Thermal Assessment Tool

CLIMATE CHANGE DASHBOARDS FOR DECISION MAKERS



An easy-to-use Thermal Assessment Tool has been developed within the Climate Change Dashboards for Decision Makers demo case contract to visualise complex climate data regarding the impact of hot and cold weather. The tool will support public health and urban planning managers, climate change researchers, and other stakeholders to visualise past and future climate trends and make appropriate decisions.



1. Background

Climate change may lead to an increase in the number and intensity of extreme weather events, including heatwaves and cold snaps. These may bring temperatures that are significantly warmer or colder than average that may cause impacts such as thermal discomfort, lack of productivity, more energy consumption and health problems.

To reduce or at least mitigate these impacts, governments need added-value information regarding the risks of extreme temperatures to take proper decisions to prepare, protect and prevent the city and citizens.

2. Solution

For this purpose, the easy-to-use Thermal Assessment Tool shows the magnitude of extreme temperature events. It provides a customised panel that allows users to visualise heatwaves, cold snaps and thermal comfort based on longterm projections and seasonal forecasts. The tool also presents an interactive map and a time series visualisation identifying the magnitude of the three variables. This reduces the need for repetitive complex climate data analysis, thereby saving time and effort in the decision making process. Information on the frequency and severity of future extreme temperature events can also assist with planning.





User-selectable parameters and graphical outcomes:

- Variables: maximum temperature, minimum temperature, heatwaves, cold snaps, mean radiant temperature (MRT) and thermal comfort through the physiological equivalent temperature (PET) index.
- Time scale: past 30 years (yearly data), next six months (monthly data), next 90 years (multidecadal data).
- The tool shows historical, seasonal future and longterm future information related to cold snaps, heatwaves and thermal comfort. The timescale selection is possible via a dropdown menu.
- The interactive map of Spain displays the selected variables and shows administrative averages of temperature variables related to the chosen risk.

3. Conclusion

The Thermal Assessment Tool is based on the independent and authoritative Copernicus Climate Change Service (C3S) datasets, available through its Climate Data Store (CDS). The tool showcases how to analyse, process and simplify large volumes of data through different maps and plots that make it easier to understand climate indicators (about the past, present or future).

Local governments and other decision makers, as well as actors in housing development and management, urban planning, and insurance can refer to the tool to complement their usual information systems with additional quality assured insights that they can act on.



The Thermal-Assessment Tool is being developed as a demo case under a Copernicus Climate Change Service (C3S) contract. C3S is one of the six services of the EU's Copernicus Programme and is implemented by the European Centre for Medium-Range Weather Forecast (ECMWF) on behalf of the European Commission.

Find out more here:

https://climate.copernicus.eu/thermal-assessment-tool



Climate Change Service







