

Copernicus Health Hub

Cristina Ananasso & Jonilda Kushta



@NEREUS Space data & services for Health

4 February 2025

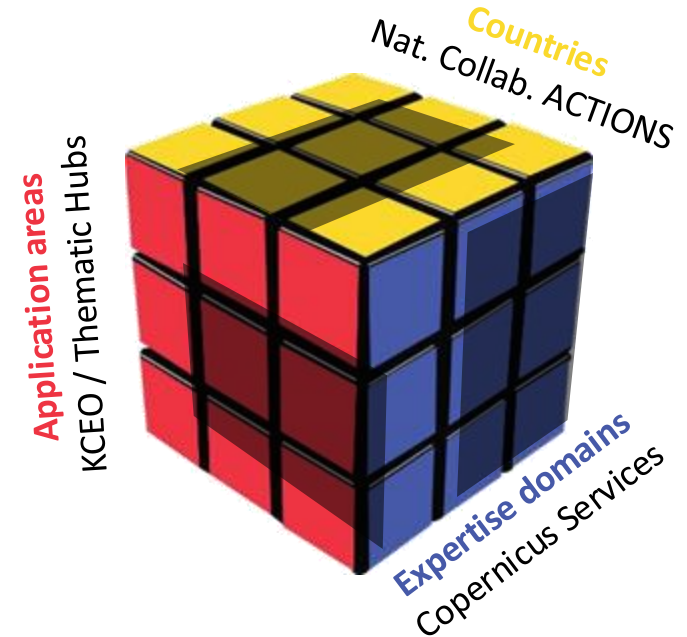


PROGRAMME OF THE
EUROPEAN UNION



The Copernicus Thematic Hubs: A new approach towards the users

1. **COORDINATE:** Improve coordination and information flow between Copernicus components, related projects and initiatives.
2. **CONNECT:** Create a user community by bridging scientific knowledge // technical expertise // specific user needs.
3. **GAIN USER INTELLIGENCE:** Invest time to listen and understand users, develop value propositions, and collect user requirements.
4. **INSPIRE:** Showcase how data can be integrated with other data/information through user stories and new demonstrators, foster ideas for further research and applications.
5. **COLLABORATE:** Leverage the collaboration/interactions with other Copernicus entities and external stakeholders.



ARCTIC HUB

HEALTH HUB

COASTAL HUB

ENERGY HUB

What is the Copernicus Health Hub?

The Copernicus Health Hub is a **centralised platform providing Earth Observation data, products, and information to support activities related to human health protection.** It serves a broad user base—including policymakers, researchers, private sector, NGOs and the general public—by offering tools, datasets, and insights for health-related applications.

The Copernicus Health Hub embraces the definition of the World Health Organisation (WHO): **"Health is a state of complete physical, mental, and social wellbeing and not merely the absence of disease or infirmity."**

The products offered by Copernicus Services comprehensively address these diverse aspects of health:

Physical health



Mental health

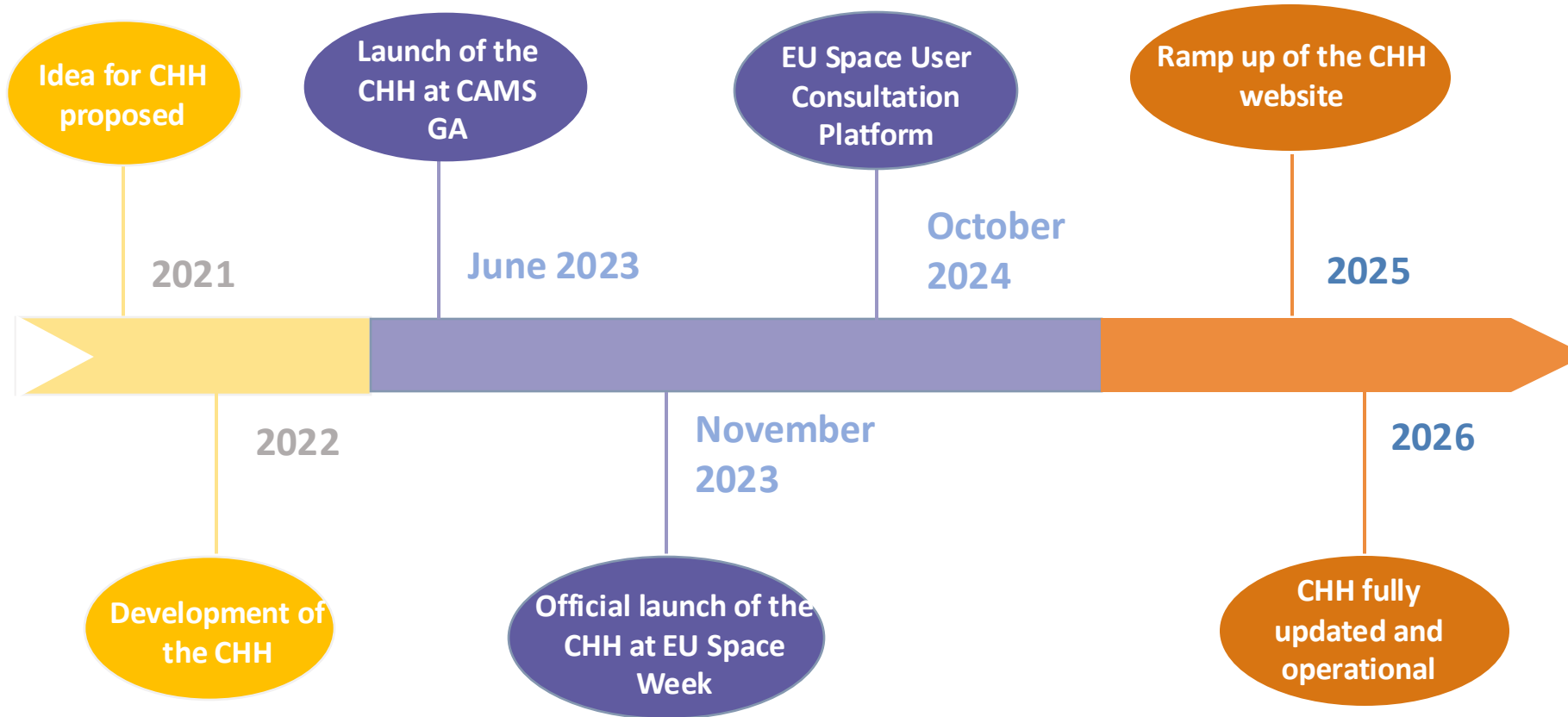


Wellbeing



HEALTH HUB

Timeline of the Copernicus Health Hub



Datasets

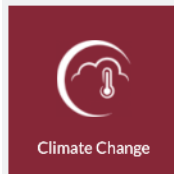
Free, full, and open access



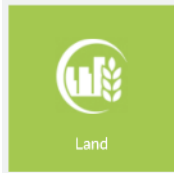
UV index
Air quality: PM, NO₂, Ozone
Pollens



Ocean temperature and currents
Chlorophyll-a concentration
Dissolved oxygen
Ocean acidification



Heat & cold stress
Climate extreme value indices
Heat waves



Land cover
Burnt area
Lake water quality
Land Surface Temperature

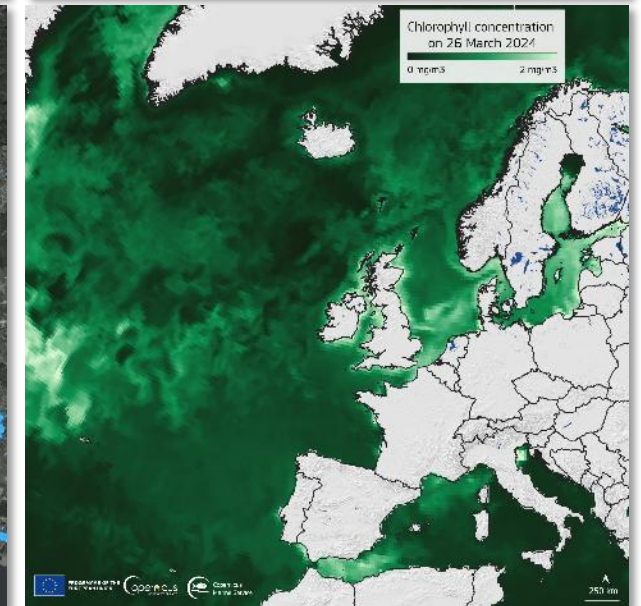
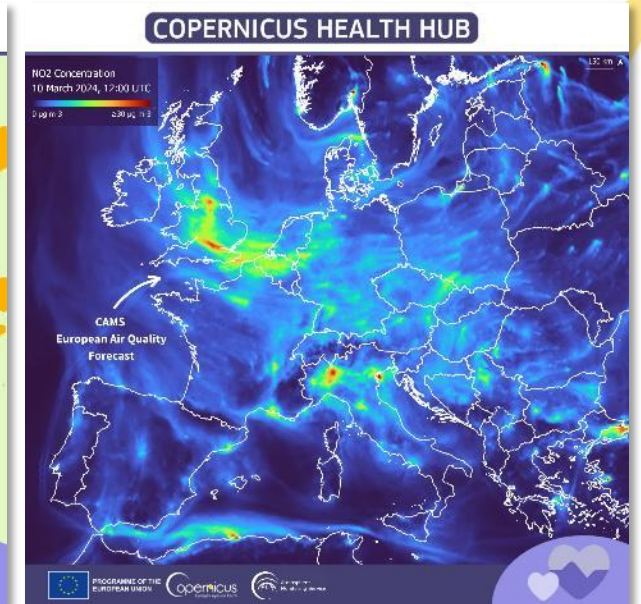
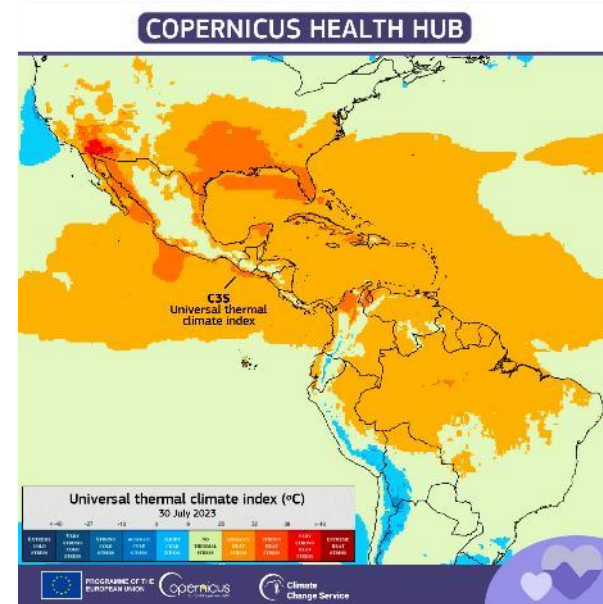


Global Flood Monitoring
Droughts
Wildfires



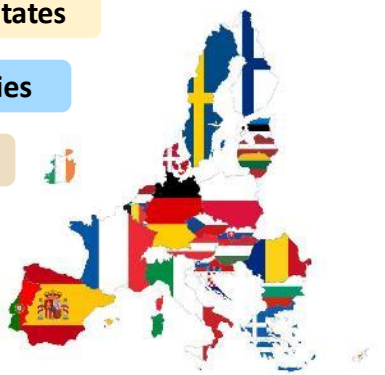
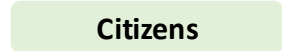
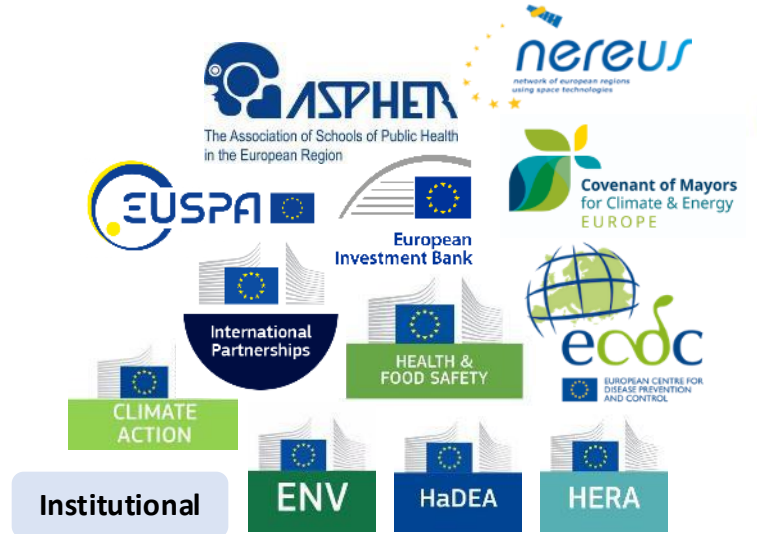
Critical Infrastructure Analysis
Road network status/accessibility
Traffic monitoring
Pre-frontier Monitoring Service

Regulated access



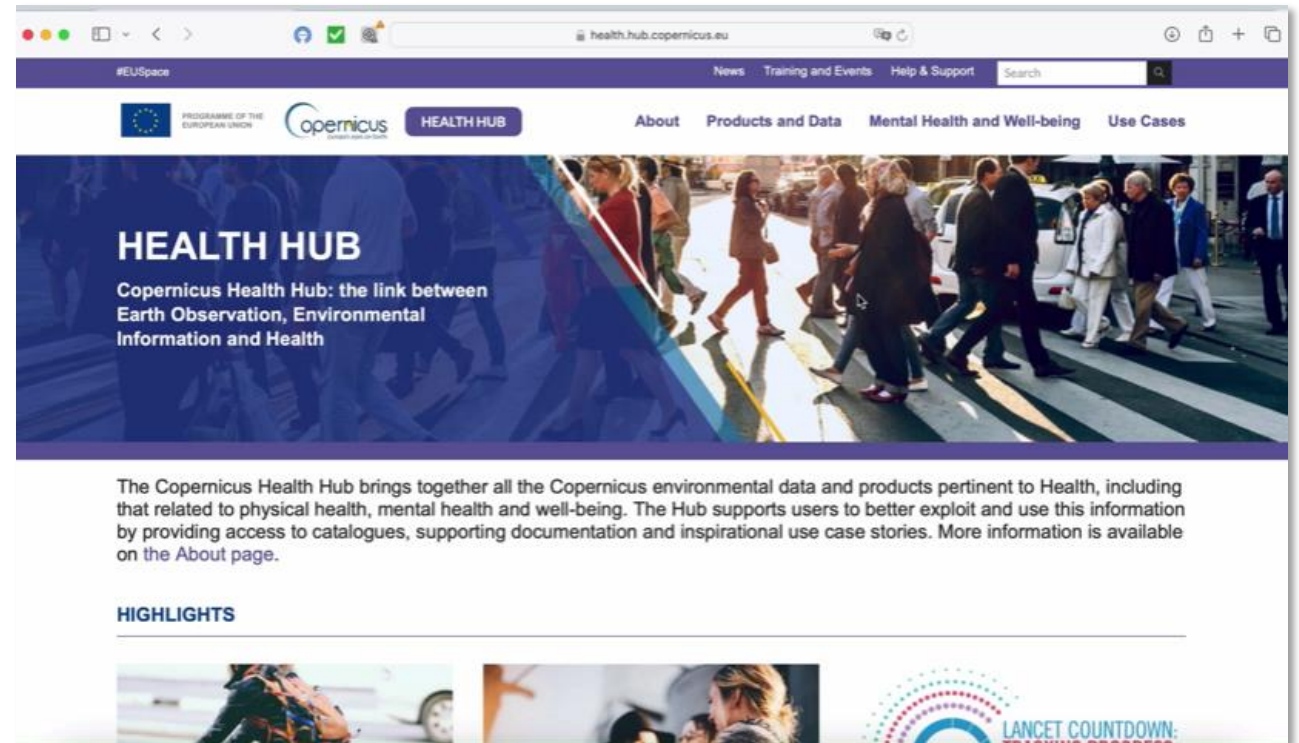
Copernicus Health Hub Ecosystem

Data from the Copernicus Services



What is currently available

- 26 Use Cases and User Stories
- Information on EU projects linked to health sector
- Access to 27 datasets
- Help and support



<https://health.hub.copernicus.eu>

What's coming up

- Continuous development of the website, including the addition of new:
 - Articles
 - Use cases
 - Data visualisations
 - Infographics
- Future events and opportunities

There's much more to come!

13TH JUNE 2023

Unlocking the power of Earth observation for health

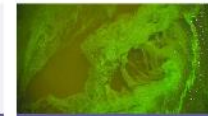
This launch marks a new milestone in the European Union's Copernicus Earth observation programme. The Copernicus Health Hub is the first of several upcoming Copernicus Thematic Hubs, which aim to support users in specific domains in navigating the entire Copernicus portfolio.



Current case studies



Air pollution: Nearly everyone in Europe breathing bad air (Deutsche Welle)



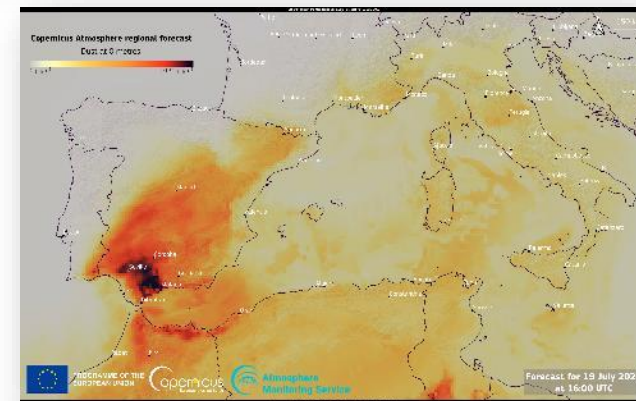
MONITORING WATER QUALITY IN THE MEDITERRANEAN SEA



AIR QUALITY, CLIMATE CHANGE AND PUBLIC HEALTH



ASSESSING THE NUTRIENT BUDGET IN PORTUGUESE COASTAL ZONES



HEALTH HUB

Examples of uses cases available



Intensification of climate extremes

Projections show that extreme temperatures will increase even more rapidly than average temperatures in the Mediterranean region. For instance, maximum temperatures on summer days may increase by up to 7°C by the end of the 21st century compared to the recent past. Heatwaves provoke extra physiological stresses on the human body and cause excess mortality.

Urban centers are prone to the heat island effect, in which heat is trapped by narrow streets and pavements and human activities generate extra heat. Temperatures rise faster and reach higher extremes than in surrounding areas.



"We are finally starting to focus on heat waves, especially in urban"

Monitoring harmful UV rays and the ozone layer

Southern Hemisphere ozone hole area

million km²

Area of Antarctica

July August September October November December

Graph showing the annual formation of the Antarctic ozone hole. The data clearly show a trend in decreasing area of the ozone hole since the ban on halocarbons, although year-to-year variations can still be significantly large. Credit: Copernicus Atmosphere Monitoring Service, ECMWF.

The Antarctic ozone hole is usually at its largest between September and November, leading to more UV radiation reaching the ground.

The size and duration of the ozone hole changes from year to year. The Copernicus Atmosphere Monitoring Service (CAMS) monitors levels of stratospheric ozone and assesses the extent of the ozone hole.

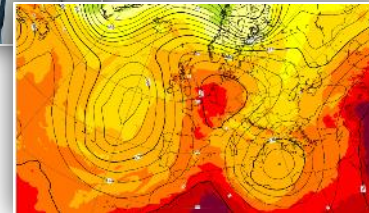
CAMS monitors the global 3D distribution of ozone in the atmosphere all year round and tracks the formation and development of the ozone hole. Credit: Copernicus

Horizon Europe (2022-2027)

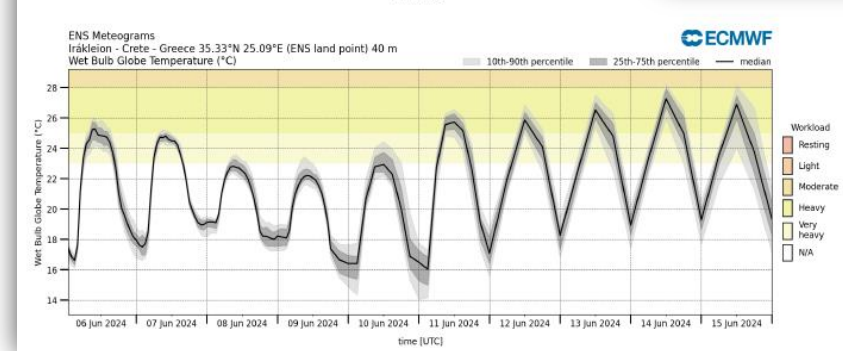
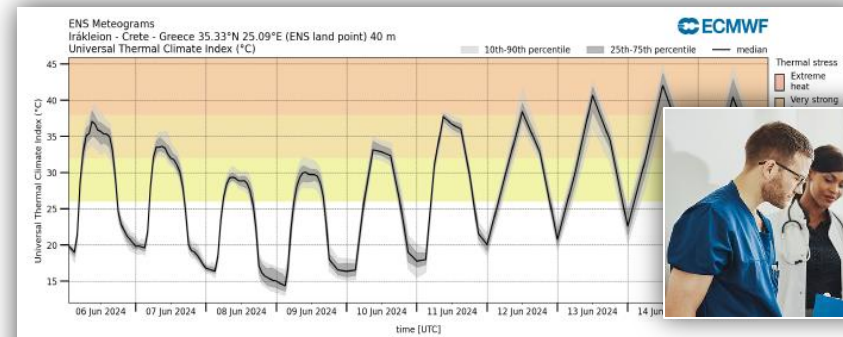
- ↳ Living labs to study climate and weather impacts on human health
- ↳ Part of the European Climate-Health Cluster

ECMWF: Process, quality control and store:

- ↳ Observations collected at the labs
- ↳ Forecasts (e.g. upcoming extreme weather event, such as heatwaves)



Universal Thermal Climate Index



Wet Bulb Globe Temperature

We are eager to hear your voice!

Share your stories on how you combine Copernicus data and health information.

Questions? Contact us!

