RESPONSIVE SCIENCE IN SUPPORT OF CLIMATE POLICYMAKING

Friday, August 29, 2025 Acropolis Museum, Athens, Greece

Climate change impacts in Greece

Gianna Kitsara

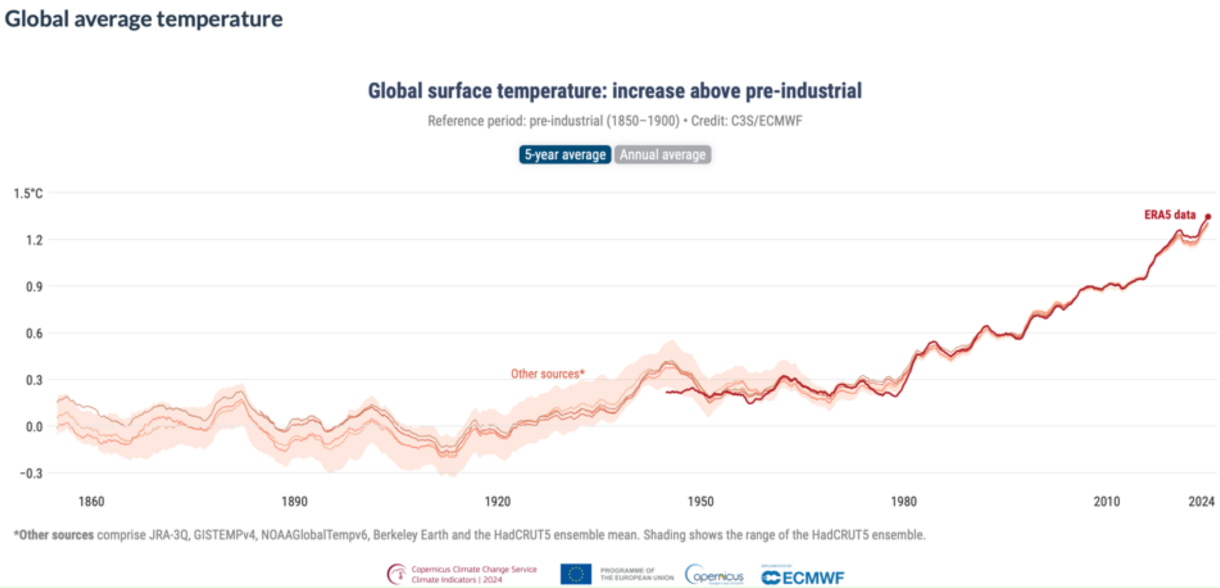
Research Fellow, PhD

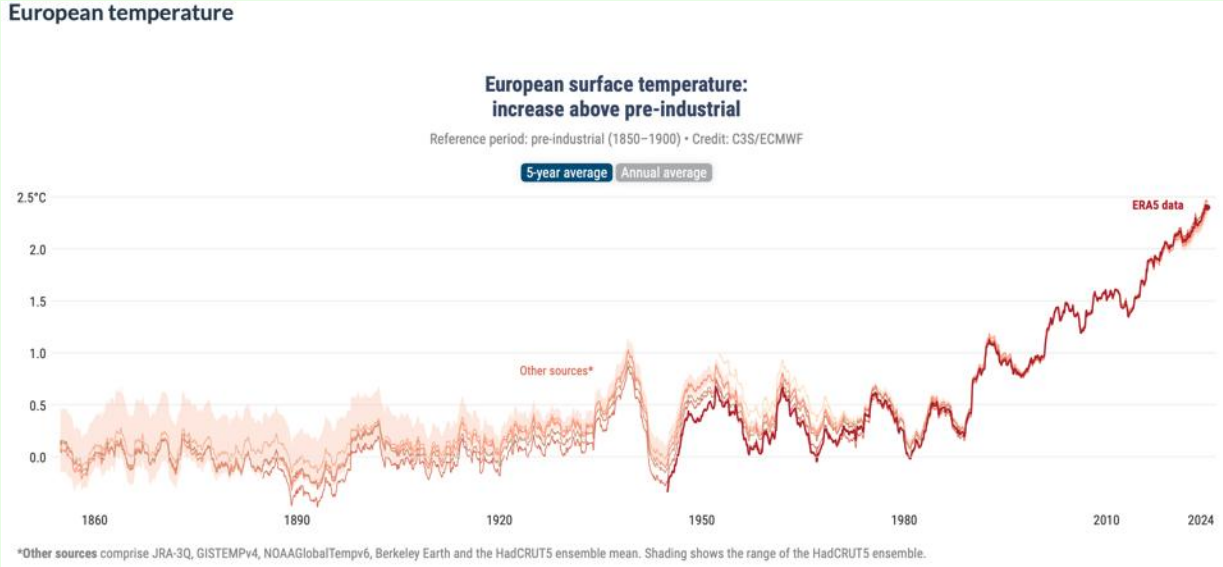
Institute for Environmental Research and Sustainable Development

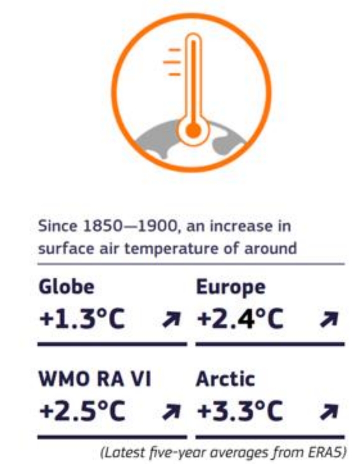
National Observatory of Athens

•Global surface air temperature Global surface air temperature has increased by between 1.3°C and 1.4°C since the pre-industrial era. (http://climate.copernicus.eu/climate-indicators/temperature)

•The latest five-year averages are the highest, or close to the highest, on record.







Past eight years were the warmest on record globally, with a temperature of about 1.15 °C above the pre-industrial levels. ([WMO, 2023](#))

Global temperature is likely to exceed 1.5°C above pre-industrial level temporarily in next 5 years ([WMO, 2024](#))

•The latest five-year averages are the highest, or close to the highest, on record.
•The temperature increase over Europe has been about 1°C higher than that for the globe as a whole.

Global-Europe Temperatures

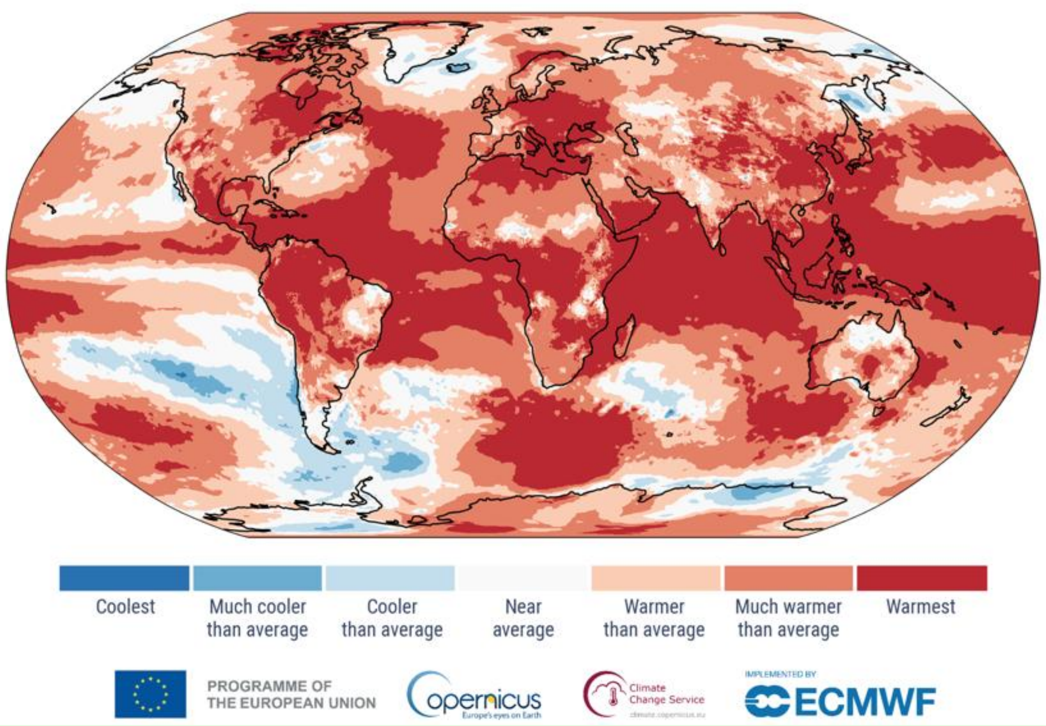
2024 **the first year with an average temperature clearly exceeding 1.5°C above the pre-industrial level –**
a threshold set by the Paris Agreement to significantly *reduce the risks and impacts of climate change.*

Key temperature statistics for 2024

Region	Anomaly (vs 1991–2020)	Actual temperature	Rank (out of 85 years)
Globe	**+0.72°C** (+1.60°C vs pre-industrial)	15.10°C	**1st highest** 2nd - 2023
Europe	**+1.47°C**	10.69°C	**1st highest** 2nd - 2020
Arctic	**+1.34°C**	-11.37°C	**4th highest** 1st - 2016
Extra-polar ocean	**+0.51°C**	20.87°C	**1st highest** 2nd - 2023

Anomalies and extremes in surface air temperature in 2024

Data: ERA5 1979–2024 • Reference period: 1991–2020 • Credit: C3S/ECMWF



Multiple **global records were broken** for
- **greenhouse gas levels,**
- **air temperature**
- **sea surface temperature,**

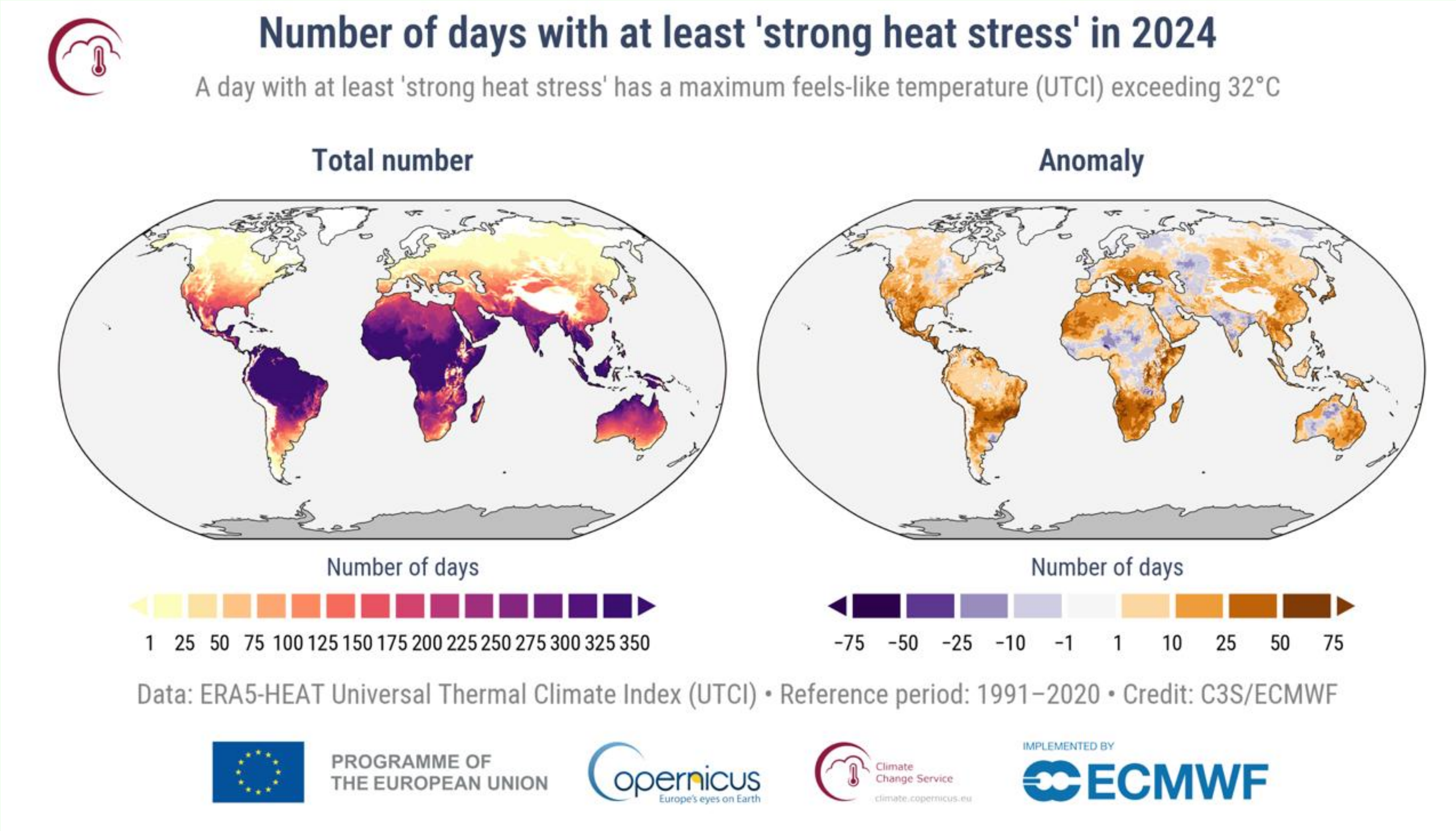
contributing to
- **extreme events, floods, heatwaves and wildfires.**

These data highlight the accelerating impacts of human-caused climate change.

https://climate.copernicus.eu/global-climate-highlights-2024

Global-Europe

Heat stress

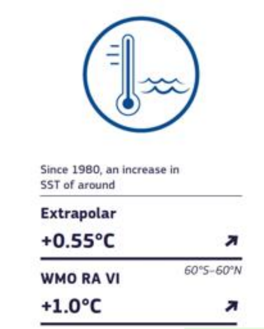


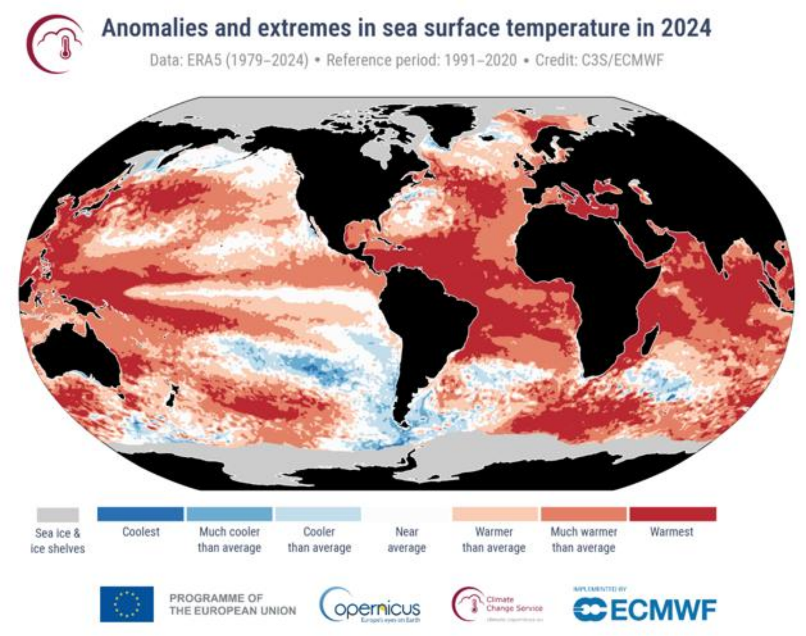
Number of days in 2024 during which at least 'strong heat stress' was experienced, based on the daily maximum feels-like temperature exceeding 32°C. Left: Total number of days. Right: Anomalies in the number of days, relative to the average for the 1991–2020 reference period. Feels-like temperature based on the Universal Thermal Climate Index (UTCI).

Global-Europe

Sea Surface Temperature

Sea Level Rise





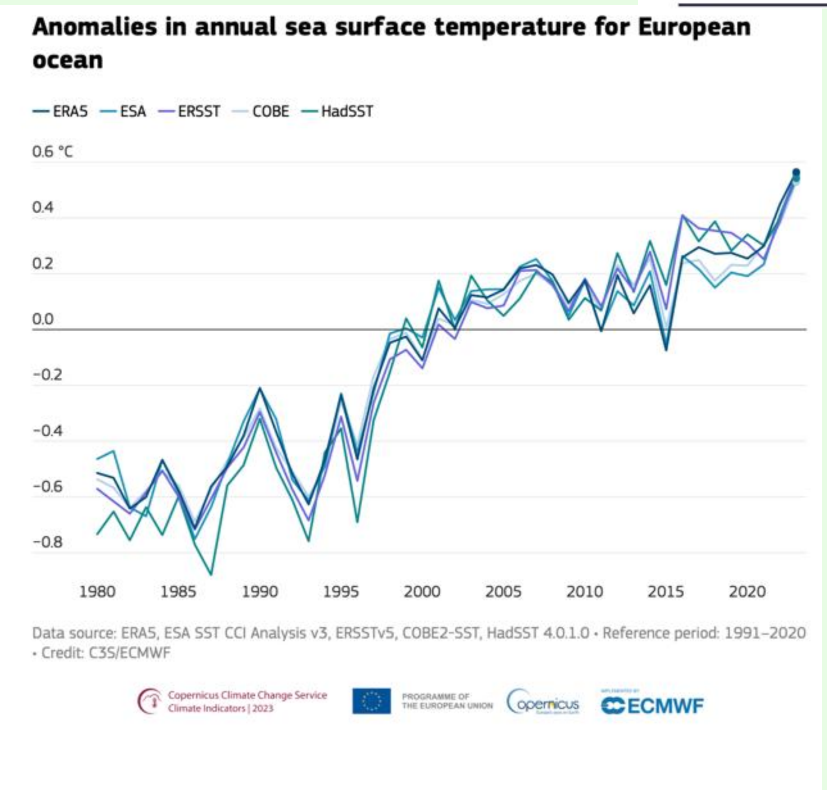


Figure 3. Annual average SST anomalies (°C), relative to the average for the 1991–2020 reference period, for the European ocean domain (WMO Region VI). Data source: ERA5, ESA

European seas, annual SSTs reached record highs in the central and eastern Mediterranean Sea, the Black Sea, and the Norwegian Sea.
All areas with record annual SSTs experienced marine heatwaves of at least category II ('strong') at some point during the year.

- **sea level** for most of the **European seas**, has risen by **2–4 mm/year** on average over the past 30 years.

The **European average SST** for 2019–2023 is about 1.1°C above the 1880–1900 average and about 0.4°C above the average for the 1991–2020 reference period.

The total Europe's SST increase since 1980 has been around 1.1°C.

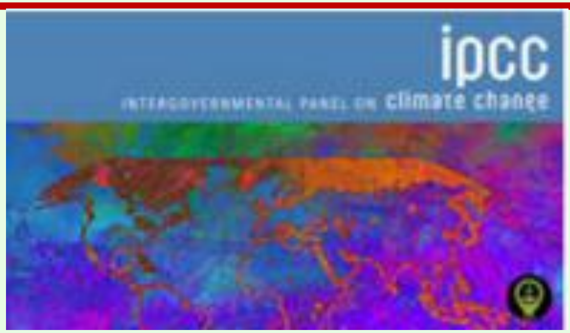
https://climate.copernicus.eu/global-climate-highlights-2024,
https://climate.copernicus.eu/global-climate-highlights-2023

https://climate.copernicus.eu/climate-indicators

• Possible Climate Futures

(IPCC, 2021)

https://www.ipcc.ch/report/sixth-assessment-report-working-group-i/



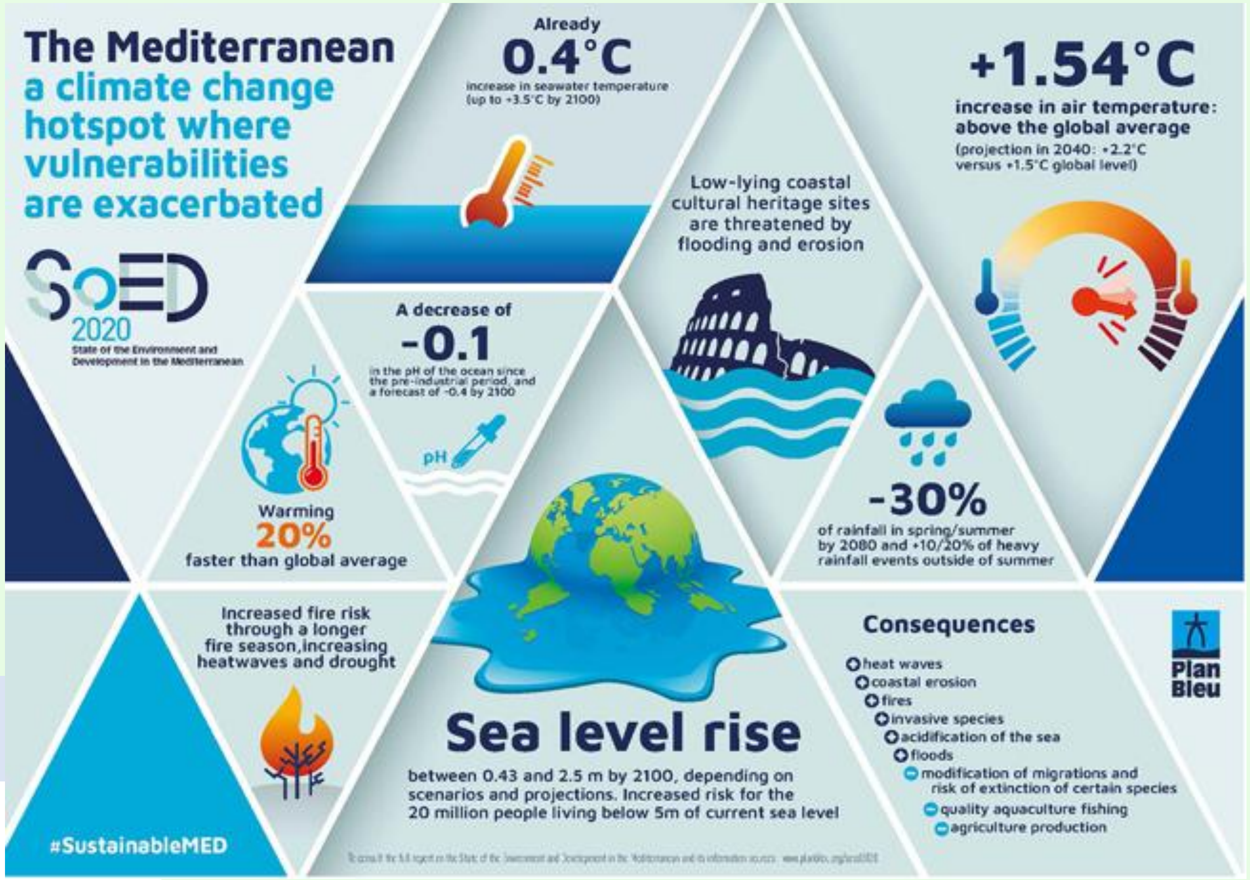
•B1. **Global surface temperature will continue to increase until at least mid-century under all emissions scenarios considered.**

Global warming of 1.5°C and 2°C will be exceeded during the21st century unless reductions in CO_2 and other greenhouse gas emissions occur in the coming decades.

https://www.unep.org/unepmap/resources/factsheets/climate-change

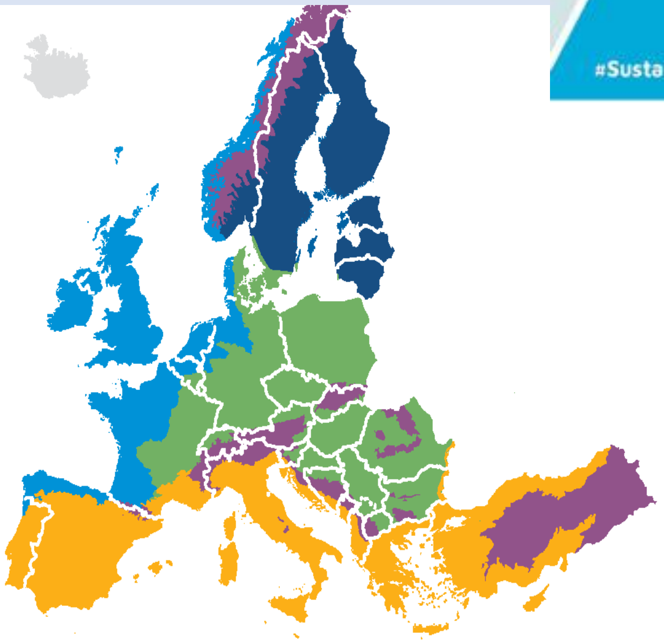
https://www.medecc.org/wp-content/uploads/2021/05/MedECC_MAR1_2_Drivers-of-change.pdf

MedECC
Mediterranean Experts on Climate and environmental Change

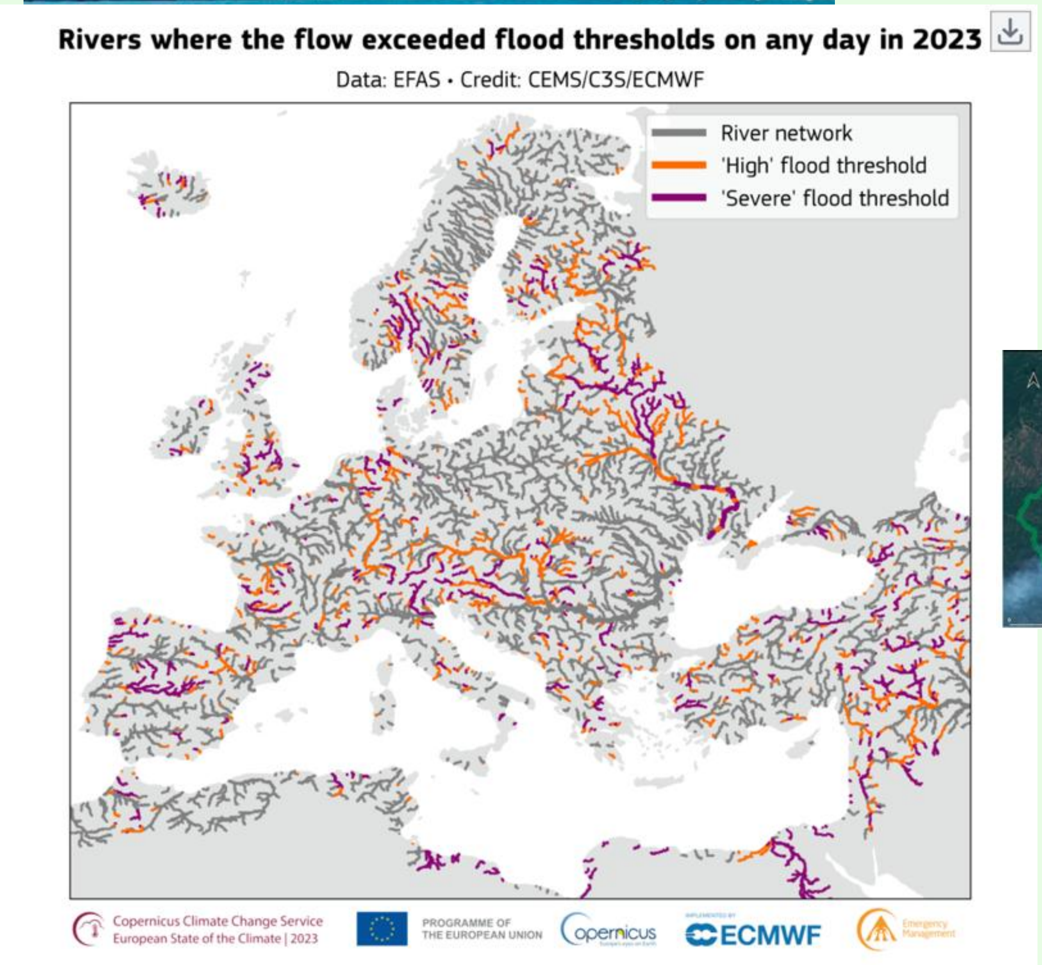


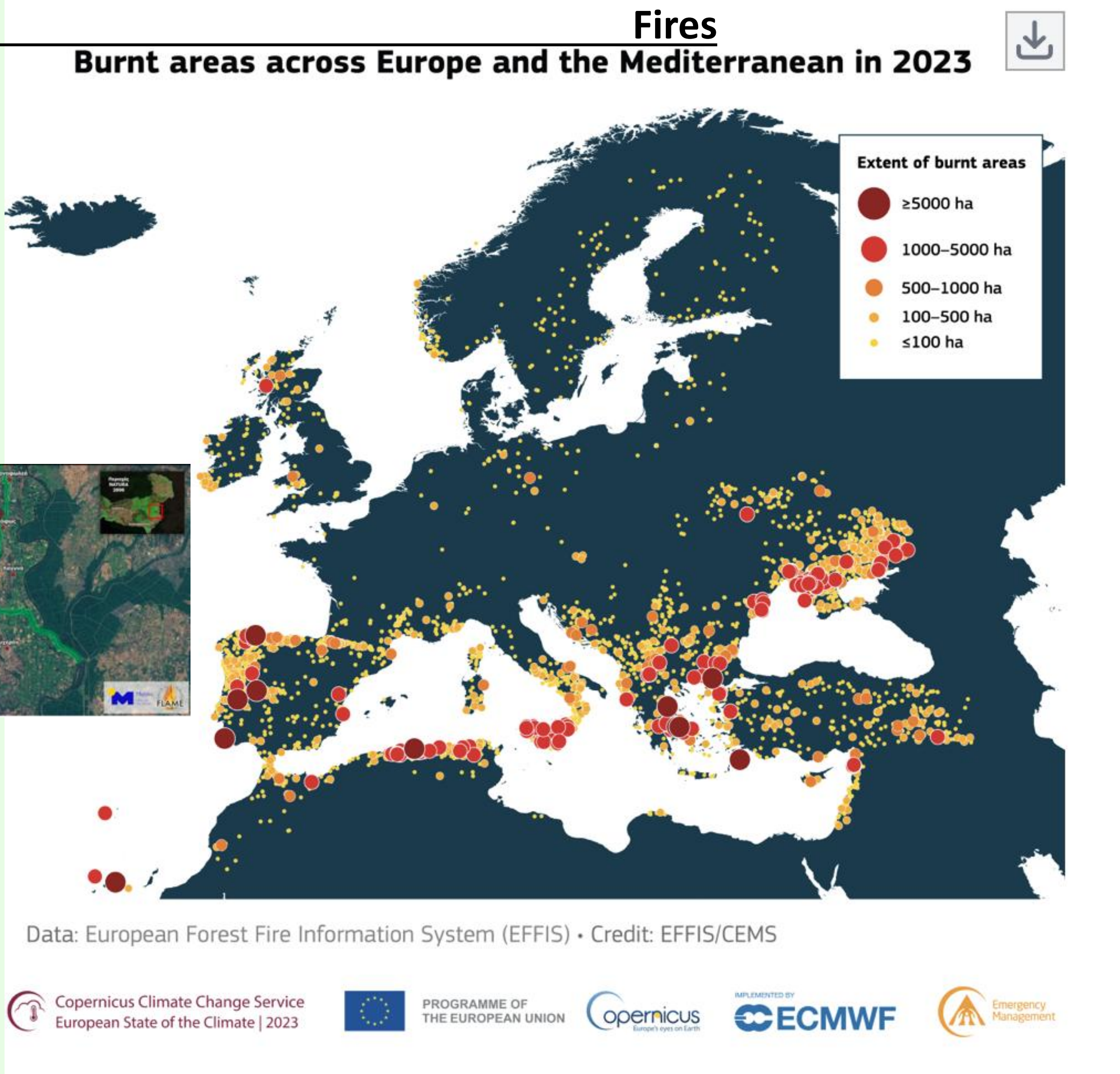
Impacts of Climate Change in the Mediterranean

Mediterranean region
- Large increase in heat extremes
- Decrease in precipitation and river flow
- Increasing risk of droughts
- Increasing risk of biodiversity loss
- Increasing risk of forest fires
- Increased competition between different water users
- Increasing water demand for agriculture
- Decrease in crop yields
- Increasing risks for livestock production
- Increase in mortality from heat waves
- Expansion of habitats for southern disease vectors
- Decreasing potential for energy production
- Increase in energy demand for cooling
- Decrease in summer tourism and potential increase in other seasons
- Increase in multiple climatic hazards
- Most economic sectors negatively affected
- High vulnerability to spillover effects of climate change from outside Europe



Floods **Fires**





-5/2023 storm Minerva led to flooding of several rivers in the Emilia-Romagna and Marche regions of Italy
-8/23 rainfall in Slovenia affected two thirds of the country.
-9/23 Storm Daniel record-breaking rainfall to Greece,

2023 the largest fire on record in Europe burning 960 square kilometres) of land in Alexandroupolis, Greece.

Climate Change and its impacts in Greece

❖ **Greece** as a part of the Mediterranean basin is considered as climate change hotspot with a high risk of desertification

(Giorgi 2006; Zanis et al. 2008).

The **climate in Greece** is typical of the Mediterranean climate: mild and rainy winters, relatively warm and dry summers and, generally, extended periods of sunshine throughout most of the year.

- increases in heatwaves
- decreases in rainfall
- increases in droughts
- increases in forest fires risk

- **will cause increasing environmental problems and risks over the coming decades.**
- **will pose important challenges for Greece**

negatively affect key sectors of the Greek economy

Agriculture

Tourism

and population's health

Agriculture

<u>The main negative impacts of climate change on agriculture</u> in Greece

- **Increased demand for irrigation water** and reduced water availability due to prolonged drought periods, changes in soil fertility, and a higher risk of soil erosion associated with droughts and extreme events
- **Reduced production due to rising temperatures**
- **Degradation of agricultural land** due to the continuation or intensification desertification (EMEKA, 2011).
- In general, extreme events affect the soil, potentially reducing organic matter, which is a key parameter of fertile soils, and increase the risk of damage to agricultural production, leading to a reduction in the annual yield.

Climate change may create winners and losers depending on their agricultural activity and location, while adaptation can mitigate adverse effects of climate change under cost-effective terms. (Georgopoulou et al., 2017).

Wildfires/Fire risk

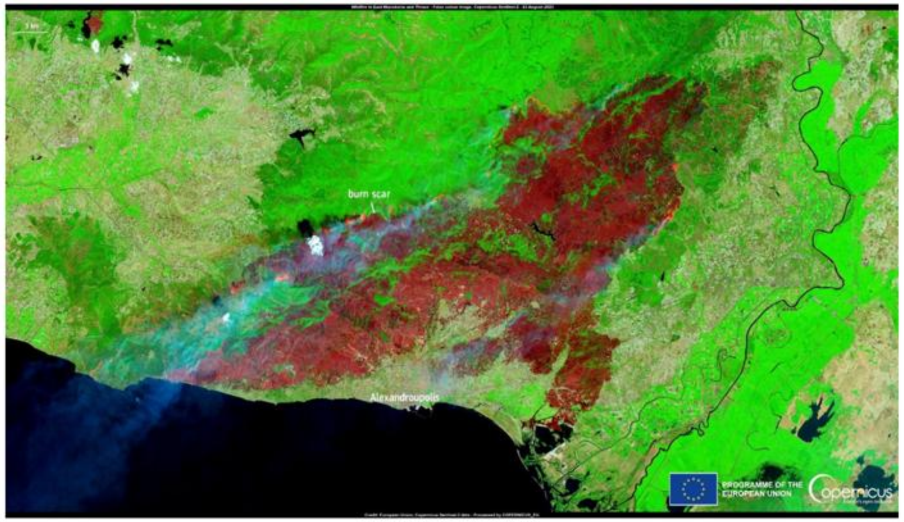
Wildfire risk depends on a number of factors, including temperature, soil moisture, and the presence of trees, shru

All these factors have strong direct or indirect ties to climate variability and climate change.

Climate change enhances the drying of organic matter in forests (the material that burns and spreads wildfire)

Mediterranean countries like Portugal, Spain, Italy, Greece and France, are currently most prone to fires and account for a

In 2018, vulnerable ecosystems of the Natura 2000 network, home to several endangered plant and animal species, lost third of the total burnt area



Sentinel-2 data showing the burn scar in East Macedonia and Thrace near Alexandropoulis on 23 August 2023. Source: European Union, Copernicus Sentinel-2 imagery

Climate change affects wildfires by exacerbating the hot, dry conditions that help these fires catch and spread. As global tem wildfires to increase in the years ahead.

- Climate change would also result in major shifts in the locations of current ecological domains and induce stress on the structure and composition of vegetation, leading to increased vegetation vulnerability to fires.
- Climate change will exert stress on ecosystems and increase their vulnerability to fires
- Population in wildland-urban interface exposed to fire danger

https://joint-research-centre.ec.europa.eu/system/files/2020-09/09_pesetaiv_wildfires_sc_august2020_en.pdf

https://climate.copernicus.eu/wildfire-impact-how-it-monitored-measured#:~:text=Extreme%20wildfires%20can%20potentially%20alter,can%20change%20the%20surface%20albedo.

https://www.c2es.org/content/wildfires-and-climate-change/

Penteli Athens 2024


Patras 2025


Rhodes 2023

Energy demand

Climate threats for the European energy system already exist and are projected to increase.

- increase energy demand for cooling in southern Europe, which may further exacerbate peaks in electricity demand in the summer
- More intense and frequent heatwaves will shift energy supply and demand patterns, often in opposite directions).
- Further increases in temperature and droughts may limit the availability of cooling water for thermal power generation in summer (lowering energy supply), whereas demand for air conditioning will increase.
- greater magnitude and frequency of extreme weather events will cause threats for physical energy infrastructure: overhead transmission and distribution, but also substations or transformer

- direct negative impact in the long term on the production of renewable energy
- Climate change also brings increased uncertainty in weather patterns across Europe. Some immediate examples would be less sun or wind in areas where there is usually more or heat and droughts affecting the crops intended for the production of energy from biomass.

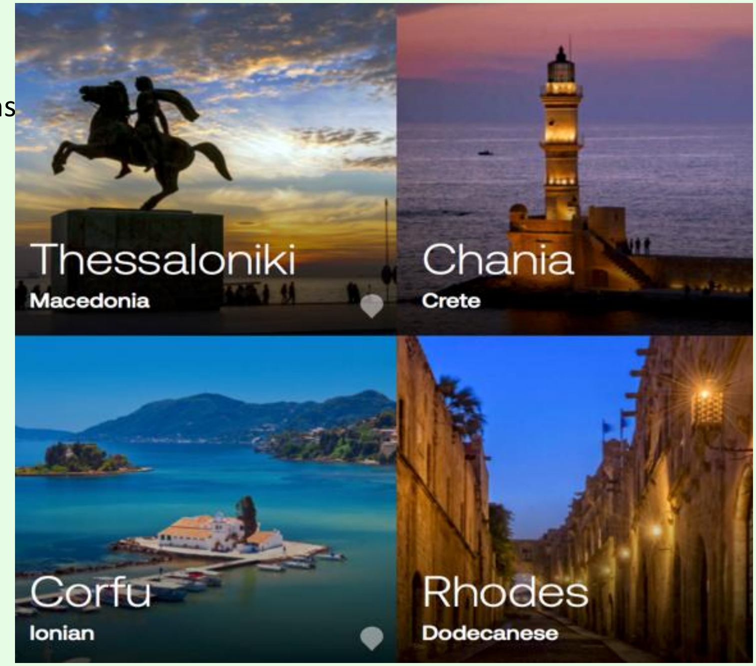
https://climate.ec.europa.eu/climate-change/consequences-climate-change_el

Tourism and Health

Climate change impacts on tourism for Greece

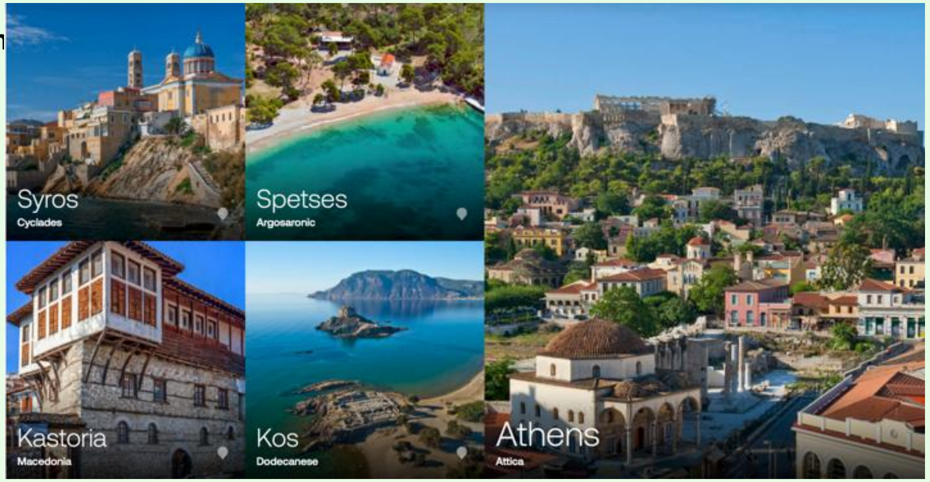
- Increase in the number of day with high temperatures - impact on the physical distress of the general population
- increased **thermal stress** - significant effects on **human health**
- Changes in the **climatic conditions of tourist destinations** by the end of the century
- Increase in **forest fires** causing a decrease in the abundance of species and biodiversity and alteration of the natural landscape

- **Extreme weather events**, sea level rise, coastal erosion affect the choice of **tourist destination** and the tourism industry



Greece is one of the most known tourist destinations of the world especially during summer, mainly due to favourable climatic conditions including warm and sunny weather. **important economic country resource**

tourism industry should be more aware and prepared for the climate change



Research & tools

CLIMADAPT: CLimate change IMpacts and ADAPTation (http://climadapt.meteo.noa.gr/))

- Analysis of regional climate model projections and observational or gridded data
- Bias correction, Uncertainty assessment / RCM evaluation
- Climate services
- Downscaling , Seasonal forecasts

Participation in research programs –Climate change and agriculture

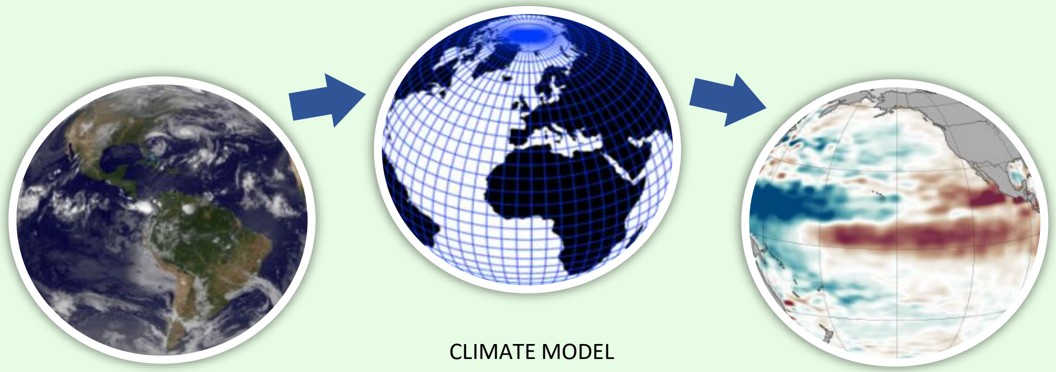
(HORIZON CHOICE, HORIZON MOIRAI, HORIZON FIRE-RES, LIFE MARE NATURA, Land Eval, LIFE-IP AdaptInGR, CLIMPACT, LIFE ADAPT2CLIMA, H2020 MED-GOLD, LIFE TERRACESCAPE)

Studies have been conducted on:

- **the impacts of climate change on agriculture** (and various sectors of the Greek economy) **utilizing future climate scenarios derived from regional climate models.**
- **Improving decision- making related to adaptation planning**

Climate Models - Climate Data

Climate models are computer programs that simulate weather patterns over time and can estimate the Earth's average weather patterns—the *climate*—under different conditions (simulating natural climate processes and reproduce atmospheric and oceanic conditions)

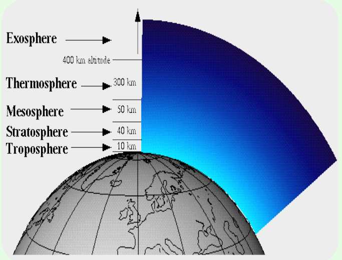


CLIMATE MODEL

EARTH'S CLIMATE SYSTEM

CLIMATE DATA

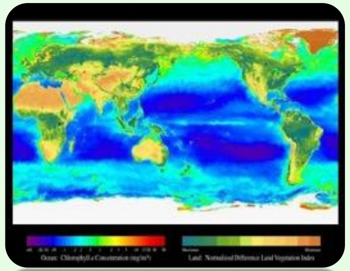
ocean



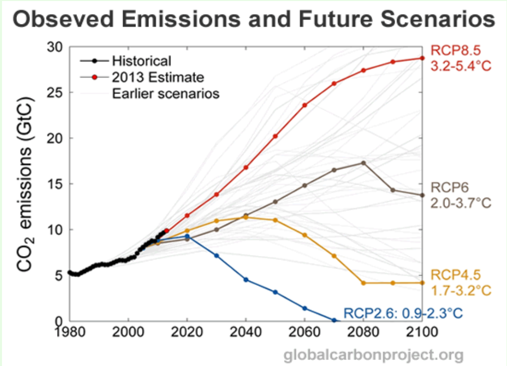
atmosphere

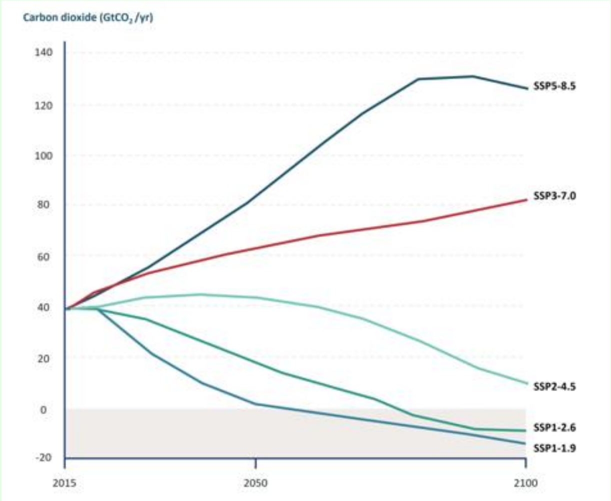
land

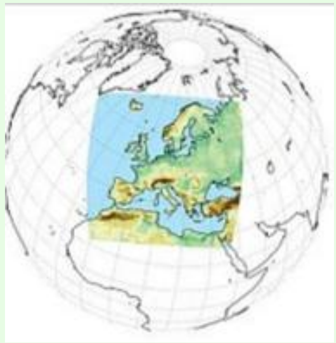
cryosphere



biosphere







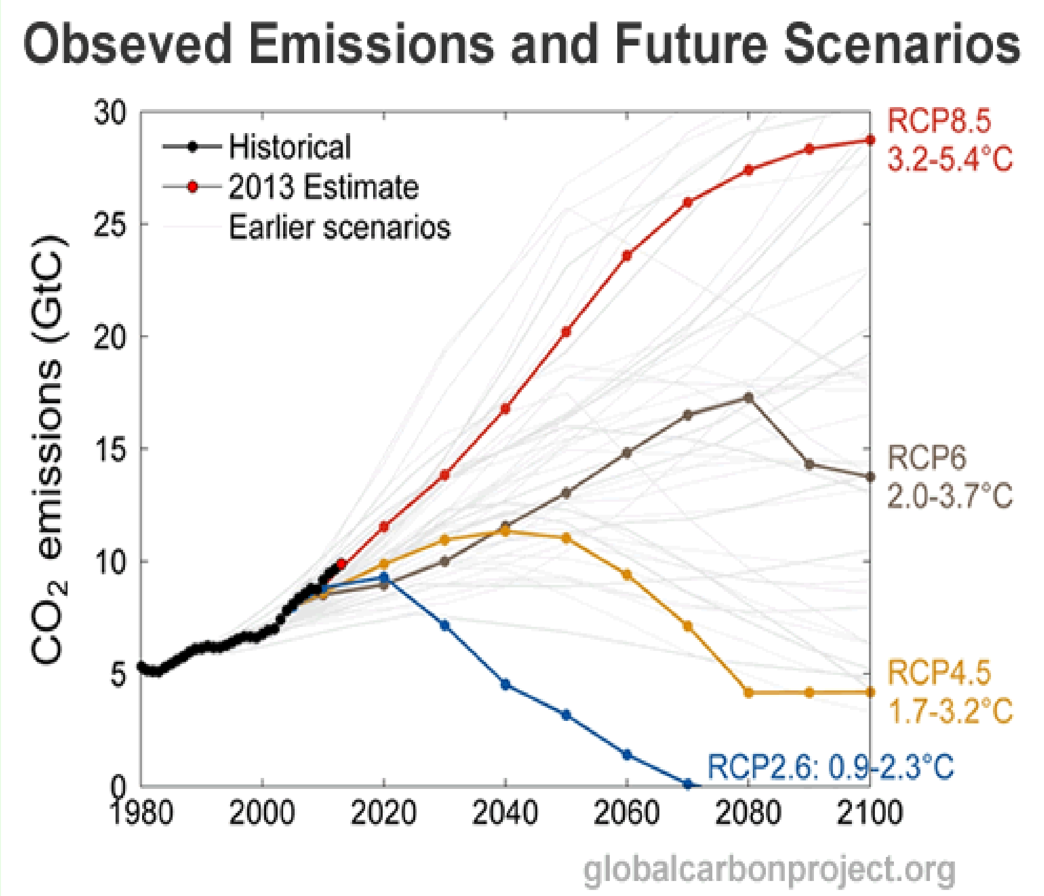
Climate projections are the output of climate simulations of Global and Regional Climate Models

Greenhouse Gas Emission Scenarios
Climate Scenarios

Representative Concentration Pathways (RCP)

IPCC Fifth Assessment Report (AR5), 2014

Representative Concentration Pathways (RCP)



- The **stringent scenario** RCP 2.6 is based on the assumption that the peak of global greenhouse gas emissions will occur during the current decade (2010–2020), followed by a significant reduction.
- The **intermediate scenario** RCP 4.5 **(RCP 6.0)**, greenhouse gas emissions will continue to increase until 2040 (2080) and then decline.
- The **extreme scenario** RCP 8.5, with very high concentrations of greenhouse gases, assumes that global emissions will continue to rise throughout the 21st century.

RCP	Radiative forcing level	Description
RCP1.9	2.6 W m^{-2} radiative forcing in 2100	Very stringent mitigation scenario
RCP2.6	2.6 W m^{-2} radiative forcing in 2100	"Stringent mitigation" scenario
RCP4.5	4.5 W m^{-2} radiative forcing in 2100	Intermediate scenario
RCP6.0	6.0 W m^{-2} radiative forcing in 2100	Intermediate scenario (higher warming than RCP4.5)
RCP8.5	8.5 W m^{-2} radiative forcing in 2100	Very high warming scenario

Greenhouse Gas Emission Scenarios
Climate Scenarios

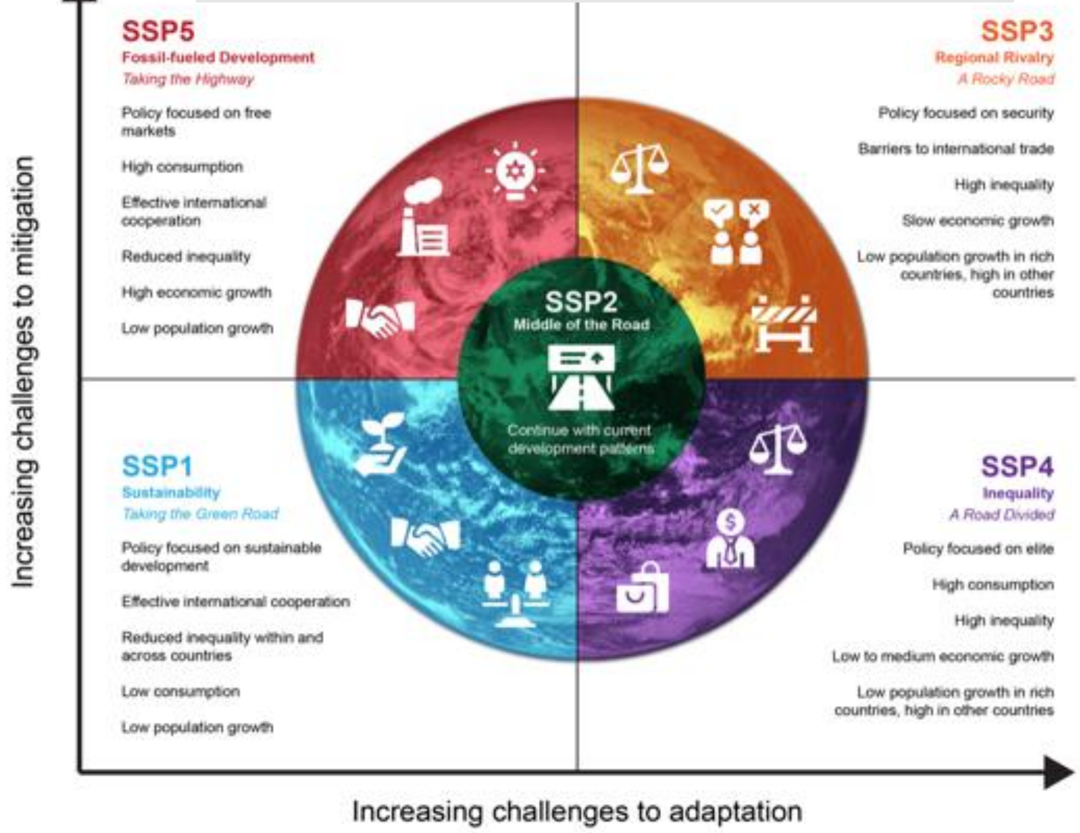
SSP1 Sustainability – Taking the Green Road
SSP2 Middle of the Road
SSP3 Regional Rivalry
SSP4 Inequality
SSP5 Fossil-Fuelled Development

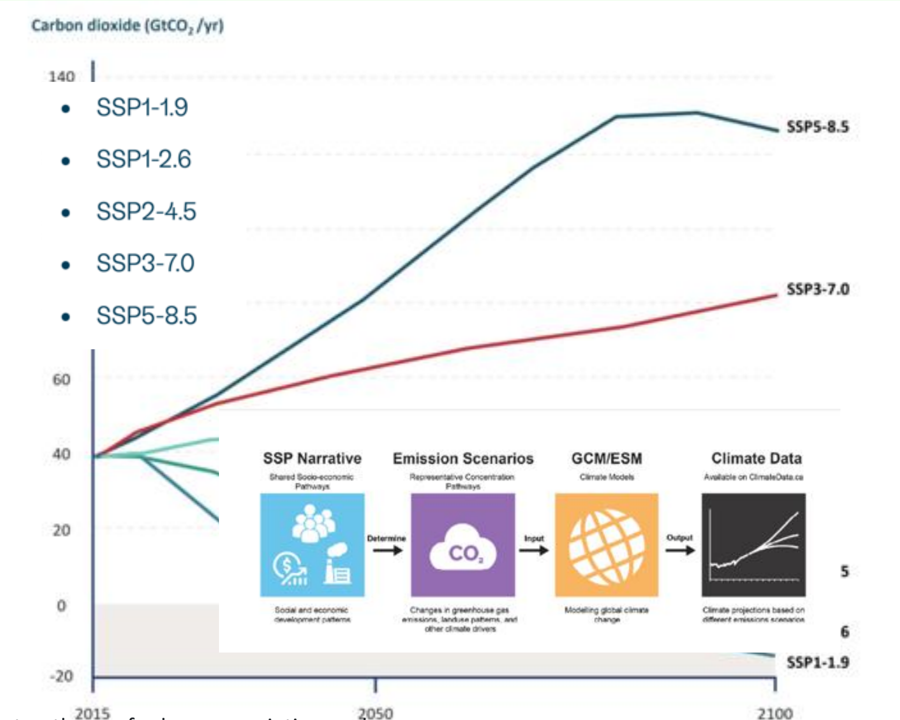
Shared Socio-economic Pathways (SSPs)

RCP2.6, RCP4.5, RCP6.0, and RCP8.5 – have new versions in CMIP6

IPCC's Sixth Assessment Report (AR6), 2021, 2023

Describe ***possible future development pathways for human society, in relation to its use of fossil fuels*** and the social and economic factors which drive fossil fuel use. SSPs explore a range of technological, socioeconomic and policy futures and consider challenges to mitigation and adaptation.

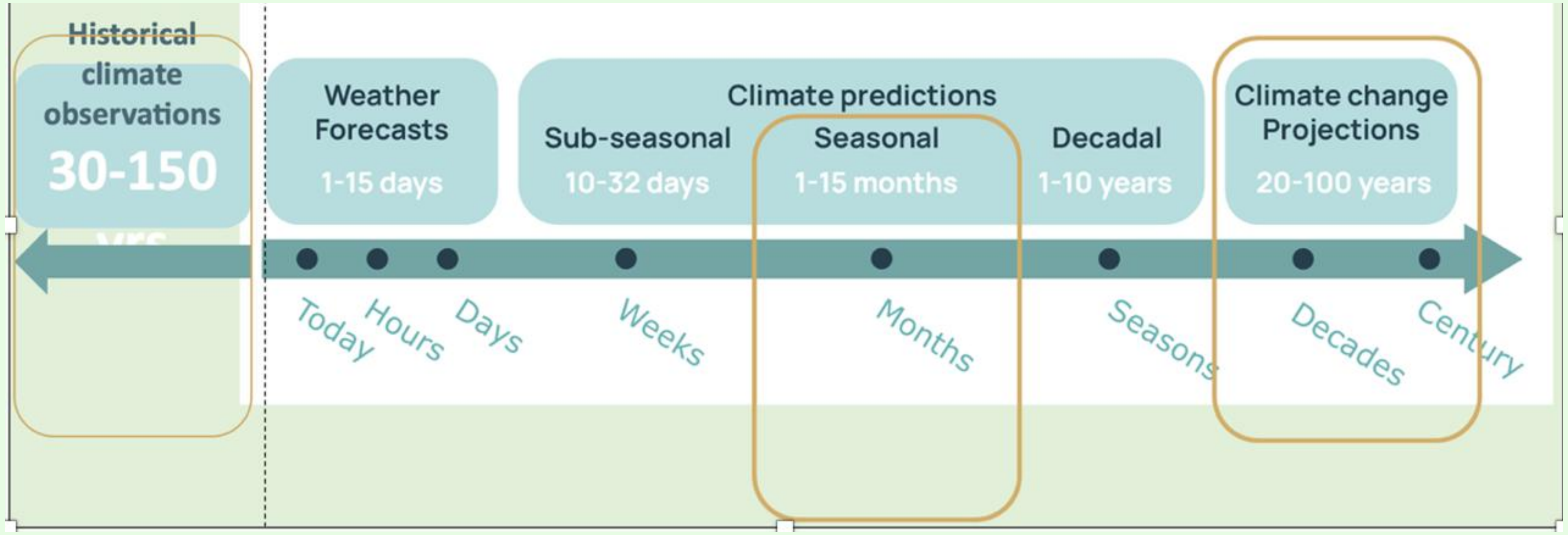




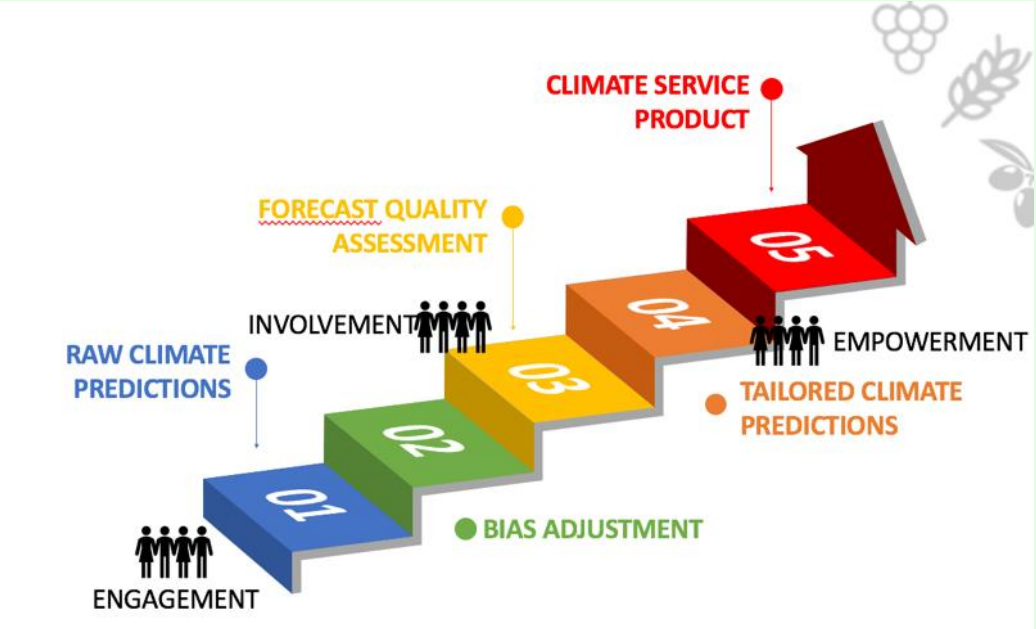
Today, the scenarios used to characterize possible future development pathways for human societies are known as

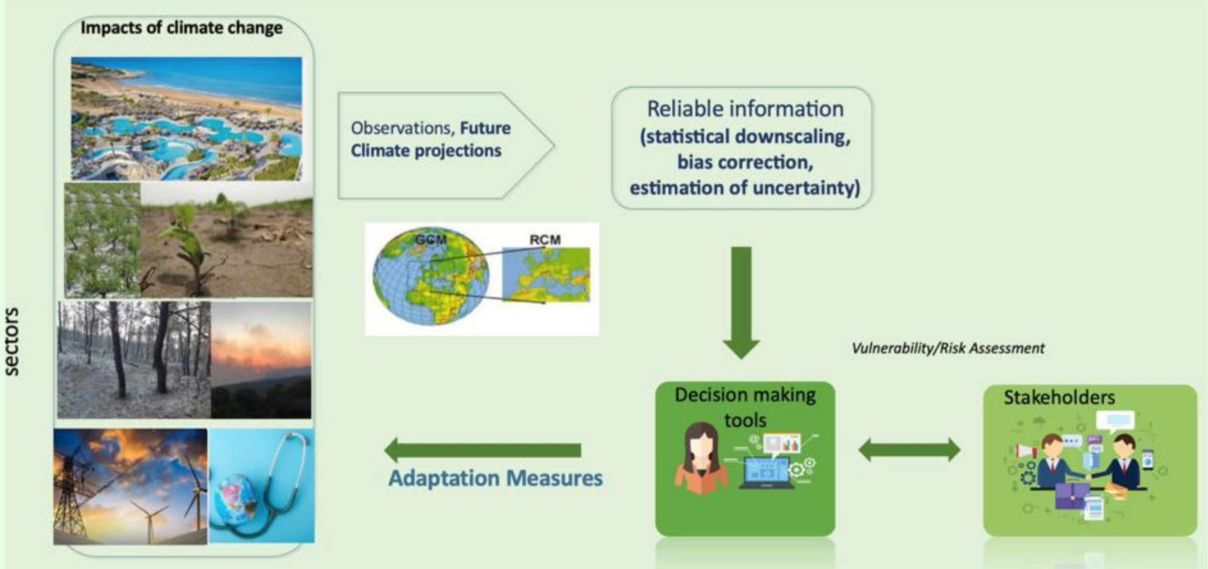
https://climatedata.ca/resource/understanding-shared-socio-economic-pathways-ssps/

Time scales of Climate Information



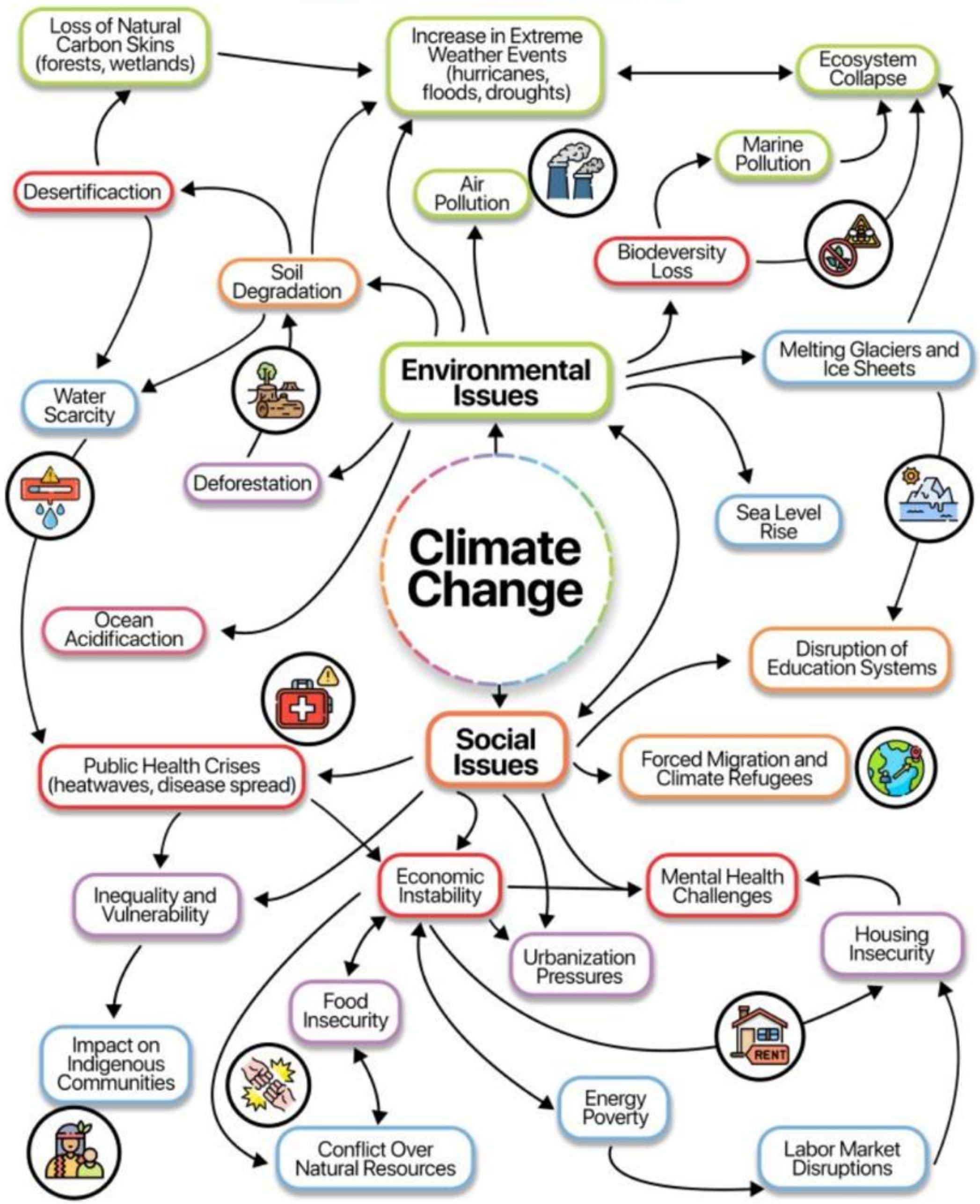
Methods / Impacts of climate change and Adaptation





A Wicked Problem Interconnected with Other Global Challenges

Antonio Vizcaya Abdo

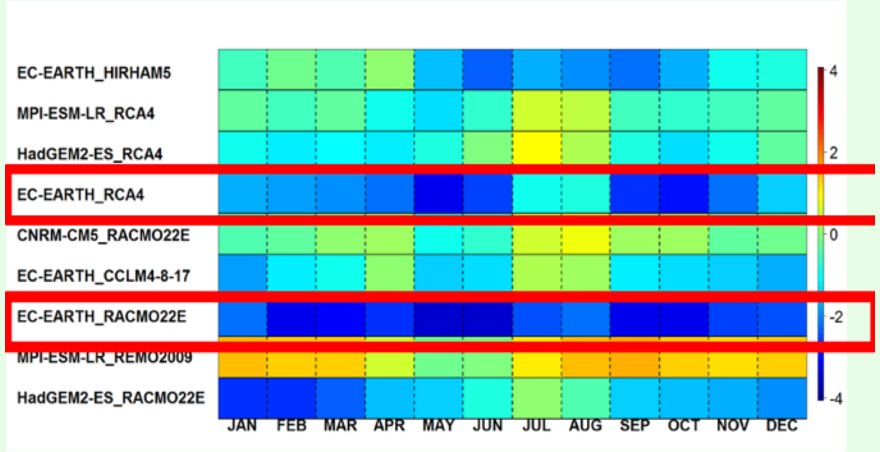


adaptivgreece®

In the framework of **the integrated project “LIFE-IP AdaptInGR – Boosting the implementation of adaptation policy across Greece** (https://www.adaptivegreece.gr/en-us/)

- **Future climate change projections for several climatic parameters** ,at a national level, with horizontal spatial analysis of approx. 0.11° were produced
- **Regional Climate Model Simulations** from the **EURO-CORDEX** database available on Climate Data Store (CDS) of Copernicus Climate Change Service (C3S)

➢ evaluation of the Regional Climate Simulations against E-OBS v19 the period **1971-2000** and for the **Essential Climate Variables (Temperature and Precipitation)**



1. **Climate projections** (together with **indices and maps)** for the **13 Regions of Greece** with a horizontal resolution of about **12km** have been produced

- Climate projections for
- 12 **pilot areas** and
- 18 **cultural heritage areas,** transects, natura areas

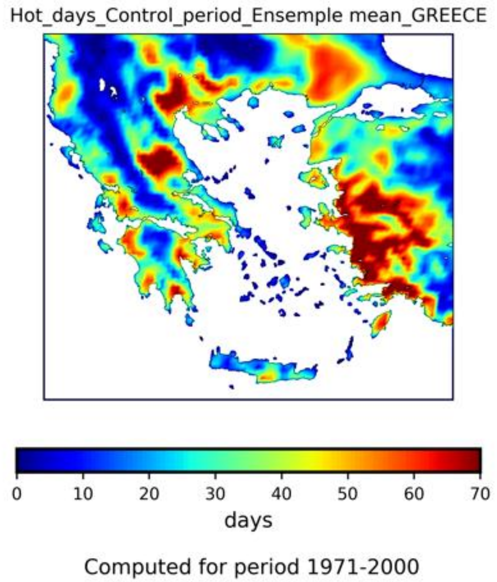
Table 1. List of Regional Climate Models (RCMs) used.

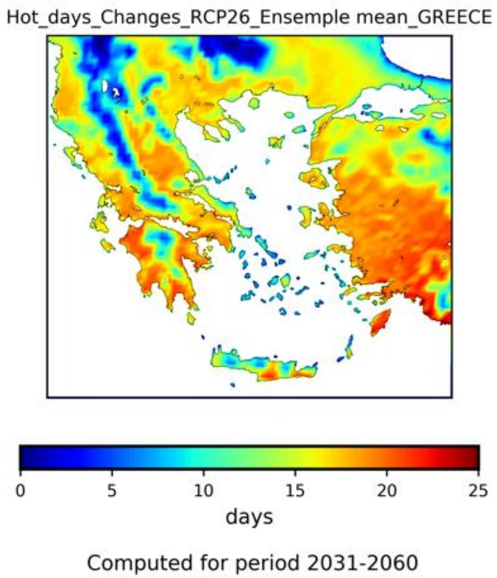
Institute	RCM	GCM (Global Climate Model)	GCM, RCM pair as used for this study
SMHI	RCA4	HadGEM2-ES MPI-ESM-LR	1.RCA4-MOHC 2. RCA4-MPI
DMI	HIRHAM5 CCLM4-8-17	EC-EARTH	3.HIRHAM5 4.CCLM4817
KNMI	RACMO22E	CNRM-CM5 HadGEM2-ES	5.RACMO22-CNRM 6.RACMO22-MOHC
MPI-CSC	REMO2009	MPI-M-MPI-ESM-LR	7.REMO2009-MPI

- The projected increase in the number of hot days will affect crop yields -especially in spring and summereffecting crop production and quality.
- Tourism health heat stress
- energy demand

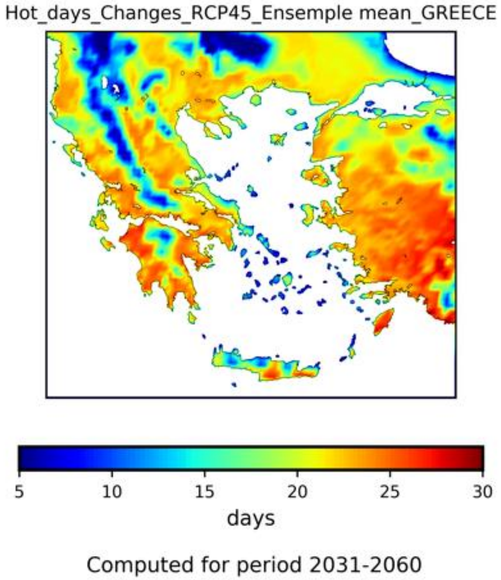
Hot days:
Number of days with Tmax>30^{0}C

17 22 27
days

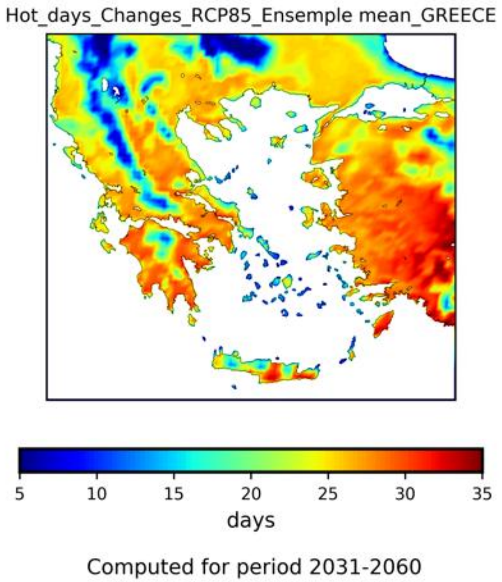




RCP2.6

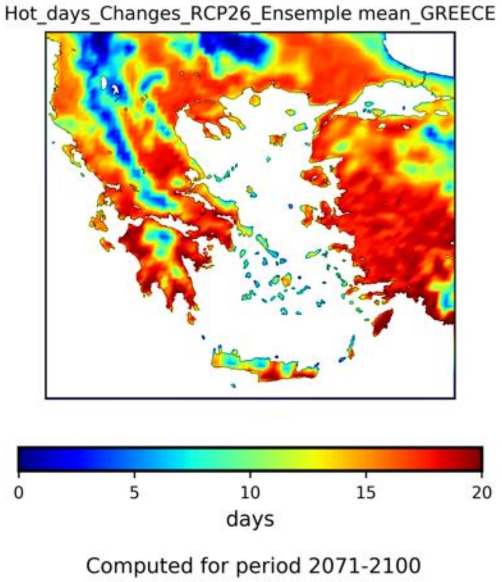


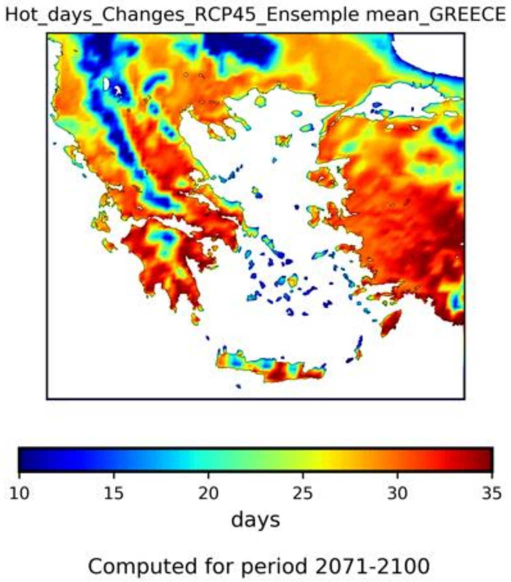
RCP4.5

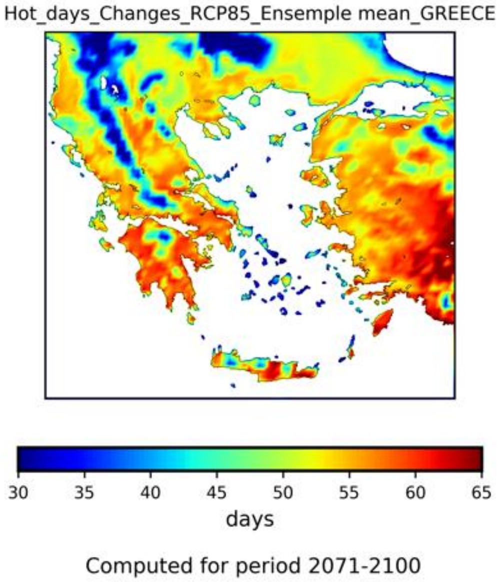


RCP8.5

adaptivgreece



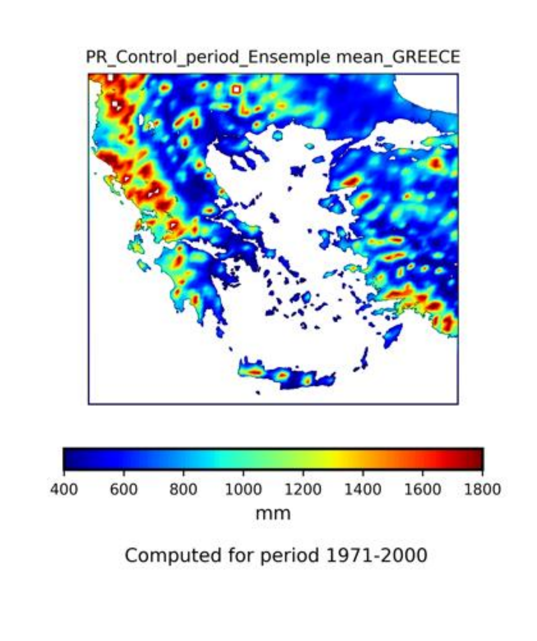




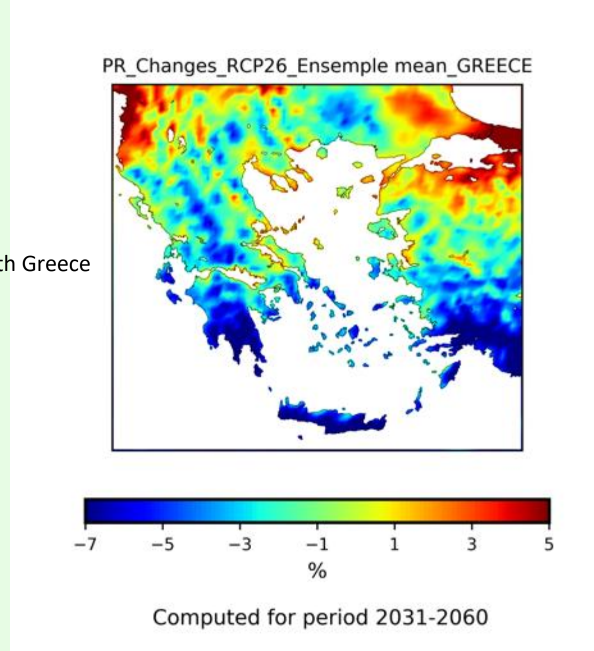
15 30 55
days

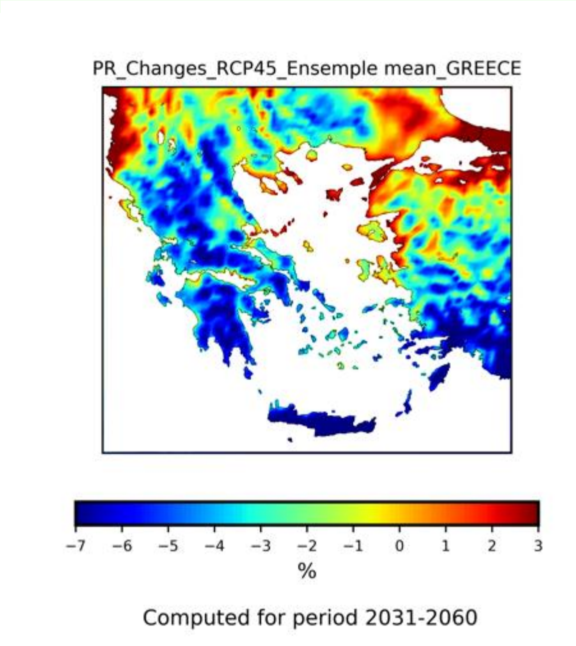
- ❖ reduction in precipitation amounts - shorter growing seasons
- ❖ reduction in the availability of irrigation

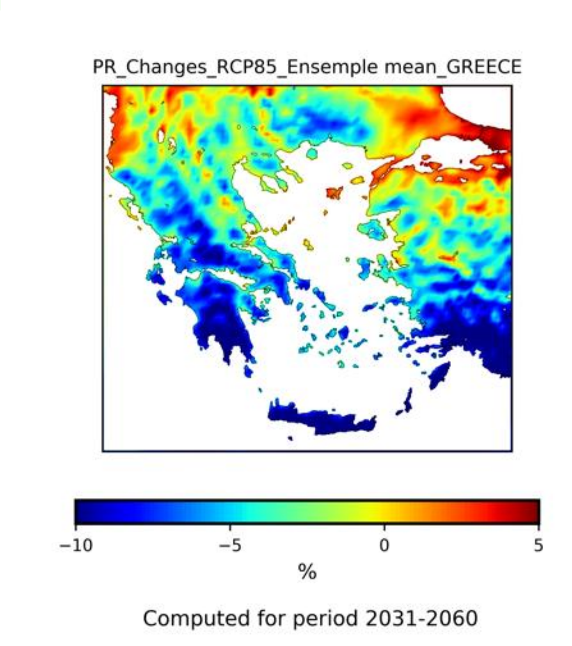
PR total precipitation



-5 % -10% South Greece

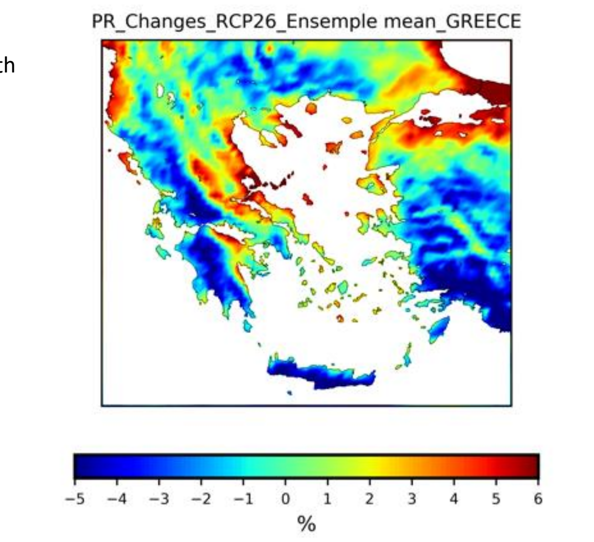


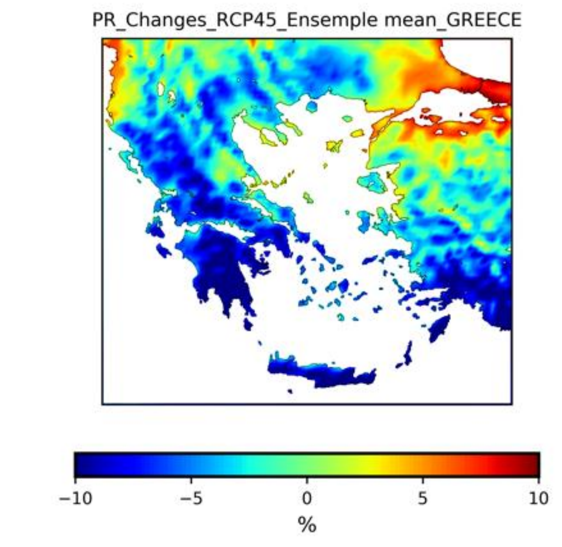


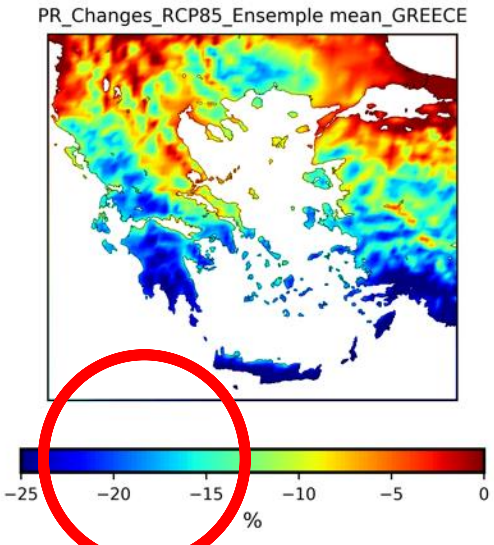


RCP2.6 **RCP4.5** **RCP8.5**

-10 % -20% South Greece





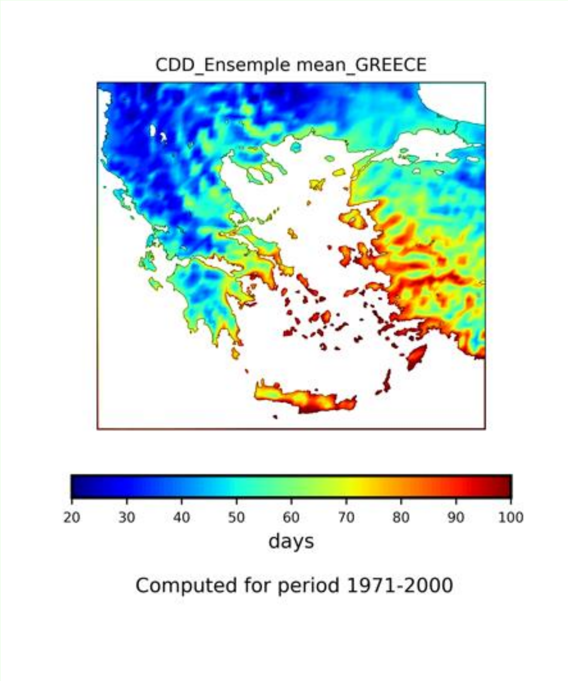


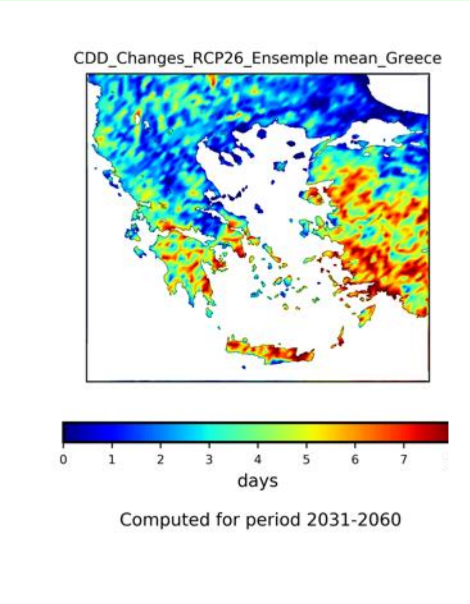
..

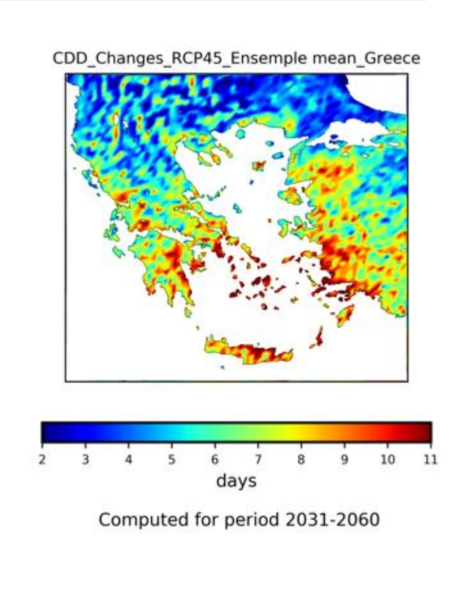
https://www.adaptivegreece.gr/el-gr/

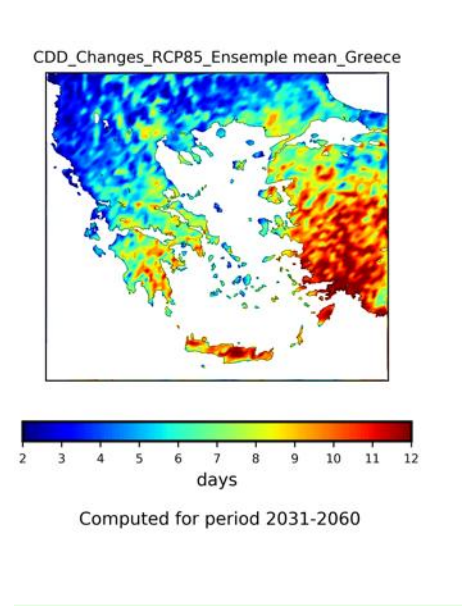
- Extension of drought periods, put pressure' on the water resources of already vulnerable areas, such as Aegean Islands

Maximum length of Continual Dry Days (PR<1mm)



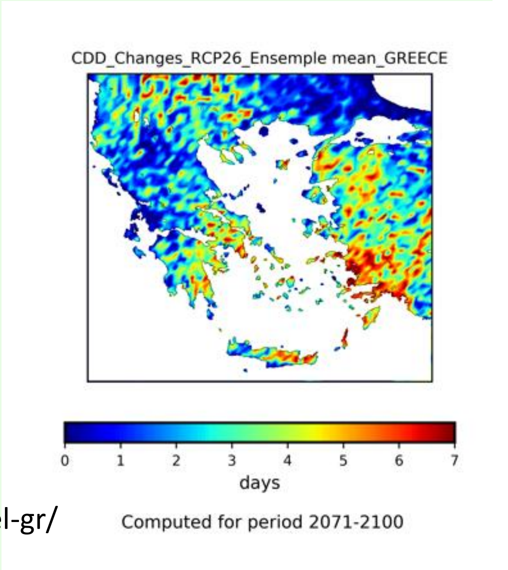


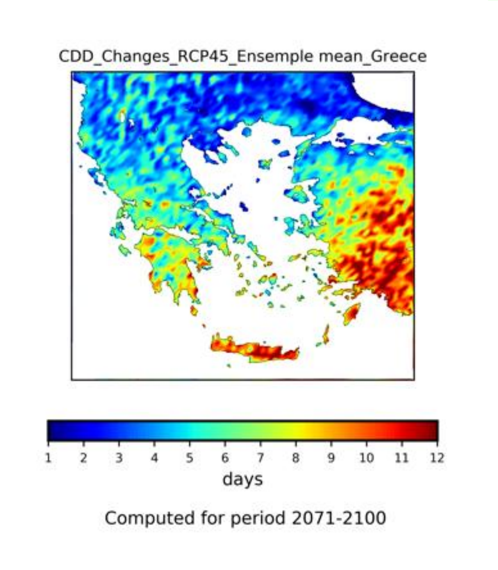


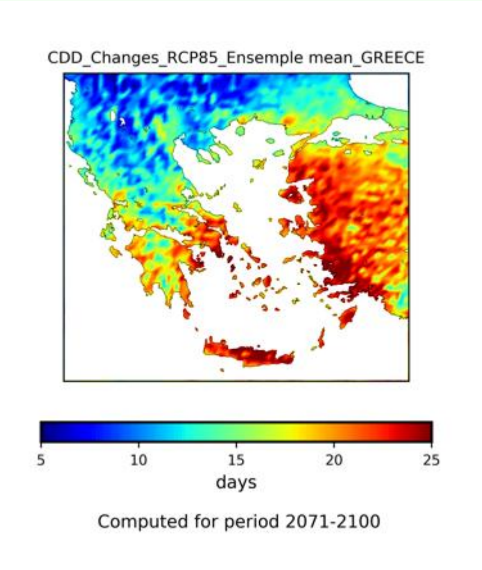


+8 days

RCP2.6 **RCP4.5** **RCP8.5**







+15-20 days

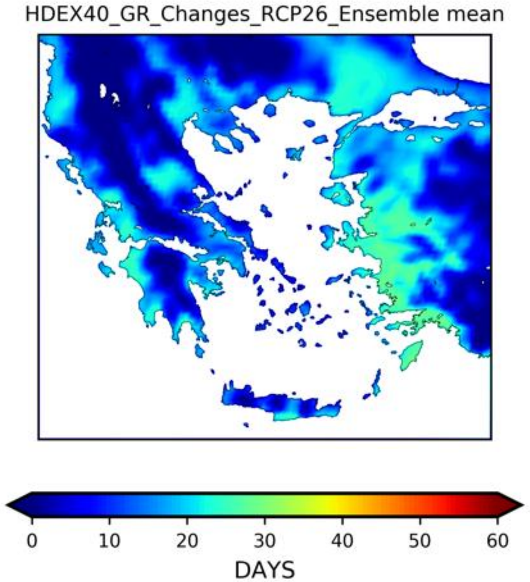
- **RCP2.6 (stringent mitigation scenario)**
- **RCP4.5 (intermediate scenario)**
- **RCP8.5 (extreme or high emissions scenario)**

https://www.adaptivegreece.gr/el-gr/

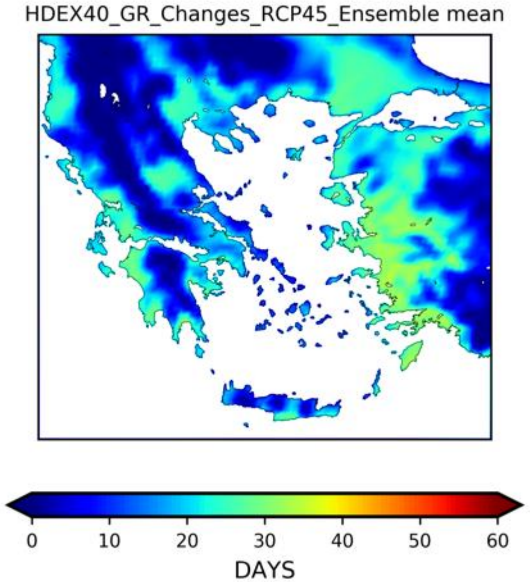
Humidex>40

Great discomfort; avoid exertion

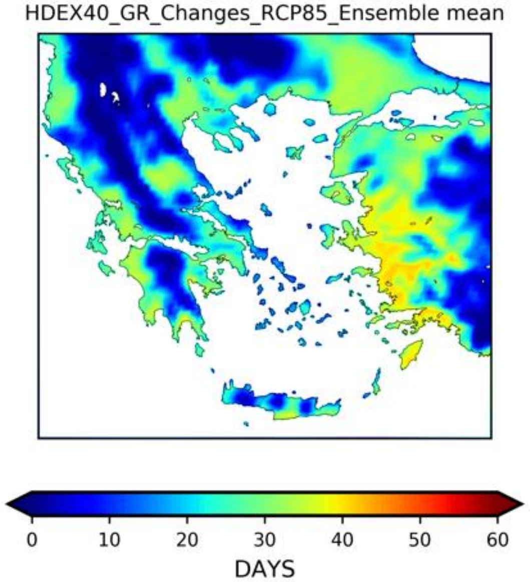
Changes/days **2031-2060**



Computed for period 2031-2060



Computed for period 2031-2060

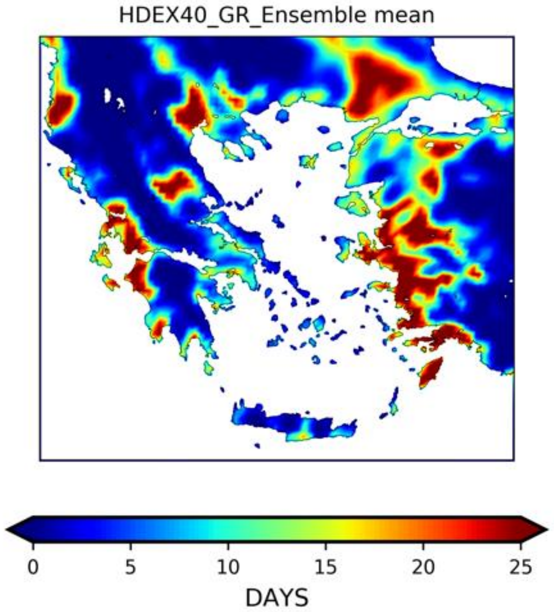


Computed for period 2031-2060

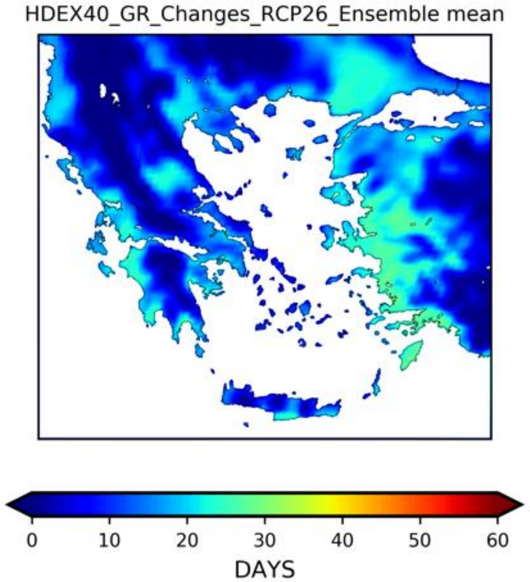
RCP2.6

RCP4.5

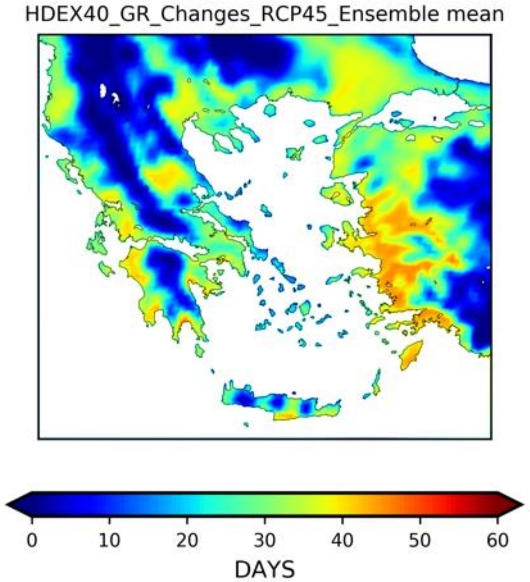
RCP8.5



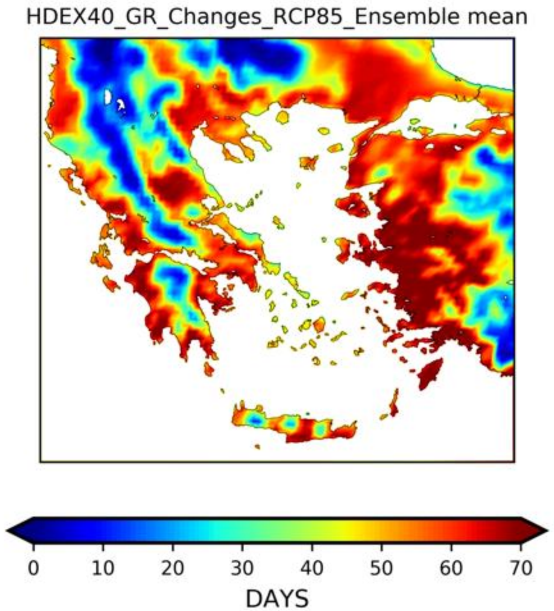
Computed for period 1971-2000



Computed for period 2071-2100



Computed for period 2071-2100

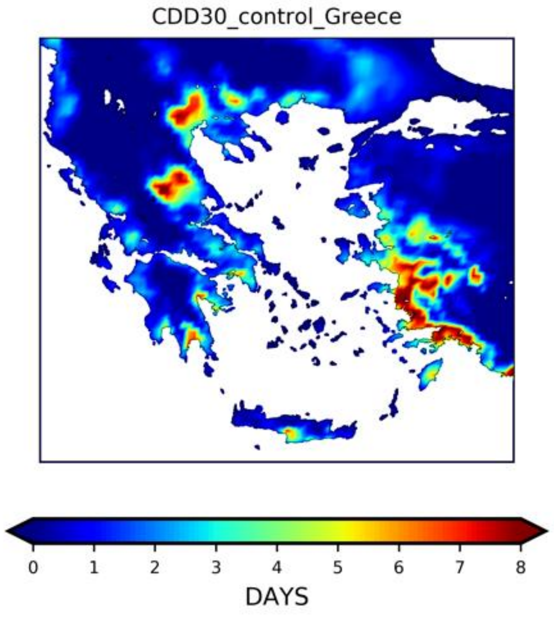


Humidex describes the physical distress of an average person under intense heat and high vapor pressure conditions

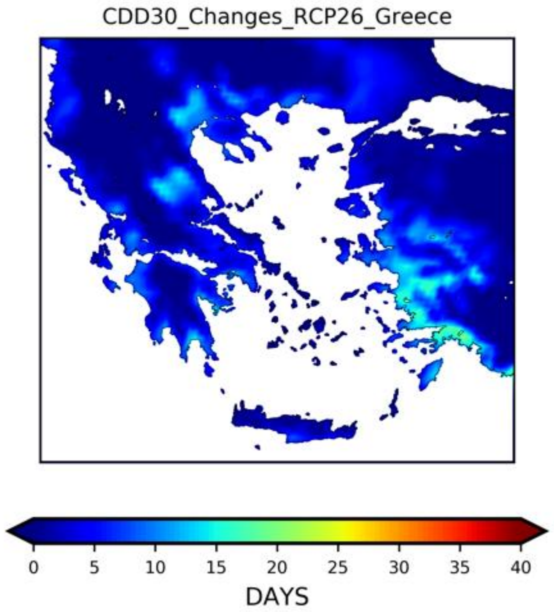
Changes/days **2071-2100**

Cooling Degree Days
Tmean>30

Changes/days **2031-2060**

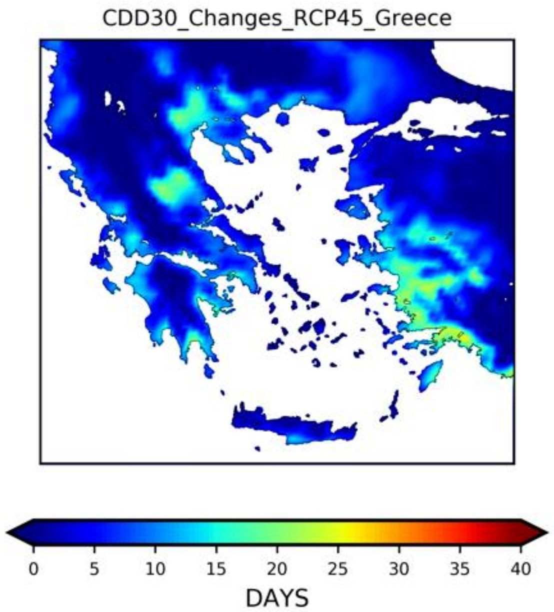


Computed for period 1971-2000



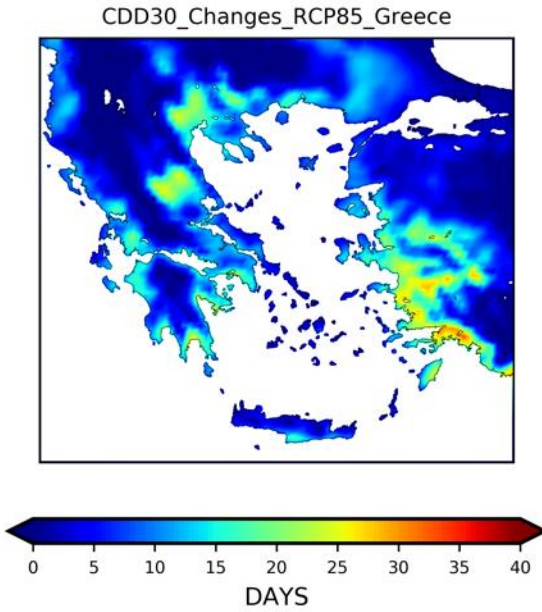
Computed for period 2031-2060

RCP2.6

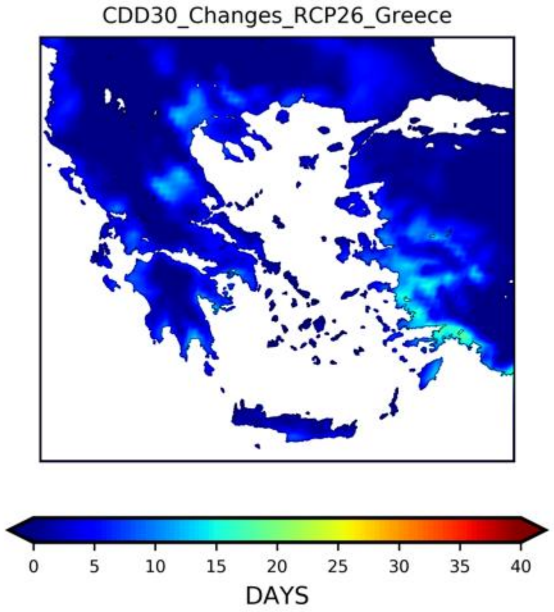


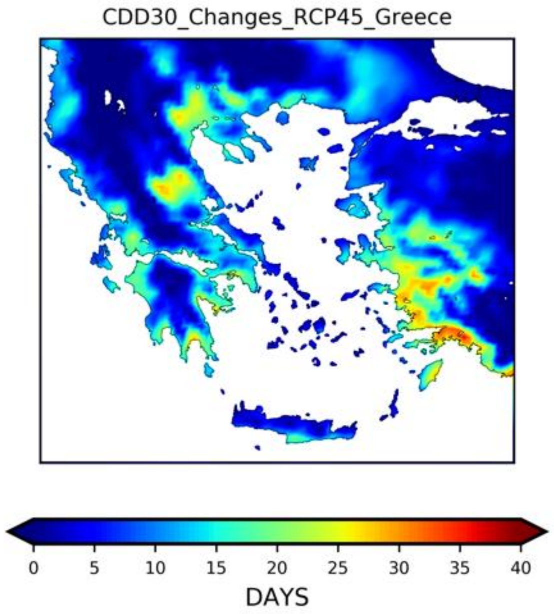
Computed for period 2031-2060

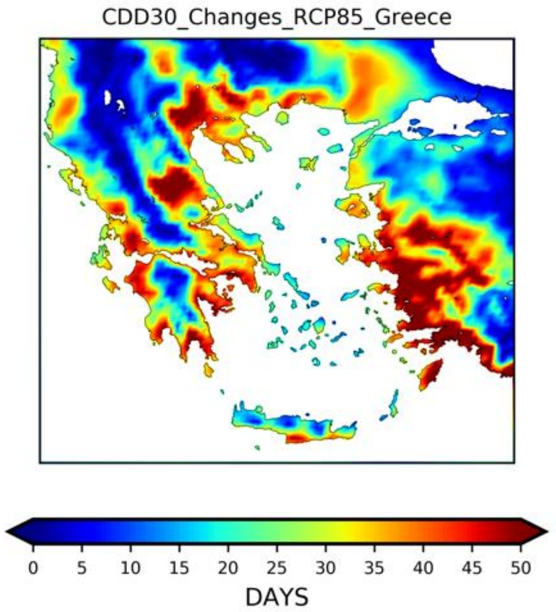
RCP4.5



Computed for period 2031-2060



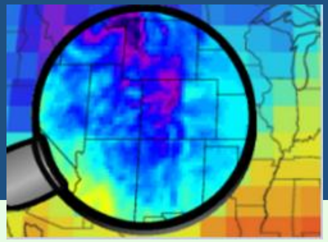




increase in the energy used for cooling in the future –need for controling the number of visitors' arrivals – buildings adaptations

Changes **2071-2100**

Climate services-web platforms for Greece



LIFE-IP AdaptInGR -Boosting the implementation of adaptation policy across Greece **is the most important project for adapting Greece to climate change.**

adaptivgreece®

1

Geospatial Information Portal of the Ministry of the Environment and Energy (MEEN)

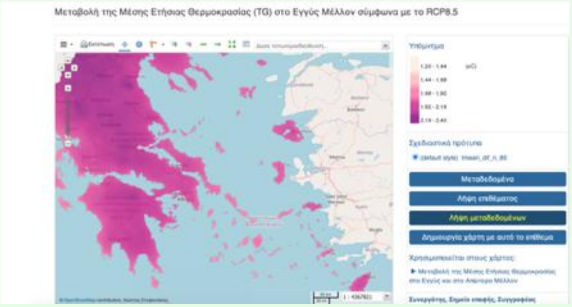
- Integration of climate projections and indicators on national scale
- *https://mapsportal.ypen.gr/thema_climatechange*

2

Climate Change Adaptation Information Web Hub

- Access to the national online information hub on adaptation to climate change
- https://adaptivegreecehub.gr/
- *https://geo.adaptivegreecehub.gr/*

ΥΠΟΥΡΓΕΙΟ ΠΕΡΙΒΑΛΛΟΝΤΟΣ & ΕΝΕΡΓΕΙΑΣ



Climate projections incorporation in the

1. Geospatial Information Portal of the Ministry of Environment and Energy of Greece

https://mapsportal.ypen.gr/thema_climatechange

Maps of Greece for 22 selected climate indices

for **current climate** as well as their **changes in the future under 3 emission scenarios** (at national level)

7 Climate models : Data from 7 pairs GCMs/RCMs
EURO-CORDEX database or **(0.11◦)** available on Climate Data Store (CDS) of Copernicus Climate Change Service (C3S)

Periods:

1971-2000 (reference period),
2 future :2031-2060 (near future) , 2071-2100 (distant future)

3 IPCC emission scenarios **: RCP2.6, RCP4.5 , RCP8.5**

RCP2.6 (stringent mitigation scenario),
RCP4.5 (intermediate mitigation scenario)
RCP8.5 (extreme scenario, very high greenhouse gas emissions)

- tailored to the climatic conditions of Greece and relevant to climate variability and risks:

high temperatures
1. Maximum annual temperature(°C)- TX
2. Number of days per year with TX > 30 °C – hot days
3. Number of days per year with TX > 35 °C – very hot days
4. Mean annual temperature(°C) -TG

droughts
5. Total annual precipitation (mm)-PR
6. Maximum length of consecutive dry days with total PR<1mm
7. Number of days with PR<1mm - dry days

Wind
8. Mean annual wind speed (m/sec)

thermal stress
9. Number of days with TN >20°C - tropical nights
10. Mean annual relative humidity (%)
11. Number of days with humidex (heat stress index) >38 °C
12. Number of days with humidex (heat stress index)>40 °C
13. Number of days with humidex >46 °C

energy demand
14. Number of days with TG<10 °C - high demand for heating
15. Number of days with of days with TG>30 °C – cooling degree days

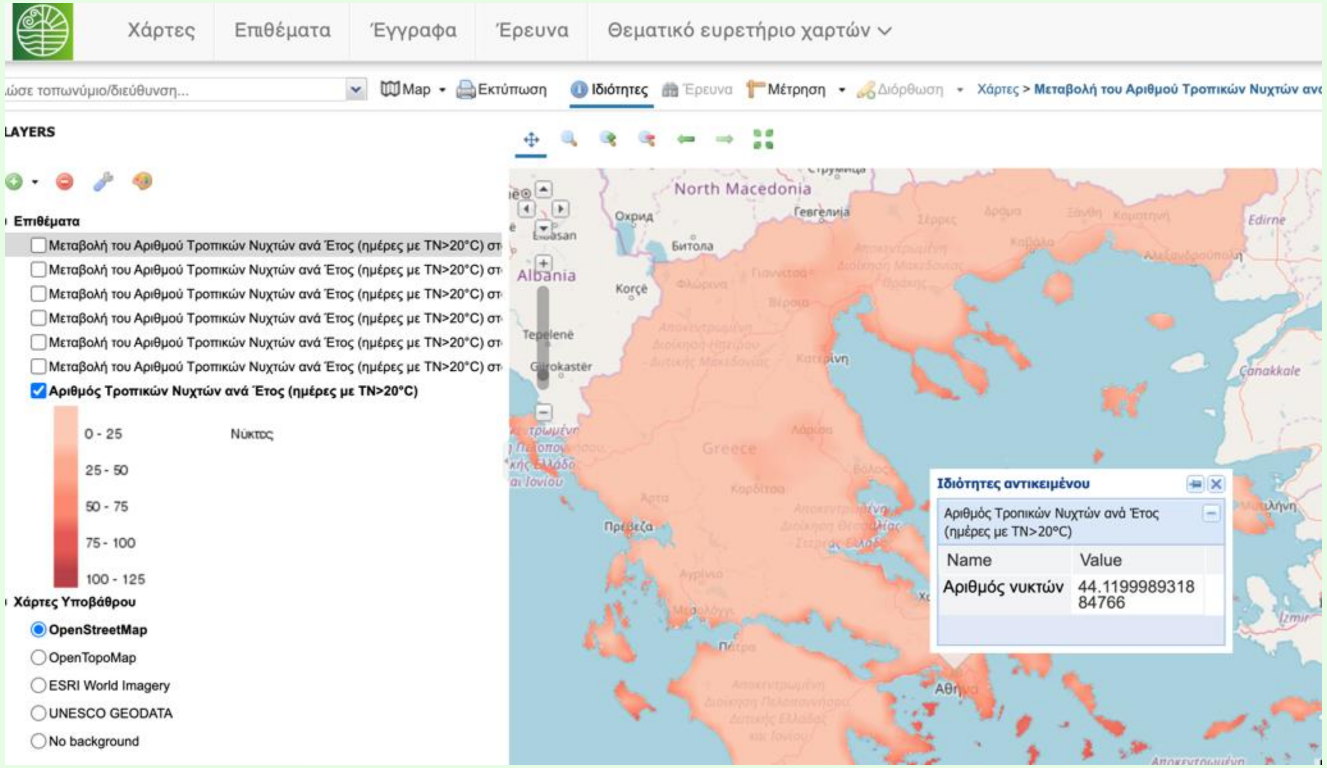
extreme rainfall
16. Number of days with με PR>10mm - heavy precipitation days
17. Number of days with PR>20mm –very heavy precipitation days
18. Number of days with PR>1mm - wet days

low temperatures
19. Minimum annual temperature(°C)- TN
20. Number of days with TN <0 °C – frost days

fire danger
21 Mean FWI (Fire Weather Index)- fire danger indicator for the period May-October
22 Number of days with high fire risk (FWI> 50)

ΑΚΑΔΗΜΙΑ ΑΘΗΝΩΝ

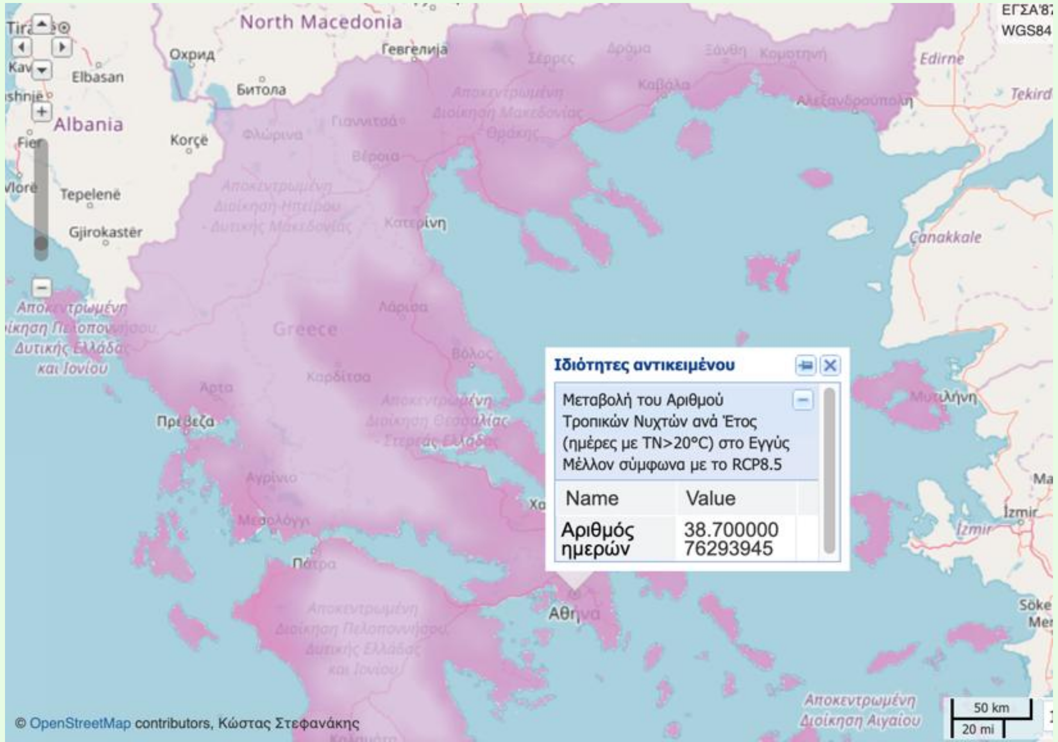
ΥΠΟΥΡΓΕΙΟ ΠΕΡΙΒΑΛΛΟΝΤΟΣ & ΕΝΕΡΓΕΙΑΣ



Number **of Tropical nights with TMIN>20** in the current climate **(1971-2000)**

Athens

Changes in the number of **Tropical nights with TMIN>20** for the near future (2031-2060) based on the RCP8.5 scenario.



Ability to focus map on a region of the country

http://mapsportal.ypen.gr/thema_climatechange

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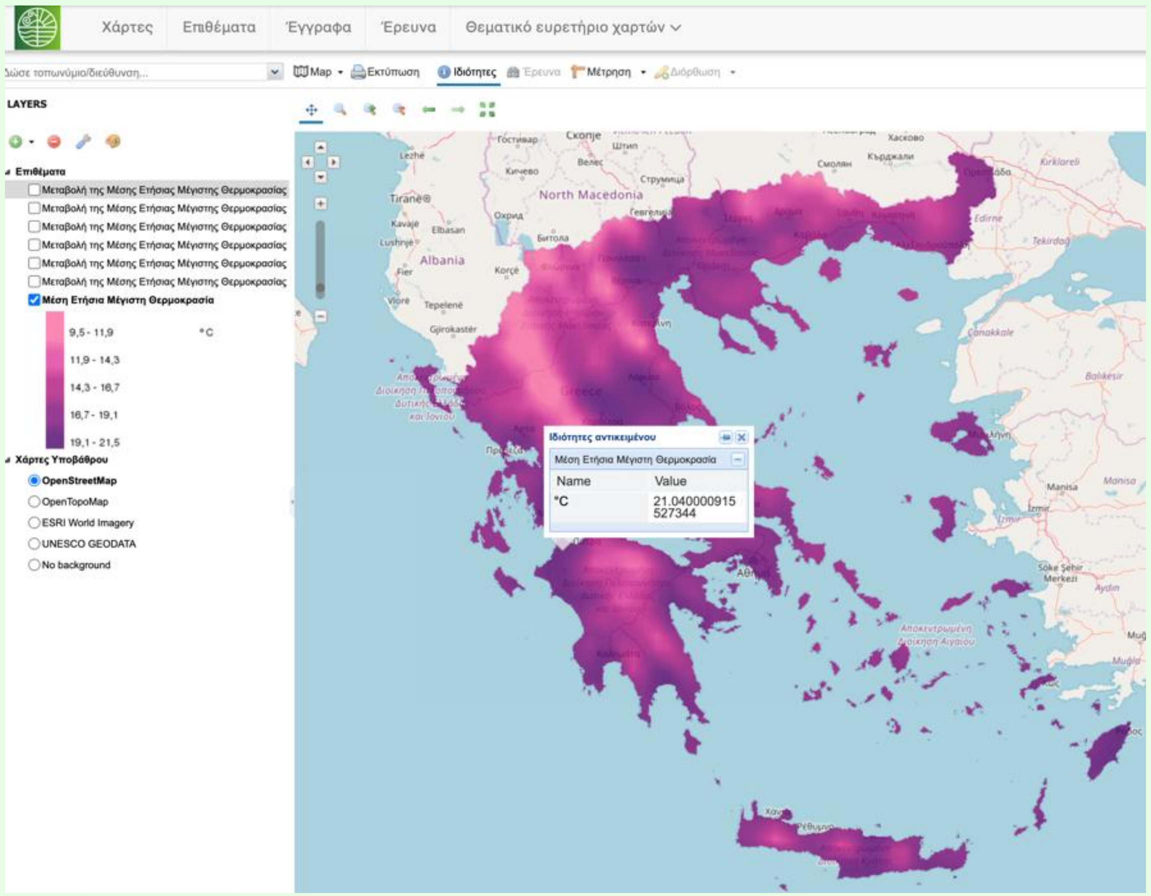

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Greece

https://mapsportal.ypen.gr/thema_climatechange

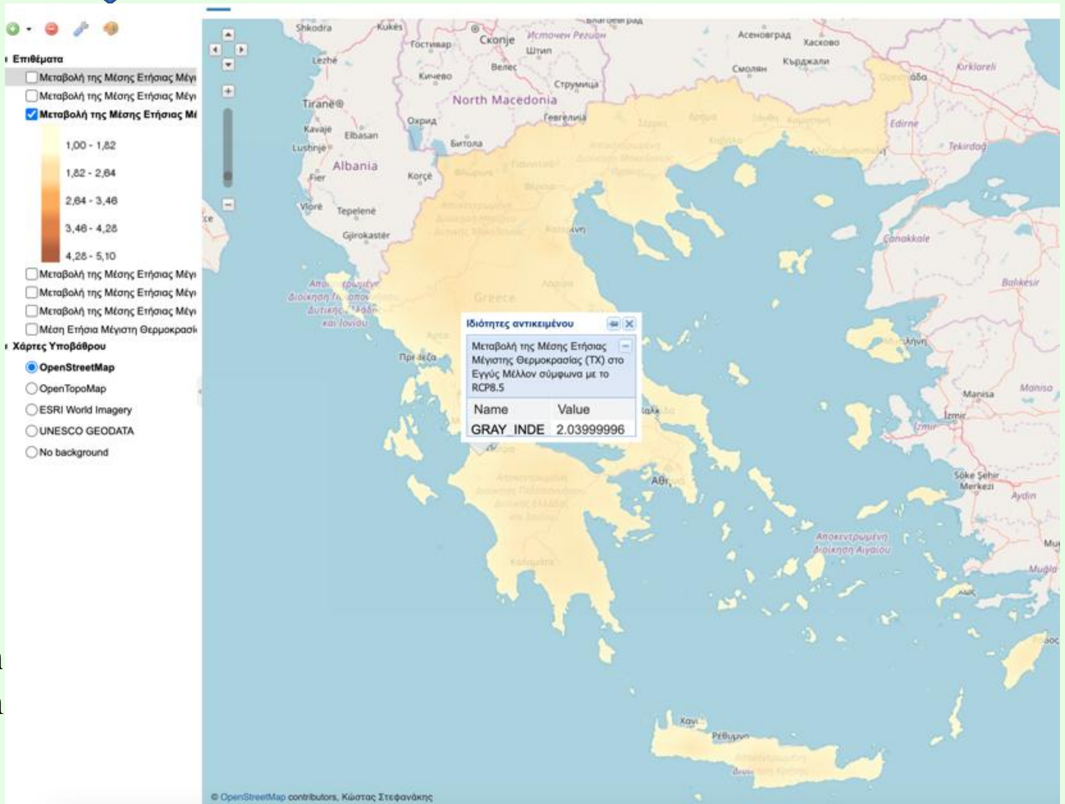
Annual average **TMAX**

control period (1971-2000)

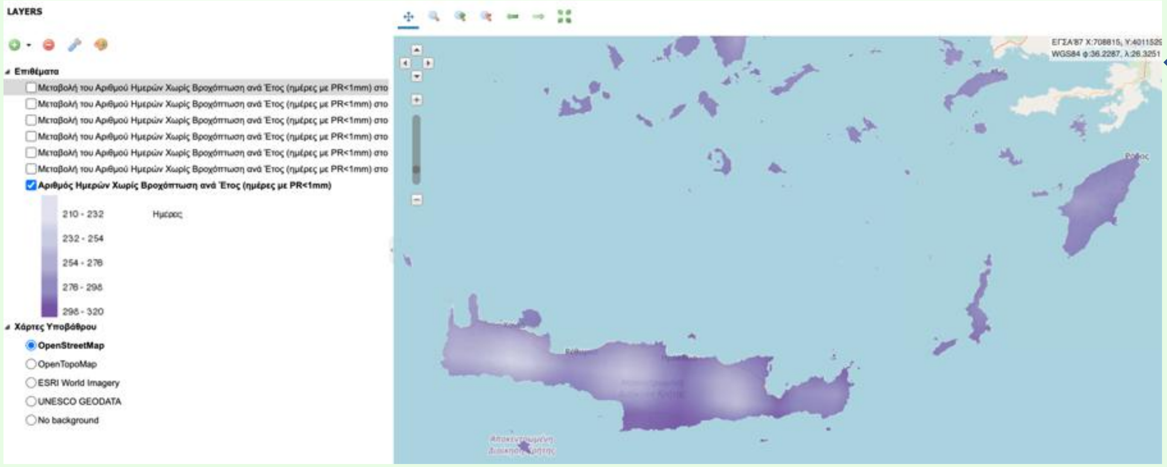
Patras

Changes in Annual average TMAX

Near future (2031-2060) under the RCP8.5 scenario



- **Maps are easily accessible** and downloadable through the GIS Mapsportal of the Greek Ministry of Environment and Energy.
- The resolution of the maps is approx. 500m after applying spatial interpolation methods to the initial data.
- The user can find **detailed climate information of a specific region of th country, focusing on the map of the online tool** which provides the value of th respective climate index of the area.



Number of **dry days (PR<1mm)**
Control period/current climate (1971-2000)

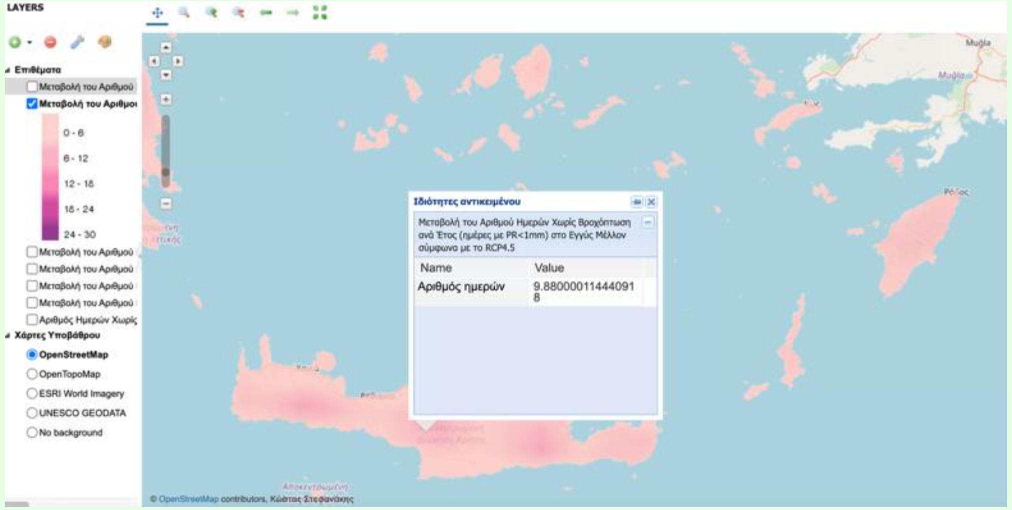
- ✓ Option to print the map and further process/analyse the data in GIS environment
- ✓ User manual is provided

https://mapsportal.ypen.gr/thema_climatechange

Crete

Changes in the Number of dry days (PR<1mm) (2071-2100) **RCP8.5.**

(2031-2060) **RCP4.5**.



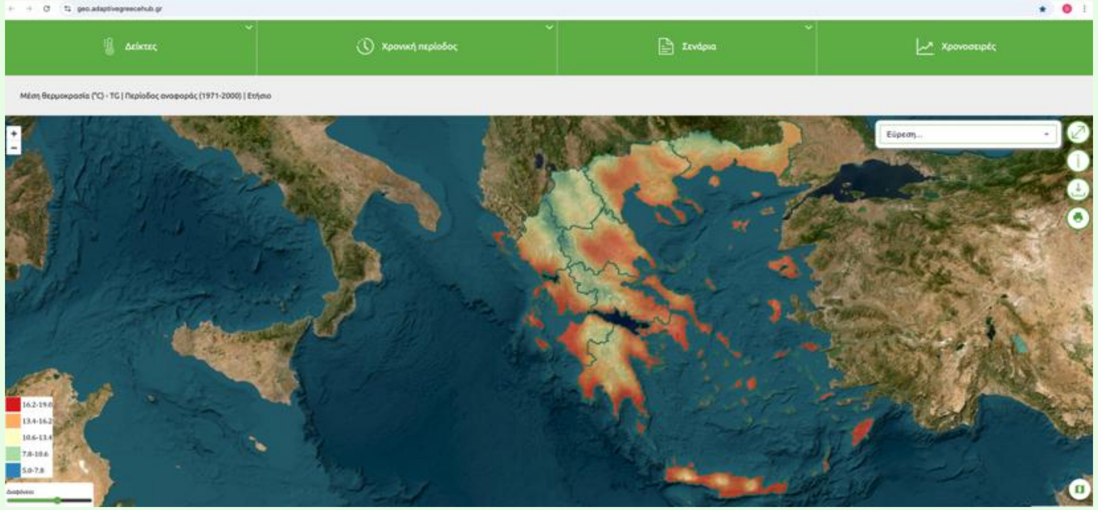
2. *Climate projections incorporation in the webtool of the National Adaptation HUB*

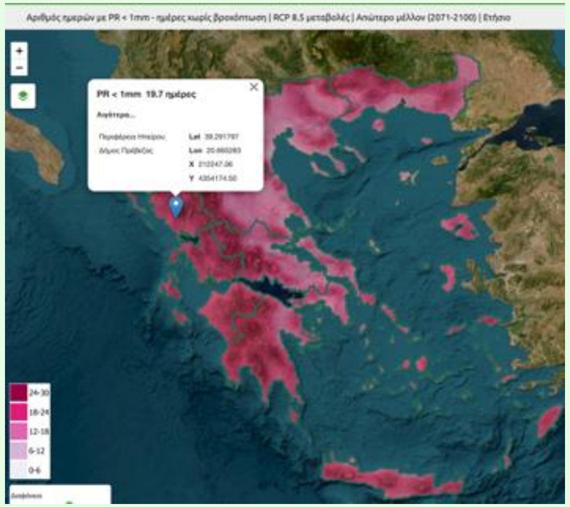
adaptivgreece Hub

Εθνικός Κόμβος για την Προσαρμογή στην Κλιματική Αλλαγή

https://adaptivegreecehub.gr/

https://geo.adaptivegreecehub.gr/



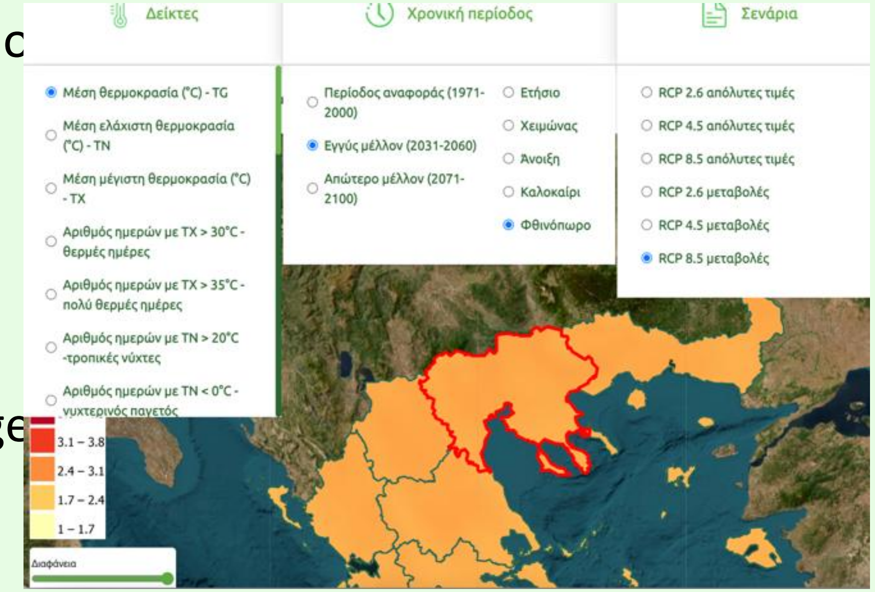


https://geo.adaptivegreecehub.gr/

adaptivgreece Hub
Εθνικός Κόμβος για την Προσαρμογή στην Κλιματική Αλλαγή

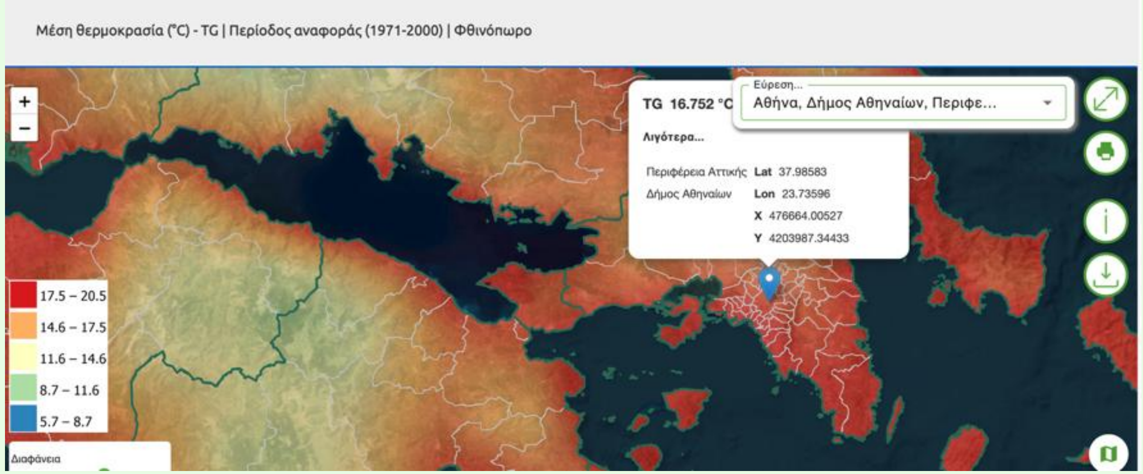
Mean annual temperature(°C) -TG
Minimum annual temperature(°C)- TN
Maximum annual temperature(°C)- TX
Number of days per year with TX > 30 °C – hot days
Number of days per year with TX > 35 °C – very hot days
Number of days with TN >20°C - tropical nights
Number of days with TN <0 ºC – frost days
Number of days with TG<10 ºC - high demand for heating
Number of days with TG>30 ºC – cooling degree days
Total annual precipitation(mm)-PR
Maximum length of consecutive dry days with total PR<1mm
Number of days with με PR>10mm - heavy precipitation days
Number of days with PR>20mm –very heavy precipitation days
Number of days with PR>1mm - wet days
Number of days with PR<1mm - dry days
Mean annual relative humidity (%)
Mean annual wind speed (m/sec)
Cloudiness (%)
Mean ANNUAL INCOMING SHORTWAVE RADIATION (Watt
Number of days with humidex (heat stress index) >38 ºC
Number of days with humidex (heat stress index)>40 ºC
Number of days with humidex >46 ºC
Mean FWI (Fire Weather Index)- fire danger indicator
for the period May-October
24. Number of days with high fire risk (FWI> 50)

- Map of Greece with climatic indices for each of the 13 Regions of the country.



Option to choose:
a)Climatic index (24 climate indices)
b) 3 emission scenarios
c)control, future periods' mean values and change
d) **seasonal values** for Tmean ,PR, Wind

- Ability to zoom by Region for detailed climate information



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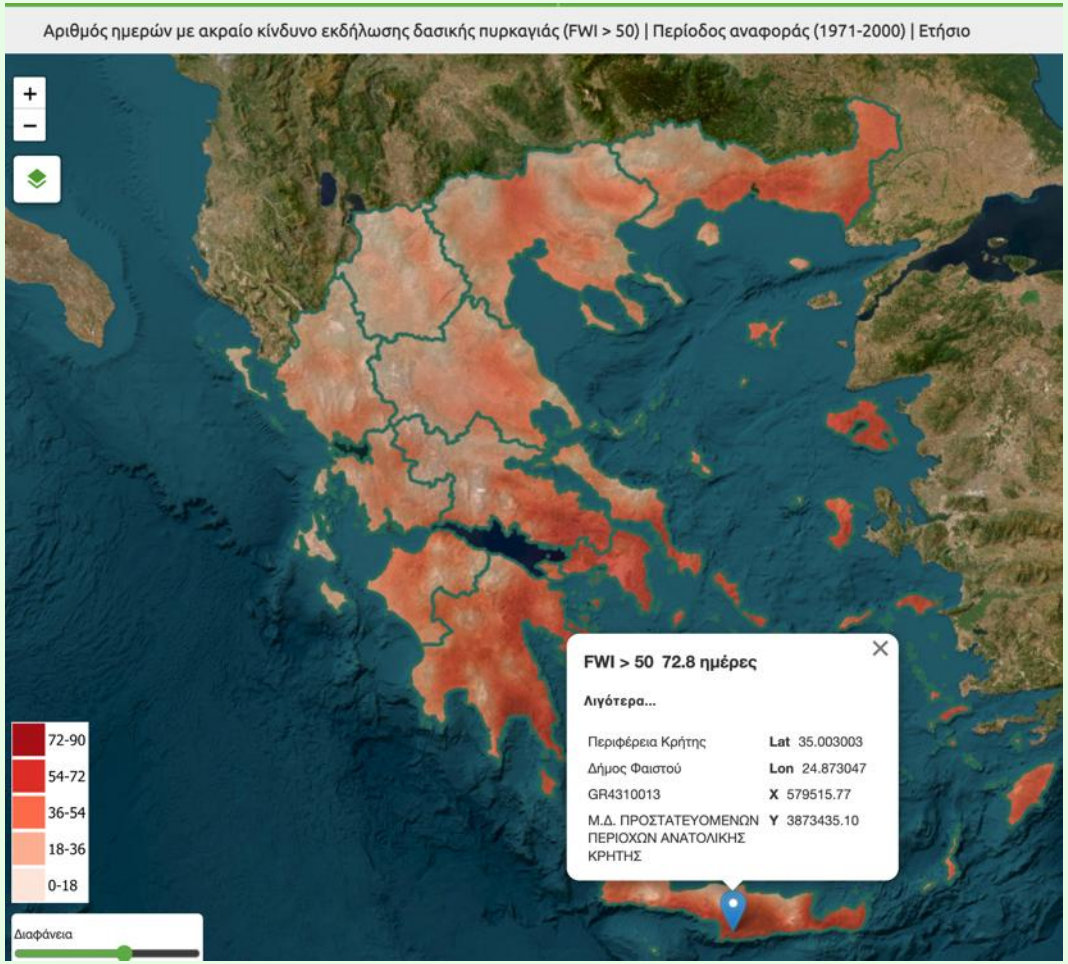
2. Climate projections incorporation in the webtool of the National Adaptation HUB

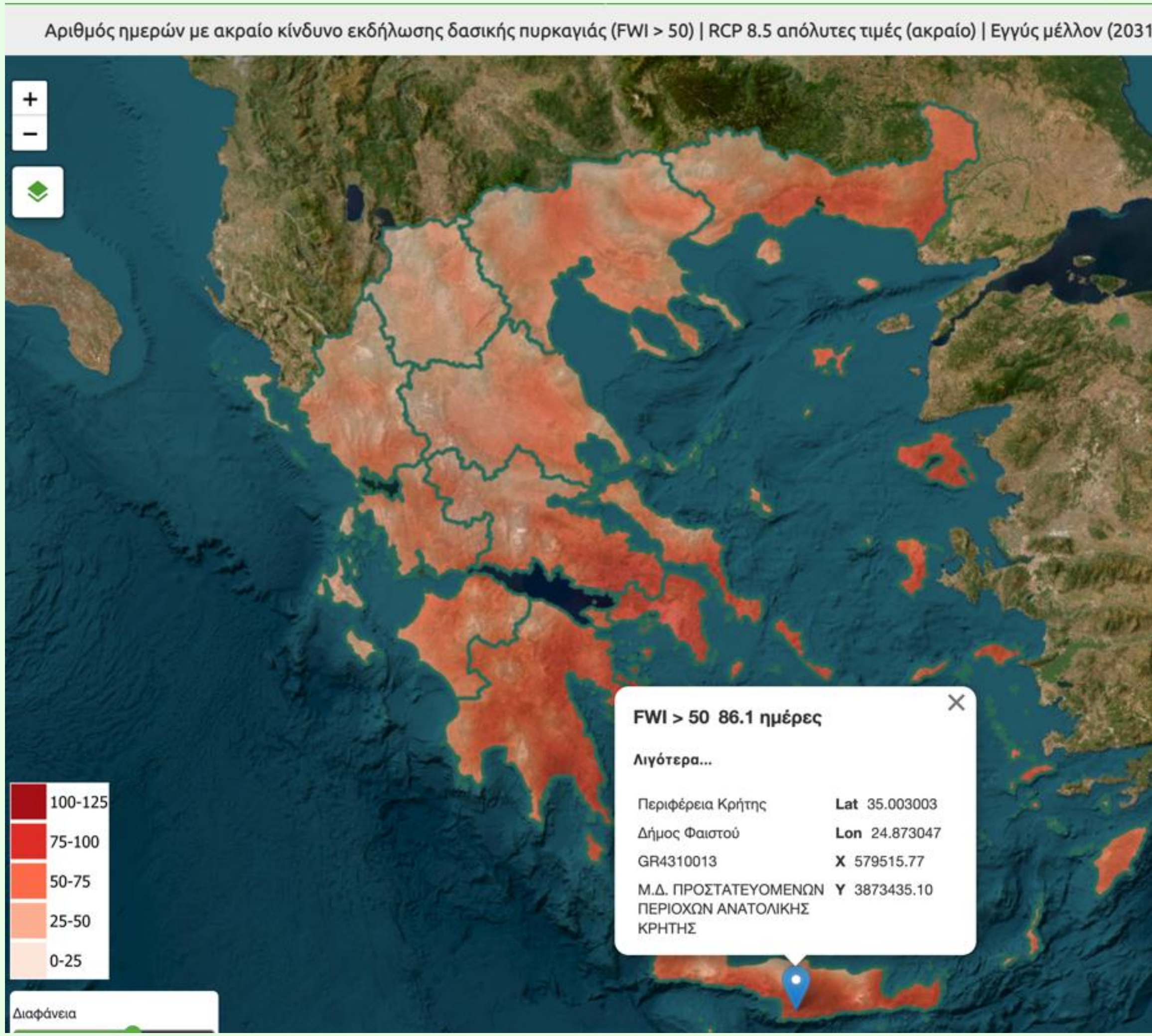
adaptivgreece

Number of days with high fire risk
Control period (1971-2000)

FWI (fire weather index) >50
Greece

Number of days with high fire risk
Near future (2031-2060) RCP8.5





South Crete

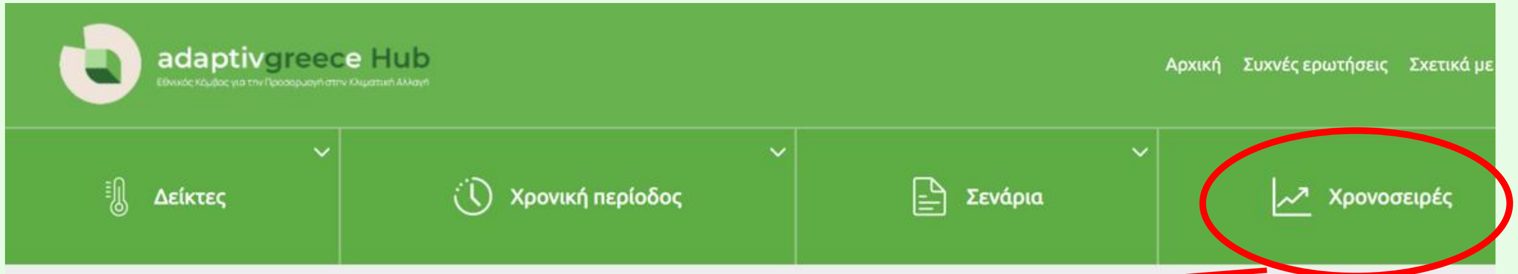
adaptivgreece Hub

https://geo.adaptivegreecehub.gr/

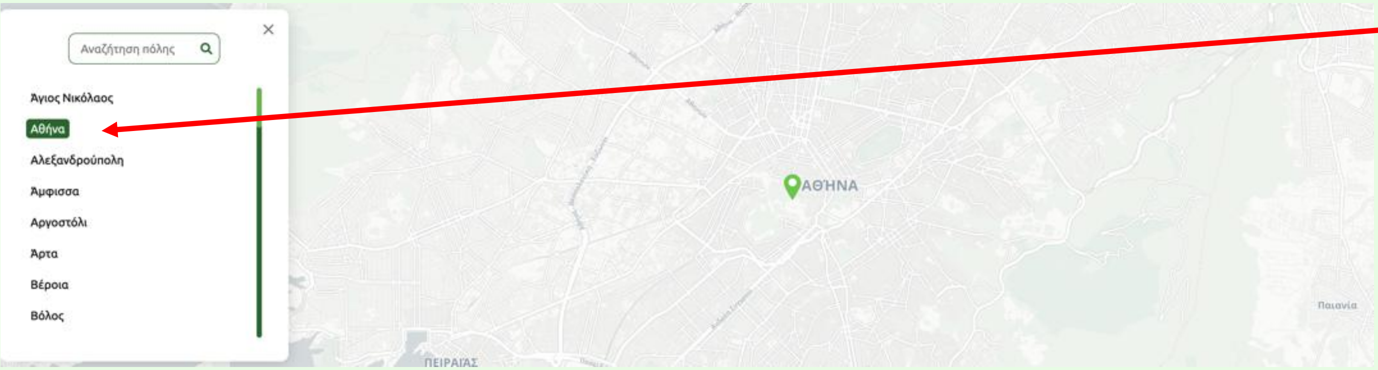
https://geo.adaptivegreecehub.gr/

- Ability to click on specific cities

- time series of temperature and Precipitation are displayed



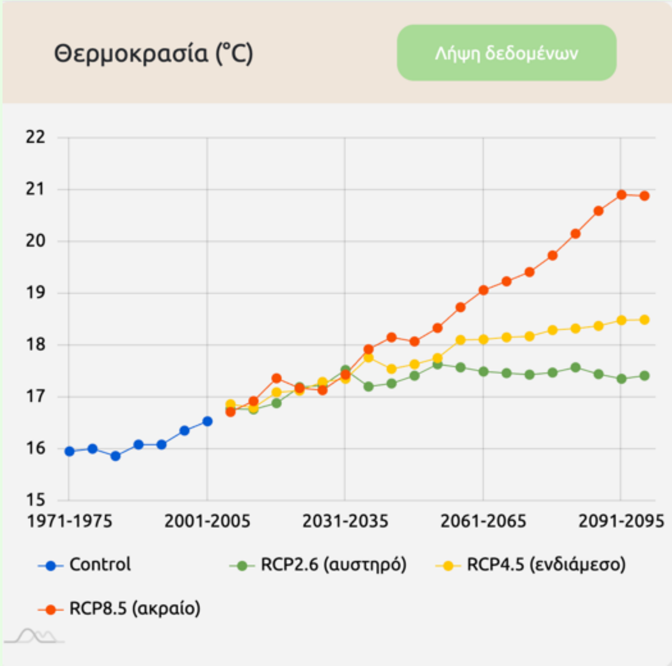
Athens

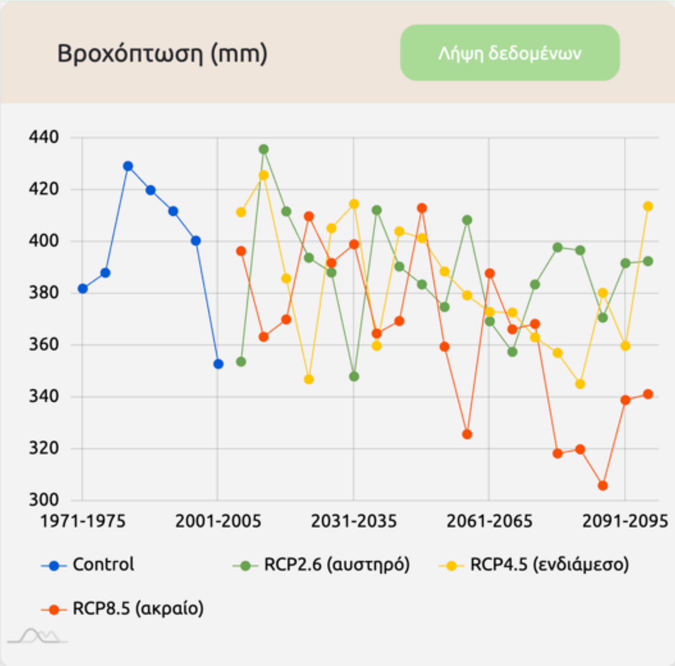


For **the capitals of all prefectures**

- Time series of five years averages of annual

PR and Tmean



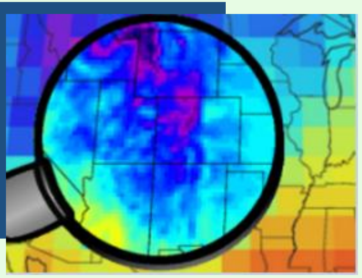


are shown for
-the present climate (blue line)
-future periods (up to 2100)
under different emission scenarios
(RCP 2.6, RCP 4.5 and RCP 8.5)

Ο.ΦΥ.ΠΕ.Κ.Α.

adaptivgreece

Climate services-web platforms for Greece



CLIMPACT
ΕΘΝΙΚΟ ΔΙΚΤΥΟ ΓΙΑ ΤΗΝ ΚΛΙΜΑΤΙΚΗ ΑΛΛΑΓΗ

3. CLIMPACT:

Webtool visualizes the expected changes as well as the effects of climate change

for agricultural sector on national scale

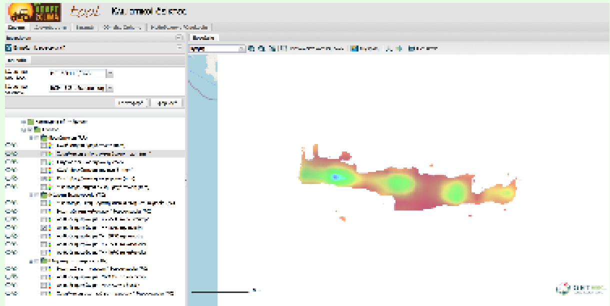
- http://climdat.meteo.noa.gr/emblematic/

ADAPT 2CLIMA

4. ADAPT2CLIMA tool

- ADAPT2CLIMA Decision Support tool is to enhance understanding of climate change and its impacts on agriculture in order to support farmers, policy makers and other relevant stakeholders (agronomists, agribusiness industry, etc.) in adaptation planning

- https://tool.adapt2clima.eu



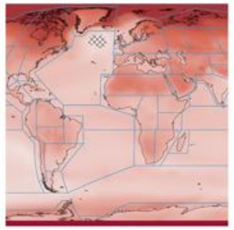
European climate Services

Climate Change Service

Key products and services


Climate Intelligence


Climate Data Store

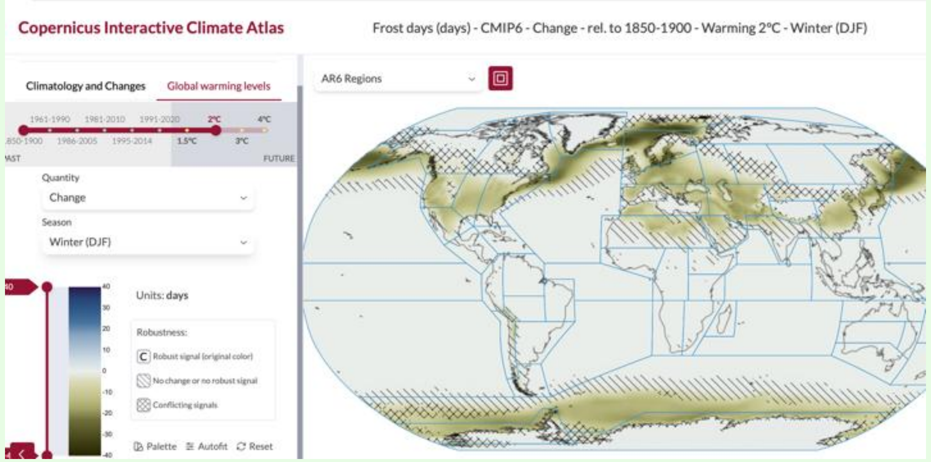

C3S Atlas


Data in action

1. https://climate.copernicus.eu/**climate-indicators**

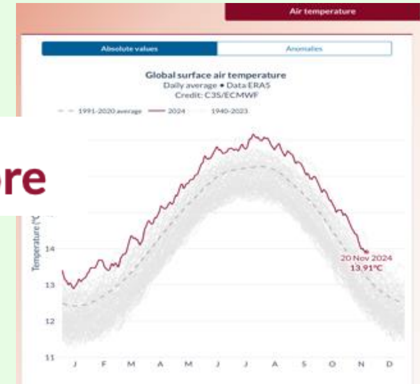
Climate Indicators

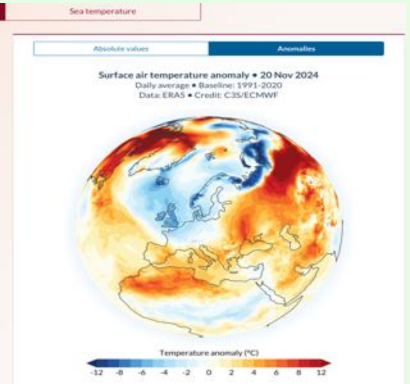
2. https://atlas.**climate.copernicus**.eu/atlas



3. https://**pulse.climate**.copernicus.eu

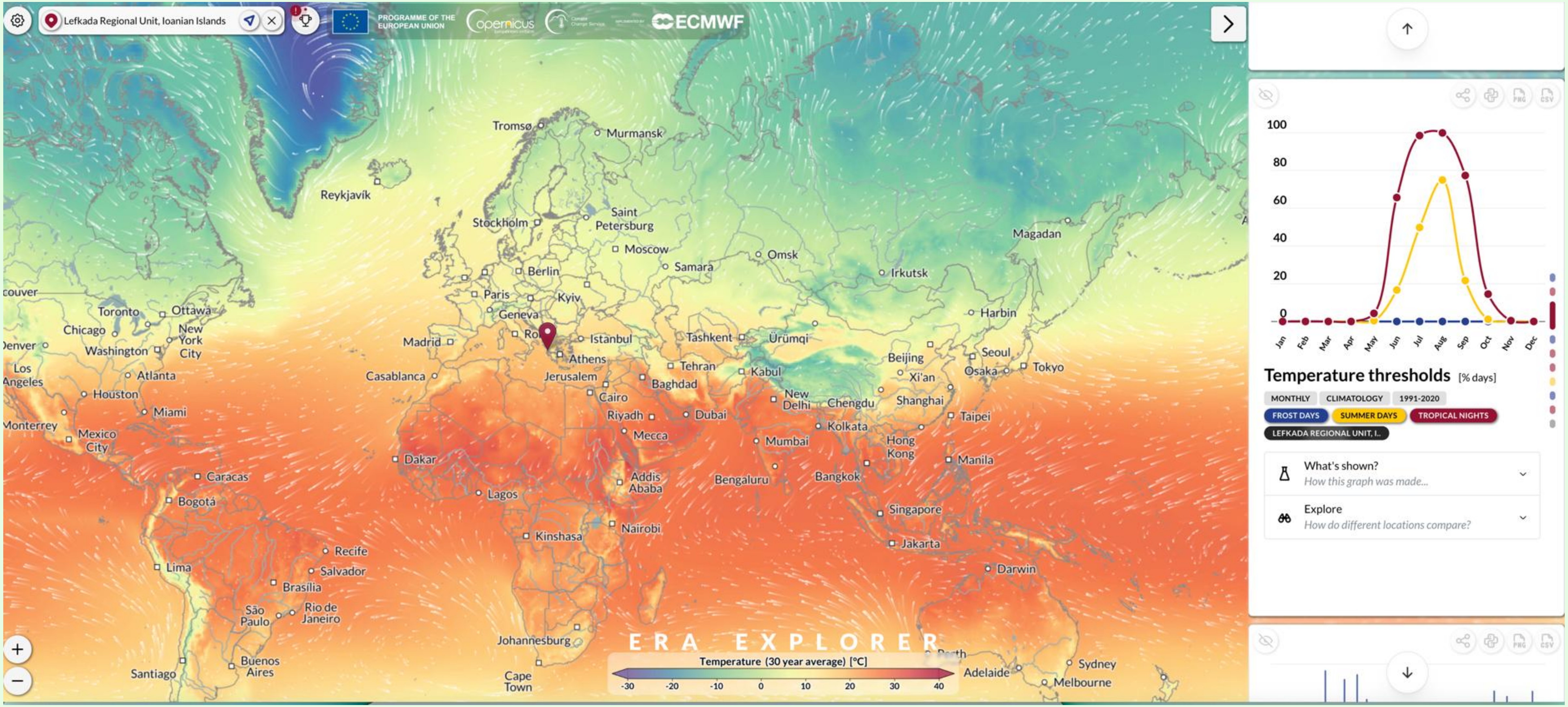
Climate Data Store



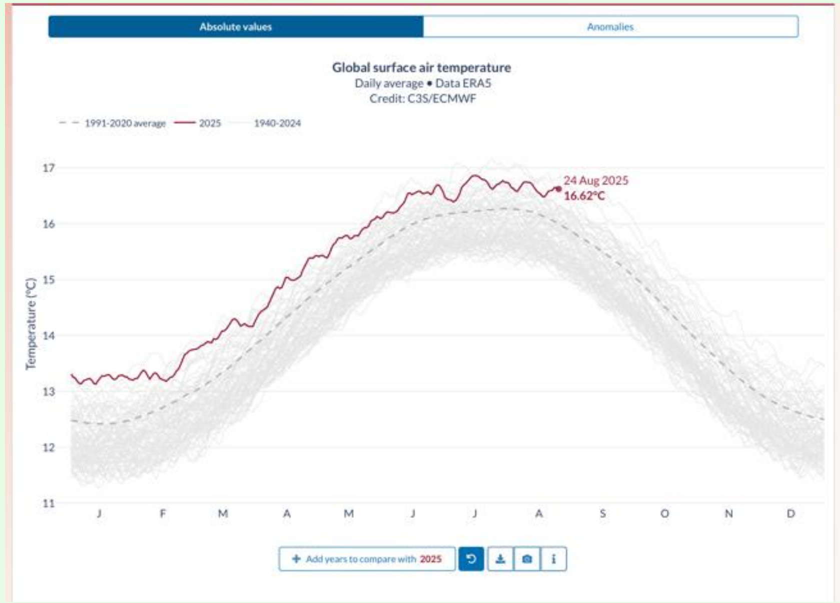


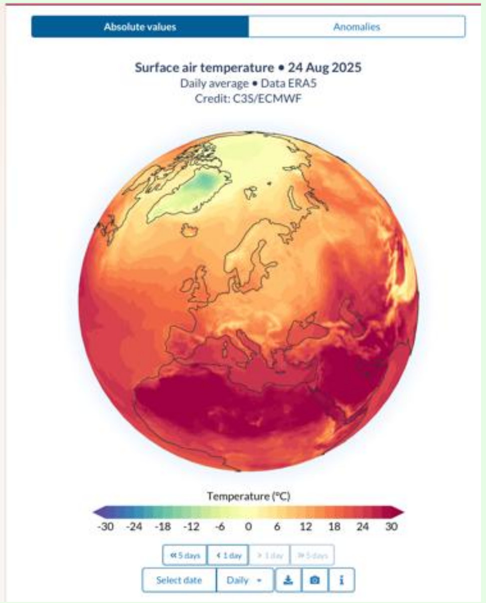
5. https://era-explorer.climate.copernicus.eu/?lat=50.86&lng=4.35&plot=0

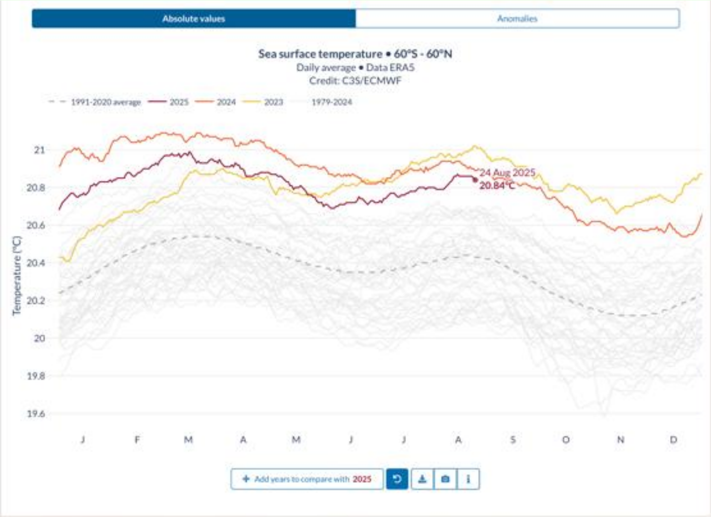
ERA Explorer

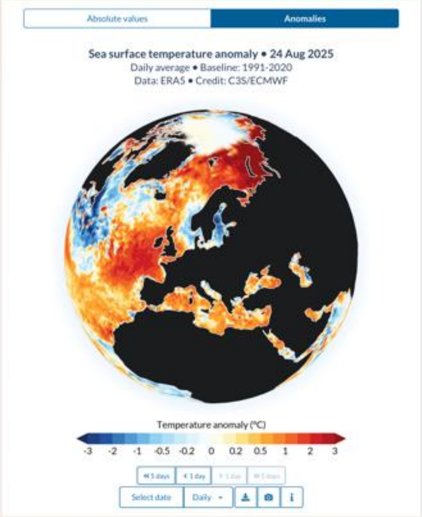


C3S has released Climate Pulse, an interactive and intuitive tool displaying key global-average **surface air temperature and sea surface temperature data**, enabling users to better
understand how our climate is changing,
explore different years,
download and share the data, charts and maps.

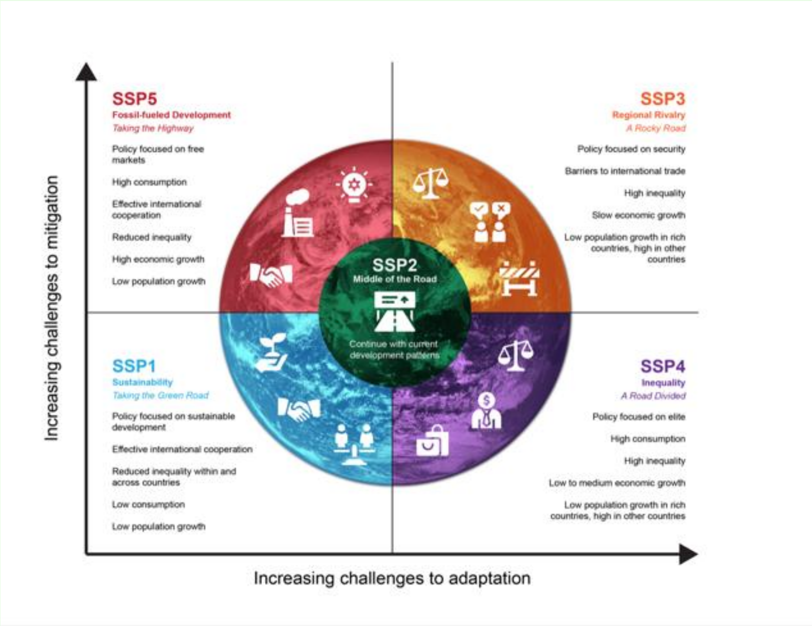








Thank you



Gianna Kitsara
gkitsara@noa.gr

Christos Giannakopoulos,
Reasearch Director
cgiannak@noa.gr

Institute for Environmental Research and Sustainable Development
National Observatory of Athens
Lofos Koufou, Palaia Penteli, Athens, Greece

CLIMADAPT research Group:
http://climadapt.meteo.noa.gr/