GEO WEEK & MINISTERIAL SUMMIT 2023

Flash talk

#TheEarthTalks
Topic 4

The Copernicus Emergency Management Service – supporting disaster risk reduction worldwide

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OUTLINE

Copernicus & the Emergency Management Service

Components

Exposure Mapping

Uptake and evolution
Copernicus: 6 satellite families and 6 Services

**Space component**
- Sentinel (S1, S2, S3, S5p)
- Copernicus Contributing Missions

**In situ component**
- Land, sea or airborne monitoring systems
- Geospatial reference or auxiliary data

- Atmosphere
- Marine
- Land
- Climate Change
- Security
- Emergency

Emergency Management
“Copernicus EMS activities are one of the examples of best practices with worldwide recognition”

Mauro Facchini, DG DEFIS Head of Unit for Earth Observation

CEMS supports actors involved in the management of natural and man-made disasters.

It addresses all phases of the disaster management cycle:

- **Pre-disaster**:
  - Risk assessment, prevention, mitigation
  - Preparedness and early warning
- **Immediate response**
  - Event mapping and monitoring
  - Damage assessment
- **Post-disaster**
  - Recovery assessment, reconstruction and monitoring
  - Associated risk assessment

It provides timely and accurate geospatial information (derived from satellite remote sensing data and supplemented with available in situ or reference data sources).
Human Settlement information is essential for policy frameworks and crisis management.
GHSL Main Features

- **Extended time series**: 1975-2030 in 5 year intervals
- **Operational production**: 2022, 2024, 2026
- **Improved spatial resolution**
  - Built-up surface fraction at 10 m spatial resolution
  - Population density at 100 m
- **Built-up classification**: residential and non-residential uses
- Building height information at 100 m spatial resolution

GHSL R2022  Brazzaville (Rep. Congo) – Kinshasa (DRC)

Built-up surface fraction

Built-up volume

Settlement characteristics

Population grid

Settlement classification

Degree of Urbanisation

Urban centre (City):
- Urban centre (City)

Urban cluster (Town & suburb):
- Dense and semi-dense urban cluster (Town)
- Suburban or peri-urban cells (Suburb)

Rural grid cells (Rural area):
- Rural cluster (Village)
Global estimation of anthropogenic emissions (11.6.2)

Open and Free Geospatial Data for Download

Use cases of GHSL in international policy frameworks

GEO 6 & GEO 6 Cities by UNEP urbanization statistics from GHSL Data
UN-Habitat SDG 11 synthesis report
UNEP WMO IPCC 6th Assessment Report
And many more …
Measuring & understanding human settlements: past, presence & future

Looking back with Landsat

Looking ahead with projections

Monitoring with Sentinel

Today

Cities • Towns • Rural
STAY CONNECTED
EVENTS, ONLINE, and MAP VIEWERS

@CopernicusEMS
emergency.copernicus.eu
activations.emergency.copernicus.eu

More Information on the Global Human Settlement Layer:
ghsl.jrc.ec.europa.eu