Data sources overview

**UN-SPIDER Institutional Strengthening
Mission to Ethiopia**

26-30 August 2019

Image: NASA

Introduction

This booklet was created on the occasion of the UN-SPIDER Institutional Strengthening Mission to Ethiopia from 26 to 30 August 2019. It includes a selection of sources that the mission team deemed potentially useful bearing in mind the drought hazard faced by Ethiopia. The booklet emphasizes easy-to-access and free web mapping tools rather than repositories of raw data that would need to be downloaded, processed and mapped. However, such raw data sources – as well as other useful sources - can be found through the UN-SPIDER Knowledge Portal. The following pages on the Knowledge Portal are of particular relevance:

- Data sources database: www.un-spider.org/links-and-resources/data-sources
- Data Application of the Month: www.un-spider.org/links-and-resources/daotm
- UN-SPIDER Recommended Practices: www.un-spider.org/advisory-support/recommended-practices

Cover: NASA Worldview

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Image: Copernicus Sentinel-1B false-colour image of the Afar region, characterised by desert shrubland and volcanoes, particularly in the north. Differences in altitude represented in the variations in colour. The left part of the image is dominated by yellow, signifying changes in vegetation found at higher altitudes. Two lakes, Hayk Lake and Hardibo Lake, are shown in the bottom left. Credit: contains modified Copernicus Sentinel data (2018), processed by ESA, CC BY-SA 3.0 IGO.

Famine Early Warning Systems (FEWS NET)

Organization: United States Geological Survey (USGS); United States Agency for International Development (USAID)

Costs: Free

Type: Webmap / Raw data
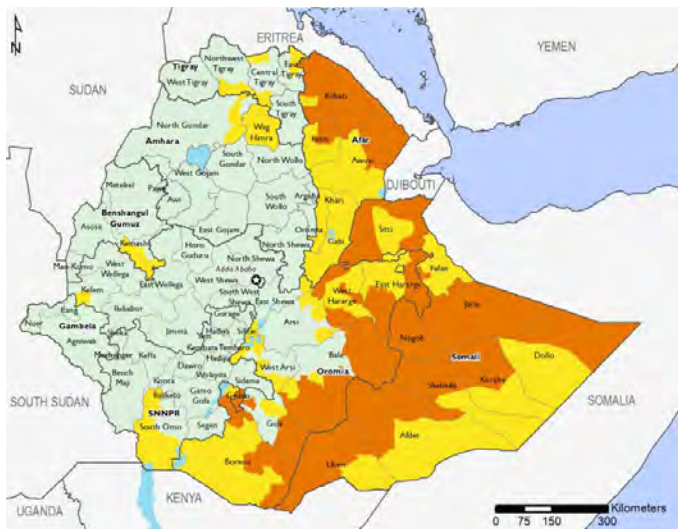
The Famine Early Warning Systems Network (FEWS NET) Africa Data Portal provides various maps of continental Africa, and East Africa specifically, which can help with drought monitoring in Ethiopia. The maps contain historical and current information about seasonal rainfall accumulation, croplands and rangelands, soil water and moisture levels, and daily runoff and anomaly, among other indicators. The maps can also be compared side-by-side in order to visualize two different measurements at the same time.

🔗 https://earlywarning.usgs.gov/fews/search/Africa/East%20Africa

Daily Potential Evapotranspiration (FEWS NET)

Organization: United States Geological Survey (USGS); United States Agency for International Development (USAID)

Costs: Free

Type: Raw data

FEWS NET provides information on evapotranspiration, with data spanning from 2013 to 2019. Information on a few different indicators is available, and data for both Continental Africa and East Africa specifically, is provided.
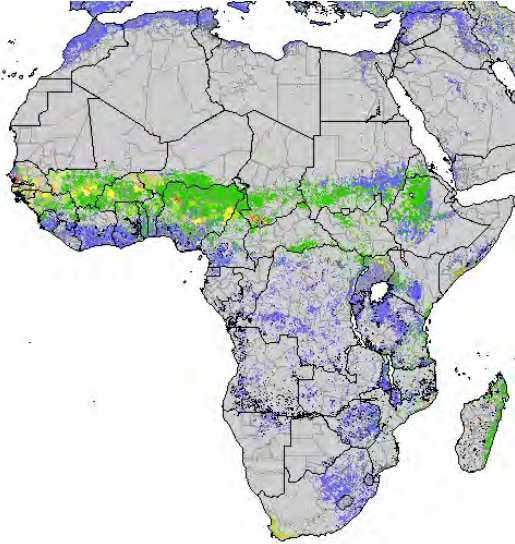
🔗 https://earlywarning.usgs.gov/fews/datadownloads/Continental%20Africa/Monthly%20ET%20Anomaly

Agricultural Stress Index System (ASIS)

Organization: Food and Agriculture Organization of the United Nations (FAO)

Costs: Free

Type: Webmap

The agricultural indexes provided by the Food and Agriculture Organization of the United Nations can provide valuable information for drought monitoring. The Agricultural Stress Index for Ethiopia is a particularly beneficial resource, as it depicts recent and historical data (from the past 36 months) about the percentage of cropland area in the country affected by severe drought. Other Ethiopia-specific resources regarding historical drought frequency, the crop growing season, precipitation, and vegetation are also available on the website, in addition to information on estimated precipitation and precipitation anomaly. In addition to this country-level information, global information, with data from 1984 to 2019, is also available on the website.

🔗 http://www.fao.org/giews/earthobservation/country/index.jsp?lang=en&code=ETH

Crop Monitoring (GEOGLAM)

Organization: Global Agricultural Monitoring (GEOGLAM); Group on Earth Observations (GEO)

Costs: Free

Type: Webmap / Raw data

With its Global Agricultural Monitoring (GEOGLAM) initiative, the Group on Earth Observation (GEO) delivers monthly global crop outlooks for wheat, maize, rice, and soy. GEOGLAM provides an interactive monthly assessment tool for countries that are part of the Agricultural Market Information System (AMIS). Available layers in the assessment tool include anomalies of rainfall, temperature, and NDVI (since August 2013) as well as crop masks and associated crop calendars for the four crop types. The assessment results in the visualization of four different crop stages (planting-early vegetative, vegetative-reproductive, ripening through harvest, and out of season) and crop conditions (exceptional, favorable, watch, and poor). Additionally, the GEOGLAM Time Series Database shows vegetation density levels for regions around the world, including East Africa.
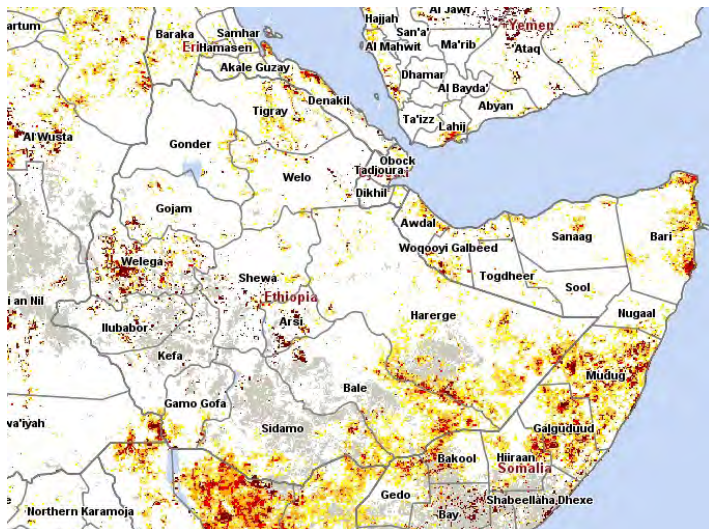
🔗 https://cropmonitor.org/

Global Agricultural Drought Monitoring and Forecasting System (GADMFS)

Organization: Center for Spatial Information Science and Systems/George Mason University (CSISS-GMU)

Costs: Free

Type: Webmap

The Center for Spatial Information Science and Systems (CSISS) provides the Global Agricultural Drought Monitoring and Forecasting System (GAD-MFS), a webtool for drought monitoring including the Vegetation Condition Index (VCI), the normalized difference vegetation index (NDVI), and a drought index layer showing six levels of drought (no drought, abnormally dry, moderate drought, severe drought, extreme drought, and exceptional drought).

🔗 http://gis.csiss.gmu.edu/GADMFS/

Global Drought Information System (NIDIS)

Organization: National Integrated Drought Information System (NIDIS)

Costs: Free

Type: Webmap
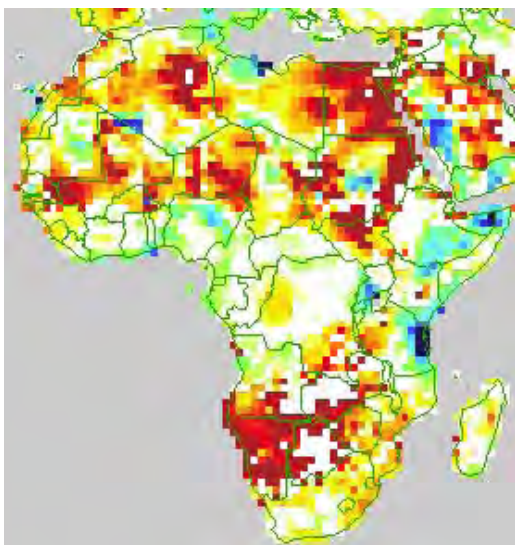
The Global Drought Information System shares non-prescriptive drought information from local providers, with the aim to make drought conditions around the world comparable. The platform offers an interactive map which includes several layers, such as global standardized precipitation indexes, soil moisture values for Africa, monthly rainfall, vegetation water content (NDWI), and vegetation productivity (fAPAR). An overview of current conditions of the standard precipitation index (SPI), the vegetation health index (VHI), and global drought monitor is also provided. The Global Drought Information System is provided by the U.S. National Integrated Drought Information (NIDIS), together with international partners.
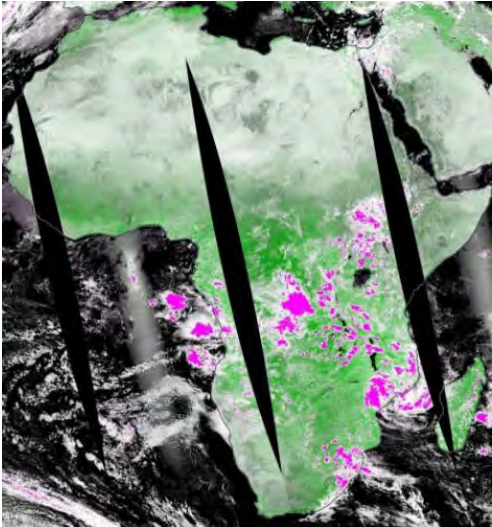
🔗 https://www.drought.gov/gdm/current-conditions

Drought Monitoring (EOSDIS Worldview)

Organization: Earth Observing System Data and Information System/National Aeronautics and Space Administration (EOSDIS-NASA)

Costs: Free

Type: Webmap

NASA's Data and Information System (EOSDIS) provides access to near-real-time satellite data that could be used for drought observation: MODIS Corrected Reflectance True Color and Bands 7-2-1, MODIS Land Surface Reflectance bands 1-2-1, MODIS Snow Cover, and AIRS precipitation. The satellite data can be visualized in NASA's interactive webmapping tool, Worldview, where it can also be overlaid with the following layers from the Socio Economic Data and Applications Center (SEDAC): drought economic risk (2000) and drought hazard frequency and distribution (1980-2000).

🔗 https://earthdata.nasa.gov/earth-observation-data/near-real-time/hazards-and-disasters/drought

Global Drought Hazard Frequency and Distribution

Organization: Center for Hazards and Risk Research (CHRR), Center for International Earth Science Information Network (CIESIN), International Research Institute for Climate and Society (IRI)/Columbia University

Costs: Free

Type: Webmap
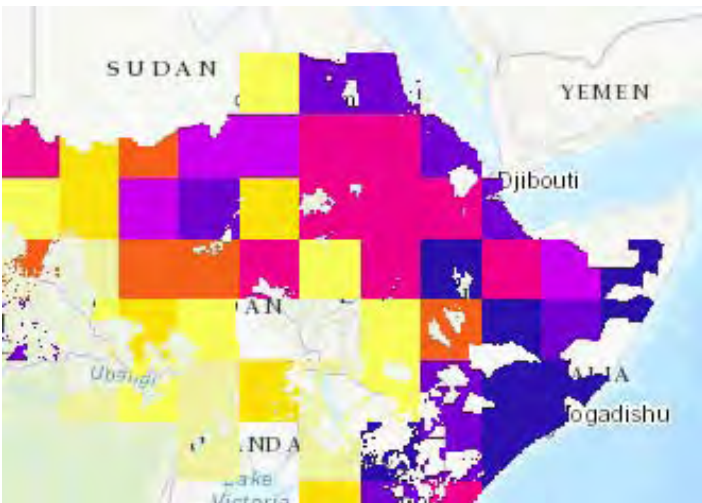
The Global Drought Hazard Frequency and Distribution resource contains data on monthly average precipitation from 1980-2000, with a raster data layer presented on a 2.5 by 2.5 degree grid (map). The map can be zoomed in to depict East Africa and Ethiopia specifically. The data provided is a result of the collaboration between the Center for Hazards and Risk Research (CHRR), International Research Institute for Climate and Society (IRI), and the Columbia University Center for International Earth Science Information Network (CIESIN).

🔗 https://databasin.org/datasets/57115c8b45364678b005eb92184dbed0

African Flood and Drought Monitor (AFDM)

Organization: Princeton University

Costs: Free
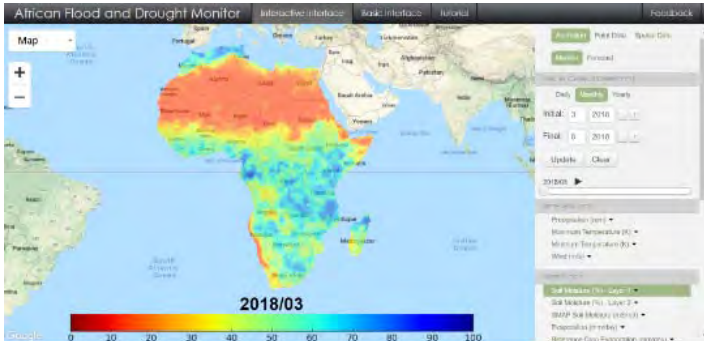
Type: Webmap

Princeton University's African Flood and Drought Monitor (AFDM) system provides exportable maps and statistical data regarding floods and drought in Africa. This information, which can be accessed after a free user account is created, is helpful in the disaster risk managment, response, and recovery phases. Archived information as well as near real-time information is available.

🔗 https://platform.princetonclimate.com/PCA_Platform/

Anomaly Hotspots of Agricultural Production (ASAP)

Organization: European Commission (EC)

Costs: Free
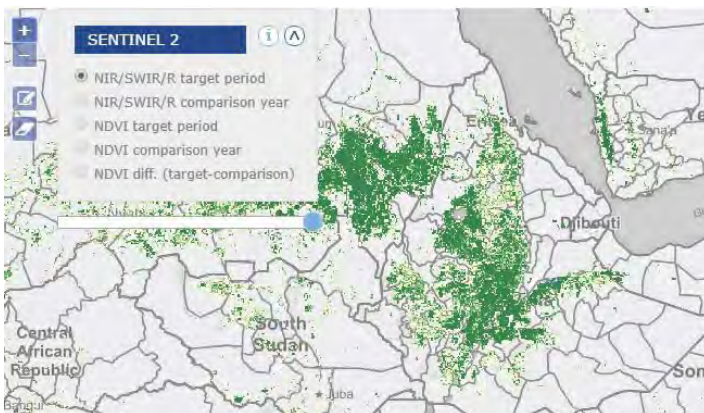
Type: Webmap

The ASAP High Resolution Viewer allows users to view agricultural production information for a particular region over time. This can provide some indication of the impact that natural events, such as droughts, have on production levels. Satellite information from Sentinel 2, Sentinel 1, and Landsat 8 is available, and users can define a particular time period and a comparison year, in order to view agricultural changes over time. Layers, such as a crop layer, rangeland layer, or "no land cover mask" can be applied to the map.

🔗 https://mars.jrc.ec.europa.eu/asap/hresolution/?region=0

Copernicus Global Land Service

Organization: European Commission (EC)

Costs: Free

Type: Webmap/ Raw data

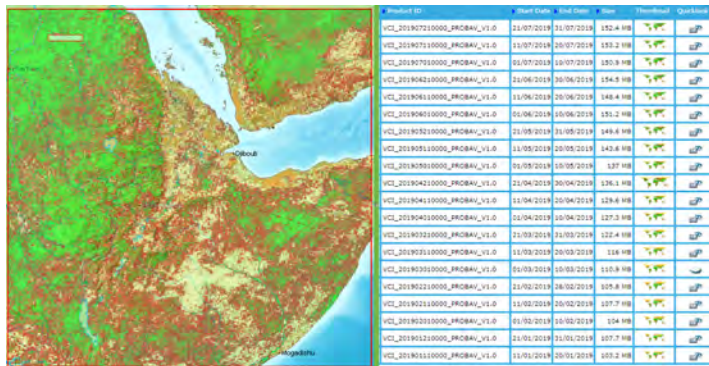Copernicus Global Land Service maps and data include global and country-level information about vegetation (including a normalized difference vegetation index, vegetation condition index, soil water index, and information on fire disturbance and surface soil moisture), energy (including land surface temperature), and water (including water bodies and water level). Specific date ranges can be selected to gain near-real time or historical information about a particular indicator. And specific information about Ethiopia can be found by searching for "Ethiopia" in the search bar of each map or information field. To access the information, registration is needed.

🔗 https://land.copernicus.vgt.vito.be/PDF/portal/Application.html#Home

IGAD Climate Prediction and Applications Centre (ICPAC)

Organization: Intergovernmental Authority on Development (IGAD)

Costs: Free

Type: Webmap
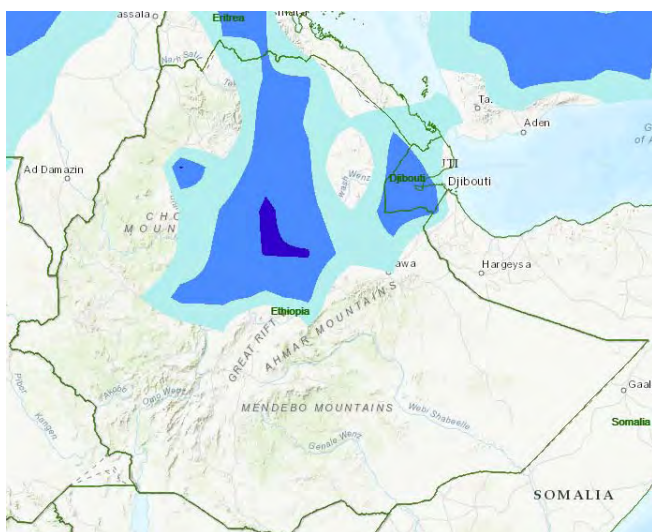
ICPAC visualizes various indices for vegetation (NDVI), precipitation (SPI, long term average rainfall), hydrology and drought on the topics of agriculture, climate, disaster risk and environment. With a focus on Africa overall, and more specifically Eastern African countries, ICPAC drought watch maps provide information on rainfally anomaly and vegetation anomaly, and also include a rangeland drought monitoring system. Additionally, a drought hazard monitoring map is included, which allows for the tracking of drought risks in Ethiopia.

🔗 https://icpac.maps.arcgis.com/home/index.html

STAR - Global Vegetation Health Products

Organization: National Oceanic and Atmospheric Administration (NOAA)

Costs: Free

Type: Webmap / Raw data
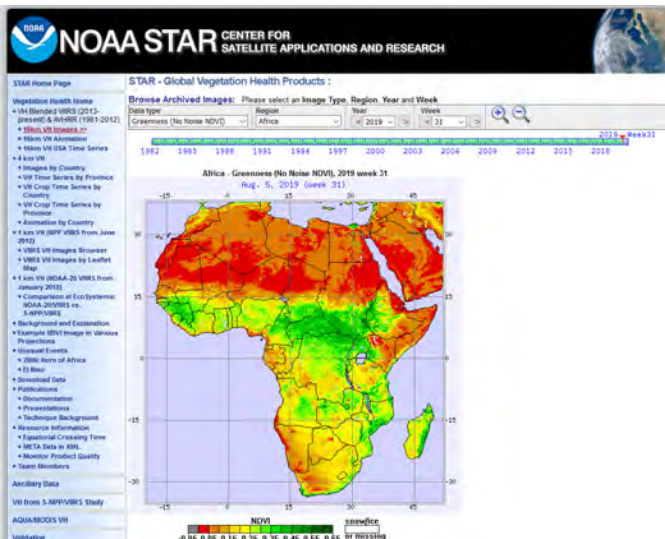
The STAR Global Vegetation Health map, which can be filtered to depict only Africa, displays information about vegetation health, fire risk, soil saturation, moisture stress, drought, and other indicators in weekly increments. Data from 1982 to the present is included.

🔗 https://www.star.nesdis.noaa.gov/smcd/emb/vci/VH/vh_browse.php

Crop Explorer

Organization: International Production Assessment Division (IPAD), United States Department of Agriculture (USDA) Foreign Agriculture Service

Costs: Free

Type: Webmap
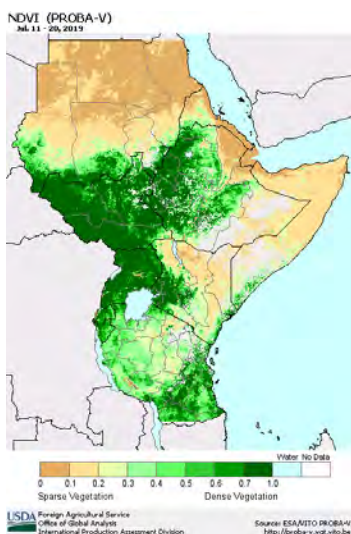
Historical and near-real time information from USDA's crop explorer is helpful for monitoring signs of flood and drought in the risk management phase of the disaster cycle. The resource contains East Africa and Ethiopia-specific information in the areas of precipitation, temperature, soil moisture, drought severity, and vegetation. The information is displayed in the form of maps and charts.

🔗 https://ipad.fas.usda.gov/cropexplorer/imageview.aspx?regionid=eafrica

Flood and Drought Portal

Organization: United Nations Environment Programme (UNEP); International Water Association; DHI Water & Environment

Costs: Free

Type: Webmap
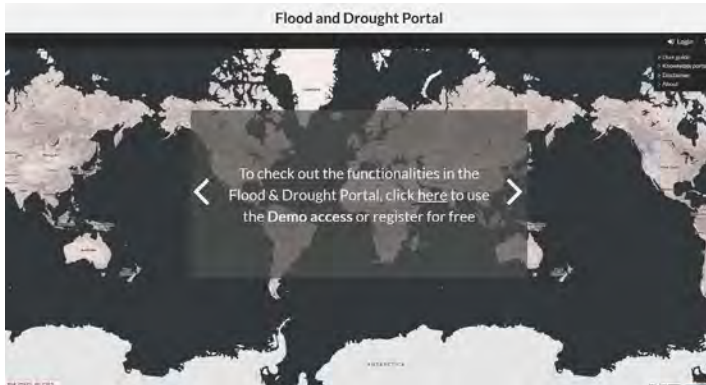
The Flood and Drought Portal provides near real-time access to global hydrographic, meteorological and demographic information, assisting in the flood risk management, response, and recovery phases of the disaster cycle. The data is displayed via a web-map, with historical and near-real time information available. The portal was developed by the UNEP in partnership with the International Water Association and the DHI Water & Environment, and 10 water authorities across six countries.

🔗 http://www.flooddroughtmonitor.com/

Global Drought Observatory (GDO)

Organization: European Commission (EC)

Costs: Free

Type: Webmap
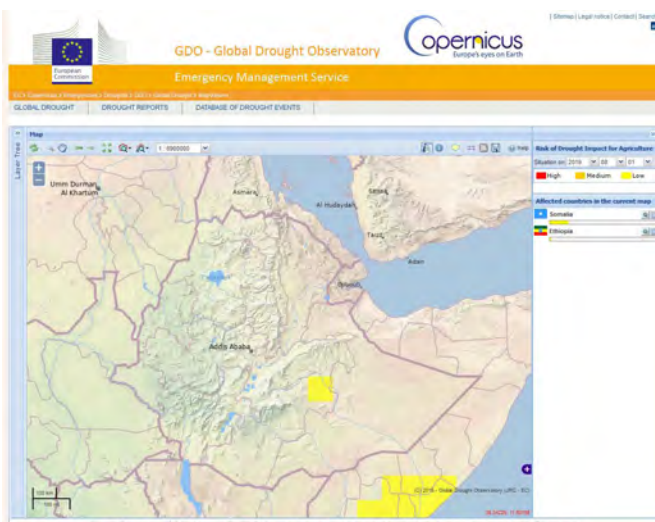
The Global Drought Observatory provides drought-relevant information such as maps of indicators derived from different data sources (e.g. precipitation measurements, satellite measurements, modelled soil moisture content). It is built on open web services and connects drought data providers and users from global to regional levels.

In case of severe drought events, the GDO team also produces reports with a detailed description of the situation.

🔗 Global Drought Observatory: http://edo.jrc.ec.europa.eu/gdo/php/index.php?id=2001

FAO Earth Observation

Organization: Food and Agriculture Organization of the United Nations (FAO)

Costs: Free

Type: Webmap
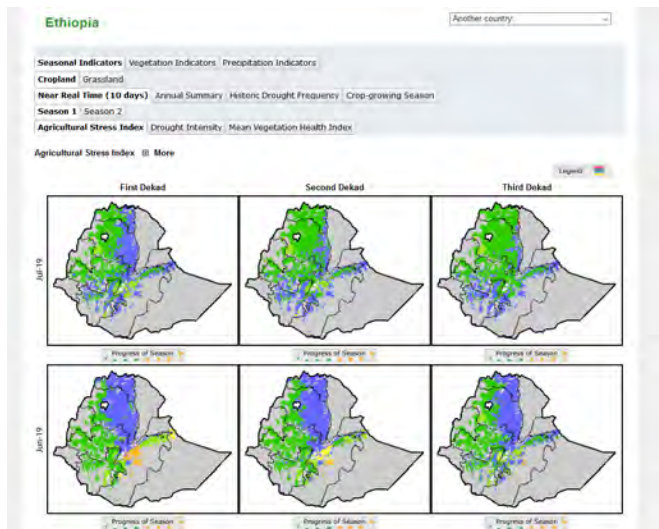
The earth observation products provided by the Food and Agriculture Organization of the United Nations are focused on agricultural indexes. Information about crop stress, precipitation indexes and mean vegetation indexes, and information on the crop growing season also provide value for drought monitoring. Information provided on a country-level includes agricultural stress, estimated precipitation, estimated precipitation anomaly, and historic drought frequency. The country level maps and graphs for Ethiopia depict the latest 36-month period of the seasonal, vegetation and precipitation indicators.

🔗 http://www.fao.org/giews/earthobservation/country/index.jsp?lang=en&code=ETH

Global Precipitation Climatology Centre (GPCC)

Organization: German Federal Ministry of Transport and Digital Infrastructure; German Meteorological Service

Costs: Free

Type: Webmap
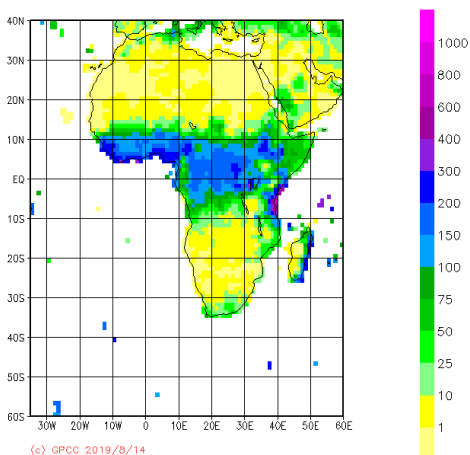
The GPCC Visualizer depicts global precipitation information on a map in monthly increments. This information can be used when researching precipitation trends and monitoring and studying drought. As of 1 August 2019, data posted on the webpage is available from January 1982 to May 2019.

🔗 https://kunden.dwd.de/GPCC/Visualizer

Global Soil Erosion Modelling Platform (ESDAC)

Organization: Joint Research Centre (JRC), European Commission, European Soil Data Centre (ESDAC)

Costs: Free, but must request access

Type: Raw data

The Global Soil Erosion Modelling platform (GloSEM) includes 202 countries and provides an assessment of global soil erosion for 2012 and 2001. The information, organized in the form of a map, is available to download for free. A request form to access the information must be submitted. The plaform is managed by the European Soil Data Centre (ESDAC).

🔗 https://esdac.jrc.ec.europa.eu/content/global-soil-erosion#tabs-0-description=0&tabs-0-description-2=
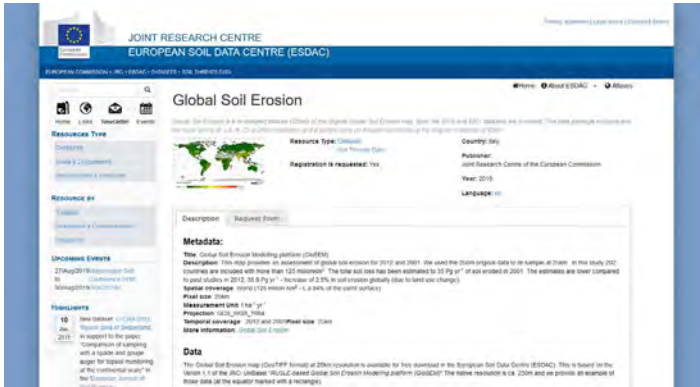
Proba-V

Organization: VITO Remote Sensing

Costs: Free

Type: Webmap / Raw Data

The Proba-Vegetation mission provides information on vegetation, including crop yield and drought, based on PROBA-V data and soon on Sentinel-3 data

🔗 http://proba-v.vgt.vito.be/en

ITHACA Drought Monitoring

Organization: Information Technology for Humanitarian Assistance, Cooperation and Action (ITHACA)

Costs: Free

Type: Webmap
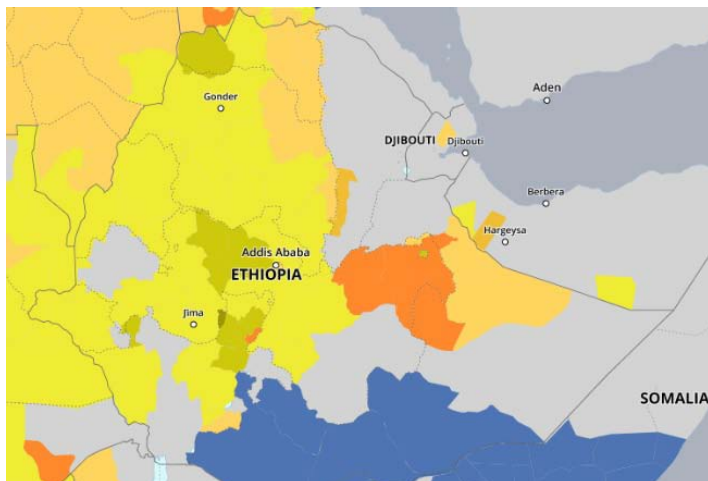
The ITHACA drought platform provides a historical overview of cases and warning signs of drought in Africa, as well as vegetation/precipitation anomalies. Drought risk or severity is indicated by different colors on the map, as described in the map's legend. Vegetation and precipitation anolomalies are displayed in terms of SSID and SPI respectively, with different levels indicated by different colors on the map. Data from 22 March 1998 to 15 October 2018 is provided.

🔗 http://drought.ithacaweb.org/historical/

Drought Monitoring Data Application of the Month

Organization: UN-SPIDER

Costs: Free

Type: ArcGIS Desktop, Web GIS, QGIS,

Drought is monitored through parameters such as precipitation, soil moisture and vegetation. Information derived from these parameters is then combined together into indices and optionally supported by other ancilliary data to develop drought ealry warning systems. Basic measurements for drough monitoring include the severity, areal extent and duration of the drought.

🔗 http://www.un-spider.org/links-and-resources/data-sources/daotm-drought

UN-SPIDER Recommended Practices

Drought Monitoring using the Standard Vegetation Index (SVI)

Organization: UN-SPIDER

Costs: Free

Type: R Studio, Python, MODIS Reprojection Tool (MRT)

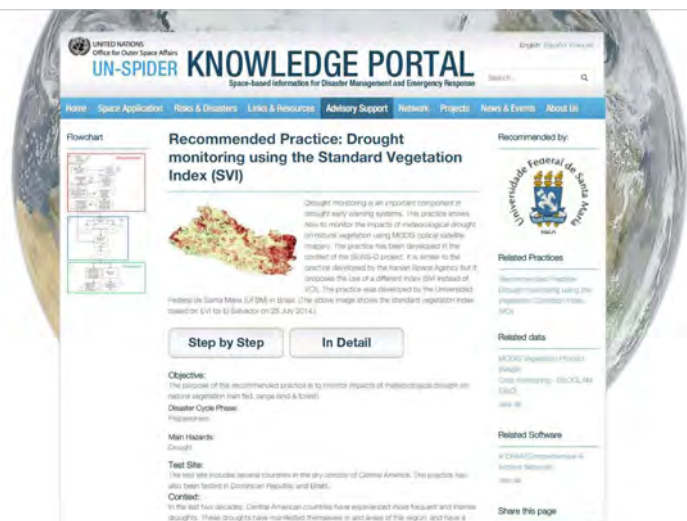SVI describes the probability of vegetation condition to deviate from normal based on weekly NDVI calculations. The SVI drought monitoring methodology applies a multi-temporal analysis of MODIS satellite data to monitor the impacts of meteorological drought on natural vegetation (rainfed, rangeland and forest). This index is capable of indicating near-real-time (varying) condition of vegetation within drought regions; showing the extent and severity of the drought.

🔗 http://www.un-spider.org/advisory-support/recommended-practices/recommended-practice-drought-monitoring-using-standard

Drought Monitoring using the Vegetation Condition Index (VCI)

Organization: UN-SPIDER

Costs: Free

Type: R Studio, ENVI, Python,

The VCI is used to compare current values (within a specific pixel) of a vegetation index to those experienced the same time the previous year. This practice is used to monitor impacts of meteorological droughts on natural vegetation. Availability, simplicity, free of charge data, good research literature and citation, minimum requirements of inputs are the main criterion, which has been considered to define the methodology.

🔗 http://www.un-spider.org/advisory-support/recommended-practices/recommended-practice-agricultural-drought-monitoring

Emergency mechanisms

Copernicus Emergency Management Service (EMS) - Mapping

Organization: European Commission (EC)

Costs: Free | Type: Mapping products

🔗 https://emergency.copernicus.eu/map-ping/ems/emergency-management-ser-vice-mapping

Using satellite imagery and other geospatial data, Emergency Management Service (EMS) Mapping is available during all phases of the disaster management process. Two modes of mapping are available: rapid mapping and risk and recovery mapping. With rapid mapping, geospatial information is made available within hours or days from the time of activation. This information can be used to evaluate the environment before the event, to identify and evaluate the areas most severely impacted by the disaster, to evaluate the geographical extent of the disaster, or to evaluate the severity and scope of damage caused by the disaster. Risk and recovery mapping is more beneficial in the prevention, preparedness, disaster risk reduction, and recovery phases of emergency management, and includes reference maps, pre-disaster situation maps, and post-disaster situation maps. EMS mapping service users include emergency management entities and organisations at the regional, national, European, and international level. The EMS mapping service can be initiated only by or through an Authorised User. Authorised Users include National Focal Points (NFPs) in the EU Member States and countries participating in the Copernicus programme, as well as European Commission services and the European External Action Service (EEAS).

International Charter "Space and Major Disasters"

Organization: Voluntary group of space agencies

Costs: Free | Type: Mapping products
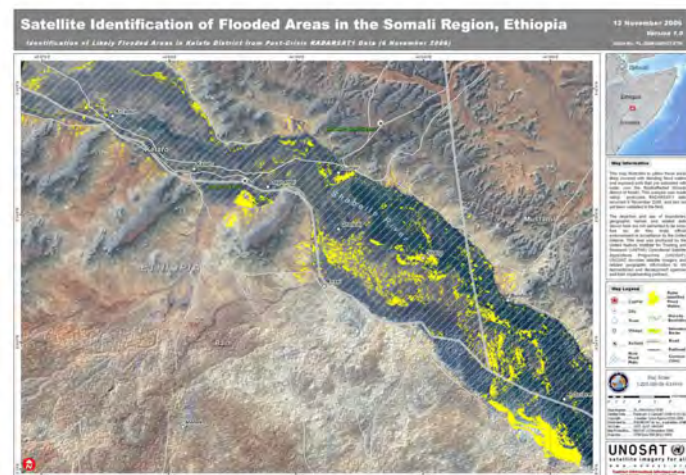
The Charter is a global collaboration that makes space-based data available for disaster management when critical needs arise. The Charter represents a combination of Earth observation assets from different space agencies around the world. This information can be used by national, regional, and local disaster management authorities to assist with disaster response efforts in the wake of floods, landslides, and many other natural hazards. An authorised user, usually a representative of a national civil protection, rescue, or security organization starts the Charter activation process by submitting a request to obtain information on a major disaster.

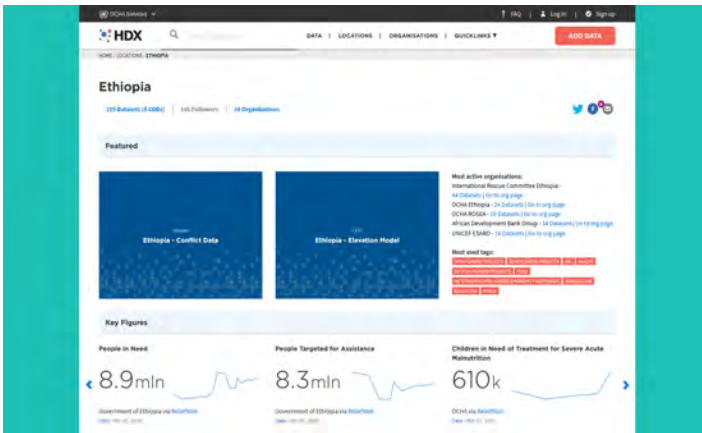🔗 https://disasterscharter.org/web/guest/home

General sources

Humanitarian Data Exchange (HDX)

Organization: United Nations Office for the Coordination of Humanitarian Affairs (OCHA)

Costs: Free

Type: Webmap / Raw data

The Humanitarian Data Exchange is an open platform for sharing data about crises. The data includes contextual information about humanitarian crises, information about people affected by a crisis and their specific needs, and information about organizations' response to crises and the efforts of responders seeking to help. The information may be specific to a particular country, or include many geographic areas. To date, the datasets have been accessed by individuals in over 200 countries and territories. The Humanitarian Data Exchange is managed by the OCHA's Centre for Humanitarian Data.

🔗 https://data.humdata.org/group/eth

CCI Land Cover - S2 Prototype Land Cover 20m Map of Africa 2016

Organization: European Space Agency (ESA)

Costs: Free

Type: Webmap
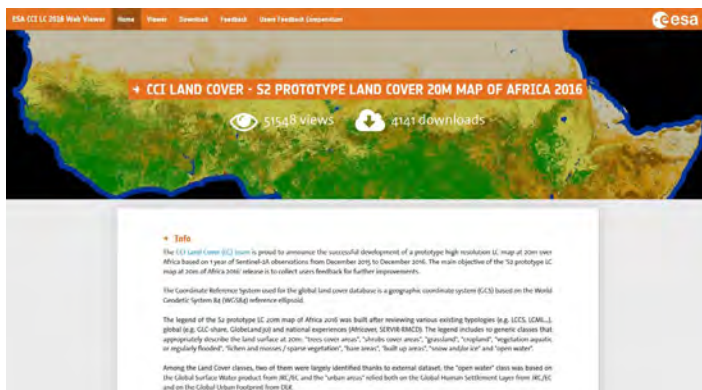
The Africa land cover map is a prototype, high-resolution map based on 1 year of Sentinel-2A satellite observations from December 2015 to December 2016. The map's legend helps to identify the type of land surface at 20m, using the general labels, "trees cover areas," "shrubs cover areas," "grassland," "cropland," "vegetation aquatic or regularly flooded," "lichen and mosses / sparse vegetation," "bare areas," "built up areas," "snow and/or ice," and "open water." The map is created by the European Space Agency's CCI Land Cover Team.

🔗 http://2016africalandcover20m.esrin.esa.int/

NASA EOSDIS Worldview

Organization: National Aeronautics and Space Administration (NASA)

Costs: Free

Type: Webmap / Raw data
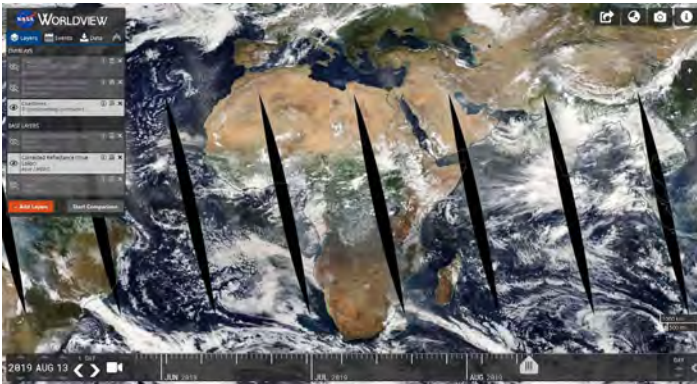
NASA EOSDIS Worldview is an interactive webpage for viewing global, near real-time satellite images of the Earth's surface. Specific dates and overlays, including for landslides and floods, can be selected in order to view particular conditions or changes over time.

🔗 https://worldview.earthdata.nasa.gov/

USGS Earth Explorer

Organization: United States Geological Survey (USGS)

Costs: Free

Type: Webmap
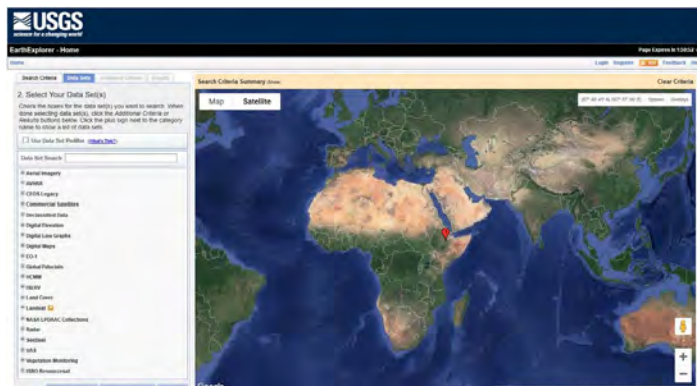
USGS Earth Explorer provides access to global current and historical satellite images. In addition to the standard global map, data sets of specific satellites and geographical features can be accessed.

🔗 https://earthexplorer.usgs.gov/

NASA Earth Data

Organization: National Aeronautics and Space Administration (NASA)

Costs: Free

Type: Webmap / Raw data

The NASA Earth Data webpage contains several global and Africa-specific maps depicting various values, including soil moisture and precipitation levels.

🔗 https://search.earthdata.nasa.gov/
search?q=Ethiopia&ok=Ethiopia

Baseline Data (WFP)

Organization: World Food Programme (WFP)

Costs: Free

Type: Webmap
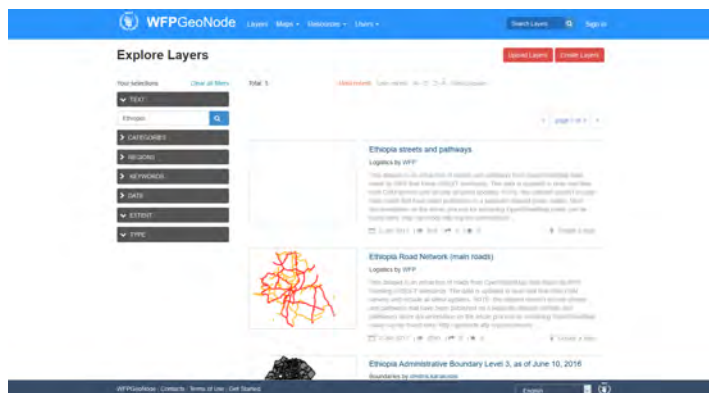
The World Food Programme (WFP) provides two maps of Ethiopia: one depicts streets and pathways, and the other depicts main roads. Both were created using OpenStreetMap data and are updated in near-real time from OpenStreetMap servers. An additional map listed contains information about administrative boundaries.

🔗 https://geonode.wfp.org/layers/?limit=10&offset=0&title__icontains=Ethiopia

Global Administrative Areas (GADM) - Maps of Ethiopia
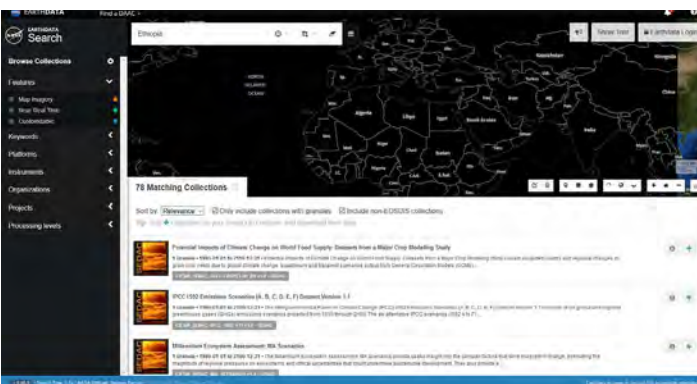
Organization: GADM

Costs: Free

Type: Webmap / Raw data

The GADM maps and data sets, which provide Ethiopia-specific information about elevation above sea level, average annual temperature, and total annual precipitation, can provide helpful background information when conducting drought mitigation measures and monitoring. The maps and data sets contain archived data, rather than real-time or near-real time information, with the most recent information released on 6 May 2018 (as of 1 August 2019).

🔗 https://gadm.org/maps/ETH.html

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Annex - Addtional sources

Global Map

Type: World Thematic layers for transport, boundary, drainage, elevation, population etc.

Provides consistent coverage of the entire land surface of the Earth.

🔗 *http://www.gsi.go.jp/kankyochiri/globalmap_e.html*

Global Land Cover Facility

Type: Landsat, MODIS, AVHRR satellite imagery

To quantify research on land use and change around the world.

🔗 *http://landcover.org/*

Natural Earth

Type: Cultural, physical and raster

Public domain vector and raster dataset. Supported by the NACIS.

🔗 *http://www.naturalearthdata.com/downloads/*

ESRI Open Data

Type: Download formats are in spreadsheet, KML, shapefile and API's

Allows examining over 67,310 open records from 4,092 companies worldwide and more.

🔗 *https://hub.arcgis.com/pages/open-data*

Physical Oceanography Distributed Active Archive Center

Type: Oceanography data for the world

The platform provides access to world oceanography datas that provide Earth science data, information, and services to research scientists.

🔗 *https://podaac.jpl.nasa.gov/*

Open Street Map

Type: High spatial resolution cultural vector data

Serves as a means to collect data from multiple users.

🔗 *https://gisgeography.com/openstreetmap-download-osm-data/*

NASA's Socioeconomic Data and Applications Center (SEDAC)

Type: Social economic data eg climate, hazard, population, poverty etc

SEDAC is all about human interaction with the environment.

🔗 *https://sedac.ciesin.columbia.edu/*

UNEP Environmental Data Explorer

Type: Freshwater, population, forests, emissions, climate, disasters

Contains many spatial and non-spatial data on a variety of topics.

🔗 *http://geodata.grid.unep.ch/*

NASA Earth Observations (NEO)

Type: All raster grids: atmosphere, energy, land, life and ocean GIS data.

Focuses on global satellite imagery.

🔗 *http://neo.sci.gsfc.nasa.gov/*

Sentinel Satellite Data

Type: Raster data – 11 channels from Sentinel-2, Radar data from Sentinel-1.

The European Space Agency's Sentinel satellite is currently the highest spatial resolution available to the public for free.

🔗 *https://scihub.copernicus.eu/dhus/#/home*

Terra Populus

Type: Area-level, micro-data & environmental data for land cover, land use, and climate

Incorporate Cencus data from 160 countries and environmental data.

🔗 *https://terra.ipums.org/*

FAO GeoNetwork

Type: Agriculture, fisheries, land resource GIS data.

Provides satellite imagery and spatial data to support sustainable development.

🔗 *http://www.fao.org/geonetwork/srv/en/main.home*

International Steering Committee for Global Mapping (ISCGM)

Type: Boundaries, drainage, transportation, population place, elevation, land use, vegetation

Download global land cover and tree prevention by selecting map tiles.

Télécharger la carte mondiale de la couverture terrestre et de la prévention de l'arboriculture en sélectionnant les tuiles de la carte.

🔗 *https://globalmaps.github.io/*

Open Topography

Type: Lidar data

It provides a portal to high spatial resolution topographic data and tools.

Il fournit un portail pour accéder à des données topographiques et à des outils à haute résolution.

🔗 *https://opentopography.org/*

ASTER GDEM

Type: Global elevation data

30m resolution global elevation data derived from ASTER Radiometer satellite images.

🔗 *http://asterweb.jpl.nasa.gov/gdem.asp*

NOAA Data Access Viewer

Type: Imagery, Land cover and Elevation data

Authoritative Imagery, Land cover and Elevation datasets.

🔗 *https://coast.noaa.gov/dataviewer/#/*

NOAA CLASS

Type: Raster

Free high quality atmospheric data sets (raster).

Ensembles de données atmosphériques gratuites de haute qualité (raster).

🔗 *https://www.bou.class.noaa.gov/saa/products/*

NOAA Digital Coast

Type: Coastal Data

Free satellite imagery to choose from, including radar, infrared and true-color composites.

Images satellites gratuites au choix, y compris des images composites radar, infrarouges et en couleurs vraies.

🔗 *https://coast.noaa.gov/digitalcoast/*

NCAR GIS Climate Change Scenarios

Type: Climate change data

The free data set are available for climate change projection.

🔗 *http://gisclimatechange.ucar.edu/*

National Institute for Space Research (INPE)

Type: Satellite data from CBERS-2, 2b, Aqua, Landsat, S-NPP, Terra, UK-DMC, ResourceSat

Partnership between Brazil and China catalog for remotely sensed data.

🔗 *http://www.dgi.inpe.br/CDSR/*

VITO Vision

Type: PROBA-V, SPOT-Vegetation and METOP datas

The portal provides roughly resolved vegetation patterns of the earth's surface.

Le portail fournit des modèles de végétation à peu près résolus de la surface de la terre.

🔗 *http://www.vito-eodata.be/PDF/portal/Application.html#Home*

UNAVCO Research Data

Type: Geodesy data for Flooding, Plate tectonics, earthquake

Organization of universities who support research using geodesy technology.

🔗 *https://www.unavco.org*

JAXA's Global ALOS 3D World

Type: Global scale elevation data, 30-meters Spatial resolution digital surface model (DSM)

Provide the most accurate elevation data on a global scale at this time.

🔗 *https://www.eorc.jaxa.jp/ALOS/en/aw3d30/index.htm*

Earth Observation Link (EOLi)

Type: Earth observation data from Envisat, ERS, IKONOS, DMC, ALOS, SPOT, Kompsat, IRS

EOLi is ESA's client for the Earth Observation Catalogue and Order Services.

🔗 *https://earth.esa.int/web/guest/eoli-sa-dismissed;jsessionid=D13A5C1D64E81DF422CD157C694A2EB1.jvm1*

IRI/LDEO Climate Data Library

Type: Climate models and datasets

Opertaed by The Earth Institute and Lamont-Doherty Earth Observation.

🔗 *https://iridl.ldeo.columbia.edu/index.html?Set-Language=en*

Global Climate Monitor

Type: Climate Datasets from 1901

Climate Web Viewer contains climate information from 1901, which can be downloaded in various GIS formats.

🔗 *https://www.globalclimatemonitor.org/*

HydroSHEDS

Type: Hydrological datas based on SRTM elevation data

SRTM elevation data. Includes river networks, watershed boundaries, drainage directions, and flow accumulations.

🔗 *https://www.hydrosheds.org/*

Atlas of the Biosphere

Type: Raster maps of environmental variables

Environmental variables including soil pH, potential evapotranspiration, average snow depth and more.

🔗 *https://nelson.wisc.edu/sage/data-and-models/atlas/index.php*

GSHHG

Type: Global self consistent, Hierarchical, High resolution Shoreline database

The data set consists of high-quality and consistent data.

🔗 *https://www.soest.hawaii.edu/pwessel/gshhg/*

Global 200

Type: Vector data from WWF

A set of the Earth's terrestrial, freshwater and marine ecoregions that harbor exceptional biodiversity.

🔗 *https://www.worldwildlife.org/publications/global-200*

Global Lakes and Wetlands Database

Type: Vector data from multiple sources by the WWF

The data set is provided by WWF and the Environmental Systems Research Centre of the University of Kassel.

🔗 *https://www.worldwildlife.org/pages/global-lakes-and-wetlands-database*

The Biodiversity Hotspots

Type: Data from Conservation International

Areas of the world with especially high endemism and high numbers of threatened species.

🔗 *https://www.conservation.org/how/pages/hotspots.aspx*

Pilot Analysis of Global Ecosystems: Forest Ecosystems

Type: Data from the World Resources Institute

World Resources Institute includes: percentage tree-cover, population density and tree cover, share of wood in fuel consumption.

🔗 *https://www.wri.org/publication/pilot-analysis-global-ecosystems-forest-ecosystems#data*

World Bank Geodata

Type: A wide range of World Bank datasets

Provides wide range of World Bank datasets such as schooling and financial data

🔗 *https://sourceforge.net/projects/googleworldbank/*

Crop Calendar Dataset

Type: Raster data on planting dates and harvesting dates

It has resolutions of 5 minutes and 0.5 degrees.

🔗 *https://web.archive.org/web/20090901080647/http://www.sage.wisc.edu/download/sacks/crop_calendar.html*

Global Agriculture Lands

Type: Raster dataset from NASA's Socioeconomic Data and Applications Center

Representing global extent and intensity of use of agricultural lands in 2000.

🔗 *https://sedac.ciesin.columbia.edu/data/collection/aglands*

Global Irrigated Area Map (GIAM)

Type: Vector mapping by the International Water Management Institute

For global irrigated and rainfed cropland.

🔗 *https://www.webcitation.org/6DdAV6pdI?url=http://www.iwmigiam.org/info/main/index.asp*

Historic Croplands Dataset, 1700-1992

Type: Documents historical changes in global land cover.

For monitoring global land cover: croplands from 1700 to 1992.

🔗 *https://nelson.wisc.edu/sage/data-and-models/historic-croplands/index.php*

Past and Present Agricultural Land Use

Type: Multiple Raster datasets

To illustrate agricultural land use from 1700 to 2007 for 175 crops.

🔗 *https://web.archive.org/web/20130910173649/http://www.geog.mcgill.ca/~nramankutty/Datasets/Datasets.html*

Soil Grids

Type: Soil datas

Data on Soil components which Physical, Chemical properties of soil.

🔗 *https://soilgrids.org/*

Global Hydrology Resource Center DAAC

Type: Harzadous weather datas

It provide a comprehensive active archive of both data and knowledge augmentation services with a focus on hazardous weather.

🔗 *https://ghrc.nsstc.nasa.gov/home/*

Physical Oceanography Distributed Active Archive Center

Type: Oceanography data for the world

The platform provides access to world oceanography datas that provide Earth science data, information, and services to research scientists.

🔗 *https://podaac.jpl.nasa.gov/*

Global Reservoir and Dam (GRanD) Database

Type: Vector dataset from NASA's Socioeconomic Data and Applications Center

All reservoirs with a storage capacity >0.1 cubic km.

🔗 *https://sedac.ciesin.columbia.edu/data/set/grand-v1-dams-rev01*

Gridded Population of the World (GPW)

Type: Dataset from NASA's Socioeconomic Data and Applications Center

It includes raw population, population density, historic, current and predicted.

🔗 *https://sedac.ciesin.columbia.edu/data/collection/gpw-v4*

Global Rural-Urban Mapping Project (GRUMP)

Type: Dataset from NASA's Socioeconomic Data and Applications Center

It includes information on rural and urban population balances.

🔗 *https://sedac.ciesin.columbia.edu/data/collection/gpw-v4*

Global Roads Open Access Data Set (gROADS)

Type: Global dataset from NASA's Socioeconomic Data and Applications Center

For roads between settlements using a consistent data model.

🔗 *https://sedac.ciesin.columbia.edu/data/set/groads-global-roads-open-access-v1*

World Port Index

Type: A wide range of World Port Index

Contains the location and physical characteristics of, and the facilities and services offered by major ports and terminals worldwide, from the United States National Geospatial-Intelligence Agency.

🔗 *https://msi.nga.mil/NGAPortal/MSI.portal?_nfpb=true&_pageLabel=msi_portal_page_62&pubCode=0015*

OpenFlights Airport, Airline and Route Data

Type: Dataset for Openflights airport and the likes

Includes all known airports, and a large number of routes between airports.

🔗 *https://openflights.org/data.html*

GeoHive

Type: Statistical data

Population and county statistics (not provided in GIS data formats, but can easily be converted from CSV).

🔗 *http://www.geohive.ie/*

Viewfinderpanoramas Digital Elevation Model (DEM) repository

Type: Global digital elevation model data

Major areas of coverage includes: Asia, North America, South America, Alps, North, Other Europe, Africa, Antarctica.

🔗 *http://www.viewfinderpanoramas.org/dem3.html*

CHELSA Climatologies at high resolution for the earth's land surface areas

Type: Global climatologies data

For land surface temperature and precipitation.

🔗 *http://chelsa-climate.org/downloads/*

Orrbodies

Type: Raster dataset

Includes geology, topography and mineral occurrence data for several countries as well as globally.

🔗 *https://www.orrbodies.com/*

International Peace Information Service (IPIS) Open Data

Type: Datasets originate from International Peace Information Service

Thematic focus on natural resources, conflict motives of armed actors, business and human rights, and international arms transfers.

🔗 *http://geo.ipisresearch.be/geoserver/web/wicket/bookmarkable/org.geoserver.web.demo.MapPreviewPage?1*

The OCC Environmental Data Commons

Type: environmental public data sets

Scientific interest, hosted as part of the Open Science Data Cloud Ecosystem.

🔗 *http://edc.occ-data.org/*

About UN-SPIDER

In its resolution 61/110 of 14 December 2006 the United Nations General Assembly agreed to establish the "United Nations Platform for Space-based Information for Disaster Management and Emergency Response - UN-SPIDER" as a new United Nations programme, with the following mission statement: "Ensure that all countries and international and regional organizations have access to and develop the capacity to use all types of space-based information to support the full disaster management cycle".

A number of initiatives in recent years have contributed in making space technologies available for humanitarian aid and emergency response. Yet, UN-SPIDER is the first to focus on the need to ensure access to and use of such technologies during all phases of the disaster management cycle, including the risk reduction phase which is crucial for reducing the losses of lives and property.

The UN-SPIDER programme is achieving this by focusing on being a gateway to space information for disaster management support, by serving as a bridge to connect the disaster management, risk management and space communities and by being a facilitator of capacity-building and institutional strengthening, in particular for developing countries. UN-SPIDER is being implemented as an open network of providers of space-based solutions to support disaster management activities. Besides Vienna, the programme also has an office in Bonn, Germany as well as an office in Beijing, China.

UN-SPIDER is a programme of the United Nations Office for Outer Space Affairs (UNOOSA).