



Copernicus in support of public health

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DG DEFIS, European Commission



The EU Space Programme

EU SPACE PROGRAMME OVERVIEW



COPERNICUS

Earth Observation (EO) and monitoring based on satellite and non-space data

Nr.1 world provider of space data and information



GALILEO

Global satellite navigation and positioning system (GNSS)

10% of the EU GDP enabled by satellite navigation



EGNOS

Reliable navigation signals for safety of life use

Operational in 360+ airports & helipads in 23 countries



SSA

Space situational awareness monitoring and protecting space assets

Providing surveillance and tracking services to 210+ satellites

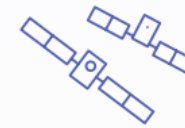


GOVSATCOM

Secure satellite communications for EU security actors

Delivering rapid support over crisis areas

AN INVESTMENT IN A FUTURE READY EUROPE



Competitive edge

Completing current satellite constellations, developing and launching the next-generation of satellites



Research innovation

Ambitious research and innovation programme benefiting from Horizon Europe



Fighting Climate Change

Monitoring biodiversity, environmental compliance and CO2 emissions (Paris Agreement)



EU as a global actor

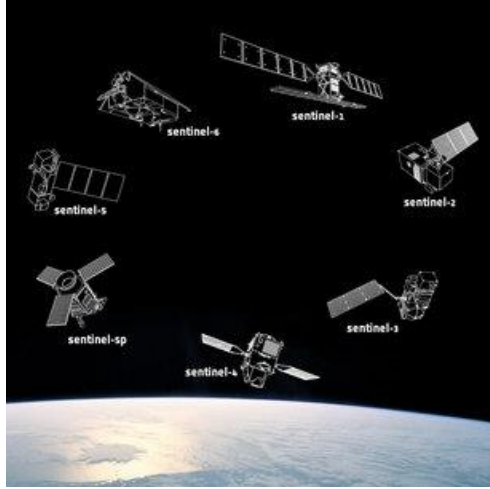
Supporting disaster relief, humanitarian assistance and security operations



European
Commission

COPERNICUS ARCHITECTURE

FULL,
FREE
AND
OPEN



Sentinels

6 services use Earth
Observation data to
deliver...



...added-value products



Contributing
missions





Copernicus

COPERNICUS IS DRIVEN BY THE USERS

CC

User Requirements: Strategic, Technical, Operational

CUF

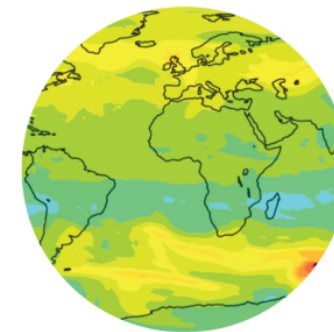
Copernicus
space and *in situ* data



Copernicus
Services



Downstream Services
"Copernicus Economy"



User
Uptake

Users

Data
sources

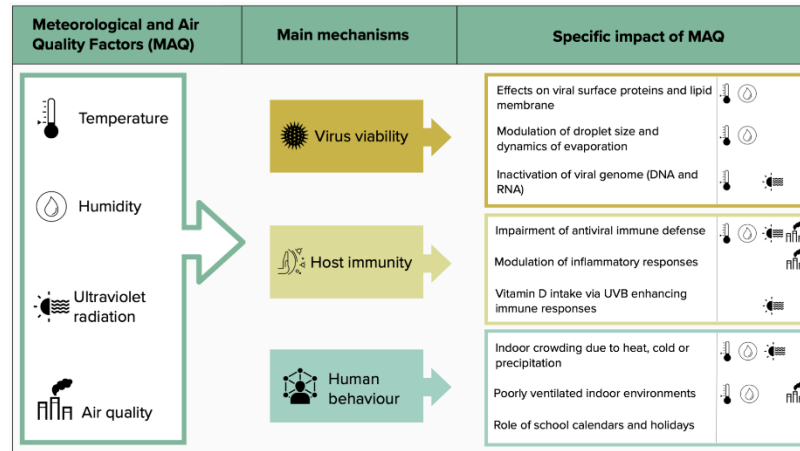
Service
Information

Value Added
Services and
Applications



COPERNICUS AND HEALTH

Contribution
to WMO
COVID-19
reports



Contribution to
Climate & Health
Observatory

European Climate and Health Observatory
Climate ADAPT
About - Policy context - Evidence on climate and health - Resource catalogue - Publications and outreach - News - Events
Evidence on climate and health - Projections and Tools - CAMS UV Index forecast

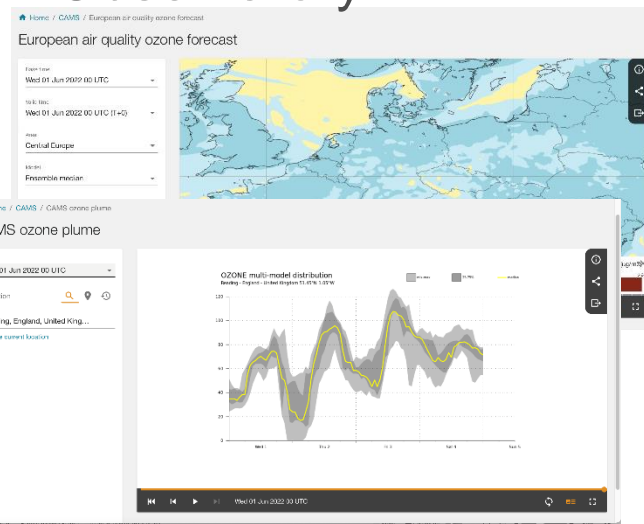
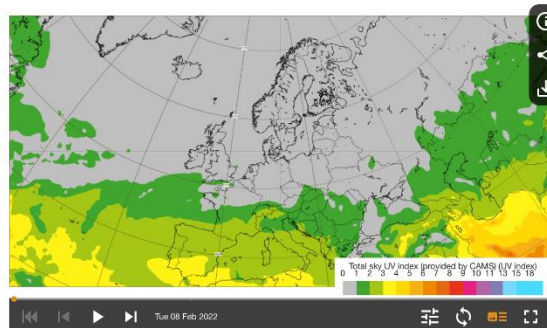
Four-day forecast of UV Index from Copernicus Atmosphere Monitoring Service (CAMS)

The viewer provides the maximum daily value of clear-sky and total-sky UV index (based on satellite data processed by CAMS and utilising WHO methodology) as an indication of the amount of the UV radiation across Europe forecasted for the next four days.

Use this icon to select the date, UV index and region of interest

Click on this icon to view the map in full screen mode

By clicking on the map, the UV index maximum values for a given location can be viewed, accompanied by a chart showing changes in hourly UV index values over the forecast period.



User stories



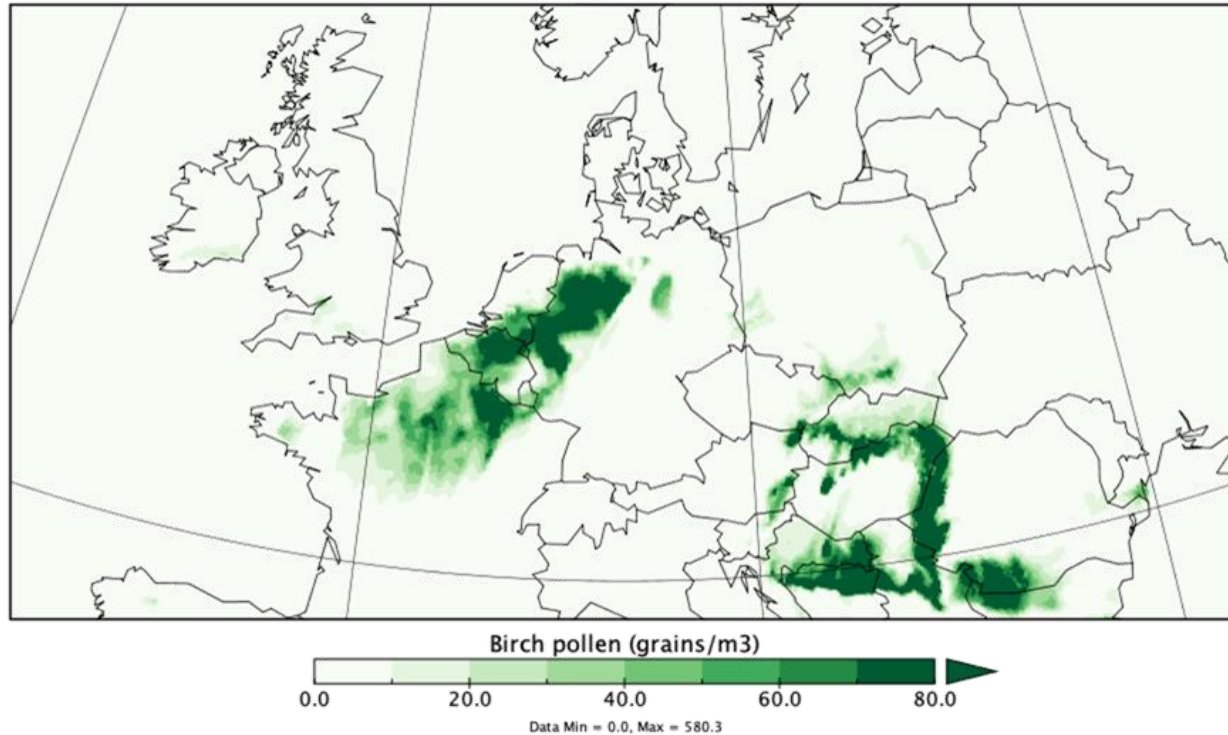
<https://stories.ecmwf.int/air-quality-climate-change-and-public-health/index.html>

Tracking the spread of vector-borne diseases

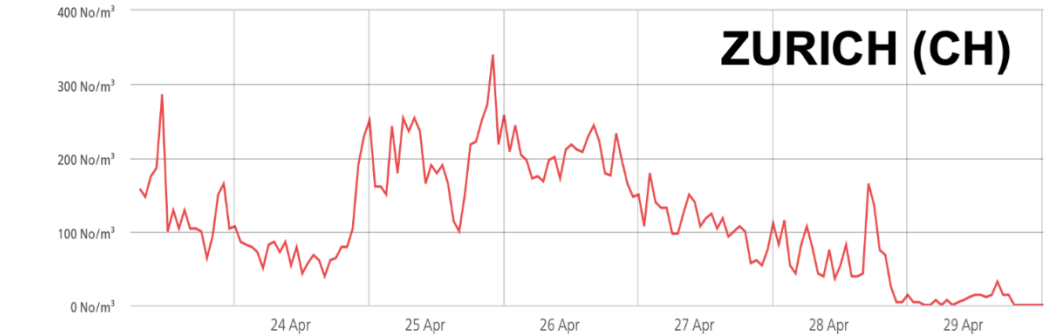
- Impacted by environmental factors such as rainfall, temperature, soil moisture, land use change, etc. Many relevant products can be found in the Copernicus service catalogue
- Expansion of vector habitats and distribution ranges of some vector-borne pathogens is expected due to climate change. C3S information includes:
 - Historic climate information from the ERA5 reanalysis dataset
 - Future climate projections from CMIP5 and Euro-Cordex initiatives
 - Seasonal forecasts
 - Datasets on specific climatic suitability indicators for some species
- Recent Lancet study on AI to predict West Nile Virus outbreaks in Europe

Pollen forecasts & NRT evaluation

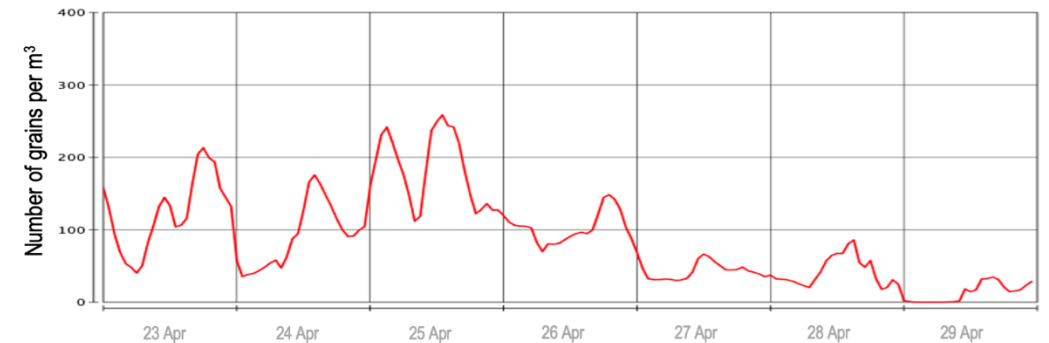
Birch pollen: forecast for 12 April 2021, 18h CET



MeteoSwiss / Eumetnet / Autopollen Birch pollen **OBSERVATIONS**



Copernicus / ECMWF / CAMS Birch pollen **FORECASTS**

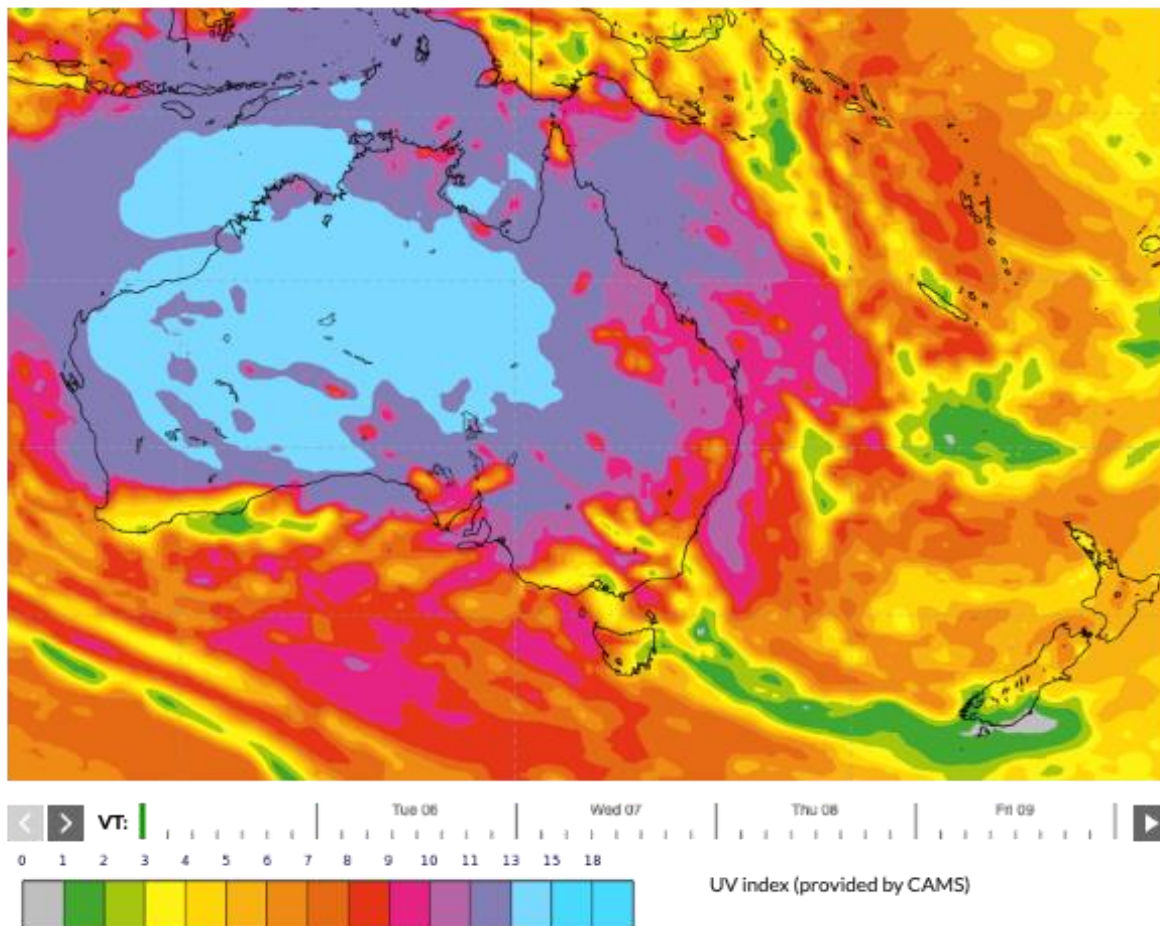


CAMS provides pollen forecasts for 6 species (alder, birch, grass, mugwort, olive, ragweed) with same technology as for AQ pollutants.

UV Index (interactive cloud, ozone & aerosol)

UV index (provided by CAMS)

Monday 5 Dec, 00 UTC T+3 Valid: Monday 5 Dec, 03 UTC

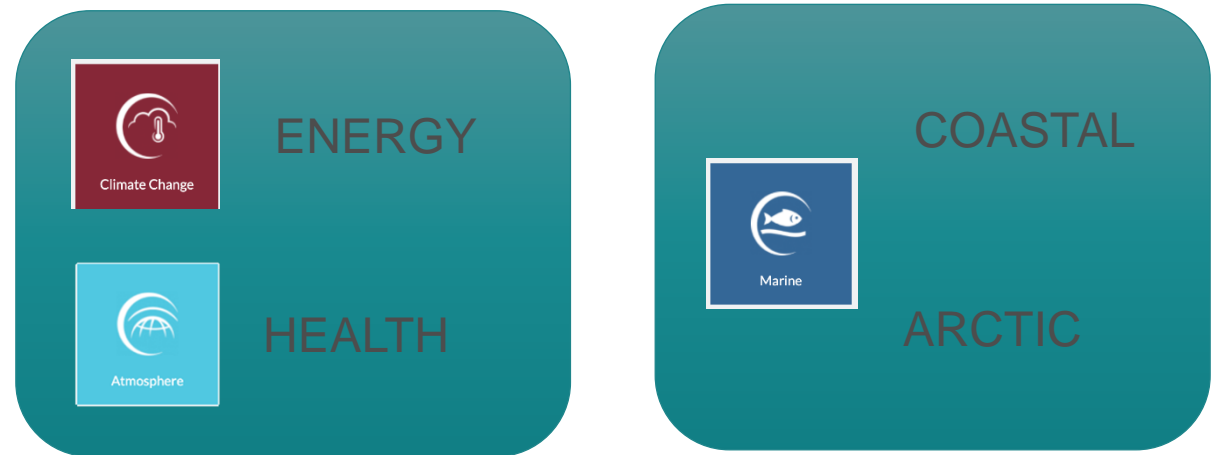


Many users worldwide, including WMO/WHO/UNEP

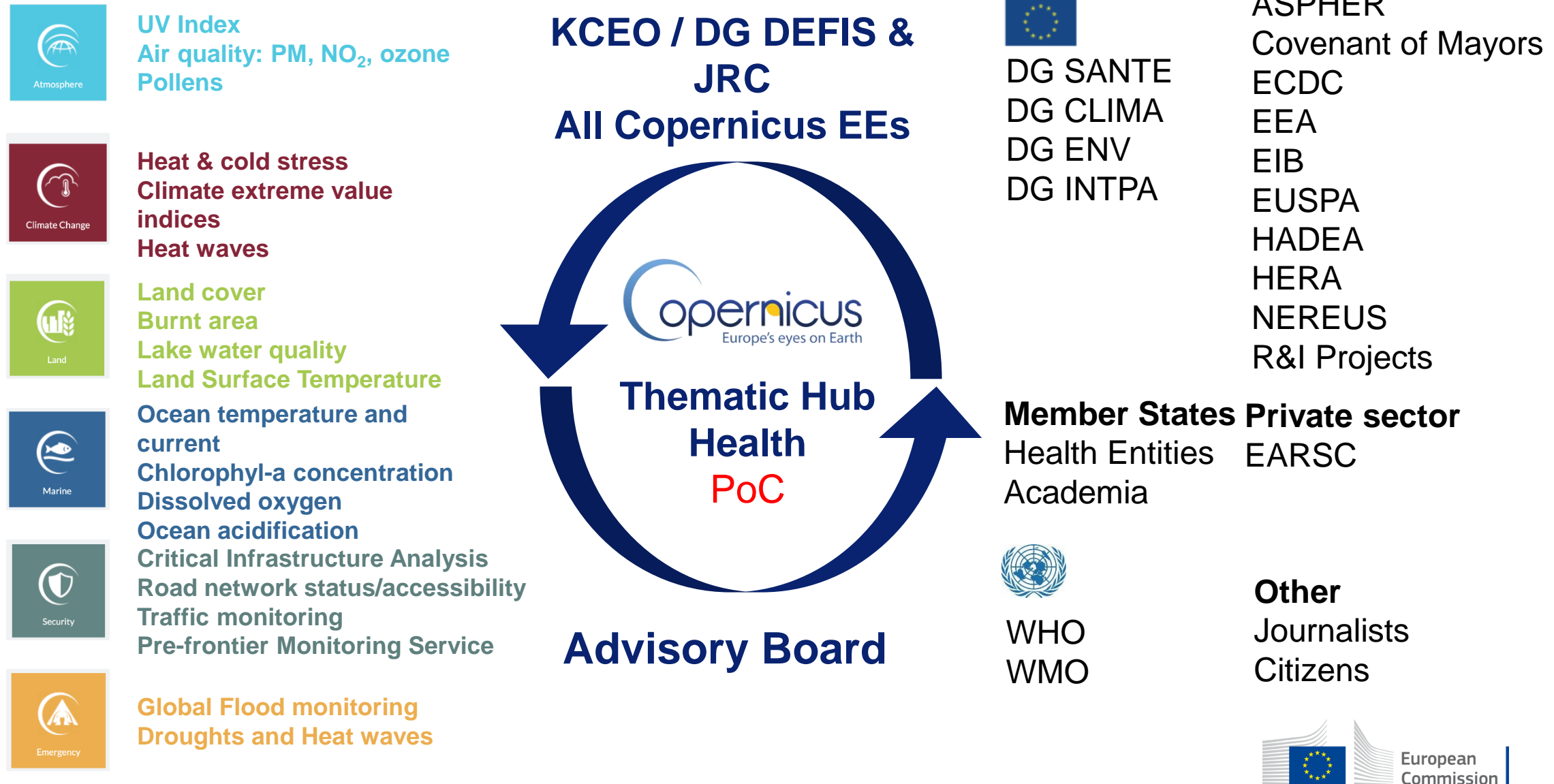


Copernicus Thematic Hubs

- **single entry point** for the ensemble of data, products and information generated by the Copernicus services and components (e.g. ESA and EUMETSAT) for **specific thematic or geographical areas**
- traceable back to specific EU policy needs
- **simplified access** to key information on selected areas of interest for various stakeholders, policy makers and users
- **incremental approach:**
 - > Proof-of-concept phase (1 year)
 - > Consolidation phase
- **3-step process:**
 - > contribution (all)
 - > collection (1 EE)
 - > coordination (KCEO)



PoC TH HEATH: PRELIMINARY SUPPLY / DEMAND MAPPING





Thank you!