GEO-SPATIAL AND GEO-STATISTICAL OPEN-DATA SOURCES

FUNCTIONAL AREAS IN THE EU

Crossing administrative boundaries for green transition and sustainable development

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1. GENERAL DATA

World Bank Geodata: https://datacatalog.worldbank.org/data-type/geospatial

The Data Catalog is designed to make World Bank's development data easy to find, download, use, and share. It includes data from the World Bank's microdata, finances and energy data platforms, as well as datasets from the open data catalog. There are different ways to access and download datasets.

The Data Catalog is a project to provide a more effective means for capture, acquisition, curation, access and use of development-Data Catalog data throughout the World Bank Group. The goal is to maximize the value and investment in data by increasing the potential for the data to be shared and reused, to minimize transaction costs in finding relevant data and data methodologies, and to prevent duplication. The project builds on existing expertise and resources such as the Microdata Library, Open Data Catalog and GFDRR.

The Data Catalog provides a "One-Stop Shop" for development data produced, acquired or used by the World Bank in accordance with the Bank Procedure for Development Dataset Acquisition, Archiving and Dissemination, and the Guidance on Data Acquisition and Archiving. This includes metadata for datasets from other catalogs such as the Microdata Library, EnergyData.Info, Finances and World Bank Open Data API. Where needed, the Data Catalog also serves as a data storage repository, providing long-term storage for World Bank development data.

European Union Open Data Portal: https://data.europa.eu/euodp/en/data/

The portal provides access to open data from international, EU, national, regional, local and geo data portals. It replaces the EU Open Data Portal and the European Data Portal. The portal addresses the whole data value chain, from data publishing to data reuse. Going beyond collecting metadata (data about data), the strategic objective of the portal is to improve accessibility and increase the value of open data.

EUROSTAT: https://ec.europa.eu/eurostat

The statistical office of the European Union. It provides high-quality statistics at the European level that enable comparisons between countries and regions.

European Space Agency - Copernicus Open Access Hub: https://earth.esa.int/eogateway/catalog; https://scihub.copernicus.eu/dhus/#/home

The European Space Agency (ESA) is Europe's gateway to space. Its mission is to shape the development of Europe's space capability and ensure that investment in space continues to deliver benefits to the citizens of Europe and the world. Copernicus is the European Union's Earth observation programme, looking at our planet and its environment to benefit all European citizens. It offers information services that draw from satellite Earth Observation and in-situ (non-space) data. The European Commission manages the Programme. It is implemented in partnership with the Member States, the European Space Agency (ESA), the European Organisation for the Exploitation of Meteorological Satellites (EUMETSAT), the European Centre for Medium-Range Weather Forecasts (ECMWF), EU Agencies and Mercator Océan. The Open Access Hub provides complete, free and open access to Sentinel-1, Sentinel-2, Sentinel-3 and Sentinel-5P user products.

USGS Earth Explorer: https://earthexplorer.usgs.gov/

EarthExplorer (EE) provides online search, browse display, metadata export, and data download for earth science data from the archives of the U.S. Geological Survey (USGS). EE provides an enhanced user interface using state-of-the-art technologies for searching, viewing, and downloading data.

NASA Earth Observation Data: https://www.earthdata.nasa.gov/;
https://worldview.earthdata.nasa.gov/

The Earth Science Data Systems (ESDS) Program provides full and open access to NASA's collection of Earth science data for understanding and protecting our home planet. This includes satellite data on climate change, surface temperature, sea levels, ice, and more.

ESRI Open Data Hub: https://hub.arcgis.com/

ArcGIS Hub is an easy-to-configure community engagement platform that organizes people, data, and tools through information-driven initiatives. Organizations of any type and any size, including government agencies, nonprofit groups, and academia, can maximize engagement, communication, collaboration, and data sharing using the ArcGIS Hub initiative-based approach. With ArcGIS Hub, organizations can leverage their existing data and technology and work together with internal and external stakeholders to track progress, improve outcomes, and create vibrant communities.

2. SPECIFIC DATA

EC INSPIRE GeoPortal: https://inspire-geoportal.ec.europa.eu/

The INSPIRE Geoportal is the central European access point to the data provided by EU Member States and several EFTA countries under the INSPIRE Directive. The Geoportal allows: monitoring the availability of INSPIRE data sets; discovering suitable data sets based on their descriptions (metadata); accessing the selected data sets through their view or download services. The metadata used in the Geoportal are regularly harvested from the discovery services of EU Member States and EFTA countries.

Important mentions: Addresses, Administrative units, Cadastral parcels, Buildings, Hydrography, Protected sites, Transport networks, Land cover, Elevation, Geology, Soil, Natural risk zones, Utilities, Statistical units, Energy, Agriculture, Environmental monitoring, Production and industrial facilities, Population distribution-demography, Orthoimagery.

EEA Copernicus – Land Monitoring Service: https://land.copernicus.eu/

Copernicus is the European Union's Earth observation programme. Information from this programme is provided through six thematic services: land, marine, atmosphere, climate change, emergency management and security. All information is free and openly accessible to all users. The Land Service is divided into four main components: Global, Pan-European, Local and Imagery and reference data

Important mentions: CORINE Land Cover, High-resolution layers: Imperviousness, Forests, Grassland, Water & Wetness, Urban Atlas; Riparian Zones, Natura 2000 (N2K), EU-DEM, EU-Hydro, LUCAS, European Image Mosaics (High & Very High Resolution).

European Environmental Agency Geodata: https://www.eea.europa.eu/data-and-maps

The European Environment Agency (EEA) is an agency of the European Union, whose task is to provide sound, independent information on the environment. The EEA aims to support sustainable development by helping to achieve significant and measurable improvement in Europe's environment, through the provision of timely, targeted, relevant and reliable information to policymaking agents and the public.

European Pollutant Release and Transfer Register (E-PRTR): https://www.eea.europa.eu/en/datahub/datahubitem-view/9405f714-8015-4b5b-a63c-280b82861b3d

The E-PRTR provides key environmental data from industrial facilities in European Union Member States and in Iceland, Liechtenstein, Norway, Serbia, and Switzerland.

European Climate Adaptation Platform (Climate-ADAPT): https://climate-adapt.eea.europa.eu

The European Climate Adaptation Platform Climate-ADAPT is a partnership between the European Commission and the European Environment Agency (EEA). Climate-ADAPT is maintained by the EEA with the support of the European Topic Centre on Climate Change Impacts, Vulnerability and Adaptation (ETC/CCA).

Climate-ADAPT aims to support Europe in adapting to climate change helping users to access and share data and information.

EC GHSL - Global Human Settlement Layer: https://ghsl.jrc.ec.europa.eu/dataToolsOverview.php

The Global Human Settlement Layer (GHSL) project produces global spatial information about the human presence on the planet over time. This in the form of built-up maps, population density maps and settlement maps. This information is generated with evidence-based analytics and knowledge using new spatial data mining technologies.

The GHSL processing framework uses heterogeneous data including global archives of fine-scale satellite imagery, census data, and volunteered geographic information. The data is processed fully automatically and generates analytics and knowledge reporting objectively and systematically about the presence of population and built-up infrastructures.

Important mentions: Multi-temporal Built-up (surface, height, volume, characteristics), Land fraction, Population grids, Settlement Model grids, Degree of Urbanisation - Classification of administrative units, Functional Urban Areas, Urban Centers.

European Soil Data Centre (ESDAC): https://esdac.jrc.ec.europa.eu/

The European Soil Data Centre (ESDAC) is the thematic centre for soil related data in Europe. Its ambition is to be the single reference point for and to host all relevant soil data and information at European level. It contains a number of resources that are organized and presented in various ways: datasets, services/applications, maps, documents, events, projects and external links.

Google Environmental Insights Explorer: https://insights.sustainability.google

Environmental Insights Explorer (EIE) is a freely available data and insights tool that uses exclusive data sources and modeling capabilities to help cities and regions measure emissions sources, run analyses, and identify strategies to reduce emissions. It publishes data on building emissions (estimated emissions from heating, cooling, and powering residential and non-residential buildings, based on Google Maps data), transportation emissions (estimated emissions of all trips that start or end within city boundaries based on aggregated, anonymized Location History data), rooftop solar potential (estimated solar energy production potential of buildings based on total sunshine exposure, weather patterns, and roof dimensions), and tree canopy (estimated tree canopy coverage across city regions, based on aerial imagery and machine learning algorithms). There is also a BETA Labs database on air quality, currently available in Hamburg, Dublin, Copenhagen, Amsterdam, and London: hyperlocal, street-by-street air quality data from mapping street-level air pollution with mobile air sensors.

OpenStreetMap: https://www.openstreetmap.org/; https://www.geofabrik.de/data/

OpenStreetMap is built by a community of mappers that contribute and maintain data all over the world. Geofabrik provides you with geodata that matches your needs. We mainly work with free data from the OpenStreetMap project and use the lean OpenStreetMap tools for cartography of all kind. Geofabrik offers region extracts of OpenStreetMap data in the OpenStreetMap raw data formats and selected features as shape files for download for free.

Important mentions: Point Features - Places, Points of Interest, Places of Worship, Natural Features, Traffic, Transport Infrastructure, Power Generation and Distribution; Line Features - Boundaries, Roads and Paths, Railways, Subways, Trams, Waterways, Coastline, Power lines, Runways and taxiways, Infrastructure disused, planned or under construction, Routes, Cycle routes, Barrier-type linear features; Polygon Features - Administrative Areas, Building outlines, Land use and land cover, Bodies of Water, Landmass and Oceans.

Humanitarian OpenStreetMap (The Humanitarian Data Exchange): https://data.humdata.org/

The Humanitarian Data Exchange (HDX) is an open platform for sharing data across crises and organisations. HDX is managed by OCHA's Centre for Humanitarian Data, which is located in The Hague. OCHA is part of the United Nations Secretariat and is responsible for bringing together humanitarian actors to ensure a coherent response to emergencies.

Important mentions: Administrative boundaries, Health sites and facilities, Educational facilities, Roads, Railways, Populated places, Airports, Buildings, Points of interest, Financial services, Population count, density, age and sex structures (raster).

Euro Geographics: https://www.mapsforeurope.org/

Providing easy access to pan-European open data created using official map, geospatial and land information. Open Maps for Europe provides free to use maps from more than 40 European countries. The datasets are created using official map, geospatial and land information from official, national sources.

ASTER Global Digital Elevation Map: https://asterweb.jpl.nasa.gov/gdem.asp

The Advanced Spaceborne Thermal Emission and Reflection Radiometer (ASTER) is an imaging instrument onboard Terra, the flagship satellite of NASA's Earth Observing System (EOS) launched in December 1999. ASTER is a cooperative effort between NASA, Japan's Ministry of Economy, Trade and Industry (METI), and Japan Space Systems (J-spacesystems). ASTER data are used to create detailed maps of land surface temperature, reflectance, and elevation. The coordinated system of EOS satellites, including Terra, is a major component of NASA's Science Mission Directorate and the Earth Science Division. The goal of NASA Earth Science is to develop a scientific understanding of the Earth as an integrated system, its response to change, and to better predict variability and trends in climate, weather, and natural hazards.

Global Forest Watch: https://www.globalforestwatch.org

Global Forest Watch offers the latest data, technology and tools that empower people everywhere to better protect forests. This provides data about global deforestation rates, land use, and landscape changes.

3. LIVE SATELLITE IMAGERY – VISUALIZATION ONLY

Zoom Earth shows global live weather satellite images in a fast, zoomable map. Watch near real-time weather images, rainfall radar maps, and animated wind speed maps. Track tropical storms and hurricanes, severe weather, wildfires, volcanoes, natural hazards and more. Newly uploaded satellite images are available each day from the National Aeronautics and Space Administration (NASA).[1]

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[1] https://chicagorti.org/resources/zoom–earth/