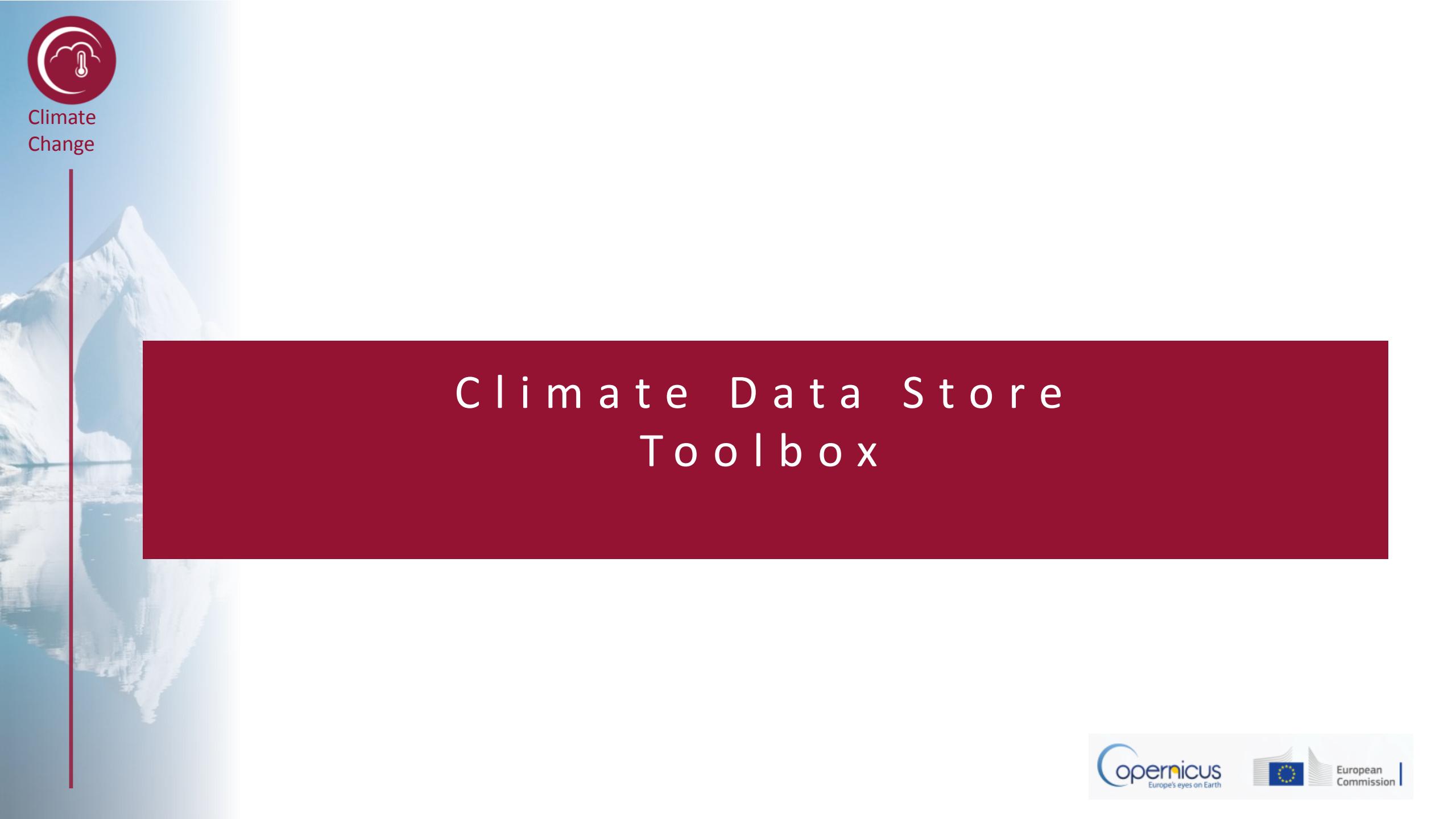




Climate  
Change

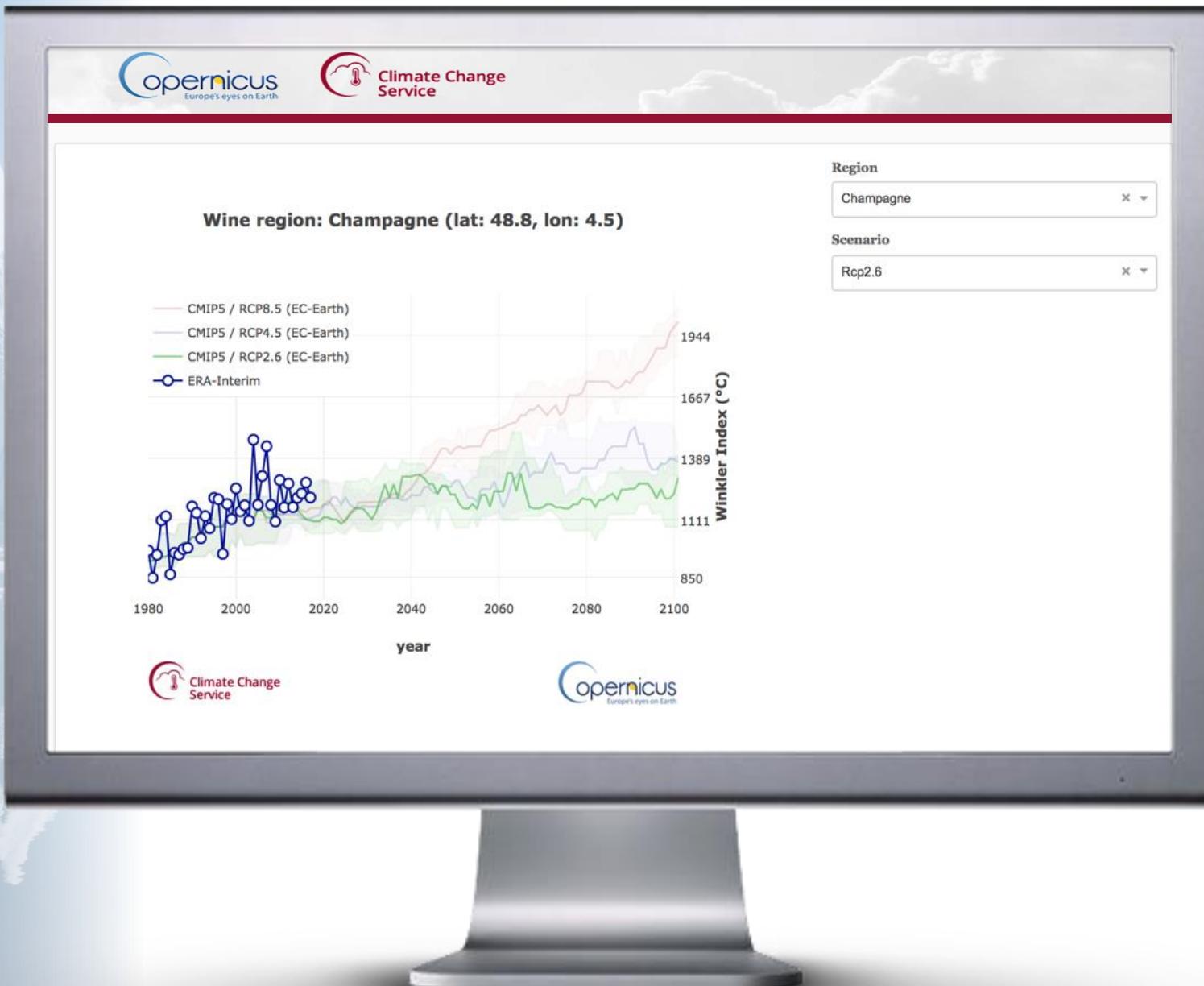


# Climate Data Store Toolbox



# Climate Data Store - Toolbox

Climate  
Change



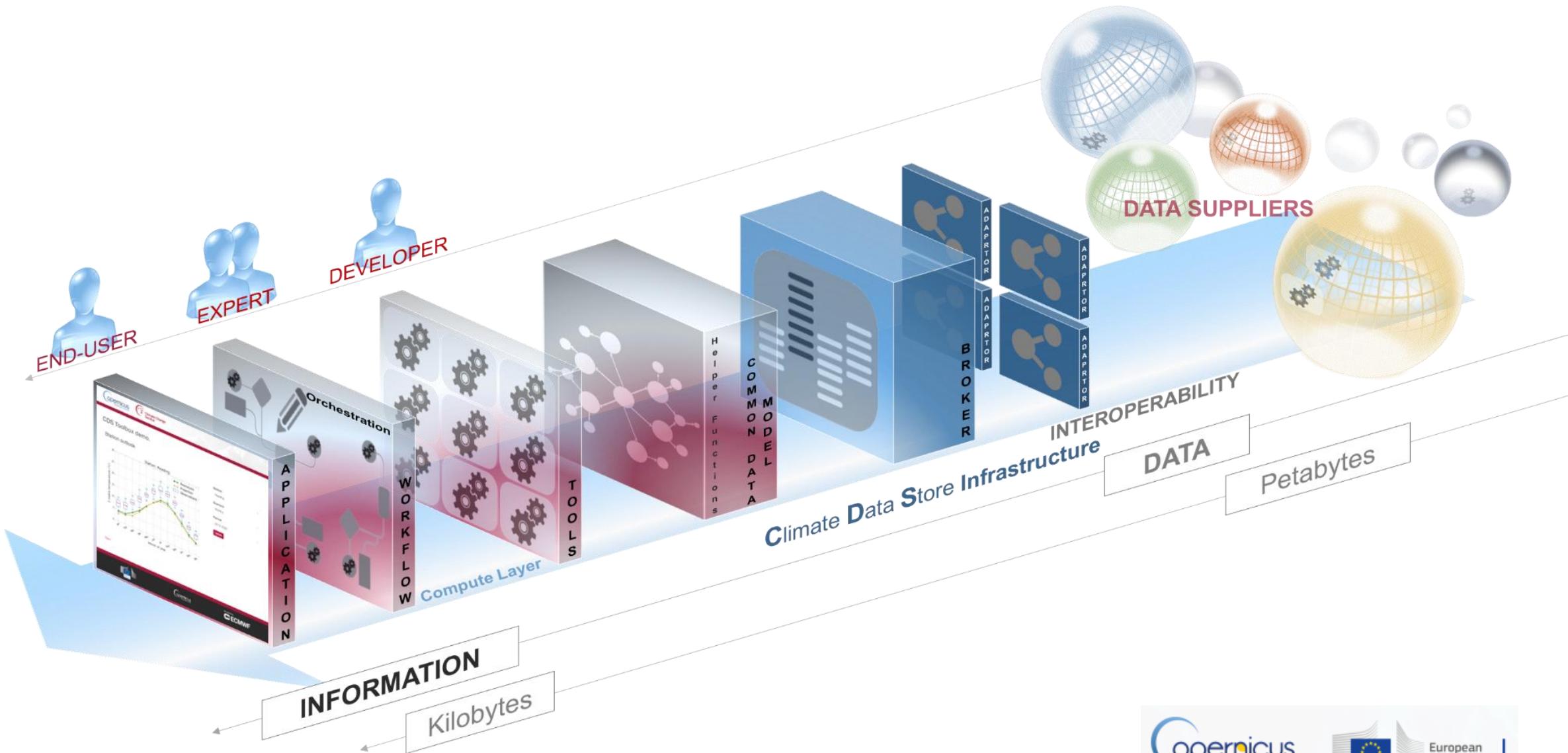
## Toolbox:

The CDS provides an authoritative set of software that will allow users to develop applications that will make use of the content of the CDS



# Climate Data Store - Toolbox

Climate  
Change

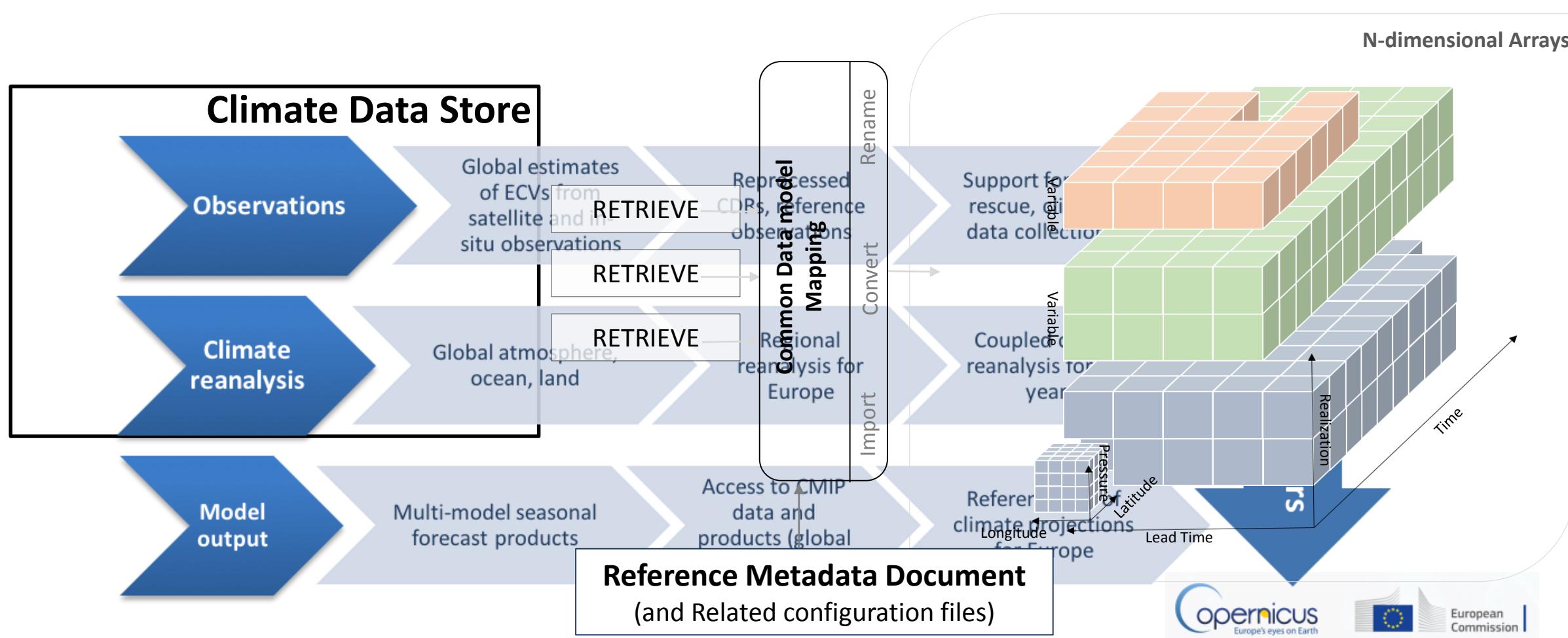




# Climate Data Store - Toolbox

Climate  
Change

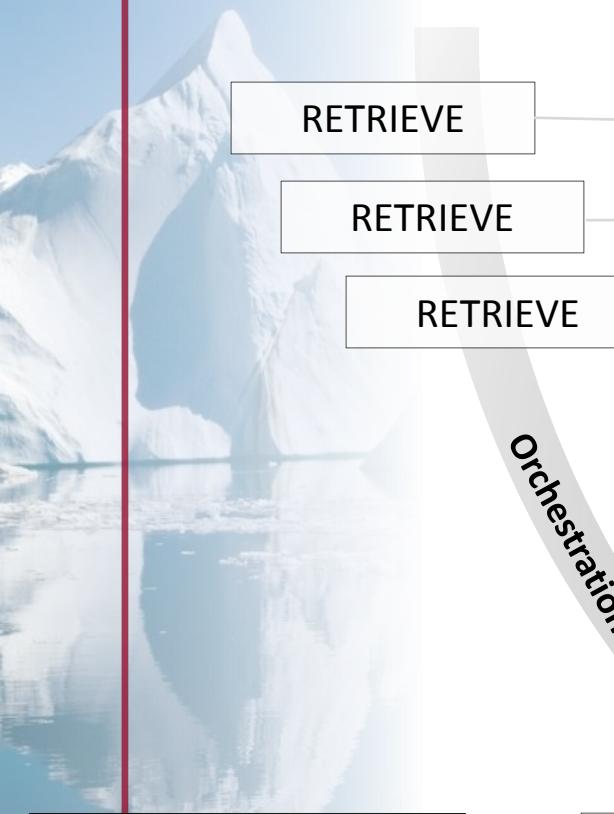
The purpose of the Common Data Model (CDM) is to provide a uniformed description (conventions, structures, formats etc.) of all data and products in the CDS, so that they can be combined and processed by the Toolbox in a consistent fashion



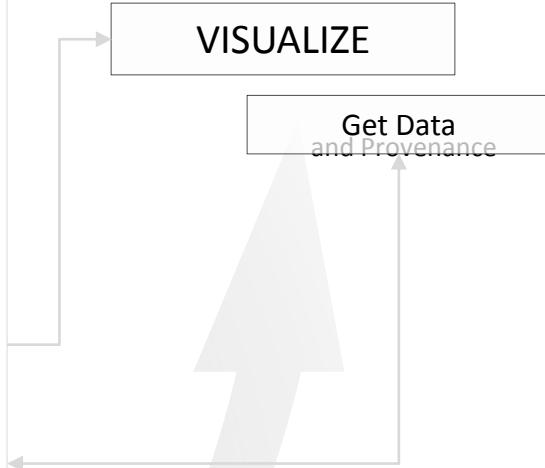
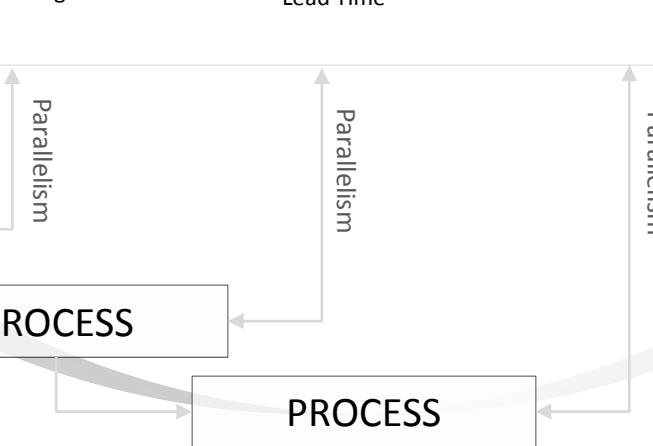
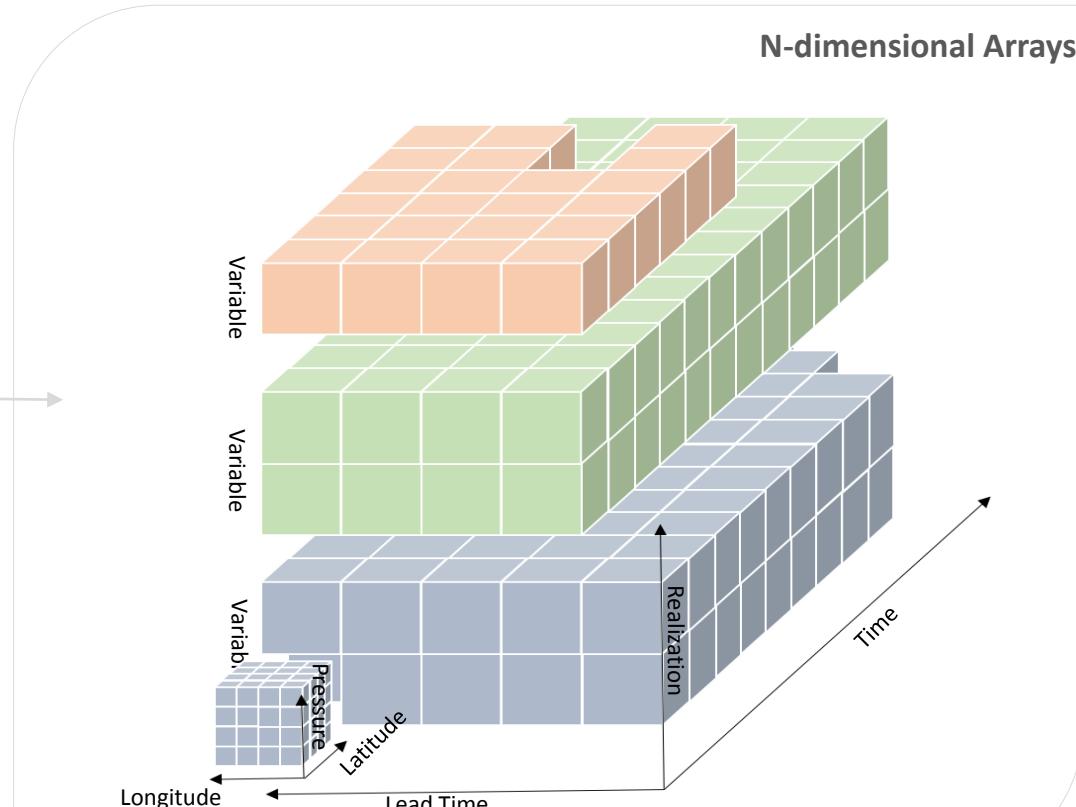


# Climate Data Store - Toolbox

Climate  
Change



WORKFLOW  
EXECUTION





# Climate Data Store - Toolbox

Climate  
Change

The screenshot shows the Climate Data Store - Toolbox interface. On the left, there's a sidebar with the Copernicus logo and a mountain image. The main area has two tabs: 'Toolbox Editor' and 'Generated Application'. The 'Toolbox Editor' tab shows a sidebar with 'Applications' (demo, examples), 'Data' (Wine Regions, Station Outlook, Seasonal Outlook, Infrastructure Planning, Forecast Evaluation, Download), and 'Documentation' (e.g., 01 Retrieve Download). The 'Generated Application' tab shows a 'Console' window with Python code for generating a Winkler Index chart for Champagne. The code includes imports, variable definitions, and a plot function. Below the code is a note: 'Wine Regions (build: 4d2037c6143c3591978f23054a30f60a25ab3c74)'. The generated chart is titled 'Wine region: Champagne (lat: 48.8, lon: 4.5)' and displays the Winkler Index from 1980 to 2100 for four scenarios: CMIP5 / RCP8.5 (EC-Earth), CMIP5 / RCP4.5 (EC-Earth), CMIP5 / RCP2.6 (EC-Earth), and ERA-Interim. The chart shows a clear upward trend in the Winkler Index over time.



## Application creation Functions



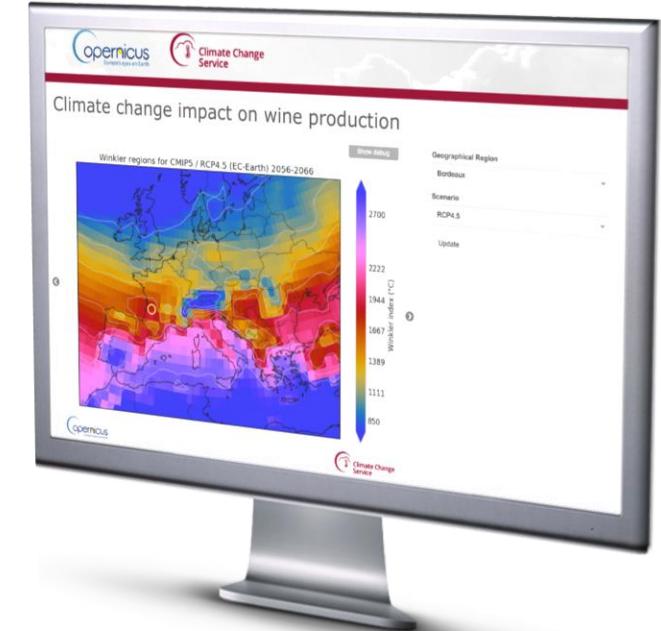
Climate  
Change

# Climate Data Store - Toolbox

The screenshot shows the Climate Data Store - Toolbox interface. At the top, there are two logos: Copernicus (Europe's eyes on Earth) and Climate Change Service. Below them is a large image of a snowy mountain landscape.

The main area is divided into several sections:

- Toolbox Editor:** A sidebar on the left containing a tree view of available applications, data, and documentation. Applications include demo, Wine Regions, Station Outlook, Seasonal Outlook, Infrastructure Planning, Forecast Evaluation, Download, examples, 01 Retrieve Download, 02 Plot 2D, 03 Plot 1D, 04 Plot Location, 05 Retrieve and Plot, 05a Retrieve ERAS Daily, 05b Retrieve ERAS Moda, 05c Retrieve CDR, 05d Retrieve ICOR, 11 Mean Standard Deviation, 12 Climatology, 21 Anomaly, 22 Anomaly Time Reference, 23 Anomaly Climatology Reference, 31 Trends, 41 Regrid, 51 Indices GDD, 52 Indices CSU.
- Code Editor:** A central window titled "Wine Regions" showing Python code. The code imports various libraries like typing, cartopy, matplotlib, numpy, and xarray, and defines Winkler index parameters, boundaries, colors, and processing parameters. It also includes a color map definition and calibration intervals.
- Map Visualization:** A bottom section showing a map of Europe with color-coded Winkler regions. A color scale on the right indicates the Winkler index (above 10°C) in degrees Celsius, ranging from 850 (blue) to 2700 (red). The map is labeled "Winkler regions for ERA-Interim 1979-1986".
- Toolbox Footer:** Logos for Copernicus (Europe's eyes on Earth) and Climate Change Service.



## Application creation Functions