WEkEO Essentials 2025

Post-event report

WEkEO Implemented by EUMETSAT MERCATOR OCEAN INTERNATIONAL ECMWF European Environment Agency Funded by

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SUMMARY

Introduction

Here you will find answers to the questions we were unable to address during the WEkEO Essentials webinar series held on May 13th, 20th, and 27th, 2025, due to time constraints. Over 60 questions were submitted during the first session alone.
Please note that many of the questions were quite similar, so we have grouped them by topic and provided summarized responses.
Thank you once again for your participation, and we look forward to seeing you on May 20th for the second webinar in the series: **Navigate Copernicus Data!**

General questions

The Copernicus WEkEO data are freely available for access, download and visualization. You can find global data at low and mid-resolutions, as well as higher resolution data specifically for Europe. This is made possible through Copernicus, a program funded by the European Union.

You can find data from all of the 5 Copernicus Services, for all types of use:

- Copernicus Atmosphere: Atmosphere | Copernicus
- Copernicus Marine: Marine | Copernicus
- Copernicus Land: Land | Copernicus
- Copernicus Climate Change: Climate change | Copernicus
- Copernicus Emergency: Emergency | Copernicus

Data & products

To get a better idea of all data and products available through Copernicus WEkEO, you can have a look at the Expert Data Viewer: Data viewer | WEkEO.
It allows you to:

- check the full catalogue of available data
- read the exact description of each product
- visualize them on a map
- download them after selecting the product(s) you are interested in

Downloading the data

To learn more on how to download the data (wms, api, etc.), you can read this article from the help centre: How to download WEkEO data? | WEkEO Help Center
It details all the steps to download data:

- With the Viewer
- Via HDA – API

It also shows the error messages you might get and how to correct them.

Virtual machines and Jupyter Notebooks Catalogue

WEkEO paid subscription & virtual machines: Computing | WEkEO

Jupyter Notebooks catalogue : Jupyter Catalog (wekeo2.eu)

Calculation and specific parameters

There were several questions asked about the different ways to calculate certain parameters, the impact of a phenomenon on the environment and so on for your projects. We invite you to look for research papers that will provide you with a full description of their working methods and the calculations/models/data they use.
You can have a look on ResearchGate, Connected Papers, Google Scholar and many others.

Session #1 Explore Copernicus – 13 May 2025

General questions

- Is the Copernicus service interconnected somehow with new developing Digital twin platform? For example, climate data?

- How WEkEO compares to a service like openEO? OpenEO allows for combining different data collections which is then harmonized and stored as a cube.

- What does the word WEkEO stand for?

The name WEkEO (pronounced [wikio]) first refers to the image of the Wikipedia reference portal and also brings up the idea of a collaborative platform where the first syllable "WE" involves the 4 centres (EUMETSAT, ECMWF, EEA, and MERCATOR OCEAN international) together with all WEkEO's users. It also refers to the way the WEkEO platform is built with a distributed architecture. The letter "k" is synonymous of Knowledge here. Finally, "EO" stands for "Earth Observation" and for "Environment Observatory".

- How are the datasets served to the frontend? What type of server API is used for WEkEO ?

The datasets are served to the frontend using WMTS (Web Map Tile Service). However, this might vary depending on the dataset.

WEkEO also provides WMS/WMTS links, enabling users to access data directly via compatible tools or platforms.

WEkEO Products Overview & WEKEO Viewers

WEkEO Catalogue: Data Viewer - WEkEO

- What are the main differences between this WEkEO Viewer and the « MyOceanPro Viewer » from Copernicus Marine?

The WEkEO Viewer contains data from 5 of the Copernicus Services. The MyOceanPro Viewer only has Copernicus Marine Service data available.

- Are the datasets in the light Data viewer the same as in the expert Data Viewer? I made a simple selection of "total precipitation" and couldn't find it in expert

The **WEkEO Light Viewer** is a new tool of the WEkEO platform, designed with simplicity in mind, making it the perfect starting point for beginners. It comes with a predefined set of commonly used variables, allowing new users to explore and visualize Earth Observation data quickly and effortlessly. Find more here: Introduction to the WEkEO Light Viewer | WEkEO Help Center

The source is the same, but the selection is not. The light viewer is just a small selection of key variables from key datasets that are available in the full catalogue (the Expert Data Viewer). The goal of the light viewer is to highlight and introduce WEkEO, with some of the most popular variables. The ones shown in the Light Viewer are also available in the Expert Viewer, but they will be a specific variable from a specific dataset. In this case, the precipitation product of the light viewer comes from the hourly ERA5 products. To find it in the Expert viewer, filter by the service C3S (Climate), and also click on the "viewable" filter option. The dataset is called: "ERA5 hourly data on single levels from 1940 to present"

- Data in Grib format & .SAFE files:

Observation Domain	Data Format
Atmosphere	GRIB and NetCDF* in `.zip`
Climate Change	GRIB and NetCDF*
Emergency	GRIB and NetCDF in `.zip`
Land	GRIB, GeoTIFF and NetCDF* in `.zip`
Marine	NetCDF
Sentinel	NetCDF, `.SEN3`, `.SEN6`, `.SAFE` in `.zip`**

You can read this Help Centre article to learn more about Copernicus data formats: In which format the WEkEO data are delivered? | WEkEO Help Center

- Can I upload a polygon (shp) and perform zonal statistics (e.g. with ndvi or temperature products) currently? If I can't do it in viewer, is there any other way?

It is currently not possible to use Shapefile to study and download data. But it could be a nice upgrade to WEkEO so we will keep this in mind.

- For the world maps of meteo parameteres, aren't there available isothermes, isobares, level curves? A legend of colours would help

At the moment, there are no weather maps available (in the form of isobar or isotherm maps), but rather products like atmospheric composition forecasts, air quality forecasts, and reanalyses. Oftentimes structured by height levels, pressure levels, or single levels. However, do not hesitate to contact the user support team through the chat widget on the website to enquire about more specific datasets (they can reach out to experts from the different entities providing data), as well as providing feedback on datasets that you would like to see incldued in WEkEO.

- When I browse the WEKEO library, can I also see the public data offered by Google Earth Engine Data catalogue, NASA, and others? and import QGIS into it?

In WEkEO you will only see the products that are offered within the platfrom, which are mainly related to Copernicus. There is no functionality to import QGIS projects or data into WEKEO.

- Can you change the map projection used in the data viewer? For many datasets a more equal area projection would be more appropriate

It is not possible to select another projection in the download process. However, you can use the **EOcanvas function to reproject your data before downloading**. This might take a bit more time than the direct download, but you will not have to reproject the data on your local machine. We encourage you to join the 27th May webinar to learn more about EOCanvas.

Session #2 Navigate Copernicus data – 20 May 2025

- What is the main difference between the WEkEO platform and the other DIAS platforms such as CREODIAS, ONDA, and Mundi?

WEkEO is the DIAS platform specifically operated by the Copernicus core service providers (EUMETSAT, ECMWF, Mercator Ocean) and is uniquely focused on providing integrated access to Copernicus environmental data and services (e.g., climate, marine, and atmosphere). In contrast, CREODIAS, ONDA, and Mundi are industry-operated platforms centered around large-scale access to satellite data and cloud computing, catering more broadly to commercial and technical users.

WEkEO stands out for its strong support for scientific and policy-related applications, while the others offer flexible infrastructure for custom Earth observation solutions.

- Does WEkEO offer any Analysis Ready Data pre-processed & standardized EO data ready for immediate analysis?

Yes, WEkEO offers Analysis Ready Data (ARD) through its Copernicus core service products, which are pre-processed, standardized, and ready for immediate analysis. These include datasets from the marine, atmosphere, and climate services (e.g., CMEMS, CAMS, C3S), making WEkEO especially useful for users who need ready-to-use environmental data without complex preprocessing. You can browse through the product catalogue here: Data Viewer - WEkEO

Thanks again for your participation 😊