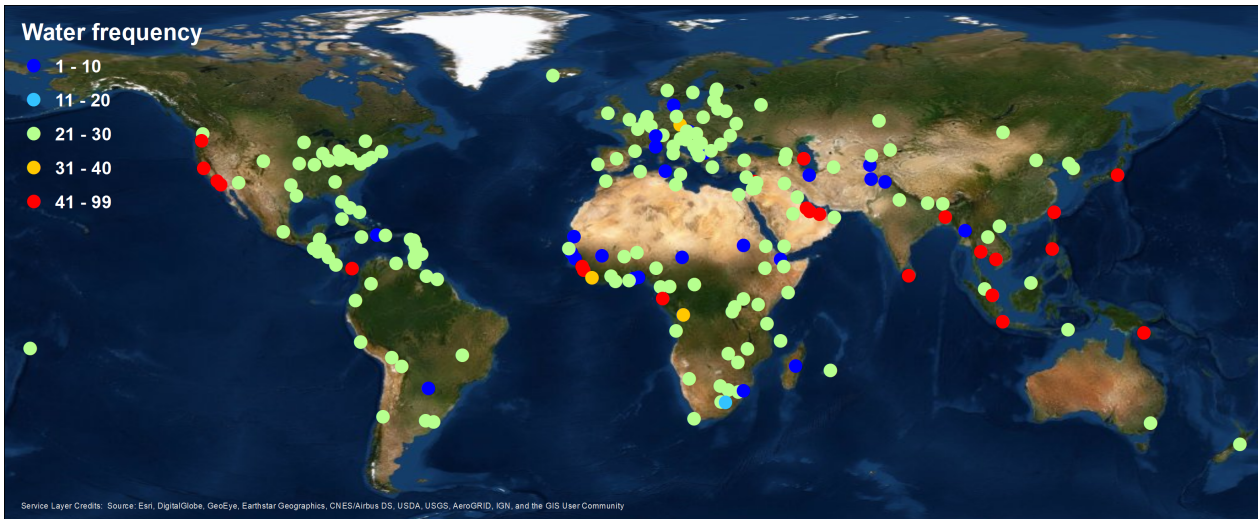
6. **Night Time Lights Index (NTLI)** is a measure of the amount of light at night in a landscape. It is calculated as the ratio of the number of pixels that are lit up at night to the total number of pixels in the landscape. In this case, the threshold is set to 10, meaning that only areas with an NTLI of 10 or higher are considered lit up at night. The legend indicates that areas built-up before 2000 are shown in black, areas built-up between 2000 and 2005 in red, areas built-up between 2005 and 2010 in orange, and areas built-up between 2010 and 2015 in yellow.



7. [REDACTED]



8. [REDACTED]

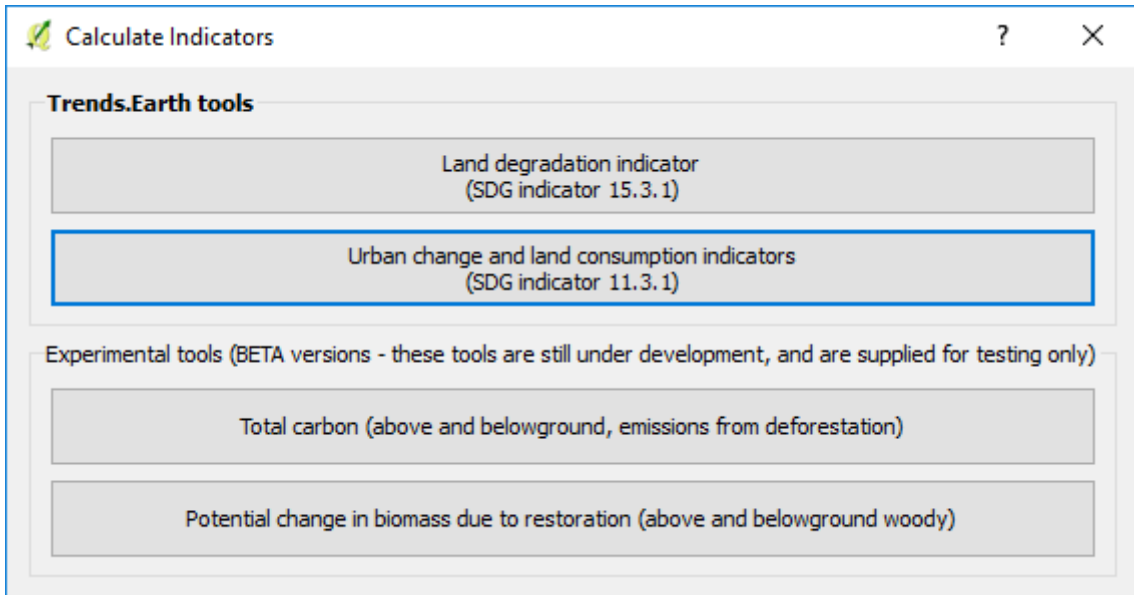


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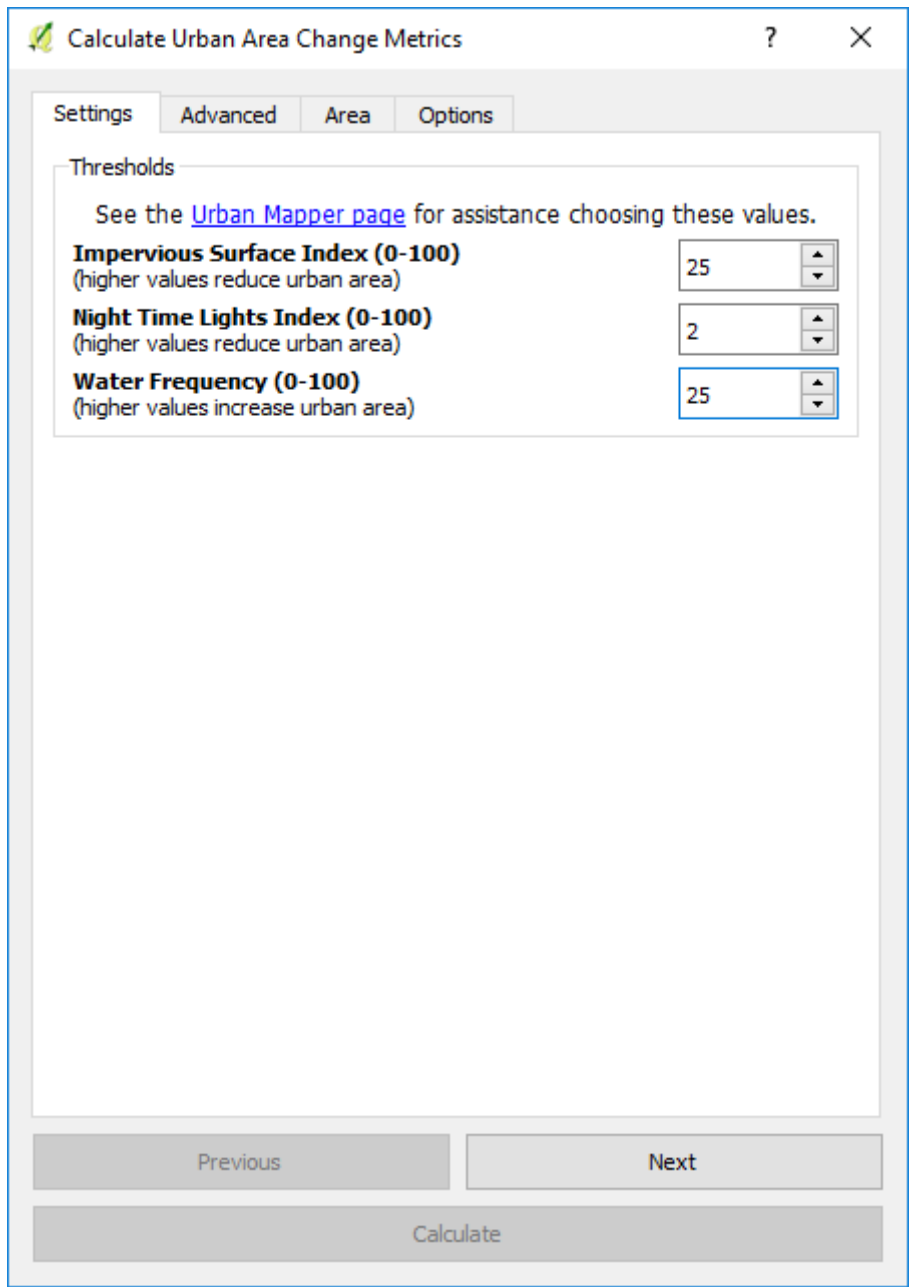
1. «iconCalculator» (iconCalculator) Trends.Earth QGIS.



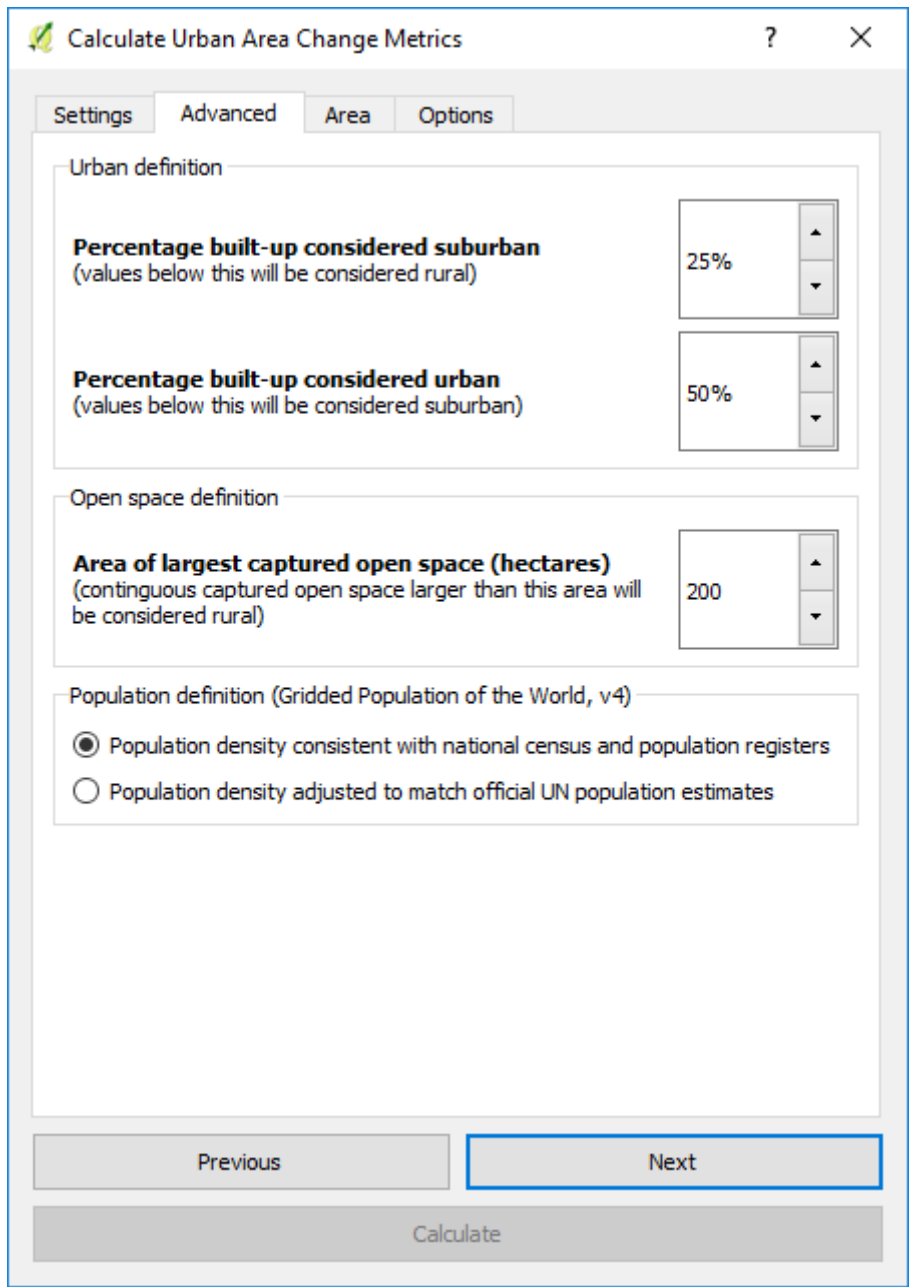
2. «Urban change and land consumption indicators (SDG indicator 11.3.1)» (iconCalculator) Trends.Earth QGIS.



3. «Urban change and land consumption indicators (SDG indicator 11.3.1)» (iconCalculator) Trends.Earth QGIS.



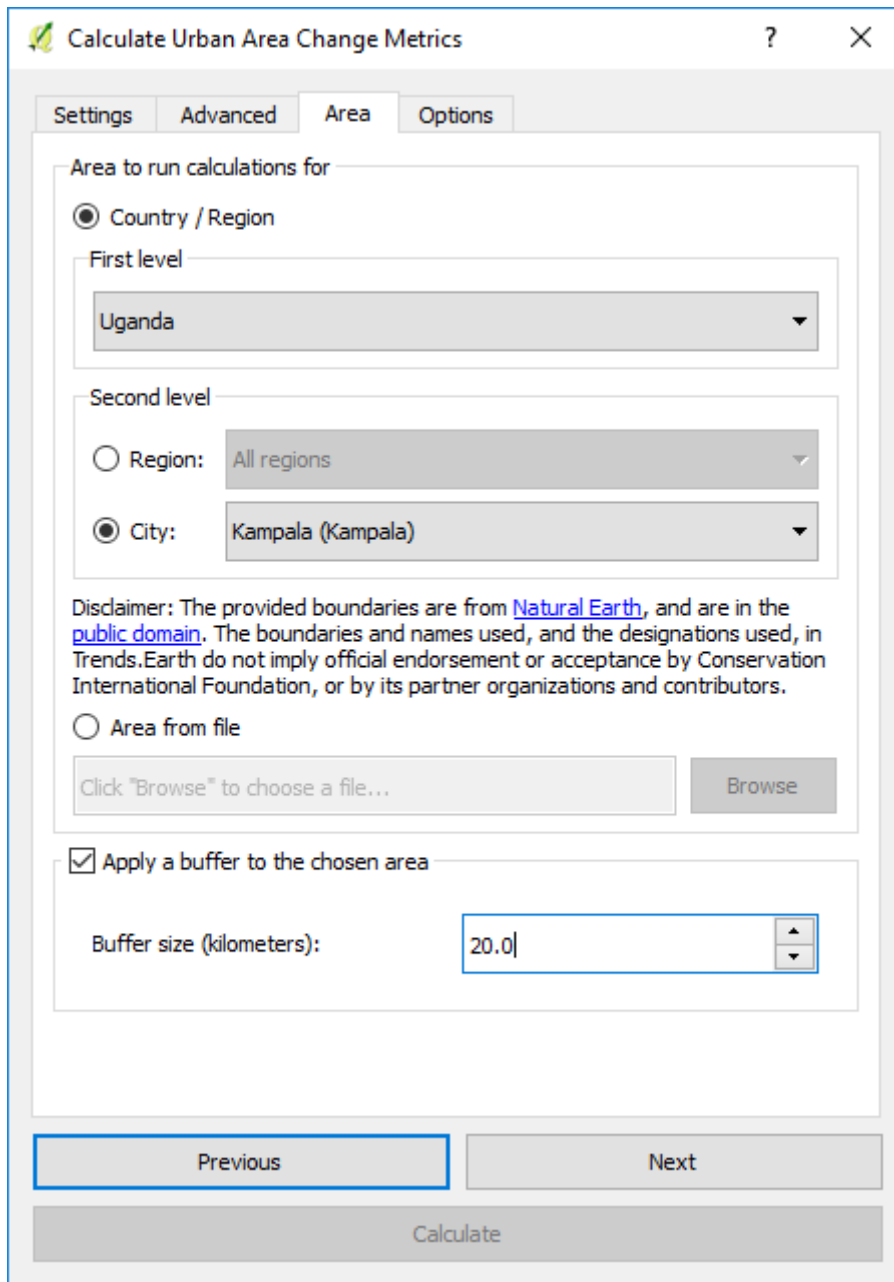
- 6. **How do you adjust the thresholds in the Urban Mapper tool?**
- A. **You can adjust the thresholds in the Advanced tab of the Urban Mapper tool.**
- B. **You can adjust the thresholds in the Settings tab of the Urban Mapper tool. The Impervious Surface Index (0-100) threshold is 25, the Night Time Lights Index (0-100) threshold is 2, and the Water Frequency (0-100) threshold is 25.**
- C. **You can adjust the thresholds in the Area tab of the Urban Mapper tool, and the thresholds are 25, 2, and 25.**



«Urban definition» - «Percentage built-up considered suburban» - 25%, «Percentage built-up considered urban» - 50%. «Open space definition» - «Area of largest captured open space (hectares)» - 200. «Population definition» - «Population density consistent with national census and population registers».

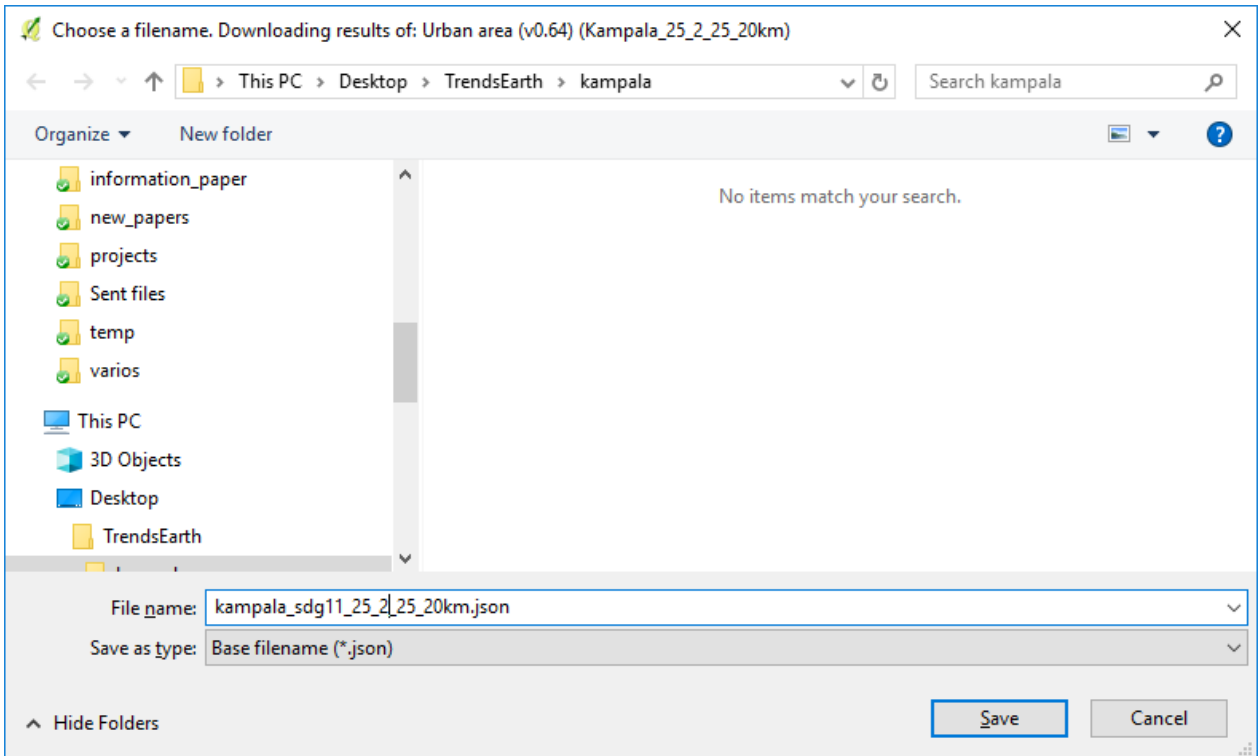
7. «Urban definition» - «Percentage built-up considered suburban» - 25%, «Percentage built-up considered urban» - 50%. «Open space definition» - «Area of largest captured open space (hectares)» - 200. «Population definition» - «Population density consistent with national census and population registers».

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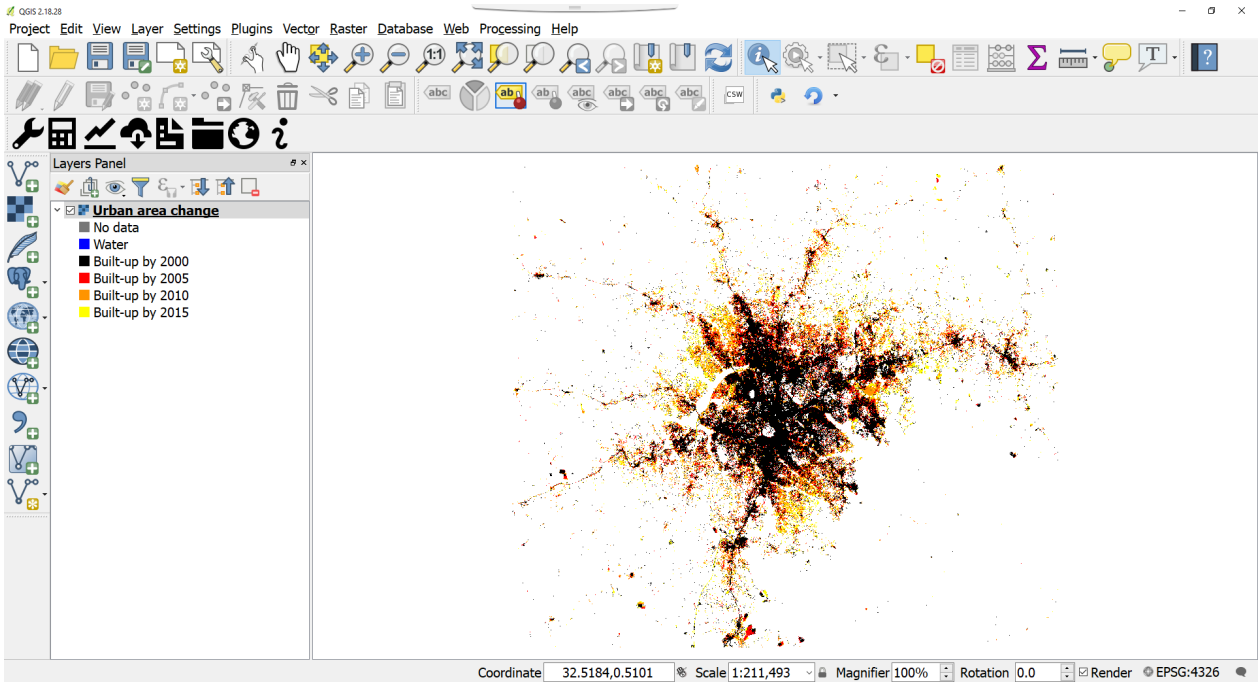


Note

geoBoundaries, Trends.Earth, CC BY 4.0. Trends.Earth Conservation International Foundation, Trends.Earth



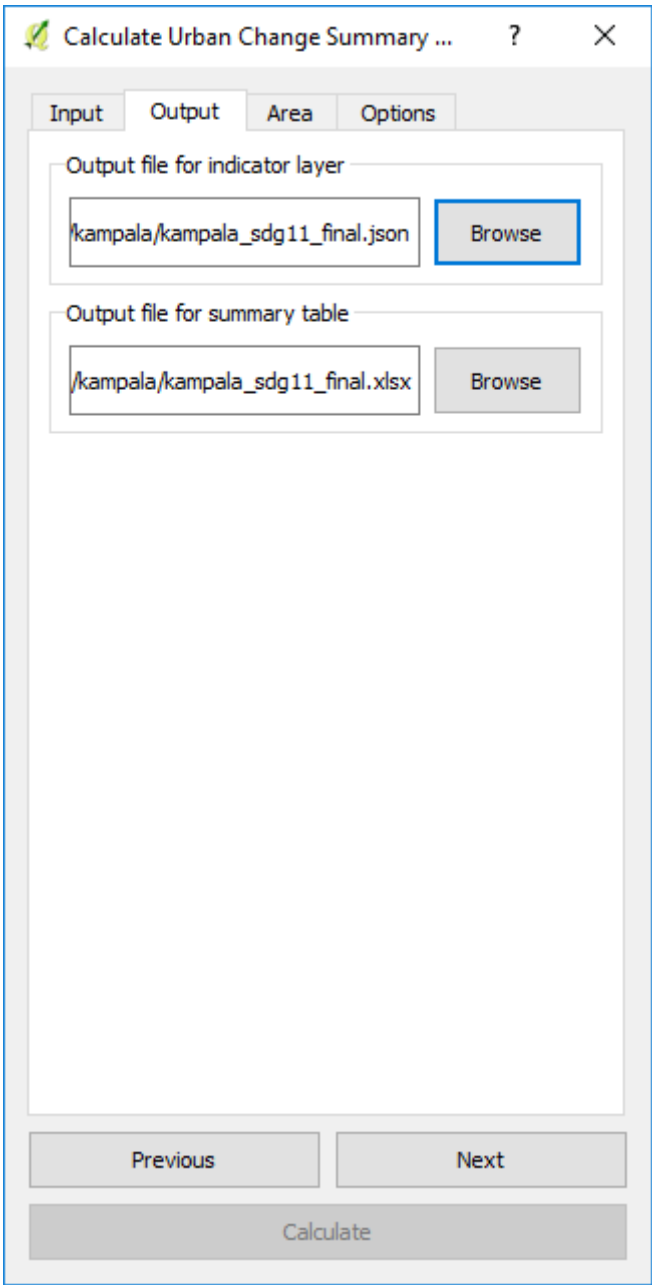
« » . QGIS.



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Repairs to 'kampala_sdg11_final.xlsx'

Excel was able to open the file by repairing or removing the unreadable content.

Excel completed file level validation and repair. Some parts of this workbook may have been repaired or discarded.

Click to view log file listing repairs: D:\Documents and Settings\mqgonzalez-rogligh\AppData\Local\Temp\error166120_01.xml

Close

sdg11_kampala_v66.xlsx - Repaired - Excel

Mariano Gonzalez-Roglich

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Trends.Earth SDG 11.3.1 summary table

TRENDS.EARTH
tracking land change

Summary of population growth rate and land consumption

Period	City population change	City population growth rate	City area change (sq km)	Land consumption rate	SDG 11.3.1
2000-2005	359,370	0.069729	5,463.89	0.053274	0.764
2005-2010	443,727	0.062004	6,955.20	0.052114	0.840
2010-2015	480,485	0.050719	5,241.82	0.031892	0.629

Urban and land consumption rates

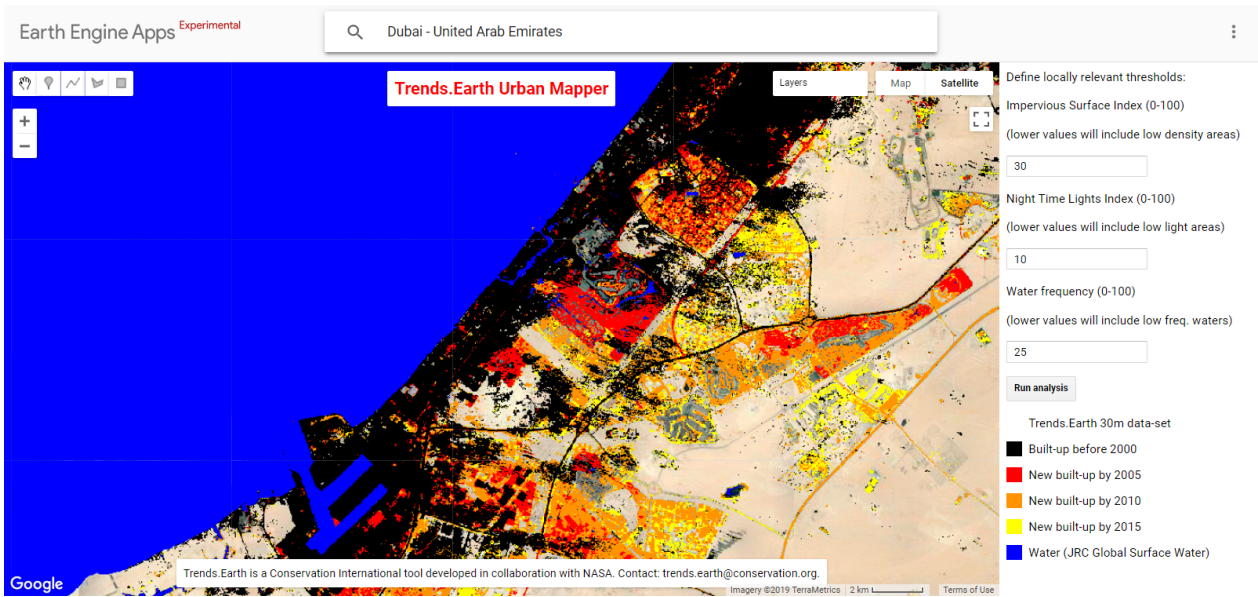
Area (in hectares) of each land class by year

	2000	2005	2010	2015	Consider this class to be part of the city?
Urban	7,217.40	10,164.70	14,060.22	16,341.25	Yes

SDG 11.3.1 Summary Table

10 [REDACTED]

[REDACTED] ([REDACTED], [REDACTED], [REDACTED]) [REDACTED]. [REDACTED] (2000, 2005, 2010 [REDACTED] 2015) [REDACTED] 11.3.1.



« 25 80, (ISI = 30, NTL = 10, WFR = 80).



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Earth Engine Apps Experimental

Trends.Earth Urban Mapper

Layers Map Satellite

Define locally relevant thresholds:

Impervious Surface Index (0-100)
(lower values will include low density areas)

Night Time Lights Index (0-100)
(lower values will include low light areas)

Water frequency (0-100)
(lower values will include low freq. waters)

Trends.Earth 30m data-set

- Built-up before 2000
- New built-up by 2005
- New built-up by 2010
- New built-up by 2015
- Water (JRC Global Surface Water)

Google Trends Earth is a Conservation International tool developed in collaboration with NASA. Contact: trends.earth@conservation.org. Imagery ©2019 TerraMetrics | 2 km Terms of Use



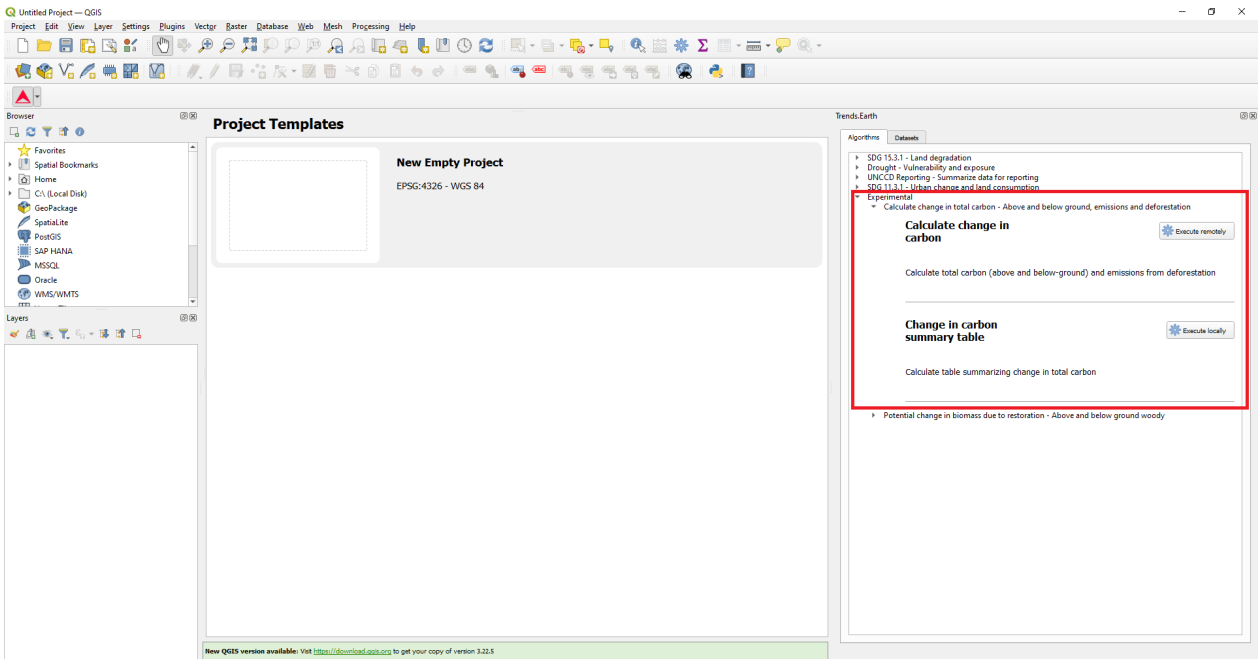
- **Impervious Surface Index:** This index is used to measure the amount of impervious surface in an area. Higher values indicate higher density of impervious surfaces, which are typically associated with urban areas. The index is calculated based on satellite imagery and is used to identify areas of high density and low density.
- **** Impervious Surface Index threshold: 20**
- **** Impervious Surface Index threshold: 30**

Note

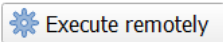
The Impervious Surface Index is a measure of the amount of impervious surface in an area. Higher values indicate higher density of impervious surfaces, which are typically associated with urban areas. The index is calculated based on satellite imagery and is used to identify areas of high density and low density.



1. **Impervious Surface Index** is a measure of the amount of impervious surface in an area. Higher values indicate higher density of impervious surfaces, which are typically associated with urban areas. The index is calculated based on satellite imagery and is used to identify areas of high density and low density.



2. [REDACTED]



3. [REDACTED]

Note

[REDACTED]

[REDACTED]

[REDACTED] 2000 [REDACTED]. [REDACTED] 25–30% [REDACTED]

[REDACTED]

4. [REDACTED]



Note

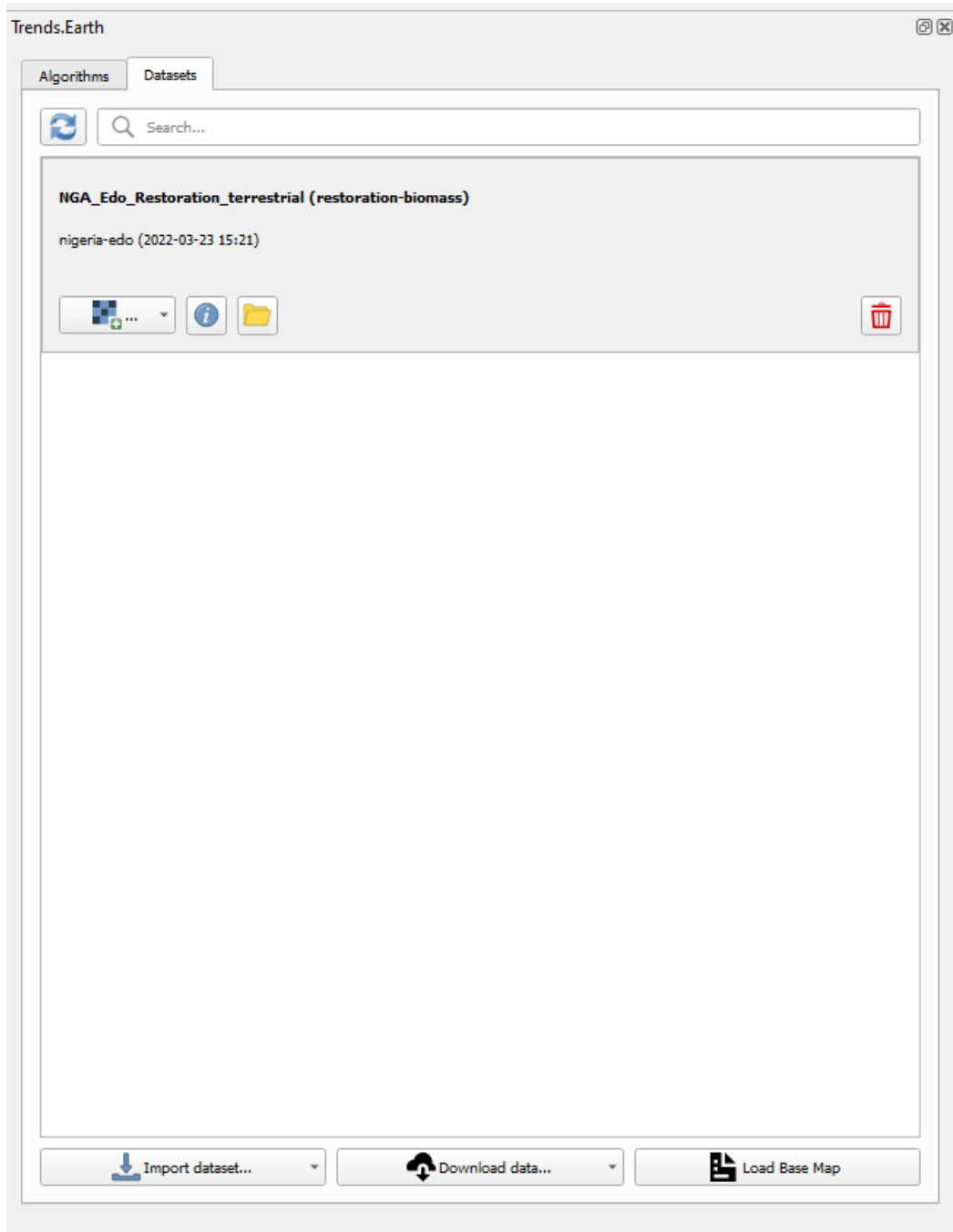
[geoBoundaries Administrative Boundaries](#), [REDACTED] Trends.Earth, [REDACTED] CC BY 4.0. [REDACTED], [REDACTED] Trends.Earth, [REDACTED]

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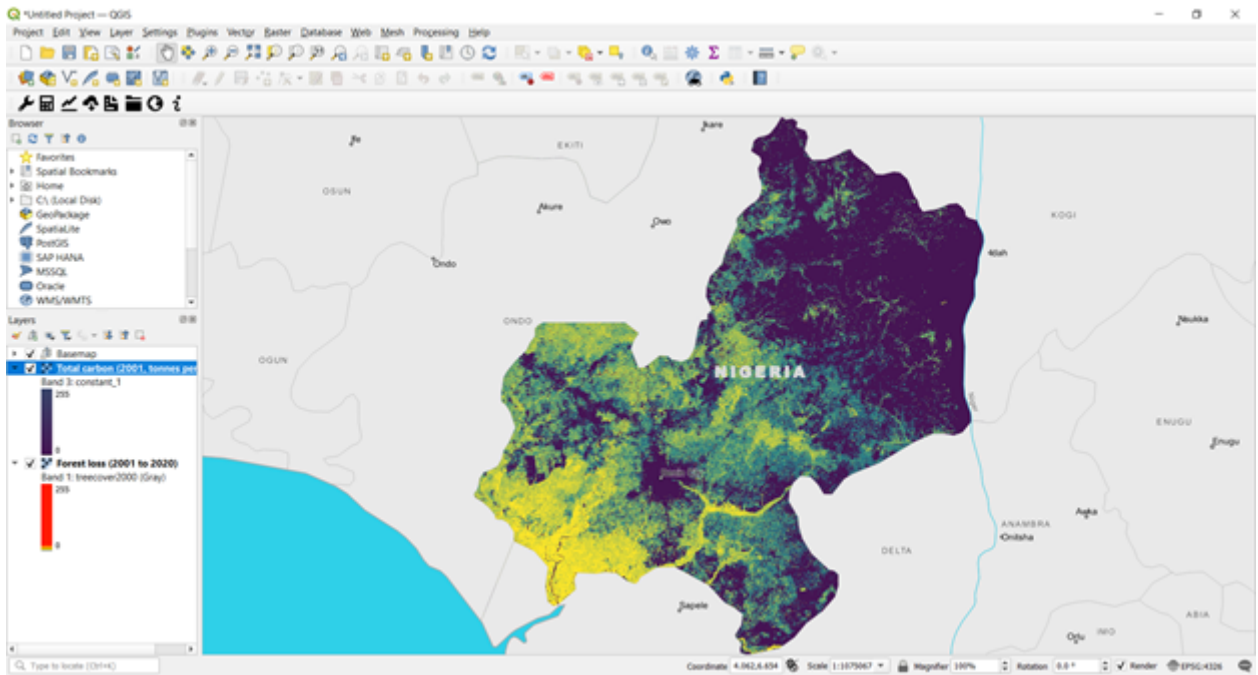
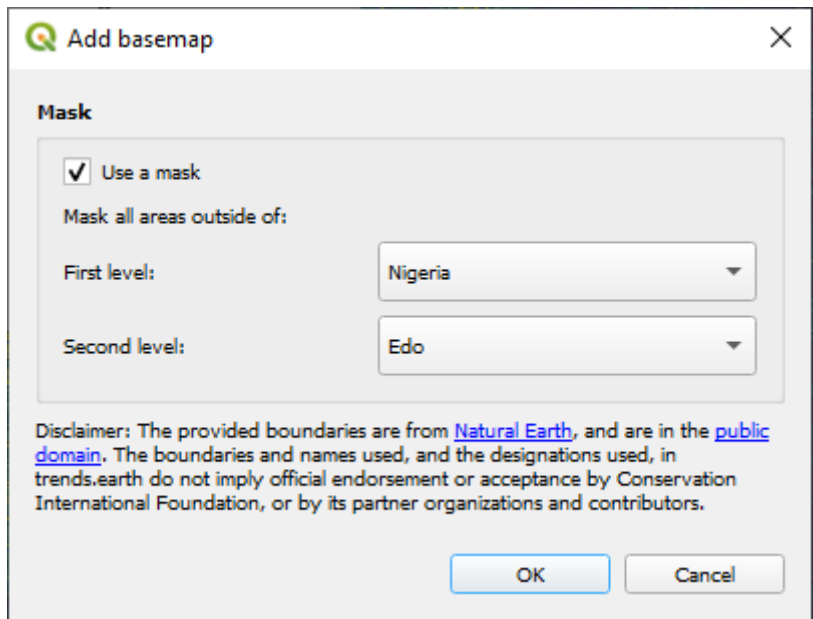
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2. [REDACTED]



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H11 A B C D E F G H I J K L M N O P

1 Trends.Earth carbon loss due to deforestation summary table **TRENDS.EARTH**
tracking land change

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3 Summary of carbon loss due to deforestation*

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6 Baseline land cover

	Area (hectares)	Percent of total area	Total biomass (tonnes of C)
Initial forest area:	1,032,937	52.2%	83,786,498
Initial non-forest land area:	934,769	47.3%	
Water area:	9,236	0.5%	
Missing data:	0	0.0%	
Total:	1,976,942	100.0%	

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13 Land cover change summary

Baseline year:	2001
Final year:	2020
Forest loss over period (hectares)	231,419
Loss of carbon over period (tonnes of C)	18,475,404
Total carbon emissions over period (tonnes of CO2e)	67,804,731

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Total Carbon Summary Table

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H11 A B C D E F G H I J K L M N O P

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21 Carbon loss by year*

22

Year	Forest Loss During Year (ha)	Forest Cover at End of Year (ha)	Loss of Carbon During Year (tonnes of C)	Total Biomass at End of Year (tonnes of C)	Carbon Emissions During Year (tonnes of CO2e)
2002	10,358	1,022,618	995,024	80,791,474	3,651,739
2003	2,133	1,020,486	194,050	80,597,434	712,563
2004	4,724	1,015,762	427,504	80,169,920	1,568,941
2005	2,143	1,013,618	200,636	79,969,284	736,332
2006	6,447	1,007,171	594,300	79,374,984	2,581,081
2007	5,176	1,001,996	481,064	78,891,920	1,765,504
2008	6,347	995,648	573,668	78,320,253	2,505,361
2009	5,176	990,473	464,897	77,855,356	1,706,172
2010	12,641	977,832	1,177,839	76,677,516	4,322,670
2011	14,341	963,491	1,315,783	75,361,733	4,828,924
2012	7,877	955,615	702,090	74,659,643	2,576,671
2013	13,809	941,805	1,074,985	73,584,658	3,945,396
2014	24,438	917,366	1,794,337	71,790,323	6,585,218
2015	12,326	905,140	889,882	70,900,439	3,265,867
2016	24,557	880,583	1,777,525	69,123,914	6,523,516
2017	37,737	843,246	2,738,911	66,412,003	9,949,042
2018	25,257	817,989	1,879,350	64,532,654	6,897,213
2019	16,471	801,518	1,271,559	63,311,094	4,483,123
2020	0	801,518	0	63,311,094	0

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Total Carbon Summary Table

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- ** [REDACTED] **: 20 [REDACTED]
- ** [REDACTED] **: [REDACTED]

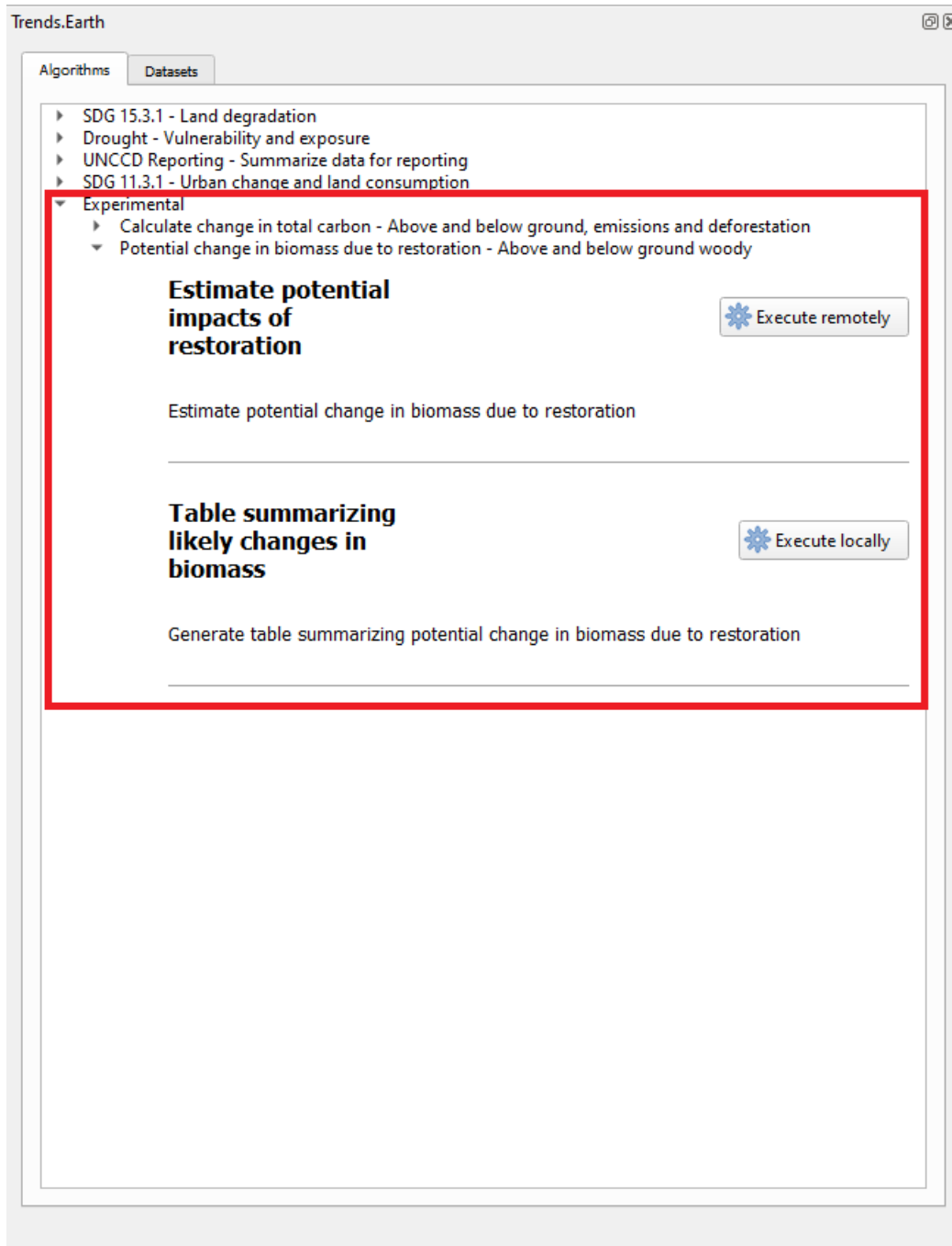
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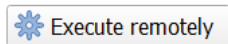
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1. ■ XXX Trends.Earth ■ QGIS ■ XXXXXX
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■ XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX.



2. **Estimate potential impacts of restoration** algorithm, **Execute remotely**.



3. **Table summarizing likely changes in biomass** algorithm, **Execute locally**. **Generate table summarizing potential change in biomass due to restoration**.



Biomass Change Estimate | Biomass

Type of restoration

Terrestrial

Coastal (mangrove)

Planned longevity of intervention (years)

20

Current region: nigeria-edo **Change region**

Execution name:
NGA_Edo_Restoration_terrestrial

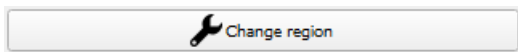
Notes:
20 year

Biomass Change Estimate

Estimate likely change in biomass due to restoration

Schedule remote execution Cancel Help

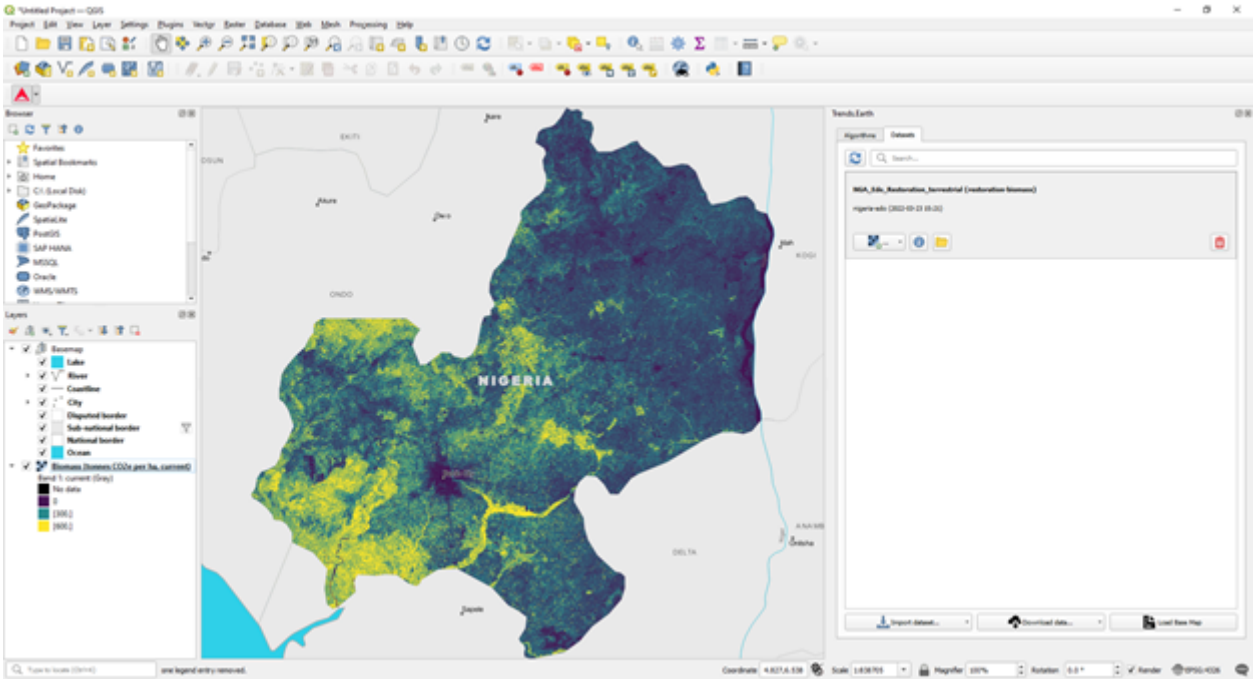
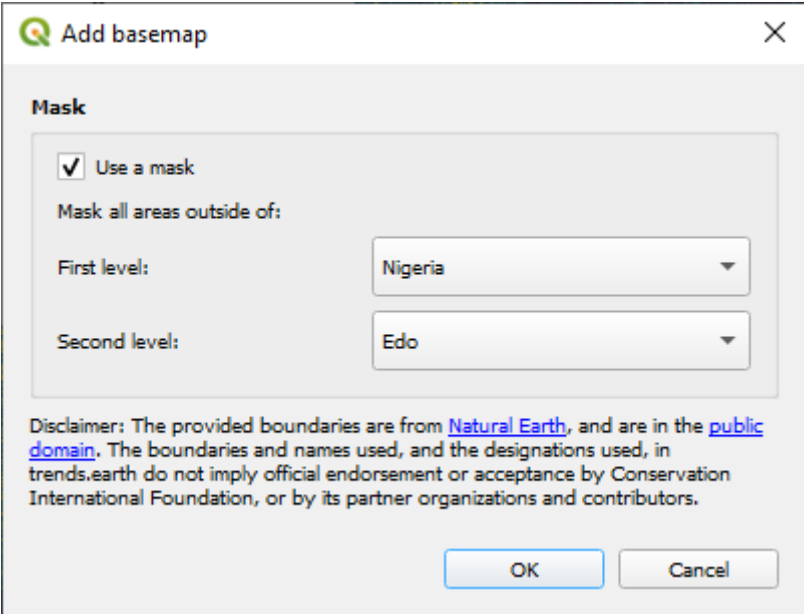
4. [redacted], [redacted].



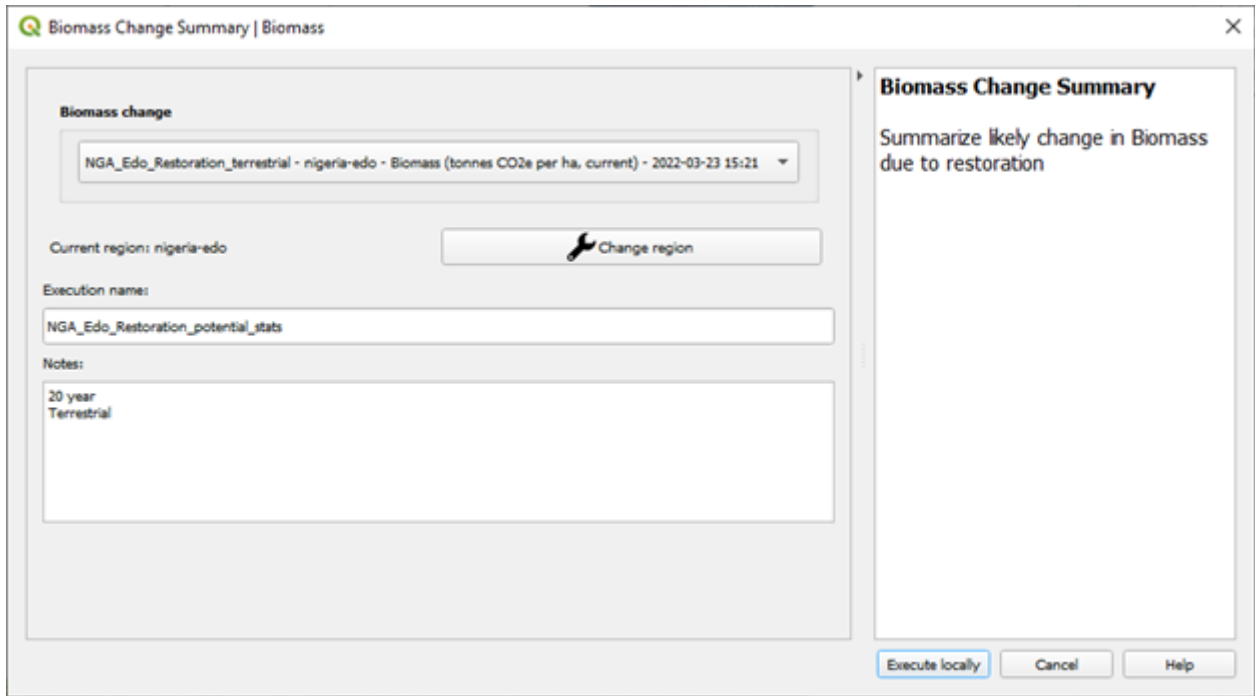
Note

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[redacted] Trends.Earth [redacted] [redacted], [redacted] [redacted] [redacted] [redacted].

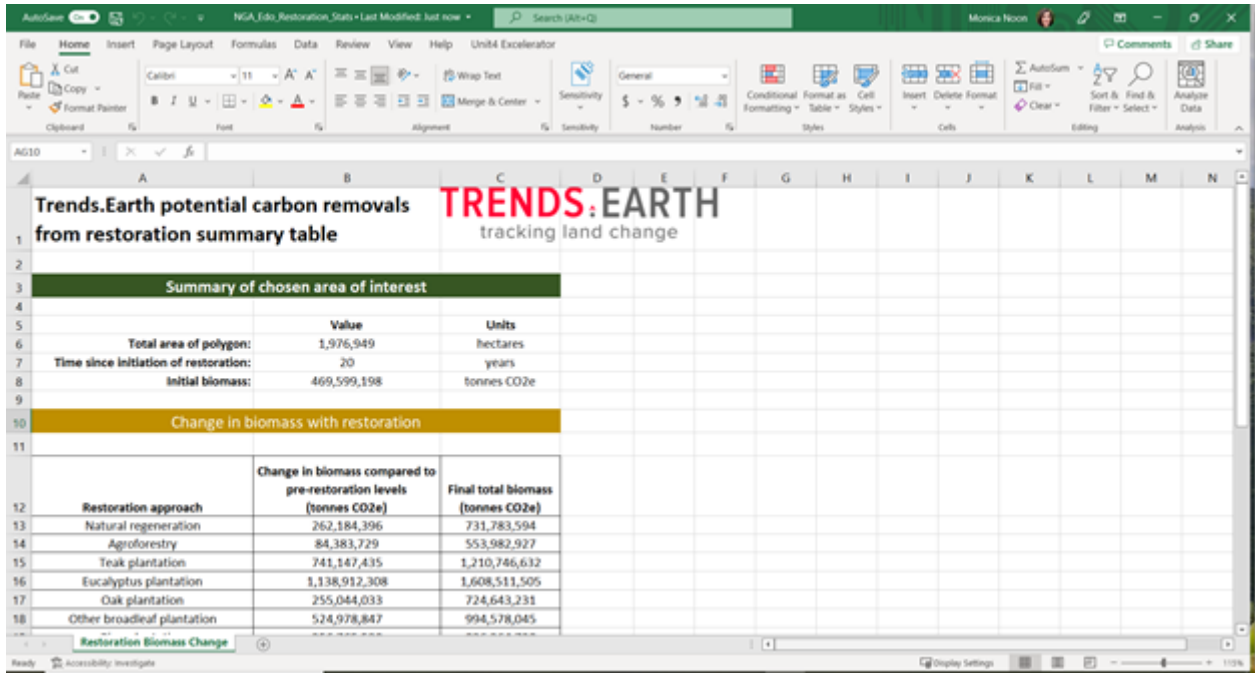


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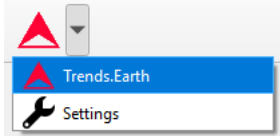
AG10

7	Time since initiation of restoration:	20	years
8	Initial biomass:	469,599,198	tonnes CO2e
9	Change in biomass with restoration		
10	Change in biomass compared to pre-restoration levels		
11	Restoration approach	Change in biomass compared to pre-restoration levels (tonnes CO2e)	Final total biomass (tonnes CO2e)
12	Natural regeneration	262,184,396	731,783,594
13	Agroforestry	84,383,729	553,982,927
14	Teak plantation	741,147,435	1,210,746,632
15	Eucalyptus plantation	1,138,912,308	1,608,511,505
16	Oak plantation	255,044,033	724,643,231
17	Other broadleaf plantation	524,978,847	994,578,045
18	Pine plantation	356,765,530	826,364,728
19	Conifer plantation	393,579,376	863,178,574
20	Sources:		
21	Biomass accumulation rates are from: Bernal, B., Murray, L. T. & Pearson, T. R. H. Global carbon dioxide removal rates from forest landscape restoration activities. Carbon Balance and Management 13, 22 (2018).		
22	The boundaries, names, and designations used in this report do not imply official		
23	Restoration Biomass Change		
24			

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- [Redacted]
 - [Redacted]: 15 [Redacted].
 - [Redacted]
1. [Redacted] Trends.Earth ■ QGIS ■ [Redacted] Trends.Earth.

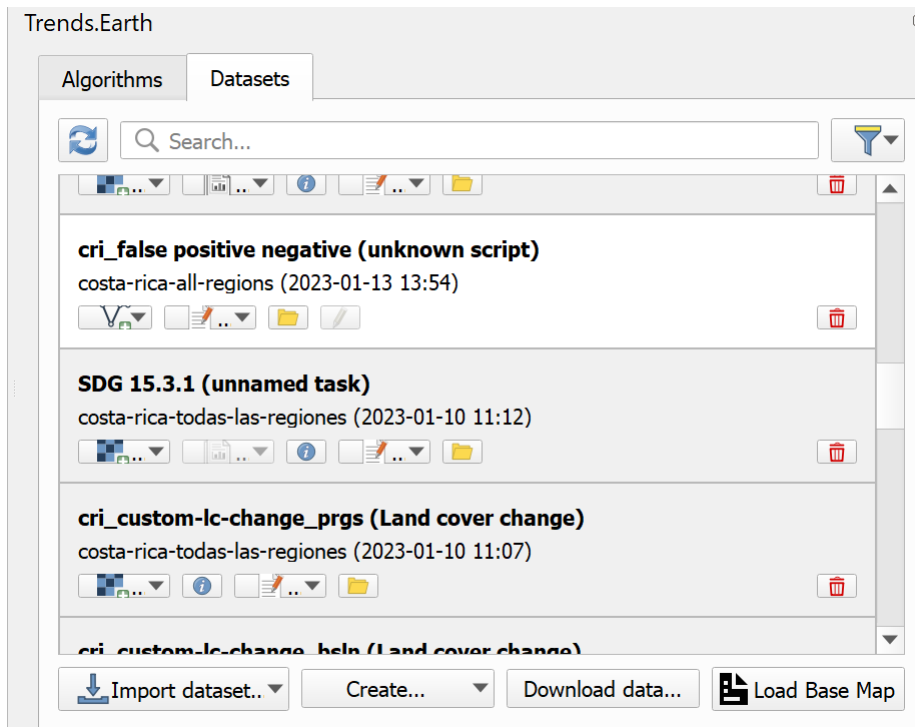


2. [Redacted] Trends.Earth. ■ [Redacted], [Redacted]

Note

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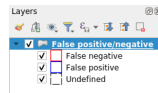
- [Redacted] « [Redacted] », [Redacted]



5. [Redacted] QGIS, [Redacted]



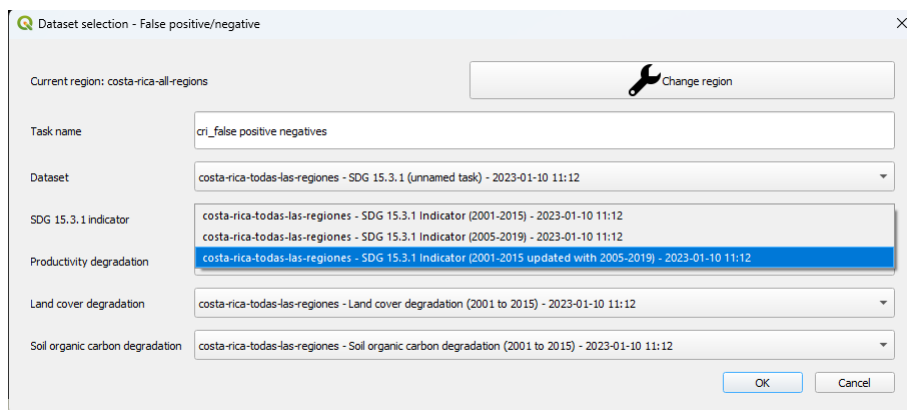
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6. [Redacted] QGIS [Redacted]



7. [Redacted] QGIS [Redacted]



[Redacted]



False positive/negative - Feature Attributes x

Location name ✕

Area, sq. km.

Process driving change ✕

Basis for judgement

Source ✕

Recode degraded to

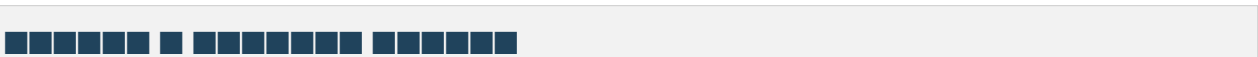
Recode stable to

Recode improved to

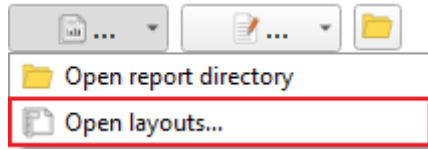
Category	Degraded	Improved	Stable	No data
SDG	~20%	~30%	~45%	~10%
Produc...	~15%	~25%	~55%	~10%
Land c...	~10%	~15%	~70%	~10%
SOC	~0%	~5%	~85%	~10%

■ Degraded
 ■ Improved
 ■ Stable
 ■ No data

... .., .. ., .. ., .. . 7.

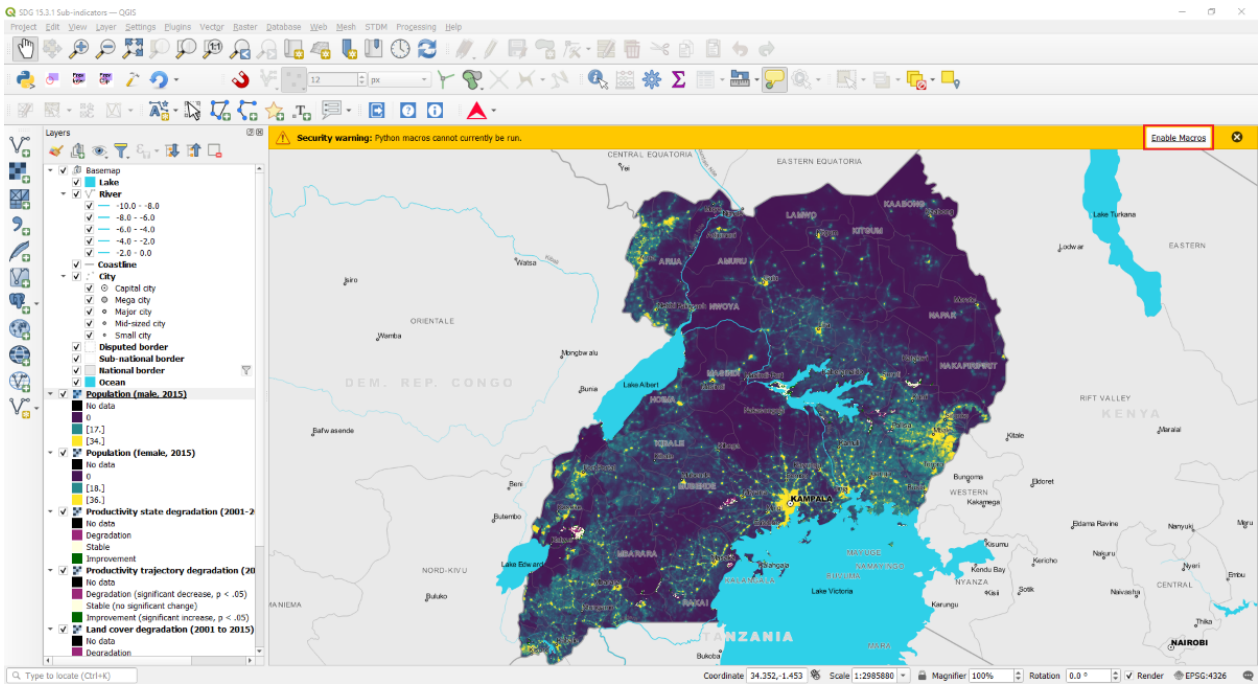


- .. .: .. ., .. ., .. ., .. ., .. .
- .. .: 10 .. .
- .. .: .. .

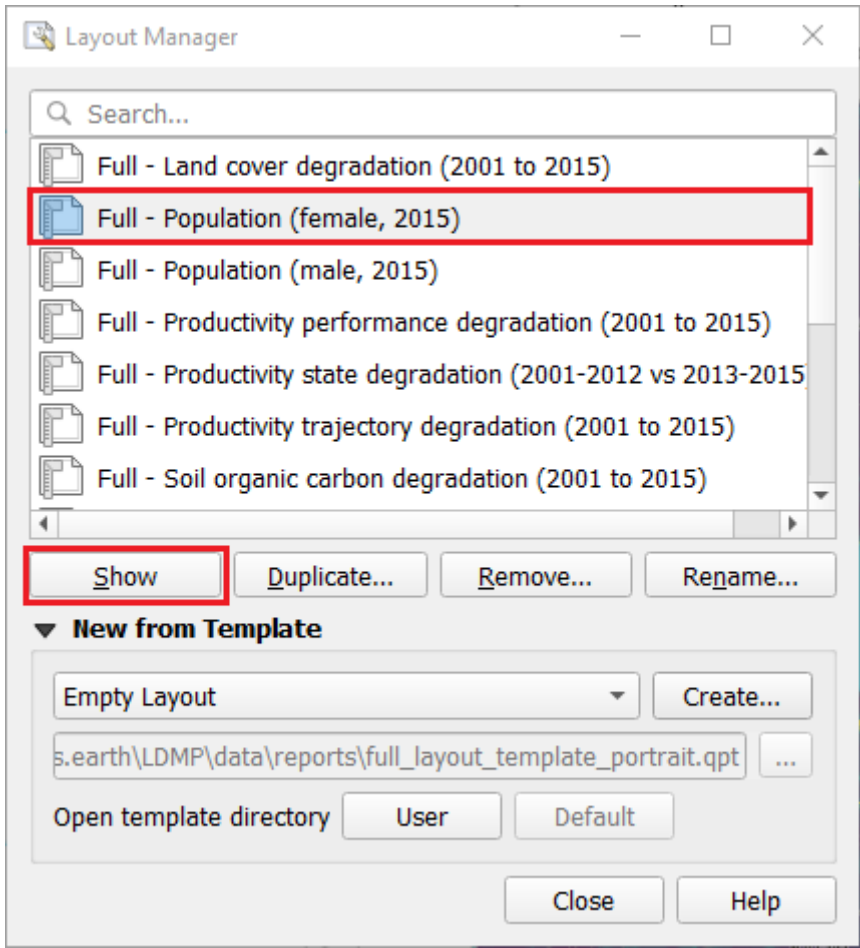


2. [REDACTED] QGIS, [REDACTED].

3. [REDACTED] Python. [REDACTED] QGIS [REDACTED]. [REDACTED] ([REDACTED]).



4. [REDACTED] « [REDACTED] » [REDACTED].



Note

- [Redacted text]
- [Redacted text]

Note

[Redacted text]

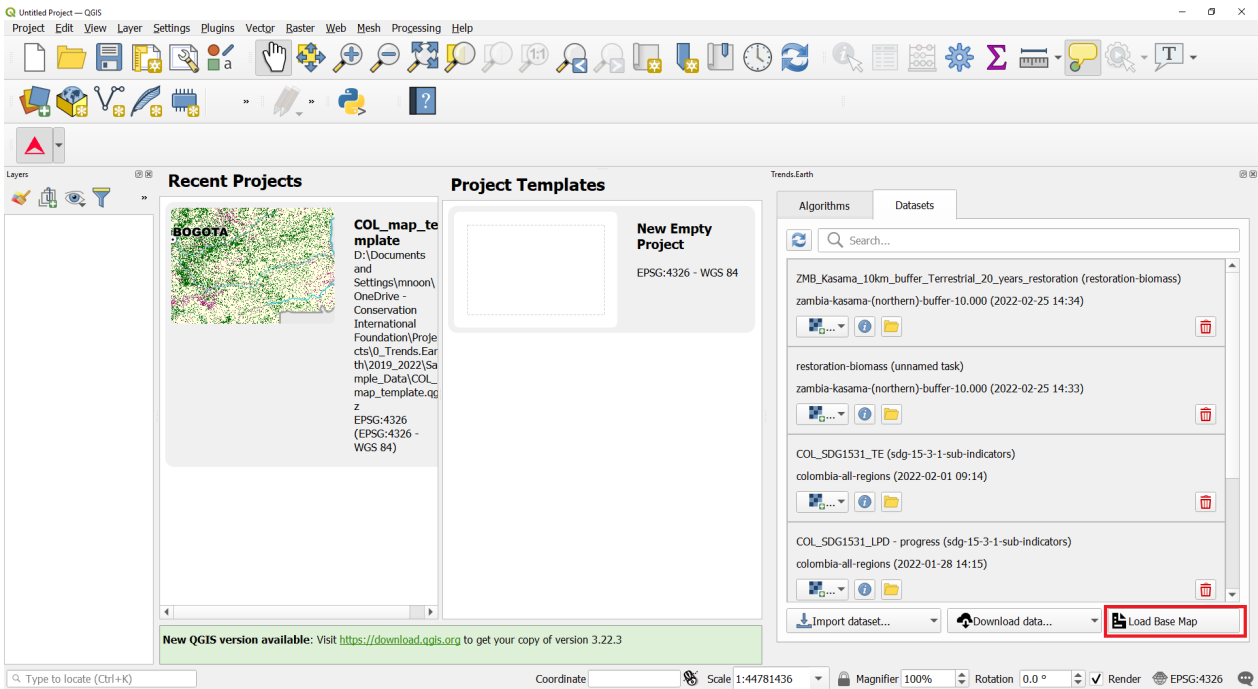
[Redacted text]

[Redacted text] qgs

Trends.Earth
 QGIS, Trends.Earth

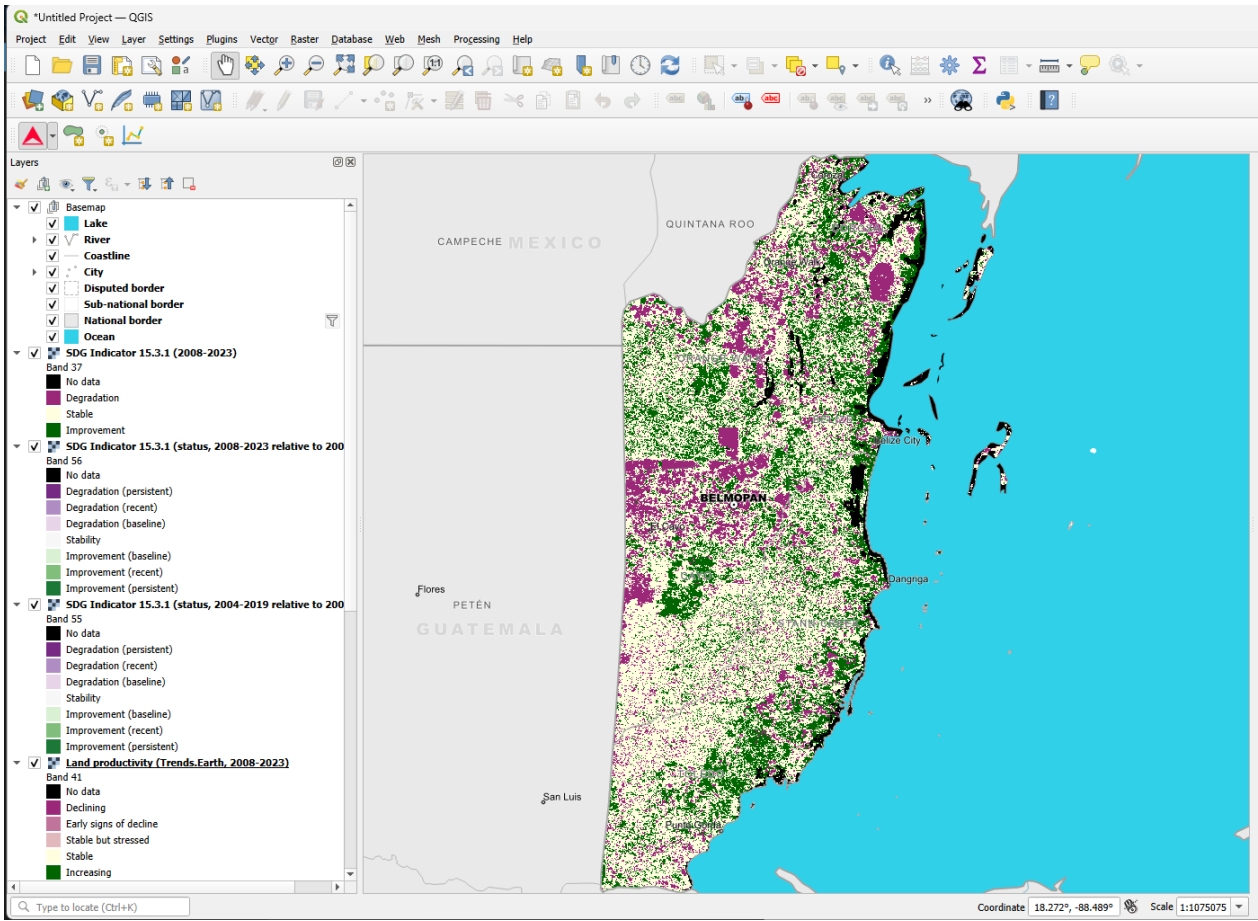
QGIS.

1. [Redacted]



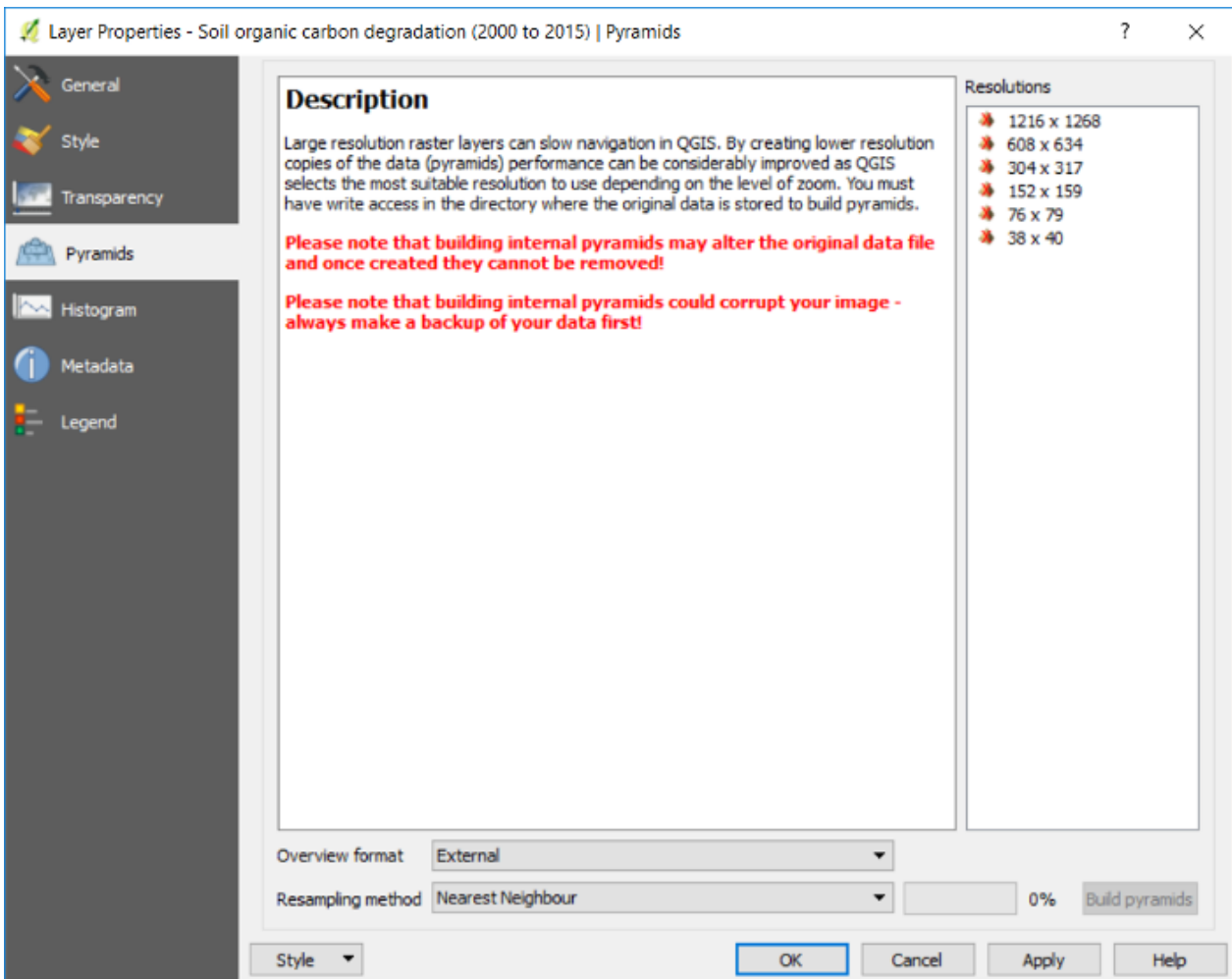
2. [Redacted]

- [Redacted]
- Trends.Earth, [Redacted] ([Redacted]). [Redacted]
- [Redacted]



[REDACTED]

1. [REDACTED]



4. **Pyramids are a set of lower resolution versions of the original data. They are used to speed up navigation in QGIS. Large resolution raster layers can slow navigation in QGIS. By creating lower resolution copies of the data (pyramids) performance can be considerably improved as QGIS selects the most suitable resolution to use depending on the level of zoom. You must have write access in the directory where the original data is stored to build pyramids.**

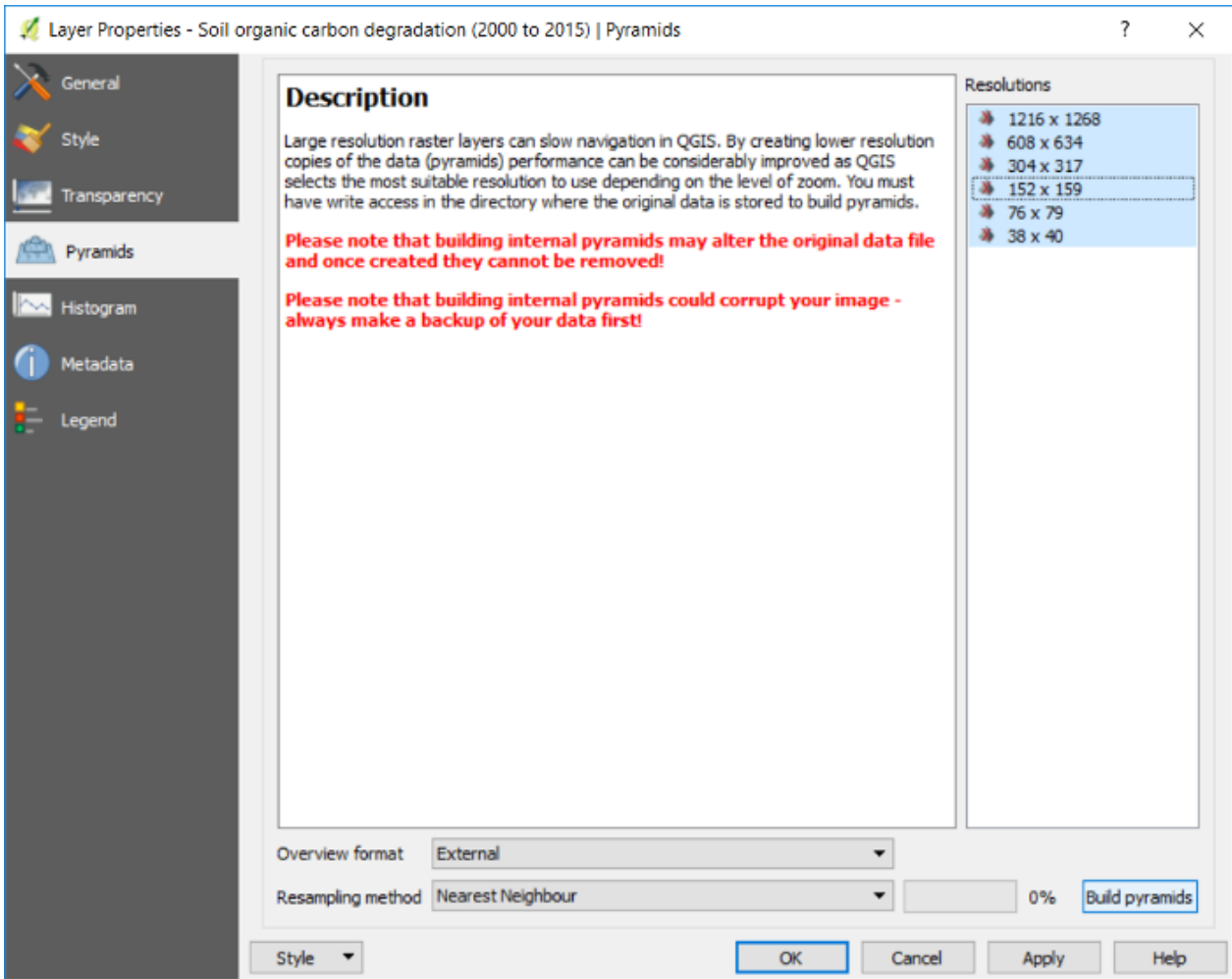
Please note that building internal pyramids may alter the original data file and once created they cannot be removed!

Please note that building internal pyramids could corrupt your image - always make a backup of your data first!

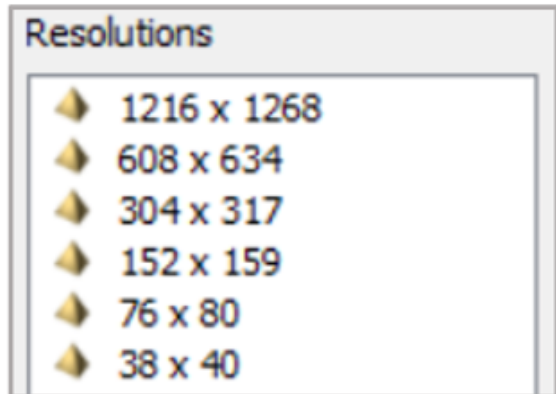
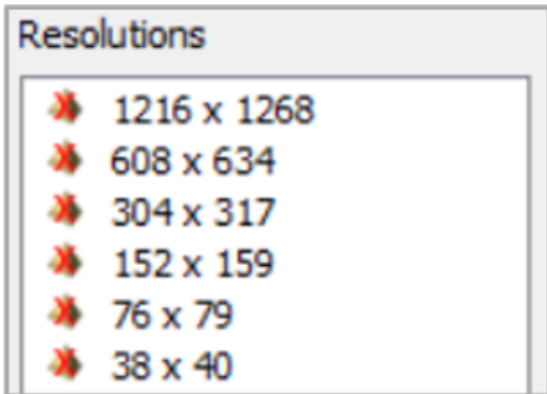
Resolutions:

- **1216 x 1268**
- **608 x 634**
- **304 x 317**
- **152 x 159**
- **76 x 79**
- **38 x 40**

5. **Pyramids are a set of lower resolution versions of the original data. They are used to speed up navigation in QGIS. Large resolution raster layers can slow navigation in QGIS. By creating lower resolution copies of the data (pyramids) performance can be considerably improved as QGIS selects the most suitable resolution to use depending on the level of zoom. You must have write access in the directory where the original data is stored to build pyramids.**



6. **Resolutions** **1216 x 1268**, **608 x 634**, **304 x 317**, **152 x 159**, **76 x 79**, **38 x 40**.



7. **Resolutions** **1216 x 1268**, **608 x 634**, **304 x 317**, **152 x 159**, **76 x 80**, **38 x 40** QGIS.



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Python в QGIS

Python в QGIS?

Python в QGIS, это инструмент «Trends.earth» для автоматизации геоинформационных процессов. Python в QGIS. Trends.earth — это инструмент «Trends.earth» для автоматизации геоинформационных процессов.

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5. Python в QGIS.

Python

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C:\Documents\user\AppData\Roaming\QGIS\QGIS3\profiles\default\pythonplugins

1. **Сформулируйте задачу.**

2. **Сформулируйте гипотезу.**

Note

Согласно п. 15.3.1 ст. 15.3.1 КоАП РФ, нарушение сроков представления отчетности, предусмотренных законодательством Российской Федерации, является административным правонарушением. Для определения факта нарушения можно использовать сервис Trends.Earth.

3. **Сформулируйте вывод.**

4. **Сформулируйте рекомендацию.**

Согласно п. 15.3.1 ст. 15.3.1 КоАП РФ, нарушение сроков представления отчетности, предусмотренных законодательством Российской Федерации, является административным правонарушением. Для определения факта нарушения можно использовать сервис Trends.Earth.

5. **Сформулируйте рекомендацию.**

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6. **Сформулируйте рекомендацию.**

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15.2.1.1 2015 年 12 月 15 日

2015 年 12 月 15 日，苹果公司宣布，将开始向用户收取 99 美元的“企业级”费用，以支持其“企业级”服务。这一费用将用于支持苹果的“企业级”服务，包括 Apple Business Manager、Apple School Manager 和 Apple Configurator 等。这一费用将如何影响苹果的财务状况？

苹果公司宣布向企业级用户收取 99 美元的年费，这一举措旨在增加其企业级服务的收入。这一费用将用于支持苹果的“企业级”服务，包括 Apple Business Manager、Apple School Manager 和 Apple Configurator 等。这一费用将如何影响苹果的财务状况？

Trends.Earth 显示，全球二氧化碳排放量在 2015 年继续增长。这一增长趋势将如何影响全球的气候变化？

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Remote Sensing Data (Satellite and Aerial)

Remote Sensing Data (Satellite and Aerial)

Remote Sensing Data (Satellite and Aerial) ?

Remote sensing data is used to monitor and assess environmental conditions, such as land use, vegetation, and water resources. This data is collected from various sources, including satellite imagery, aerial photography, and ground-based sensors. Google Earth Engine is a powerful platform for processing and analyzing large volumes of remote sensing data. It allows users to perform complex spatial and temporal analyses, such as change detection, classification, and mapping. The data is often used to track deforestation, monitor crop yields, and assess the impact of climate change. Remote sensing data is also used in urban planning, disaster response, and resource management. The data is typically processed into maps and reports that provide valuable insights into the state of the environment and the impact of human activities.

Remote Sensing Data (Satellite and Aerial) Trends.Earth ESRI?

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Remote Sensing Data (Satellite and Aerial)

Remote Sensing Data (Satellite and Aerial) Trends.Earth

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NDVI

Remote Sensing Data (Satellite and Aerial)	Remote Sensing Data (Satellite and Aerial)	Remote Sensing Data (Satellite and Aerial)	Remote Sensing Data (Satellite and Aerial)	Remote Sensing Data (Satellite and Aerial)
AVHRR/GIMMS	1982-2015	8		
MOD13Q1-coll6.1	2001-2024	250		

Remote Sensing Data (Satellite and Aerial)

Remote Sensing Data (Satellite and Aerial)	Remote Sensing Data (Satellite and Aerial)	Remote Sensing Data (Satellite and Aerial)	Remote Sensing Data (Satellite and Aerial)	Remote Sensing Data (Satellite and Aerial)
MERRA 2	1980-2019	0.5° x 0.625°		

XXXXXXXXXXXXXXXX (XXXXXXXXXXXX X XXXXXXXXXXXXXXX)

XXXXXXXXXXXX/XXXXXXXXXXXX XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX
ERA I	1979-2016	0.75° x 0.75°	XXXXXXXXXX XXXXXXXXXX	XXXXXXXXXXXX XXXXXXXXXXXX

XXXXXXXXXXXX X XXXXXXXXXXXXXXX

XXXXXXXXXXXX/XXXXXXXXXXXX XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX
GPCP v2.3 1 XXXXXXXXXXXXXXX	1979-2019	2.5° x 2.5°	XXXXXXXXXX XXXXXXXXXX	XXXXXXXXXXXX XXXXXXXXXXXX
GPCC V6	1891-2019	1° x 1°	XXXXXXXXXX XXXXXXXXXX	XXXXXXXXXXXX XXXXXXXXXXXX
CHIRPS	1981-2024	5 XXX	50 ■ - 50 ■	XXXXXXXXXXXX XXXXXXXXXXXX
PERSIANN-CDR	1983-2024	25 XXX	60 ■ - 60 ■	XXXXXXXXXXXX XXXXXXXXXXXX

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

XXXXXXXXXXXX/XXXXXXXXXXXX XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX
MOD16A2GF	2000-2024	500 ■	XXXXXXXXXX XXXXXXXXXX	XXXXXXXXXXXX XXXXXXXXXXXX

XXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXX

XXXXXXXXXXXX/XXXXXXXXXXXX XXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX
ESA CCI Land Cover	1992-2022	300 ■	XXXXXXXXXX XXXXXXXXXX	CC BY 4.0

XXXXXXXXXXXXXXXXXXXXXXXXXXXX

WorldPop 100m (2000–2020)

WorldPop 100m (2000–2020)	2000–2020	100m	CC BY 4.0
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Note

WorldPop 100m is a global population dataset derived from satellite imagery and ground truth data. It is available in 100m resolution and covers the period 2000–2020. The dataset is available in GeoTIFF format and is licensed under CC BY 4.0. For more information, please visit the Trends.Earth website.

WorldPop 100m is available in 100m resolution. The dataset is available in GeoTIFF format and is licensed under CC BY 4.0. For more information, please visit the Trends.Earth website.

- s3://trends.earth-shared/worldpop/100m
- s3://trends.earth-shared/worldpop/300m
- shared

WorldPop 100m (2000–2020) Trends.Earth

WorldPop 100m is a global population dataset derived from satellite imagery and ground truth data. It is available in 100m resolution and covers the period 2000–2020. The dataset is available in GeoTIFF format and is licensed under CC BY 4.0. For more information, please visit the Trends.Earth website.

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Geographic Information Systems (GIS) Fundamentals

Coordinate System	Projection
-32768	UTM Zone 18N
WGS 1984 UTM Zone 18N	WGS 1984 UTM Zone 18N (EPSG:31466)

Map Projections and Coordinate Systems

Map projections are mathematical transformations that convert the curved surface of the Earth into a flat, two-dimensional plane. The most common projection used in GIS is the Universal Transverse Mercator (UTM) projection. UTM uses a cylindrical projection and divides the Earth into zones, each 6 degrees wide. The UTM projection is used because it minimizes distortion over small areas. Other common projections include the Mercator projection, which is used for navigation, and the Robinson projection, which is used for world maps. The choice of projection depends on the scale and purpose of the map. For example, a map of a small area like a city would use a local projection, while a map of the entire world would use a world projection.

Coordinate System	Projection
-32768	UTM Zone 18N
WGS 1984 UTM Zone 18N	WGS 1984 UTM Zone 18N (EPSG:31466)

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1. **Map Projections and Coordinate Systems** in QGIS;
2. **Map Projections and Coordinate Systems** in QGIS.

Map Projections and Coordinate Systems

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- **Map Projections and Coordinate Systems** QGIS
- **Map Projections and Coordinate Systems** QGIS
- **Map Projections and Coordinate Systems** JSON

Таблица «Таблица параметров задания»

Таблица параметров задания

Таблица параметров задания (текущий слой, текущий слой, текущий слой) — таблица параметров задания (текущий слой, текущий слой, текущий слой). Таблица параметров задания (текущий слой, текущий слой, текущий слой) — таблица параметров задания (текущий слой, текущий слой, текущий слой).

Таблица параметров задания Trends.Earth (текущий слой, текущий слой, текущий слой) — таблица параметров задания (текущий слой, текущий слой, текущий слой). Таблица параметров задания (текущий слой, текущий слой, текущий слой) — таблица параметров задания (текущий слой, текущий слой, текущий слой).

Таблица параметров задания

Таблица параметров задания «te_job_» — таблица параметров задания (текущий слой, текущий слой, текущий слой).

Имя параметра	Описание	Тип
te_job_id	Уникальный идентификатор задания, UUID	Символьный
te_job_input_params	JSON-форматированные параметры задания	Символьный
te_job_paths	Путь к файлам задания (-) в формате	Символьный
te_job_algorithm	Алгоритм задания	Символьный
te_job_creation_date	Дата создания задания	Символьный (%Y-%m-%d %H:%M)
te_job_status	Статус задания, текущий слой, текущий слой.	Символьный
te_job_name	Имя задания, текущий слой.	Символьный
te_job_comments	Комментарии к заданию, текущий слой.	Символьный

Таблица параметров задания

Таблица параметров задания «te_current_layer_» — таблица параметров задания (текущий слой, текущий слой, текущий слой).

Имя параметра	Описание	Тип
te_current_layer_name	Имя текущего слоя, текущий слой.	Символьный

Print Report

Print Report

Click on the **Print Report** button in the top toolbar. The **Print Report** dialog box will appear. The **Print Report** dialog box has several tabs: **Print Report**, **Page Setup**, and **Print Range**. The **Print Report** tab is selected by default. In the **Print Report** tab, you can choose the **Print Range** (All, Selected, or Page Range), the **Print Range** (Page Range), the **Print Range** (Page Range), and the **Print Range** (Page Range).

Print Report

Click on the **Print Report** button in the top toolbar:

Print Report

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Note

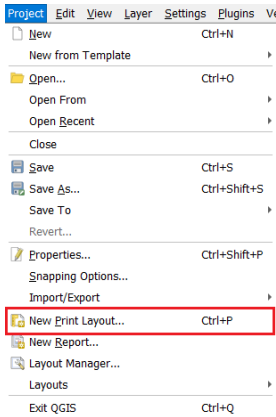
Click on the **Print Report** button in the top toolbar, the **Print Report** dialog box will appear. The **Print Report** dialog box has several tabs: **Print Report**, **Page Setup**, and **Print Range**. The **Print Report** tab is selected by default. In the **Print Report** tab, you can choose the **Print Range** (All, Selected, or Page Range), the **Print Range** (Page Range), the **Print Range** (Page Range), and the **Print Range** (Page Range).

Print Report

Click on the **Print Report** button in the top toolbar:

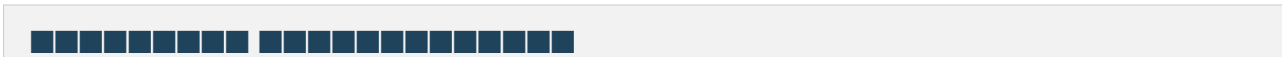
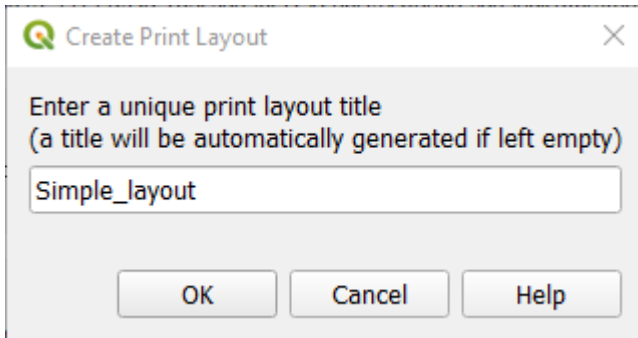
Print Report

1. Click on the **Print Report** button in the top toolbar > **Print Report** dialog box...

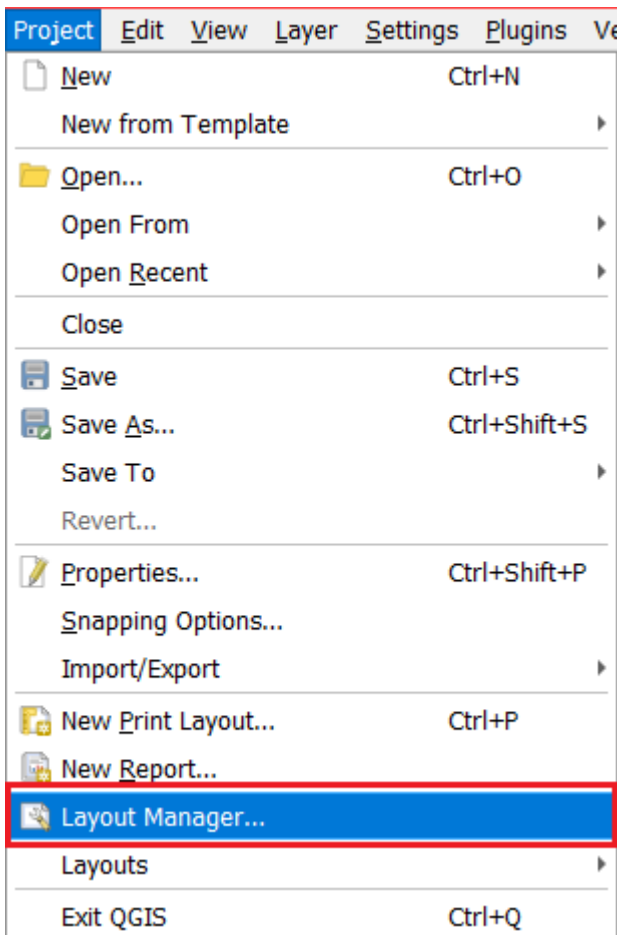




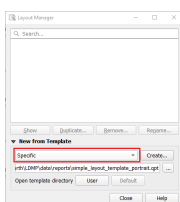
2.



1. >



2.





Field	Description	Value
<i>format_type</i>	Format type for the report. Supported values: PDF, IMAGE. The format type is determined by the report type and the output format.	PDF, IMAGE
<i>params</i>	Additional parameters for the report. Supported values: IMAGE (GeoTIFF), IMAGE (COG), PDF, PNG, IMAGE (GeoTIFF).	GeoTIFF, COG, PNG, IMAGE

Installation and configuration of the report generator

The report generator is installed as a Python package. The installation instructions are provided in the following sections:

- Install QGIS, and set the report templates path to `«[base_data_directory]/reports/templates»`.
- Install the report templates for QGIS.

Installation of the report generator

The report generator is installed as a Python package. The installation instructions are provided in the following sections:

Zip-archives of the report generator for Trends.Earth are available on [Trends.Earth](#) and [Zenodo](#). The report generator is installed using the following command:

```
pip install trends-earth-report-generator
```

The report generator is installed using the following command:

```
pip install trends-earth-report-generator==15.3.1
```

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	15.3.1 Trends.Earth LPD	15.3.1 LPD FAO-WOCAT	15.3.1 JRC LPD
BDI	BDI (Trends.Earth LPD)	BDI (FAO-WOCAT LPD)	BDI (JRC LPD)
BEL	BEL (Trends.Earth LPD)	BEL (FAO-WOCAT LPD)	BEL (JRC LPD)
BEN	BEN (Trends.Earth LPD)	BEN (FAO-WOCAT LPD)	BEN (JRC LPD)
BES	BES (Trends.Earth LPD)	BES (FAO-WOCAT LPD)	BES (JRC LPD)
BFA	BFA (Trends.Earth LPD)	BFA (FAO-WOCAT LPD)	BFA (JRC LPD)
BGD	BGD (Trends.Earth LPD)	BGD (FAO-WOCAT LPD)	BGD (JRC LPD)
BGR	BGR (Trends.Earth LPD)	BGR (FAO-WOCAT LPD)	BGR (JRC LPD)
BHR	BHR (Trends.Earth LPD)	BHR (FAO-WOCAT LPD)	BHR (JRC LPD)
BHS	BHS (Trends.Earth LPD)	BHS (FAO-WOCAT LPD)	BHS (JRC LPD)
BIH	BIH (Trends.Earth LPD)	BIH (FAO-WOCAT LPD)	BIH (JRC LPD)
BLM	BLM (Trends.Earth LPD)	BLM (FAO-WOCAT LPD)■	BLM (JRC LPD)
BLR	BLR (Trends.Earth LPD)	BLR (FAO-WOCAT LPD)	BLR (JRC LPD)
BLZ	BLZ (Trends.Earth LPD)	BLZ (FAO-WOCAT LPD)	BLZ (JRC LPD)
BMU	BMU (Trends.Earth LPD)	BMU (FAO-WOCAT LPD)	BMU (JRC LPD)
BOL	BOL (Trends.Earth LPD)	BOL (FAO-WOCAT LPD)	BOL (JRC LPD)
BRA	BRA (Trends.Earth LPD)	BRA (FAO-WOCAT LPD)	BRA (JRC LPD)
BRB	BRB (Trends.Earth LPD)	BRB (FAO-WOCAT LPD)	BRB (JRC LPD)
BRN	BRN (Trends.Earth LPD)	BRN (FAO-WOCAT LPD)	BRN (JRC LPD)
BTN	BTN (Trends.Earth LPD)	BTN (FAO-WOCAT LPD)	BTN (JRC LPD)
BWA	BWA (Trends.Earth LPD)	BWA (FAO-WOCAT LPD)	BWA (JRC LPD)



	15.3.1 Trends.Earth LPD	15.3.1 FAO-WOCAT LPD	15.3.1 JRC LPD
CAF	CAF (Trends.Earth LPD)	CAF (FAO-WOCAT LPD)	CAF (JRC LPD)
CAN	CAN (Trends.Earth LPD)	CAN (FAO-WOCAT LPD)	CAN (JRC LPD)
CHE	CHE (Trends.Earth LPD)	CHE (FAO-WOCAT LPD)	CHE (JRC LPD)
CHL	CHL (Trends.Earth LPD)	CHL (FAO-WOCAT LPD)	CHL (JRC LPD)
CHN	CHN (Trends.Earth LPD)	CHN (FAO-WOCAT LPD)	CHN (JRC LPD)
CIV	CIV (Trends.Earth LPD)	CIV (FAO-WOCAT LPD)	CIV (JRC LPD)
CMR	CMR (Trends.Earth LPD)	CMR (FAO-WOCAT LPD)	CMR (JRC LPD)
COD	COD (Trends.Earth LPD)	COD (FAO-WOCAT LPD)	COD (JRC LPD)
COG	COG (Trends.Earth LPD)	COG (FAO-WOCAT LPD)	COG (JRC LPD)
COK	COK (Trends.Earth LPD)	COK (FAO-WOCAT LPD)	COK (JRC LPD)
COL	COL (Trends.Earth LPD)	COL (FAO-WOCAT LPD)	COL (JRC LPD)
COM	COM (Trends.Earth LPD)	COM (FAO-WOCAT LPD)	COM (JRC LPD)
CPV	CPV (Trends.Earth LPD)	CPV (FAO-WOCAT LPD)	CPV (JRC LPD)
CRI	CRI (Trends.Earth LPD)	CRI (FAO-WOCAT LPD)	CRI (JRC LPD)
CUB	CUB (Trends.Earth LPD)	CUB (FAO-WOCAT LPD)	CUB (JRC LPD)
CUW	CUW (Trends.Earth LPD)	CUW (FAO-WOCAT LPD)	CUW (JRC LPD)
CYM	CYM (Trends.Earth LPD)	CYM (FAO-WOCAT LPD)	CYM (JRC LPD)
CYP	CYP (Trends.Earth LPD)	CYP (FAO-WOCAT LPD)	CYP (JRC LPD)
CZE	CZE (Trends.Earth LPD)	CZE (FAO-WOCAT LPD)	CZE (JRC LPD)
DEU	DEU (Trends.Earth LPD)	DEU (FAO-WOCAT LPD)	DEU (JRC LPD)



	15.3.1 Trends.Earth LPD	15.3.1 LPD FAO-WOCAT	15.3.1 JRC LPD
DJI	DJI (Trends.Earth LPD)	DJI (FAO-WOCAT LPD)	DJI (JRC LPD)
DMA	DMA (Trends.Earth LPD)	DMA (FAO-WOCAT LPD)	DMA (JRC LPD)
DNK	DNK (Trends.Earth LPD)	DNK (FAO-WOCAT LPD)	DNK (JRC LPD)
DOM	DOM (Trends.Earth LPD)	DOM (FAO-WOCAT LPD)	DOM (JRC LPD)
DZA	DZA (Trends.Earth LPD)	DZA (FAO-WOCAT LPD)	DZA (JRC LPD)
ECU	ECU (Trends.Earth LPD)	ECU (FAO-WOCAT LPD)	ECU (JRC LPD)
EGY	EGY (Trends.Earth LPD)	EGY (FAO-WOCAT LPD)	EGY (JRC LPD)
ERI	ERI (Trends.Earth LPD)	ERI (FAO-WOCAT LPD)	ERI (JRC LPD)
ESP	ESP (Trends.Earth LPD)	ESP (FAO-WOCAT LPD)	ESP (JRC LPD)
EST	EST (Trends.Earth LPD)	EST (FAO-WOCAT LPD)	EST (JRC LPD)
ETH	ETH (Trends.Earth LPD)	ETH (FAO-WOCAT LPD)	ETH (JRC LPD)
FIN	FIN (Trends.Earth LPD)	FIN (FAO-WOCAT LPD)	FIN (JRC LPD)
FJI	FJI (Trends.Earth LPD)	FJI (FAO-WOCAT LPD)	FJI (JRC LPD)
FLK	FLK (Trends.Earth LPD)	FLK (FAO-WOCAT LPD)	FLK (JRC LPD)
FRA	FRA (Trends.Earth LPD)	FRA (FAO-WOCAT LPD)	FRA (JRC LPD)
FRO	FRO (Trends.Earth LPD)	FRO (FAO-WOCAT LPD)	FRO (JRC LPD)
FSM	FSM (Trends.Earth LPD)	FSM (FAO-WOCAT LPD)	FSM (JRC LPD)
GAB	GAB (Trends.Earth LPD)	GAB (FAO-WOCAT LPD)	GAB (JRC LPD)
GBR	GBR (Trends.Earth LPD)	GBR (FAO-WOCAT LPD)	GBR (JRC LPD)
GEO	GEO (Trends.Earth LPD)	GEO (FAO-WOCAT LPD)	GEO (JRC LPD)



	15.3.1 Trends.Earth LPD	15.3.1 FAO-WOCAT LPD	15.3.1 JRC LPD
GGY	GGY (Trends.Earth LPD)	GGY (FAO-WOCAT LPD)	GGY (JRC LPD)
GHA	GHA (Trends.Earth LPD)	GHA (FAO-WOCAT LPD)	GHA (JRC LPD)
GIB	GIB (Trends.Earth LPD)	GIB (FAO-WOCAT LPD)	GIB (JRC LPD)
GIN	GIN (Trends.Earth LPD)	GIN (FAO-WOCAT LPD)	GIN (JRC LPD)
GLP	GLP (Trends.Earth LPD)	GLP (FAO-WOCAT LPD)	GLP (JRC LPD)
GMB	GMB (Trends.Earth LPD)	GMB (FAO-WOCAT LPD)	GMB (JRC LPD)
GNB	GNB (Trends.Earth LPD)	GNB (FAO-WOCAT LPD)	GNB (JRC LPD)
GNQ	GNQ (Trends.Earth LPD)	GNQ (FAO-WOCAT LPD)	GNQ (JRC LPD)
GRC	GRC (Trends.Earth LPD)	GRC (FAO-WOCAT LPD)	GRC (JRC LPD)
GRD	GRD (Trends.Earth LPD)	GRD (FAO-WOCAT LPD)	GRD (JRC LPD)
GRL	GRL (Trends.Earth LPD)	GRL (FAO-WOCAT LPD)	GRL (JRC LPD)
GTM	GTM (Trends.Earth LPD)	GTM (FAO-WOCAT LPD)	GTM (JRC LPD)
GUF	GUF (Trends.Earth LPD)	GUF (FAO-WOCAT LPD)	GUF (JRC LPD)
GUM	GUM (Trends.Earth LPD)	GUM (FAO-WOCAT LPD)	GUM (JRC LPD)
GUY	GUY (Trends.Earth LPD)	GUY (FAO-WOCAT LPD)	GUY (JRC LPD)
HND	HND (Trends.Earth LPD)	HND (FAO-WOCAT LPD)	HND (JRC LPD)
HRV	HRV (Trends.Earth LPD)	HRV (FAO-WOCAT LPD)	HRV (JRC LPD)
HTI	HTI (Trends.Earth LPD)	HTI (FAO-WOCAT LPD)	HTI (JRC LPD)
HUN	HUN (Trends.Earth LPD)	HUN (FAO-WOCAT LPD)	HUN (JRC LPD)
IDN	IDN (Trends.Earth LPD)	IDN (FAO-WOCAT LPD)	IDN (JRC LPD)



	15.3.1 Trends.Earth LPD	15.3.1 FAO-WOCAT LPD	15.3.1 JRC LPD
IMN	IMN (Trends.Earth LPD)	IMN (FAO-WOCAT LPD)	IMN (JRC LPD)
IND	IND (Trends.Earth LPD)	IND (FAO-WOCAT LPD)	IND (JRC LPD)
IRL	IRL (Trends.Earth LPD)	IRL (FAO-WOCAT LPD)	IRL (JRC LPD)
IRN	IRN (Trends.Earth LPD)	IRN (FAO-WOCAT LPD)	IRN (JRC LPD)
IRQ	IRQ (Trends.Earth LPD)	IRQ (FAO-WOCAT LPD)	IRQ (JRC LPD)
ISL	ISL (Trends.Earth LPD)	ISL (FAO-WOCAT LPD)	ISL (JRC LPD)
ISR	ISR (Trends.Earth LPD)	ISR (FAO-WOCAT LPD)	ISR (JRC LPD)
ITA	ITA (Trends.Earth LPD)	ITA (FAO-WOCAT LPD)	ITA (JRC LPD)
JAM	JAM (Trends.Earth LPD)	JAM (FAO-WOCAT LPD)	JAM (JRC LPD)
JOR	JOR (Trends.Earth LPD)	JOR (FAO-WOCAT LPD)	JOR (JRC LPD)
JPN	JPN (Trends.Earth LPD)	JPN (FAO-WOCAT LPD)	JPN (JRC LPD)
KAZ	KAZ (Trends.Earth LPD)	KAZ (FAO-WOCAT LPD)	KAZ (JRC LPD)
KEN	KEN (Trends.Earth LPD)	KEN (FAO-WOCAT LPD)	KEN (JRC LPD)
KGZ	KGZ (Trends.Earth LPD)	KGZ (FAO-WOCAT LPD)	KGZ (JRC LPD)
KHM	KHM (Trends.Earth LPD)	KHM (FAO-WOCAT LPD)	KHM (JRC LPD)
KIR	KIR (Trends.Earth LPD)	KIR (FAO-WOCAT LPD)	KIR (JRC LPD)
KNA	KNA (Trends.Earth LPD)	KNA (FAO-WOCAT LPD)	KNA (JRC LPD)
KOR	KOR (Trends.Earth LPD)	KOR (FAO-WOCAT LPD)	KOR (JRC LPD)
KWT	KWT (Trends.Earth LPD)	KWT (FAO-WOCAT LPD)	KWT (JRC LPD)
LAO	LAO (Trends.Earth LPD)	LAO (FAO-WOCAT LPD)	LAO (JRC LPD)



	15.3.1 Trends.Earth LPD	15.3.1 FAO-WOCAT LPD	15.3.1 JRC LPD
LBN	LBN (Trends.Earth LPD)	LBN (FAO-WOCAT LPD)	LBN (JRC LPD)
LBR	LBR (Trends.Earth LPD)	LBR (FAO-WOCAT LPD)	LBR (JRC LPD)
LBY	LBY (Trends.Earth LPD)	LBY (FAO-WOCAT LPD)	LBY (JRC LPD)
LCA	LCA (Trends.Earth LPD)	LCA (FAO-WOCAT LPD)	LCA (JRC LPD)
LIE	LIE (Trends.Earth LPD)	LIE (FAO-WOCAT LPD)	LIE (JRC LPD)
LKA	LKA (Trends.Earth LPD)	LKA (FAO-WOCAT LPD)	LKA (JRC LPD)
LSO	LSO (Trends.Earth LPD)	LSO (FAO-WOCAT LPD)	LSO (JRC LPD)
LTU	LTU (Trends.Earth LPD)	LTU (FAO-WOCAT LPD)	LTU (JRC LPD)
LUX	LUX (Trends.Earth LPD)	LUX (FAO-WOCAT LPD)	LUX (JRC LPD)
LVA	LVA (Trends.Earth LPD)	LVA (FAO-WOCAT LPD)	LVA (JRC LPD)
MAR	MAR (Trends.Earth LPD)	MAR (FAO-WOCAT LPD)	MAR (JRC LPD)
MCO	MCO (Trends.Earth LPD)	MCO (FAO-WOCAT LPD)	MCO (JRC LPD)
MDA	MDA (Trends.Earth LPD)	MDA (FAO-WOCAT LPD)	MDA (JRC LPD)
MDG	MDG (Trends.Earth LPD)	MDG (FAO-WOCAT LPD)	MDG (JRC LPD)
MDV	MDV (Trends.Earth LPD)	MDV (FAO-WOCAT LPD)	MDV (JRC LPD)
MEX	MEX (Trends.Earth LPD)	MEX (FAO-WOCAT LPD)	MEX (JRC LPD)
MHL	MHL (Trends.Earth LPD)	MHL (FAO-WOCAT LPD)	MHL (JRC LPD)
MKD	MKD (Trends.Earth LPD)	MKD (FAO-WOCAT LPD)	MKD (JRC LPD)
MLI	MLI (Trends.Earth LPD)	MLI (FAO-WOCAT LPD)	MLI (JRC LPD)
MLT	MLT (Trends.Earth LPD)	MLT (FAO-WOCAT LPD)	MLT (JRC LPD)



	 Trends.Earth LPD	 FAO-WOCAT	 JRC LPD
MMR	MMR (Trends.Earth LPD)	MMR (FAO-WOCAT LPD)	MMR (JRC LPD)
MNE	MNE (Trends.Earth LPD)	MNE (FAO-WOCAT LPD)	MNE (JRC LPD)
MNG	MNG (Trends.Earth LPD)	MNG (FAO-WOCAT LPD)	MNG (JRC LPD)
MNP	MNP (Trends.Earth LPD)	MNP (FAO-WOCAT LPD)	MNP (JRC LPD)
MOZ	MOZ (Trends.Earth LPD)	MOZ (FAO-WOCAT LPD)	MOZ (JRC LPD)
MRT	MRT (Trends.Earth LPD)	MRT (FAO-WOCAT LPD)	MRT (JRC LPD)
MSR	MSR (Trends.Earth LPD)	MSR (FAO-WOCAT LPD)	MSR (JRC LPD)
MTQ	MTQ (Trends.Earth LPD)	MTQ (FAO-WOCAT LPD)	MTQ (JRC LPD)
MUS	MUS (Trends.Earth LPD)	MUS (FAO-WOCAT LPD)	MUS (JRC LPD)
MWI	MWI (Trends.Earth LPD)	MWI (FAO-WOCAT LPD)	MWI (JRC LPD)
MYS	MYS (Trends.Earth LPD)	MYS (FAO-WOCAT LPD)	MYS (JRC LPD)
MYT	MYT (Trends.Earth LPD)	MYT (FAO-WOCAT LPD)	MYT (JRC LPD)
NAM	NAM (Trends.Earth LPD)	NAM (FAO-WOCAT LPD)	NAM (JRC LPD)
NCL	NCL (Trends.Earth LPD)	NCL (FAO-WOCAT LPD)	NCL (JRC LPD)
NER	NER (Trends.Earth LPD)	NER (FAO-WOCAT LPD)	NER (JRC LPD)
NGA	NGA (Trends.Earth LPD)	NGA (FAO-WOCAT LPD)	NGA (JRC LPD)
NIC	NIC (Trends.Earth LPD)	NIC (FAO-WOCAT LPD)	NIC (JRC LPD)
NIU	NIU (Trends.Earth LPD)	NIU (FAO-WOCAT LPD)	NIU (JRC LPD)
NLD	NLD (Trends.Earth LPD)	NLD (FAO-WOCAT LPD)	NLD (JRC LPD)
NOR	NOR (Trends.Earth LPD)	NOR (FAO-WOCAT LPD)	NOR (JRC LPD)



	15.3.1 Trends.Earth LPD	15.3.1 FAO-WOCAT LPD	15.3.1 JRC LPD
NPL	NPL (Trends.Earth LPD)	NPL (FAO-WOCAT LPD)	NPL (JRC LPD)
NRU	NRU (Trends.Earth LPD)	NRU (FAO-WOCAT LPD)	NRU (JRC LPD)
NZL	NZL (Trends.Earth LPD)	NZL (FAO-WOCAT LPD)	NZL (JRC LPD)
OMN	OMN (Trends.Earth LPD)	OMN (FAO-WOCAT LPD)	OMN (JRC LPD)
PAK	PAK (Trends.Earth LPD)	PAK (FAO-WOCAT LPD)	PAK (JRC LPD)
PAN	PAN (Trends.Earth LPD)	PAN (FAO-WOCAT LPD)	PAN (JRC LPD)
PCN	PCN (Trends.Earth LPD)	PCN (FAO-WOCAT LPD)	PCN (JRC LPD)
PER	PER (Trends.Earth LPD)	PER (FAO-WOCAT LPD)	PER (JRC LPD)
PHL	PHL (Trends.Earth LPD)	PHL (FAO-WOCAT LPD)	PHL (JRC LPD)
PLW	PLW (Trends.Earth LPD)	PLW (FAO-WOCAT LPD)	PLW (JRC LPD)
PNG	PNG (Trends.Earth LPD)	PNG (FAO-WOCAT LPD)	PNG (JRC LPD)
POL	POL (Trends.Earth LPD)	POL (FAO-WOCAT LPD)	POL (JRC LPD)
PRK	PRK (Trends.Earth LPD)	PRK (FAO-WOCAT LPD)	PRK (JRC LPD)
PRT	PRT (Trends.Earth LPD)	PRT (FAO-WOCAT LPD)	PRT (JRC LPD)
PRY	PRY (Trends.Earth LPD)	PRY (FAO-WOCAT LPD)	PRY (JRC LPD)
PSE	PSE (Trends.Earth LPD)	PSE (FAO-WOCAT LPD)	PSE (JRC LPD)
PYF	PYF (Trends.Earth LPD)	PYF (FAO-WOCAT LPD)	PYF (JRC LPD)
QAT	QAT (Trends.Earth LPD)	QAT (FAO-WOCAT LPD)	QAT (JRC LPD)
REU	REU (Trends.Earth LPD)	REU (FAO-WOCAT LPD)	REU (JRC LPD)
ROU	ROU (Trends.Earth LPD)	ROU (FAO-WOCAT LPD)	ROU (JRC LPD)



	15.3.1 Trends.Earth LPD	15.3.1 FAO-WOCAT LPD	15.3.1 JRC LPD
RUS	RUS (Trends.Earth LPD)	RUS (FAO-WOCAT LPD)	RUS (JRC LPD)
RWA	RWA (Trends.Earth LPD)	RWA (FAO-WOCAT LPD)	RWA (JRC LPD)
SAU	SAU (Trends.Earth LPD)	SAU (FAO-WOCAT LPD)	SAU (JRC LPD)
SDN	SDN (Trends.Earth LPD)	SDN (FAO-WOCAT LPD)	SDN (JRC LPD)
SEN	SEN (Trends.Earth LPD)	SEN (FAO-WOCAT LPD)	SEN (JRC LPD)
SGP	SGP (Trends.Earth LPD)	SGP (FAO-WOCAT LPD)	SGP (JRC LPD)
SHN	SHN (Trends.Earth LPD)	SHN (FAO-WOCAT LPD)	SHN (JRC LPD)
SLB	SLB (Trends.Earth LPD)	SLB (FAO-WOCAT LPD)	SLB (JRC LPD)
SLE	SLE (Trends.Earth LPD)	SLE (FAO-WOCAT LPD)	SLE (JRC LPD)
SLV	SLV (Trends.Earth LPD)	SLV (FAO-WOCAT LPD)	SLV (JRC LPD)
SMR	SMR (Trends.Earth LPD)	SMR (FAO-WOCAT LPD)	SMR (JRC LPD)
SOM	SOM (Trends.Earth LPD)	SOM (FAO-WOCAT LPD)	SOM (JRC LPD)
SRB	SRB (Trends.Earth LPD)	SRB (FAO-WOCAT LPD)	SRB (JRC LPD)
SSD	SSD (Trends.Earth LPD)	SSD (FAO-WOCAT LPD)	SSD (JRC LPD)
STP	STP (Trends.Earth LPD)	STP (FAO-WOCAT LPD)	STP (JRC LPD)
SUR	SUR (Trends.Earth LPD)	SUR (FAO-WOCAT LPD)	SUR (JRC LPD)
SVK	SVK (Trends.Earth LPD)	SVK (FAO-WOCAT LPD)	SVK (JRC LPD)
SVN	SVN (Trends.Earth LPD)	SVN (FAO-WOCAT LPD)	SVN (JRC LPD)
SWE	SWE (Trends.Earth LPD)	SWE (FAO-WOCAT LPD)	SWE (JRC LPD)
SWZ	SWZ (Trends.Earth LPD)	SWZ (FAO-WOCAT LPD)	SWZ (JRC LPD)



	15.3.1 Trends.Earth LPD	15.3.1 FAO-WOCAT LPD	15.3.1 JRC LPD
SYC	SYC (Trends.Earth LPD)	SYC (FAO-WOCAT LPD)	SYC (JRC LPD)
SYR	SYR (Trends.Earth LPD)	SYR (FAO-WOCAT LPD)	SYR (JRC LPD)
TCA	TCA (Trends.Earth LPD)	TCA (FAO-WOCAT LPD)	TCA (JRC LPD)
TCD	TCD (Trends.Earth LPD)	TCD (FAO-WOCAT LPD)	TCD (JRC LPD)
TGO	TGO (Trends.Earth LPD)	TGO (FAO-WOCAT LPD)	TGO (JRC LPD)
THA	THA (Trends.Earth LPD)	THA (FAO-WOCAT LPD)	THA (JRC LPD)
TJK	TJK (Trends.Earth LPD)	TJK (FAO-WOCAT LPD)	TJK (JRC LPD)
TKL	TKL (Trends.Earth LPD)	TKL (FAO-WOCAT LPD)	TKL (JRC LPD)
TKM	TKM (Trends.Earth LPD)	TKM (FAO-WOCAT LPD)	TKM (JRC LPD)
TLS	TLS (Trends.Earth LPD)	TLS (FAO-WOCAT LPD)	TLS (JRC LPD)
TON	TON (Trends.Earth LPD)	TON (FAO-WOCAT LPD)	TON (JRC LPD)
TTO	TTO (Trends.Earth LPD)	TTO (FAO-WOCAT LPD)	TTO (JRC LPD)
TUN	TUN (Trends.Earth LPD)	TUN (FAO-WOCAT LPD)	TUN (JRC LPD)
TUR	TUR (Trends.Earth LPD)	TUR (FAO-WOCAT LPD)	TUR (JRC LPD)
TUV	TUV (Trends.Earth LPD)	TUV (FAO-WOCAT LPD)	TUV (JRC LPD)
TWN	TWN (Trends.Earth LPD)	TWN (FAO-WOCAT LPD)	TWN (JRC LPD)
TZA	TZA (Trends.Earth LPD)	TZA (FAO-WOCAT LPD)	TZA (JRC LPD)
UGA	UGA (Trends.Earth LPD)	UGA (FAO-WOCAT LPD)	UGA (JRC LPD)
UKR	UKR (Trends.Earth LPD)	UKR (FAO-WOCAT LPD)	UKR (JRC LPD)
URY	URY (Trends.Earth LPD)	URY (FAO-WOCAT LPD)	URY (JRC LPD)



	15.3.1 Trends.Earth LPD	15.3.1 LPD FAO-WOCAT	15.3.1 JRC LPD
USA	USA (Trends.Earth LPD)	USA (FAO-WOCAT LPD)	USA (JRC LPD)
UZB	UZB (Trends.Earth LPD)	UZB (FAO-WOCAT LPD)	UZB (JRC LPD)
VAT	VAT (Trends.Earth LPD)	VAT (FAO-WOCAT LPD)	VAT (JRC LPD)
VCT	VCT (Trends.Earth LPD)	VCT (FAO-WOCAT LPD)	VCT (JRC LPD)
VEN	VEN (Trends.Earth LPD)	VEN (FAO-WOCAT LPD)	VEN (JRC LPD)
VGB	VGB (Trends.Earth LPD)	VGB (FAO-WOCAT LPD)	VGB (JRC LPD)
VIR	VIR (Trends.Earth LPD)	VIR (FAO-WOCAT LPD)	VIR (JRC LPD)
VNM	VNM (Trends.Earth LPD)	VNM (FAO-WOCAT LPD)	VNM (JRC LPD)
VUT	VUT (Trends.Earth LPD)	VUT (FAO-WOCAT LPD)	VUT (JRC LPD)
WLF	WLF (Trends.Earth LPD)	WLF (FAO-WOCAT LPD)	WLF (JRC LPD)
WSM	WSM (Trends.Earth LPD)	WSM (FAO-WOCAT LPD)	WSM (JRC LPD)
XKX	XKX (Trends.Earth LPD)	XKX (FAO-WOCAT LPD)	XKX (JRC LPD)
YEM	YEM (Trends.Earth LPD)	YEM (FAO-WOCAT LPD)	YEM (JRC LPD)
ZAF	ZAF (Trends.Earth LPD)	ZAF (FAO-WOCAT LPD)	ZAF (JRC LPD)
ZMB	ZMB (Trends.Earth LPD)	ZMB (FAO-WOCAT LPD)	ZMB (JRC LPD)
ZWE	ZWE (Trends.Earth LPD)	ZWE (FAO-WOCAT LPD)	ZWE (JRC LPD)



3] (<https://www.unccd.int/resources/manuals-and-guides/good-practice-guidance-national-reporting-unccd-strategic-objective-3>). (SPI) 12- Global Multi-Index Drought (GMID) UK-CEH, — SPI, Trends.Earth CHIRPS.

CHIRPS — 50° N. 50° S., 1981, ,

	(UK-CEH SPI)	(CHIRPS SPI)
ABW	ABW (UK-CEH)	ABW (CHIRPS)
AFG	AFG (UK-CEH)	AFG (CHIRPS)
AGO	AGO (UK-CEH)	AGO (CHIRPS)
AIA	AIA (UK-CEH)	AIA (CHIRPS)
ALB	ALB (UK-CEH)	ALB (CHIRPS)
AND	AND (UK-CEH)	AND (CHIRPS)
ARE	ARE (UK-CEH)	ARE (CHIRPS)
ARG	ARG (UK-CEH)	ARG (CHIRPS)
ARM	ARM (UK-CEH)	ARM (CHIRPS)
ASM	ASM (UK-CEH)	ASM (CHIRPS)
ATG	ATG (UK-CEH)	ATG (CHIRPS)
AUS	AUS (UK-CEH)	AUS (CHIRPS)
AUT	AUT (UK-CEH)	AUT (CHIRPS)
AZE	AZE (UK-CEH)	AZE (CHIRPS)
BDI	BDI (UK-CEH)	BDI (CHIRPS)
BEL	BEL (UK-CEH)	BEL (CHIRPS)
BEN	BEN (UK-CEH)	BEN (CHIRPS)
BES	BES (UK-CEH)	BES (CHIRPS)
BFA	BFA (UK-CEH)	BFA (CHIRPS)
BGD	BGD (UK-CEH)	BGD (CHIRPS)
BGR	BGR (UK-CEH)	BGR (CHIRPS)
BHR	BHR (UK-CEH)	BHR (CHIRPS)
BHS	BHS (UK-CEH)	BHS (CHIRPS)
BIH	BIH (UK-CEH)	BIH (CHIRPS)
BLM	BLM (UK-CEH)	BLM (CHIRPS)
BLR	BLR (UK-CEH)	BLR (CHIRPS)
BLZ	BLZ (UK-CEH)	BLZ (CHIRPS)



	(UK-CEH SPI)	(CHIRPS SPI)
BMU	BMU (UK-CEH)	BMU (CHIRPS)
BOL	BOL (UK-CEH)	BOL (CHIRPS)
BRA	BRA (UK-CEH)	BRA (CHIRPS)
BRB	BRB (UK-CEH)	BRB (CHIRPS)
BRN	BRN (UK-CEH)	BRN (CHIRPS)
BTN	BTN (UK-CEH)	BTN (CHIRPS)
BWA	BWA (UK-CEH)	BWA (CHIRPS)
CAF	CAF (UK-CEH)	CAF (CHIRPS)
CAN	CAN (UK-CEH)	CAN (CHIRPS)
CHE	CHE (UK-CEH)	CHE (CHIRPS)
CHL	CHL (UK-CEH)	CHL (CHIRPS)
CHN	CHN (UK-CEH)	CHN (CHIRPS)
CIV	CIV (UK-CEH)	CIV (CHIRPS)
CMR	CMR (UK-CEH)	CMR (CHIRPS)
COD	COD (UK-CEH)	COD (CHIRPS)
COG	COG (UK-CEH)	COG (CHIRPS)
COK	COK (UK-CEH)	COK (CHIRPS)
COL	COL (UK-CEH)	COL (CHIRPS)
COM	COM (UK-CEH)	COM (CHIRPS)
CPV	CPV (UK-CEH)	CPV (CHIRPS)
CRI	CRI (UK-CEH)	CRI (CHIRPS)
CUB	CUB (UK-CEH)	CUB (CHIRPS)
CUW	CUW (UK-CEH)	CUW (CHIRPS)
CYM	CYM (UK-CEH)	CYM (CHIRPS)
CYP	CYP (UK-CEH)	CYP (CHIRPS)
CZE	CZE (UK-CEH)	CZE (CHIRPS)
DEU	DEU (UK-CEH)	DEU (CHIRPS)
DJI	DJI (UK-CEH)	DJI (CHIRPS)
DMA	DMA (UK-CEH)	DMA (CHIRPS)
DNK	DNK (UK-CEH)	DNK (CHIRPS)
DOM	DOM (UK-CEH)	DOM (CHIRPS)
DZA	DZA (UK-CEH)	DZA (CHIRPS)
ECU	ECU (UK-CEH)	ECU (CHIRPS)
EGY	EGY (UK-CEH)	EGY (CHIRPS)
ERI	ERI (UK-CEH)	ERI (CHIRPS)



	(UK-CEH SPI)	(CHIRPS SPI)
ESP	ESP (UK-CEH)	ESP (CHIRPS)
EST	EST (UK-CEH)	EST (CHIRPS)
ETH	ETH (UK-CEH)	ETH (CHIRPS)
FIN	FIN (UK-CEH)	FIN (CHIRPS)
FJI	FJI (UK-CEH)	FJI (CHIRPS)
FLK	FLK (UK-CEH)	FLK (CHIRPS)
FRA	FRA (UK-CEH)	FRA (CHIRPS)
FRO	FRO (UK-CEH)	FRO (CHIRPS)
FSM	FSM (UK-CEH)	FSM (CHIRPS)
GAB	GAB (UK-CEH)	GAB (CHIRPS)
GBR	GBR (UK-CEH)	GBR (CHIRPS)
GEO	GEO (UK-CEH)	GEO (CHIRPS)
GGY	GGY (UK-CEH)	GGY (CHIRPS)
GHA	GHA (UK-CEH)	GHA (CHIRPS)
GIB	GIB (UK-CEH)	GIB (CHIRPS)
GIN	GIN (UK-CEH)	GIN (CHIRPS)
GLP	GLP (UK-CEH)	GLP (CHIRPS)
GMB	GMB (UK-CEH)	GMB (CHIRPS)
GNB	GNB (UK-CEH)	GNB (CHIRPS)
GNQ	GNQ (UK-CEH)	GNQ (CHIRPS)
GRC	GRC (UK-CEH)	GRC (CHIRPS)
GRD	GRD (UK-CEH)	GRD (CHIRPS)
GRL	GRL (UK-CEH)	GRL (CHIRPS)
GTM	GTM (UK-CEH)	GTM (CHIRPS)
GUF	GUF (UK-CEH)	GUF (CHIRPS)
GUM	GUM (UK-CEH)	GUM (CHIRPS)
GUY	GUY (UK-CEH)	GUY (CHIRPS)
HND	HND (UK-CEH)	HND (CHIRPS)
HRV	HRV (UK-CEH)	HRV (CHIRPS)
HTI	HTI (UK-CEH)	HTI (CHIRPS)
HUN	HUN (UK-CEH)	HUN (CHIRPS)
IDN	IDN (UK-CEH)	IDN (CHIRPS)
IMN	IMN (UK-CEH)	IMN (CHIRPS)
IND	IND (UK-CEH)	IND (CHIRPS)
IRL	IRL (UK-CEH)	IRL (CHIRPS)



	(UK-CEH SPI)	(CHIRPS SPI)
IRN	IRN (UK-CEH)	IRN (CHIRPS)
IRQ	IRQ (UK-CEH)	IRQ (CHIRPS)
ISL	ISL (UK-CEH)	ISL (CHIRPS)
ISR	ISR (UK-CEH)	ISR (CHIRPS)
ITA	ITA (UK-CEH)	ITA (CHIRPS)
JAM	JAM (UK-CEH)	JAM (CHIRPS)
JOR	JOR (UK-CEH)	JOR (CHIRPS)
JPN	JPN (UK-CEH)	JPN (CHIRPS)
KAZ	KAZ (UK-CEH)	KAZ (CHIRPS)
KEN	KEN (UK-CEH)	KEN (CHIRPS)
KGZ	KGZ (UK-CEH)	KGZ (CHIRPS)
KHM	KHM (UK-CEH)	KHM (CHIRPS)
KIR	KIR (UK-CEH)	KIR (CHIRPS)
KNA	KNA (UK-CEH)	KNA (CHIRPS)
KOR	KOR (UK-CEH)	KOR (CHIRPS)
KWT	KWT (UK-CEH)	KWT (CHIRPS)
LAO	LAO (UK-CEH)	LAO (CHIRPS)
LBN	LBN (UK-CEH)	LBN (CHIRPS)
LBR	LBR (UK-CEH)	LBR (CHIRPS)
LBY	LBY (UK-CEH)	LBY (CHIRPS)
LCA	LCA (UK-CEH)	LCA (CHIRPS)
LIE	LIE (UK-CEH)	LIE (CHIRPS)
LKA	LKA (UK-CEH)	LKA (CHIRPS)
LSO	LSO (UK-CEH)	LSO (CHIRPS)
LTU	LTU (UK-CEH)	LTU (CHIRPS)
LUX	LUX (UK-CEH)	LUX (CHIRPS)
LVA	LVA (UK-CEH)	LVA (CHIRPS)
MAR	MAR (UK-CEH)	MAR (CHIRPS)
MCO	MCO (UK-CEH)	MCO (CHIRPS)
MDA	MDA (UK-CEH)	MDA (CHIRPS)
MDG	MDG (UK-CEH)	MDG (CHIRPS)
MDV	MDV (UK-CEH)	MDV (CHIRPS)
MEX	MEX (UK-CEH)	MEX (CHIRPS)
MHL	MHL (UK-CEH)	MHL (CHIRPS)
MKD	MKD (UK-CEH)	MKD (CHIRPS)



	(UK-CEH SPI)	(CHIRPS SPI)
MLI	MLI (UK-CEH)	MLI (CHIRPS)
MLT	MLT (UK-CEH)	MLT (CHIRPS)
MMR	MMR (UK-CEH)	MMR (CHIRPS)
MNE	MNE (UK-CEH)	MNE (CHIRPS)
MNG	MNG (UK-CEH)	MNG (CHIRPS)
MNP	MNP (UK-CEH)	MNP (CHIRPS)
MOZ	MOZ (UK-CEH)	MOZ (CHIRPS)
MRT	MRT (UK-CEH)	MRT (CHIRPS)
MSR	MSR (UK-CEH)	MSR (CHIRPS)
MTQ	MTQ (UK-CEH)	MTQ (CHIRPS)
MUS	MUS (UK-CEH)	MUS (CHIRPS)
MWI	MWI (UK-CEH)	MWI (CHIRPS)
MYS	MYS (UK-CEH)	MYS (CHIRPS)
MYT	MYT (UK-CEH)	MYT (CHIRPS)
NAM	NAM (UK-CEH)	NAM (CHIRPS)
NCL	NCL (UK-CEH)	NCL (CHIRPS)
NER	NER (UK-CEH)	NER (CHIRPS)
NGA	NGA (UK-CEH)	NGA (CHIRPS)
NIC	NIC (UK-CEH)	NIC (CHIRPS)
NIU	NIU (UK-CEH)	NIU (CHIRPS)
NLD	NLD (UK-CEH)	NLD (CHIRPS)
NOR	NOR (UK-CEH)	NOR (CHIRPS)
NPL	NPL (UK-CEH)	NPL (CHIRPS)
NRU	NRU (UK-CEH)	NRU (CHIRPS)
NZL	NZL (UK-CEH)	NZL (CHIRPS)
OMN	OMN (UK-CEH)	OMN (CHIRPS)
PAK	PAK (UK-CEH)	PAK (CHIRPS)
PAN	PAN (UK-CEH)	PAN (CHIRPS)
PCN	PCN (UK-CEH)	PCN (CHIRPS)
PER	PER (UK-CEH)	PER (CHIRPS)
PHL	PHL (UK-CEH)	PHL (CHIRPS)
PLW	PLW (UK-CEH)	PLW (CHIRPS)
PNG	PNG (UK-CEH)	PNG (CHIRPS)
POL	POL (UK-CEH)	POL (CHIRPS)
PRK	PRK (UK-CEH)	PRK (CHIRPS)



	(UK-CEH SPI)	(CHIRPS SPI)
PRT	PRT (UK-CEH)	PRT (CHIRPS)
PRY	PRY (UK-CEH)	PRY (CHIRPS)
PSE	PSE (UK-CEH)	PSE (CHIRPS)
PYF	PYF (UK-CEH)	PYF (CHIRPS)
QAT	QAT (UK-CEH)	QAT (CHIRPS)
REU	REU (UK-CEH)	REU (CHIRPS)
ROU	ROU (UK-CEH)	ROU (CHIRPS)
RUS	RUS (UK-CEH)	RUS (CHIRPS)
RWA	RWA (UK-CEH)	RWA (CHIRPS)
SAU	SAU (UK-CEH)	SAU (CHIRPS)
SDN	SDN (UK-CEH)	SDN (CHIRPS)
SEN	SEN (UK-CEH)	SEN (CHIRPS)
SGP	SGP (UK-CEH)	SGP (CHIRPS)
SHN	SHN (UK-CEH)	SHN (CHIRPS)
SLB	SLB (UK-CEH)	SLB (CHIRPS)
SLE	SLE (UK-CEH)	SLE (CHIRPS)
SLV	SLV (UK-CEH)	SLV (CHIRPS)
SMR	SMR (UK-CEH)	SMR (CHIRPS)
SOM	SOM (UK-CEH)	SOM (CHIRPS)
SRB	SRB (UK-CEH)	SRB (CHIRPS)
SSD	SSD (UK-CEH)	SSD (CHIRPS)
STP	STP (UK-CEH)	STP (CHIRPS)
SUR	SUR (UK-CEH)	SUR (CHIRPS)
SVK	SVK (UK-CEH)	SVK (CHIRPS)
SVN	SVN (UK-CEH)	SVN (CHIRPS)
SWE	SWE (UK-CEH)	SWE (CHIRPS)
SWZ	SWZ (UK-CEH)	SWZ (CHIRPS)
SYC	SYC (UK-CEH)	SYC (CHIRPS)
SYR	SYR (UK-CEH)	SYR (CHIRPS)
TCA	TCA (UK-CEH)	TCA (CHIRPS)
TCD	TCD (UK-CEH)	TCD (CHIRPS)
TGO	TGO (UK-CEH)	TGO (CHIRPS)
THA	THA (UK-CEH)	THA (CHIRPS)
TJK	TJK (UK-CEH)	TJK (CHIRPS)
TKL	TKL (UK-CEH)	TKL (CHIRPS)



	(UK-CEH SPI)	(CHIRPS SPI)
TKM	TKM (UK-CEH)	TKM (CHIRPS)
TLS	TLS (UK-CEH)	TLS (CHIRPS)
TON	TON (UK-CEH)	TON (CHIRPS)
TTO	TTO (UK-CEH)	TTO (CHIRPS)
TUN	TUN (UK-CEH)	TUN (CHIRPS)
TUR	TUR (UK-CEH)	TUR (CHIRPS)
TUV	TUV (UK-CEH)	TUV (CHIRPS)
TWN	TWN (UK-CEH)	TWN (CHIRPS)
TZA	TZA (UK-CEH)	TZA (CHIRPS)
UGA	UGA (UK-CEH)	UGA (CHIRPS)
UKR	UKR (UK-CEH)	UKR (CHIRPS)
URY	URY (UK-CEH)	URY (CHIRPS)
USA	USA (UK-CEH)	USA (CHIRPS)
UZB	UZB (UK-CEH)	UZB (CHIRPS)
VAT	VAT (UK-CEH)	VAT (CHIRPS)
VCT	VCT (UK-CEH)	VCT (CHIRPS)
VEN	VEN (UK-CEH)	VEN (CHIRPS)
VGB	VGB (UK-CEH)	VGB (CHIRPS)
VIR	VIR (UK-CEH)	VIR (CHIRPS)
VNM	VNM (UK-CEH)	VNM (CHIRPS)
VUT	VUT (UK-CEH)	VUT (CHIRPS)
WLF	WLF (UK-CEH)	WLF (CHIRPS)
WSM	WSM (UK-CEH)	WSM (CHIRPS)
XKX	XKX (UK-CEH)	XKX (CHIRPS)
YEM	YEM (UK-CEH)	YEM (CHIRPS)
ZAF	ZAF (UK-CEH)	ZAF (CHIRPS)
ZMB	ZMB (UK-CEH)	ZMB (CHIRPS)
ZWE	ZWE (UK-CEH)	ZWE (CHIRPS)