

Climate change and forest fires – the Portuguese case

2017

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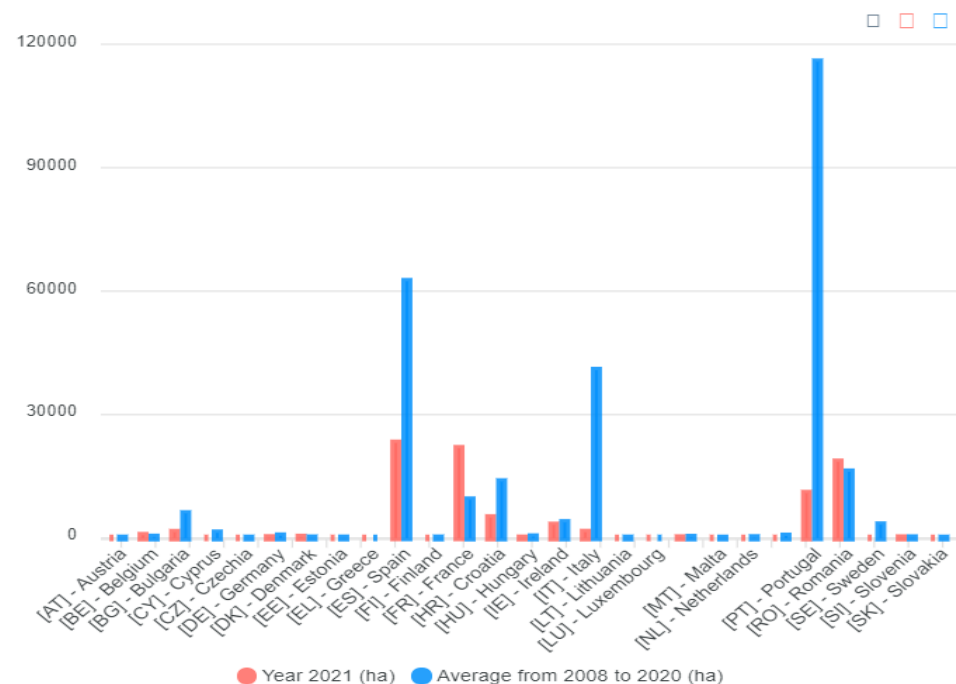
Forest fires can be seen
as endemic in Portugal



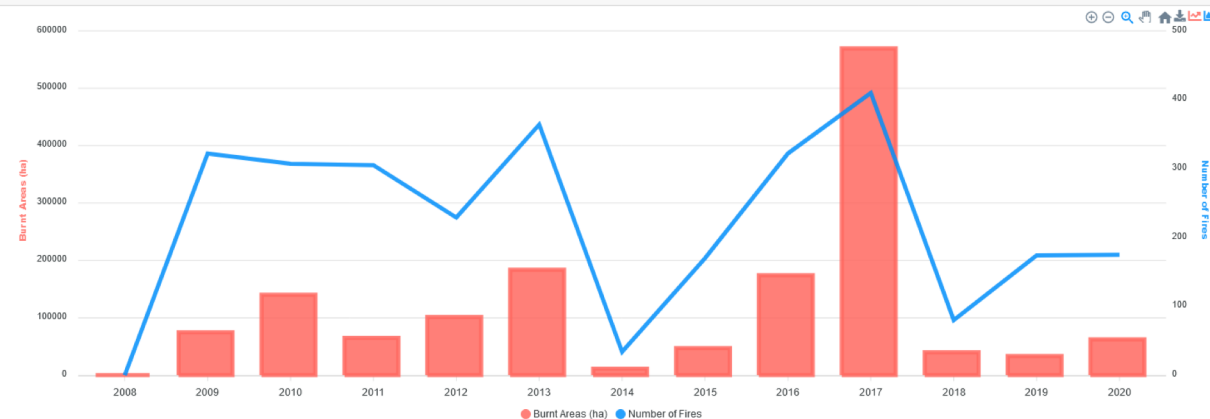
Burnt Areas

Number of Fires

EFFIS - Estimates per Country



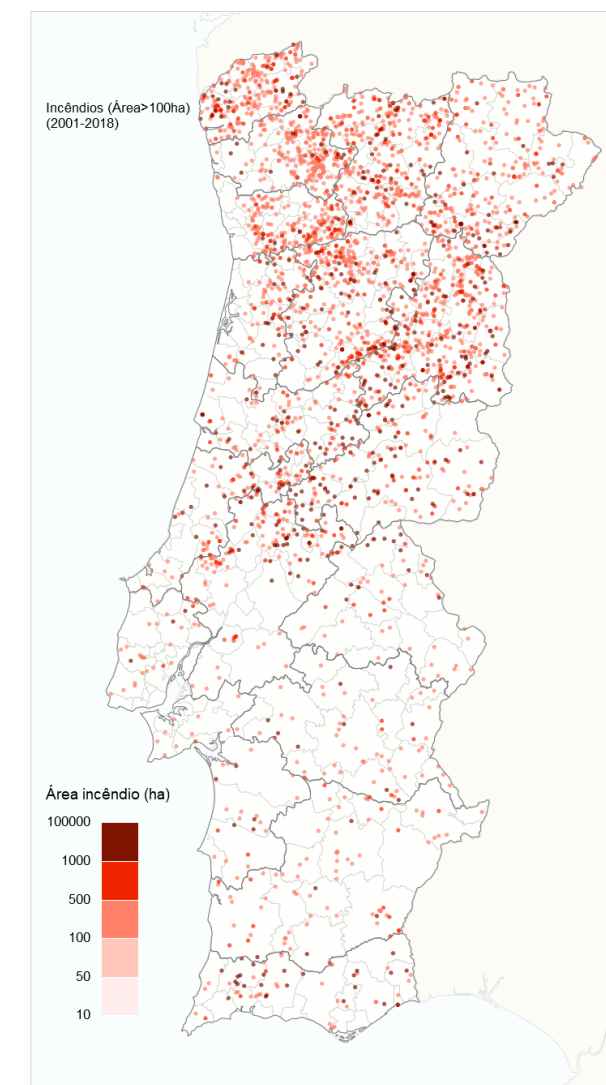
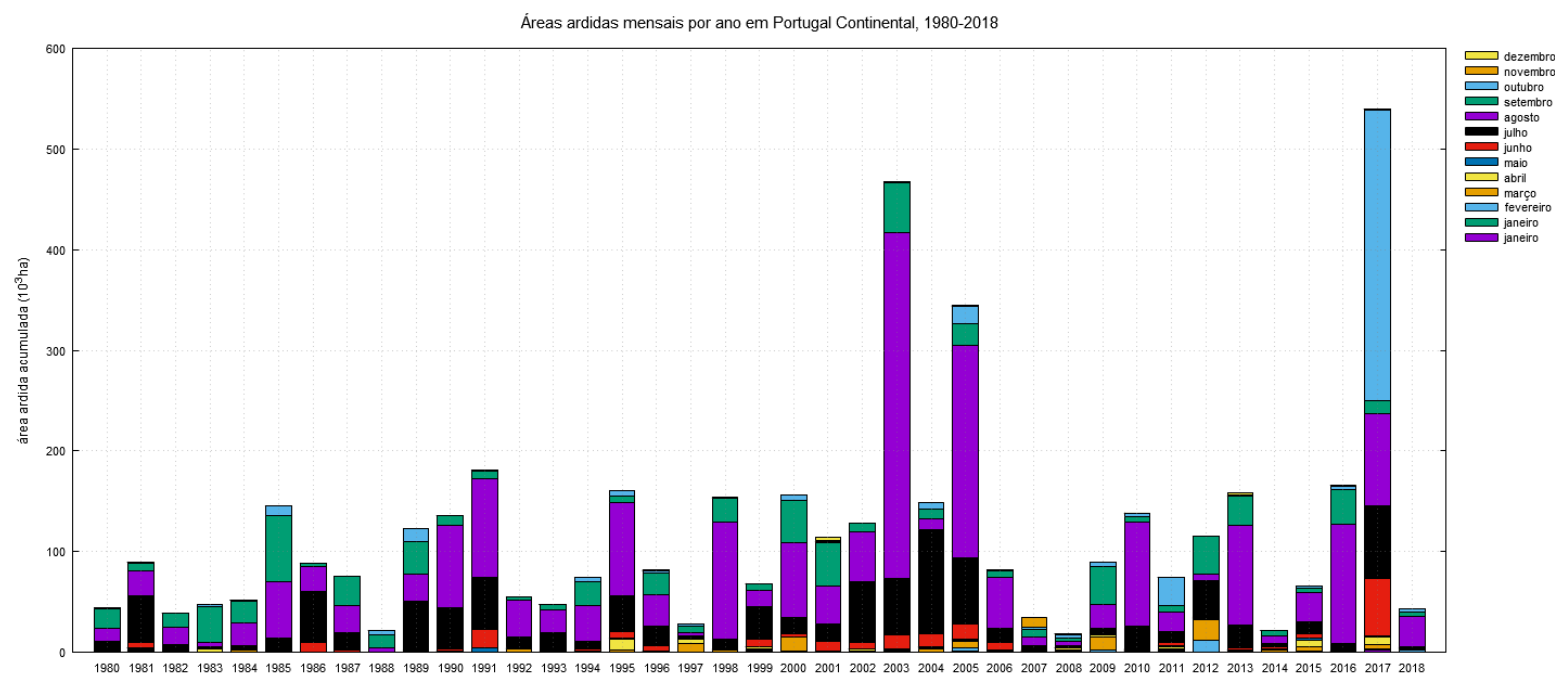
EFFIS - Annual Country Statistics for Portugal [PT]



Year	Burnt Areas (ha)	Number of Fires
2020	62557	175
2019	33533	174
2018	39969	80
2017	569406	410

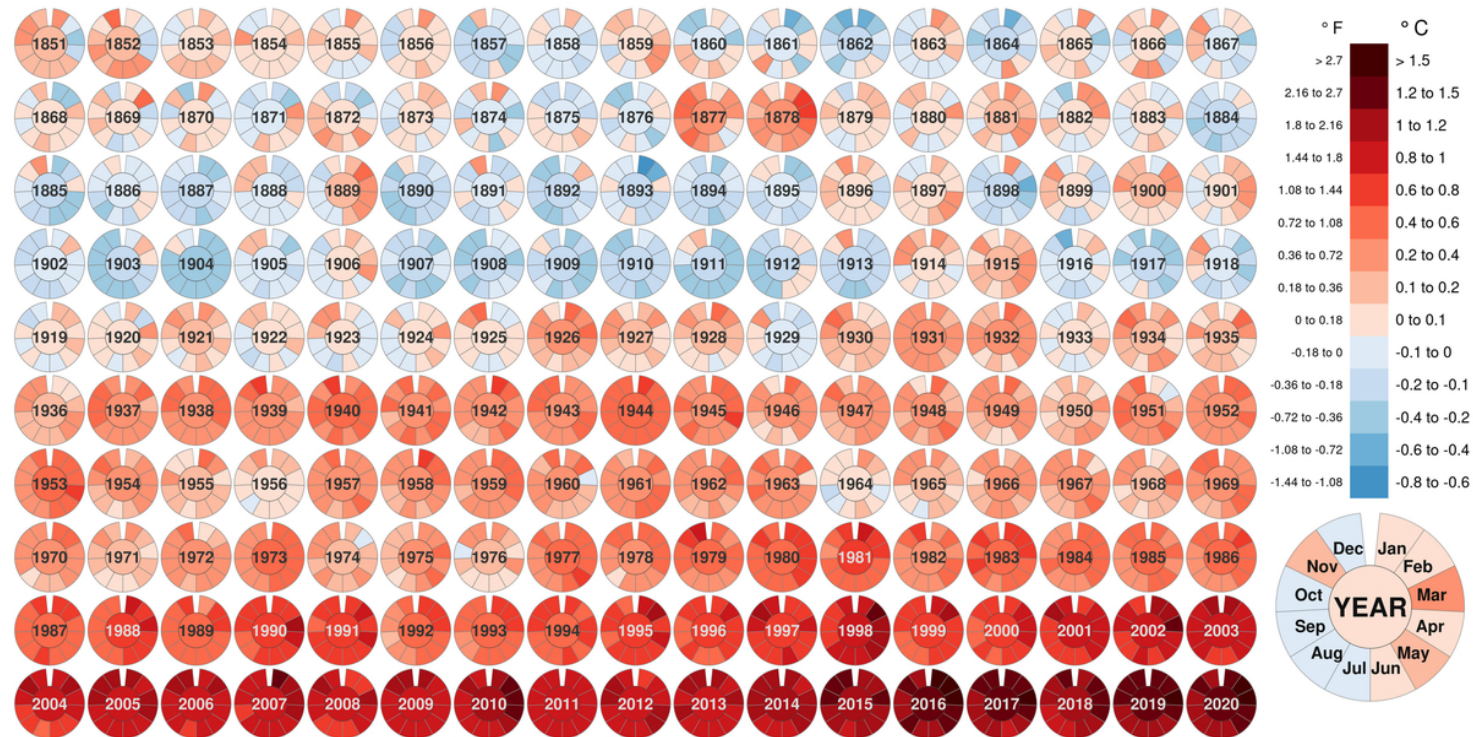
Source: European Forest Fire Information System

Forest fires are geographically distributed and have high correlation with drier years and warm summers





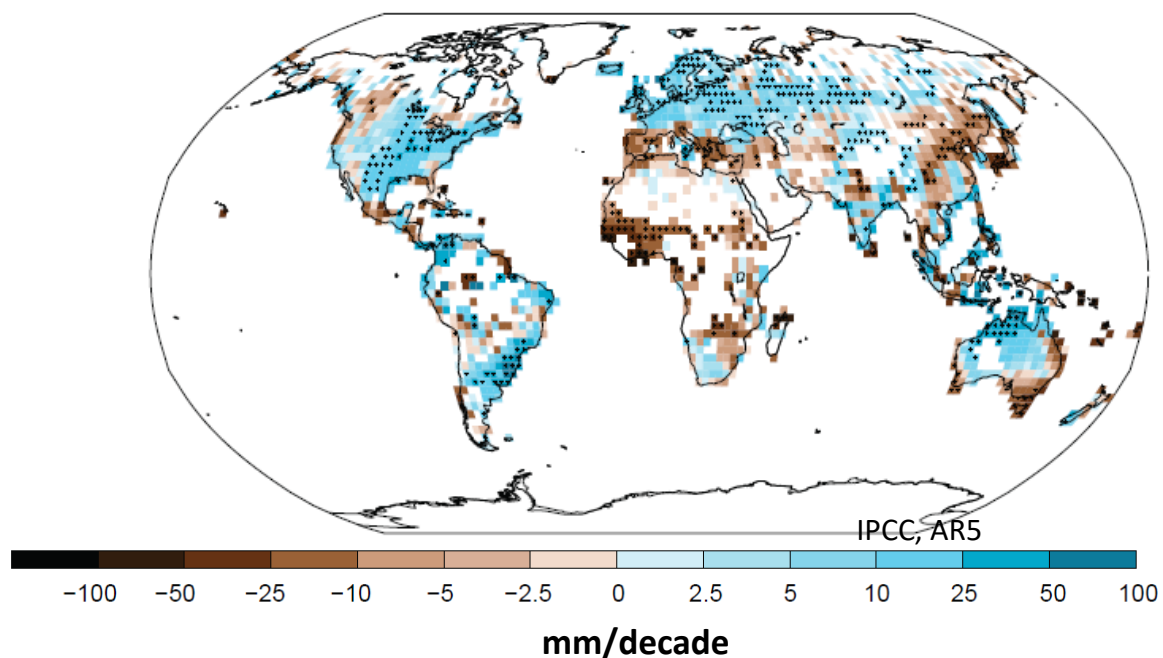
Monthly global mean temperature 1851 to 2020 (compared to 1850-1900 averages)



Data: HadCRUT5 - Created by: @neirkaye

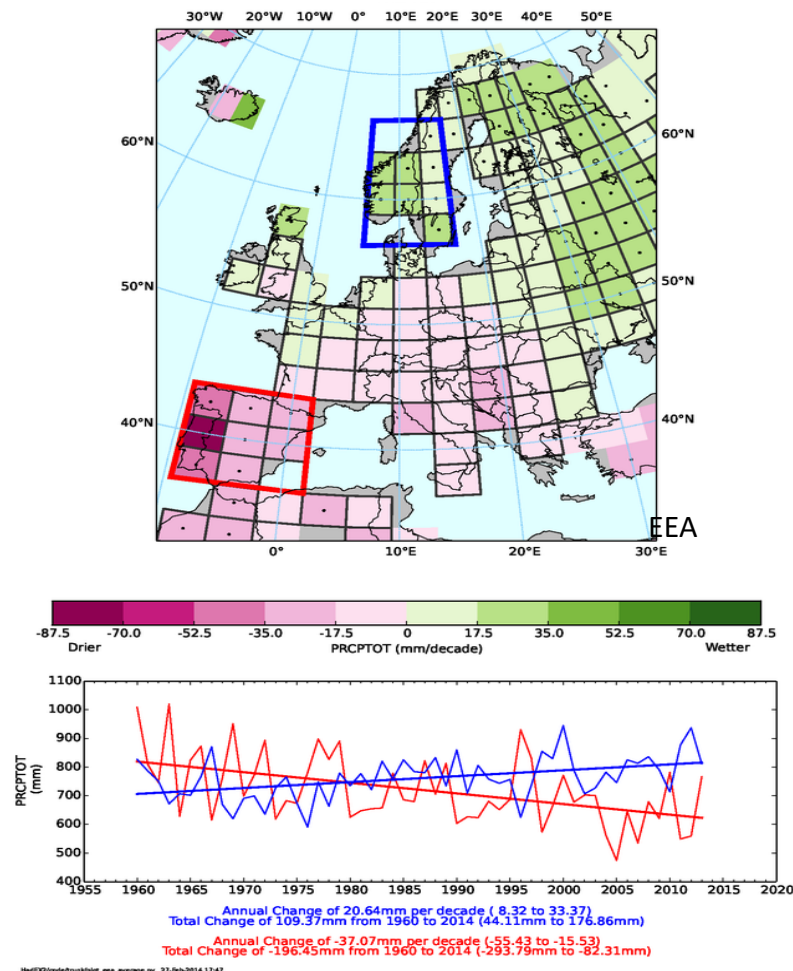
Precipitation trend

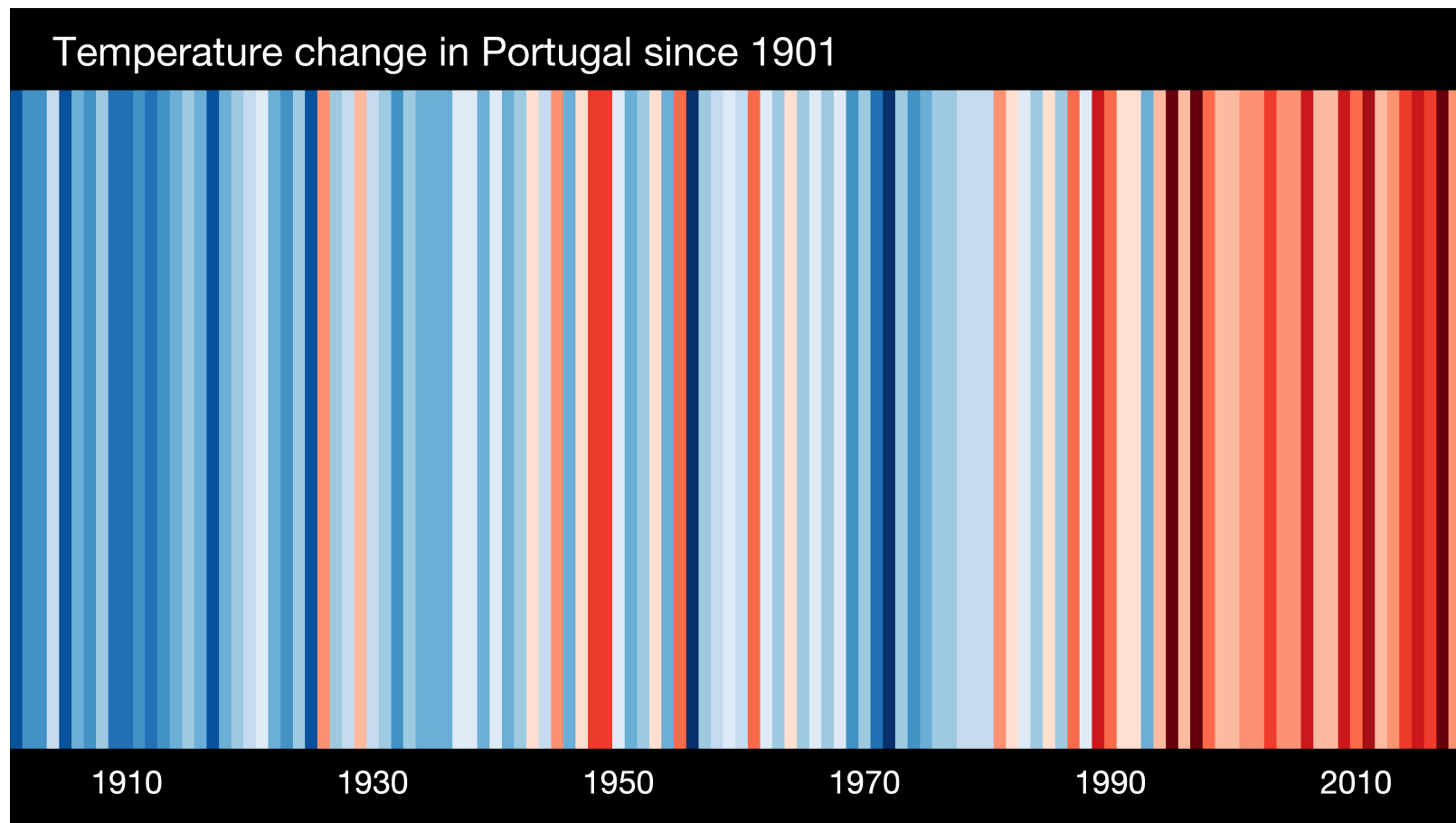
1951–2010



**Reduction of precipitation in the Iberian Peninsula
and Mediterranean basin**

Precipitation trend in Europe (mm/decade)





Source: <https://showyourstripes.info> Credits: Professor Ed Hawkins (University of Reading)

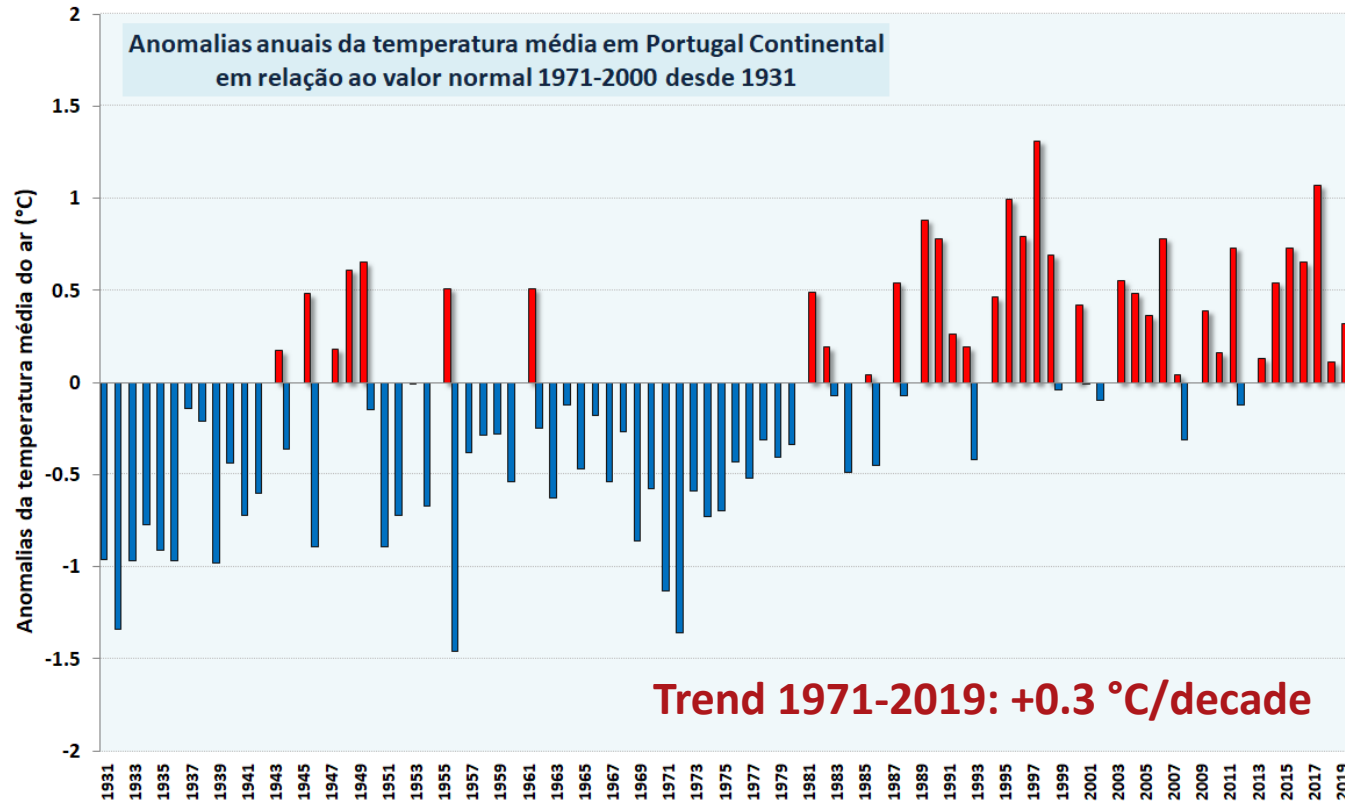


IPMA

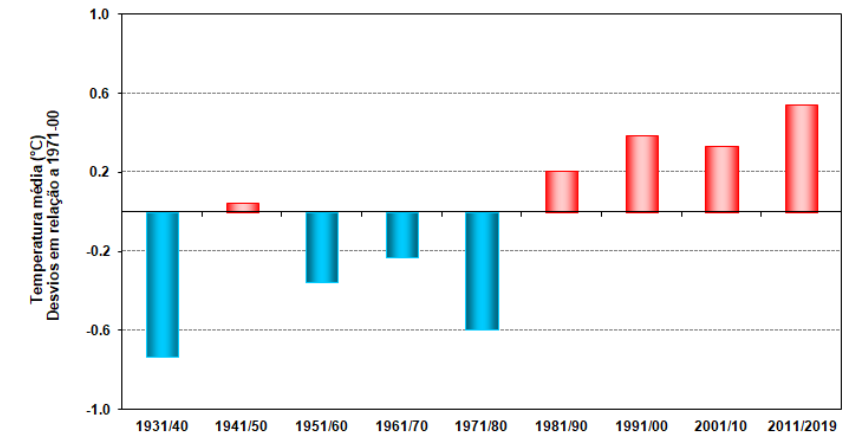
Instituto
Português
do Mar e da
Atmosfera

Climate change observed in Continental Portugal

Average temperature anomalies



Average temperature anomaly per decade

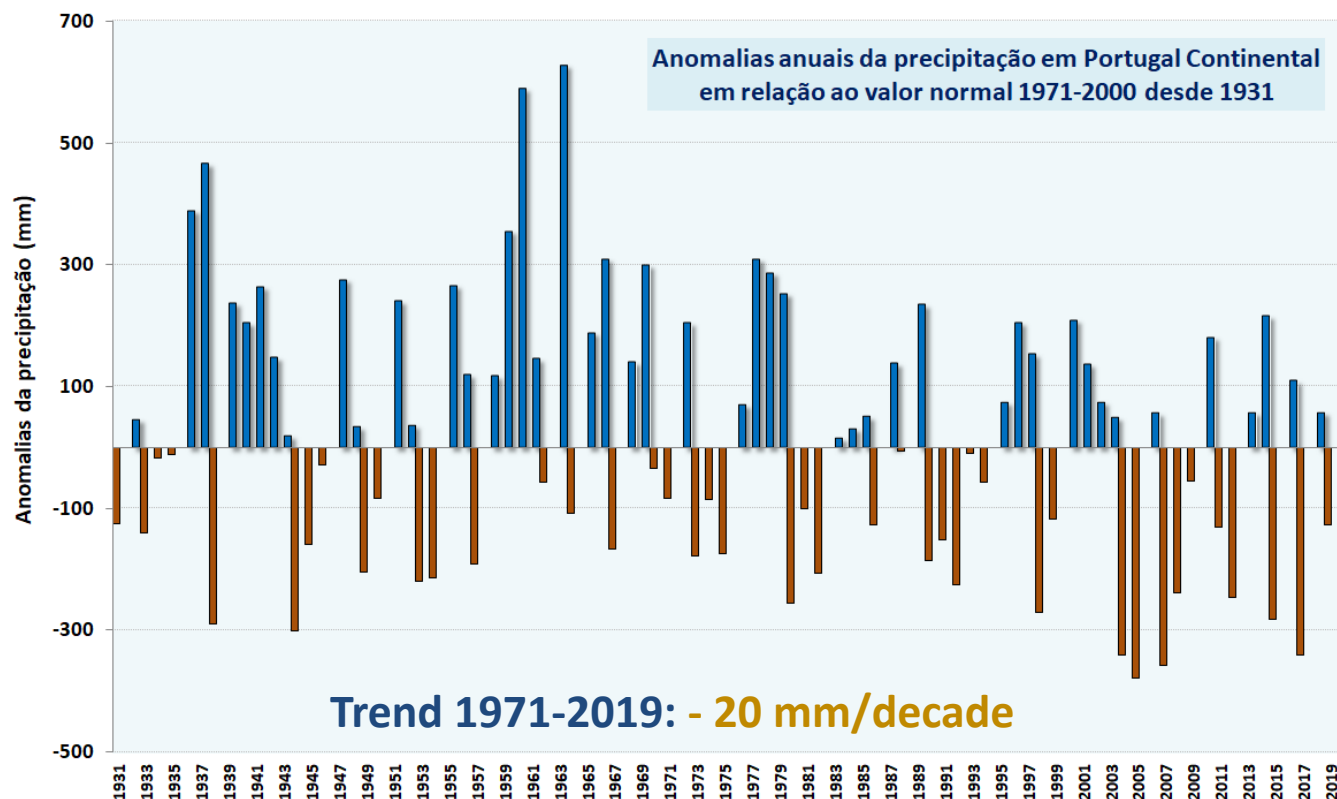


Of the 10 warmest years, 8 occurred after 1990:

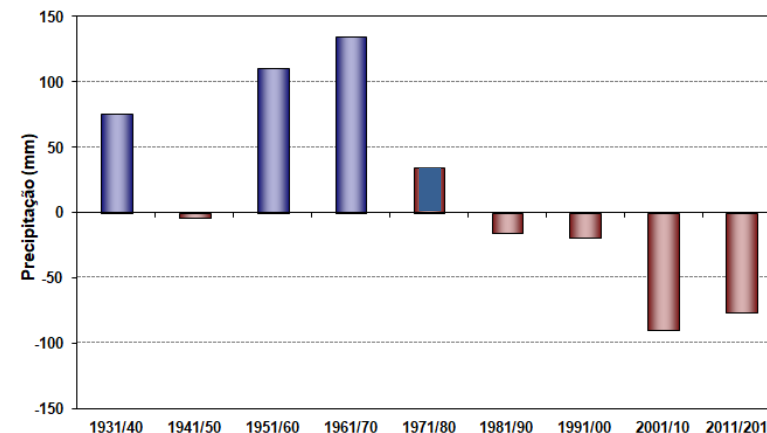
1997 warmest year (but low area burnt)

2017 second warmest year (worst year of forest fires)

Precipitation anomalies

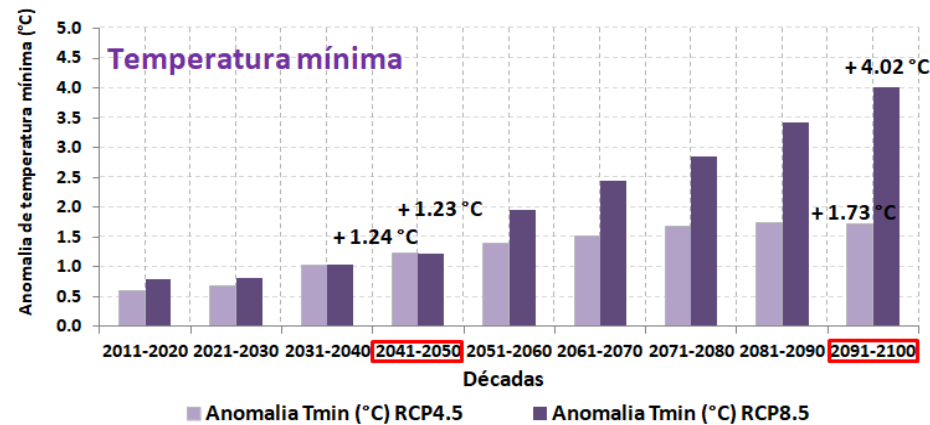
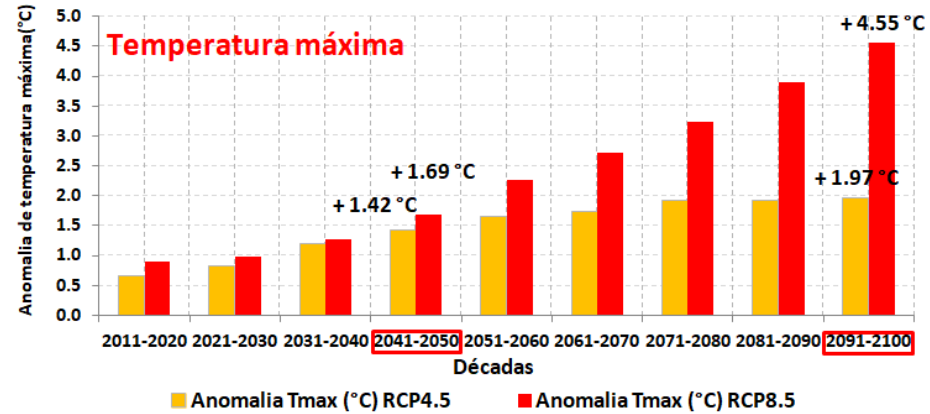


Precipitation anomalies per decade

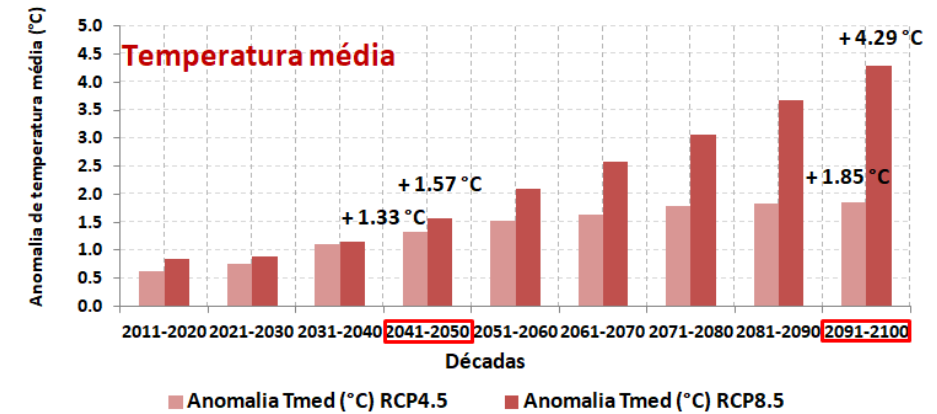


Decrease of precipitation in the last four decades, with more impact in the last 20 years

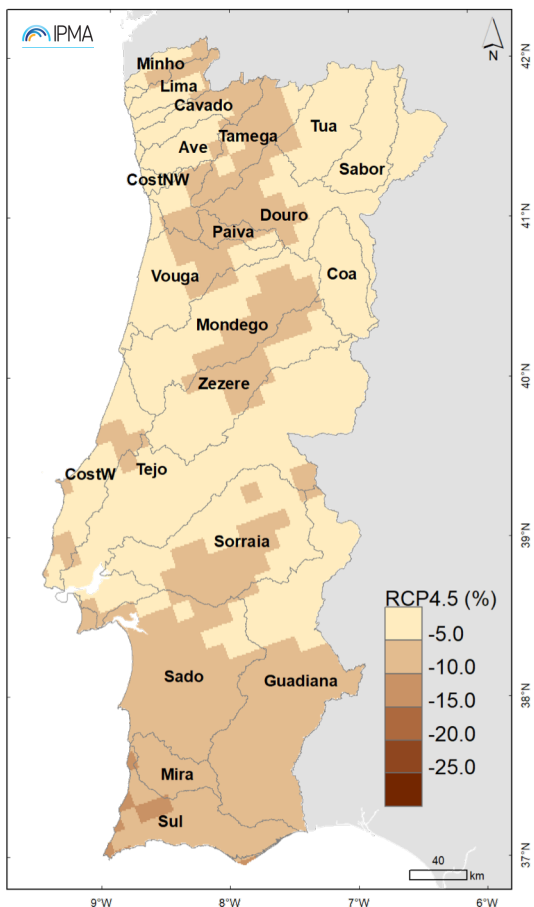
Drier years: 2005, 2007, 2017



All scenarios with an increase in temperatures

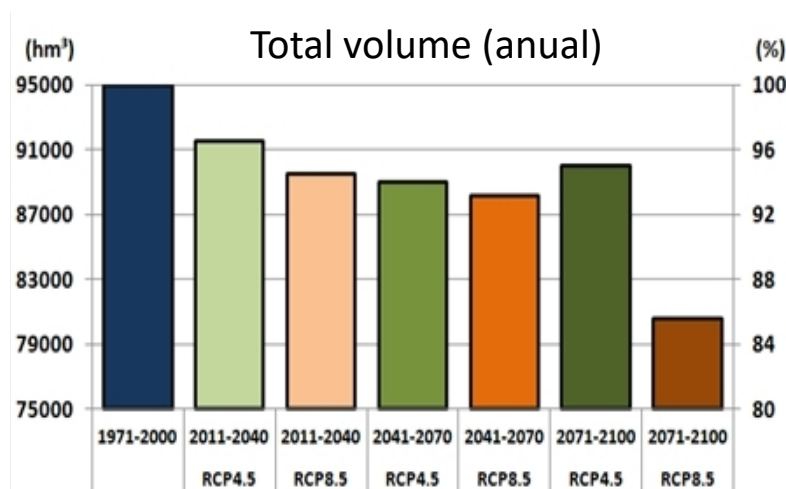


Cenário RCP4.5 (Ensemble - Portal do Clima)
de Precipitação anual no período 2071-2100:
Diferença em relação aos valores médios no período 1971-2000

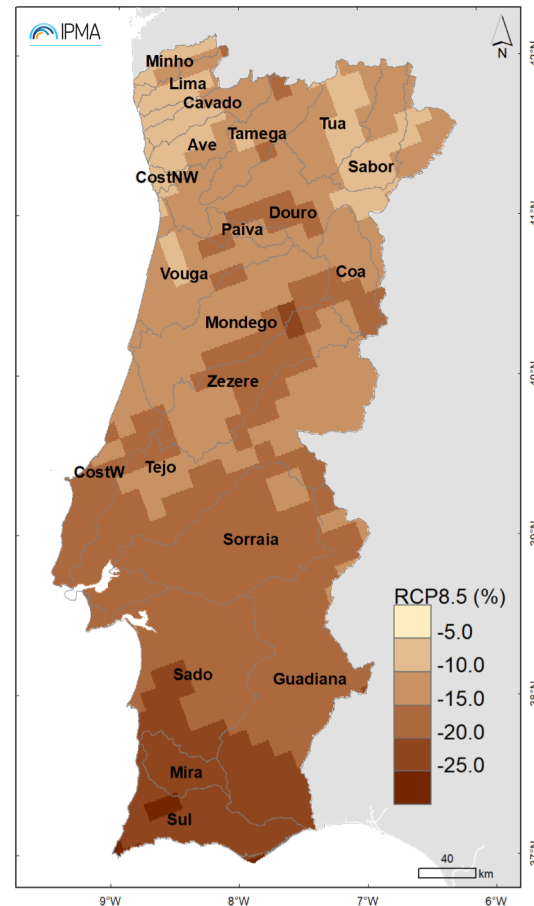


**Less precipitation in all scenarios,
more noticeable in the south**

Until 2071-2100, in the RCP 4.5 scenario, a reduction of at least 5% but could reach 15% in the south

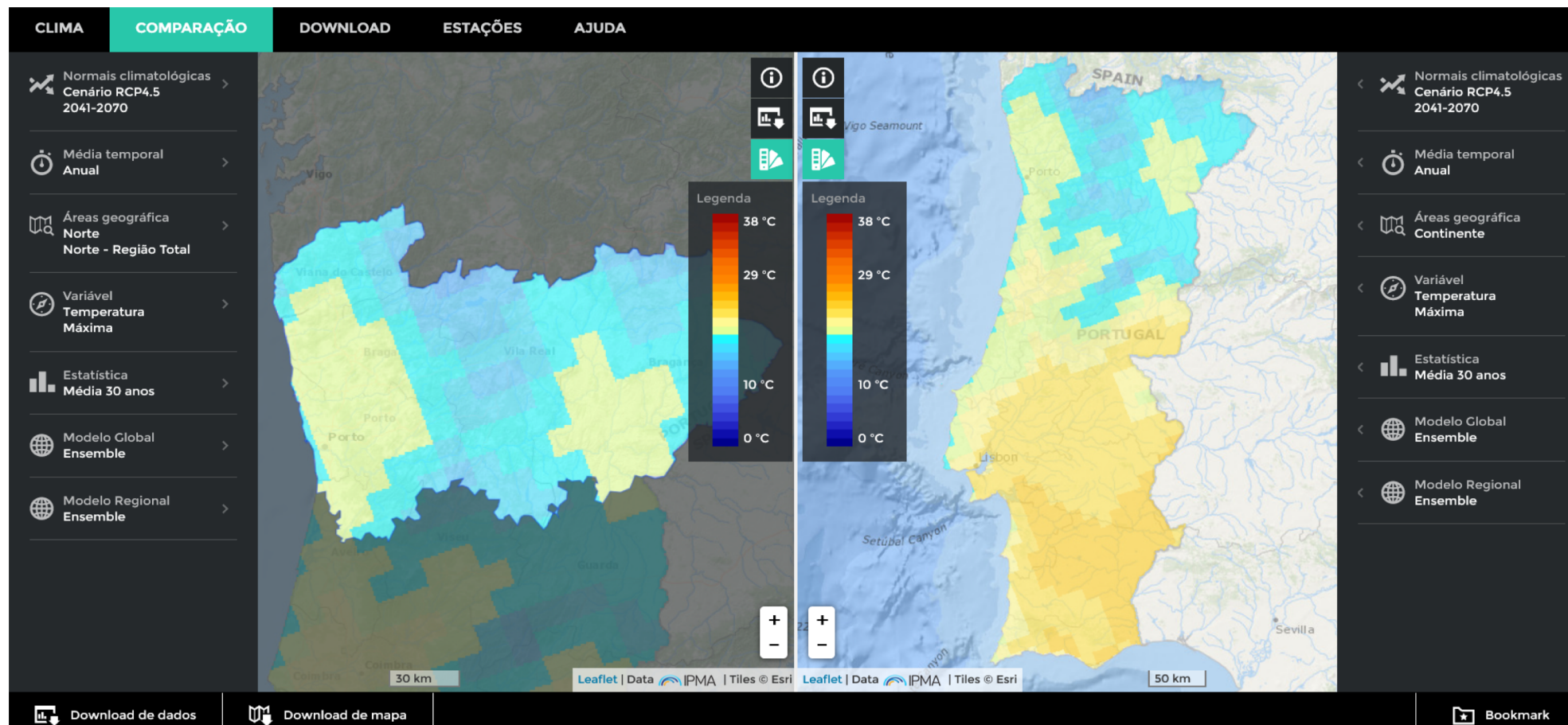


Cenário RCP8.5 (Ensemble - Portal do Clima)
de Precipitação anual no período 2071-2100:
Diferença em relação aos valores médios no período 1971-2000

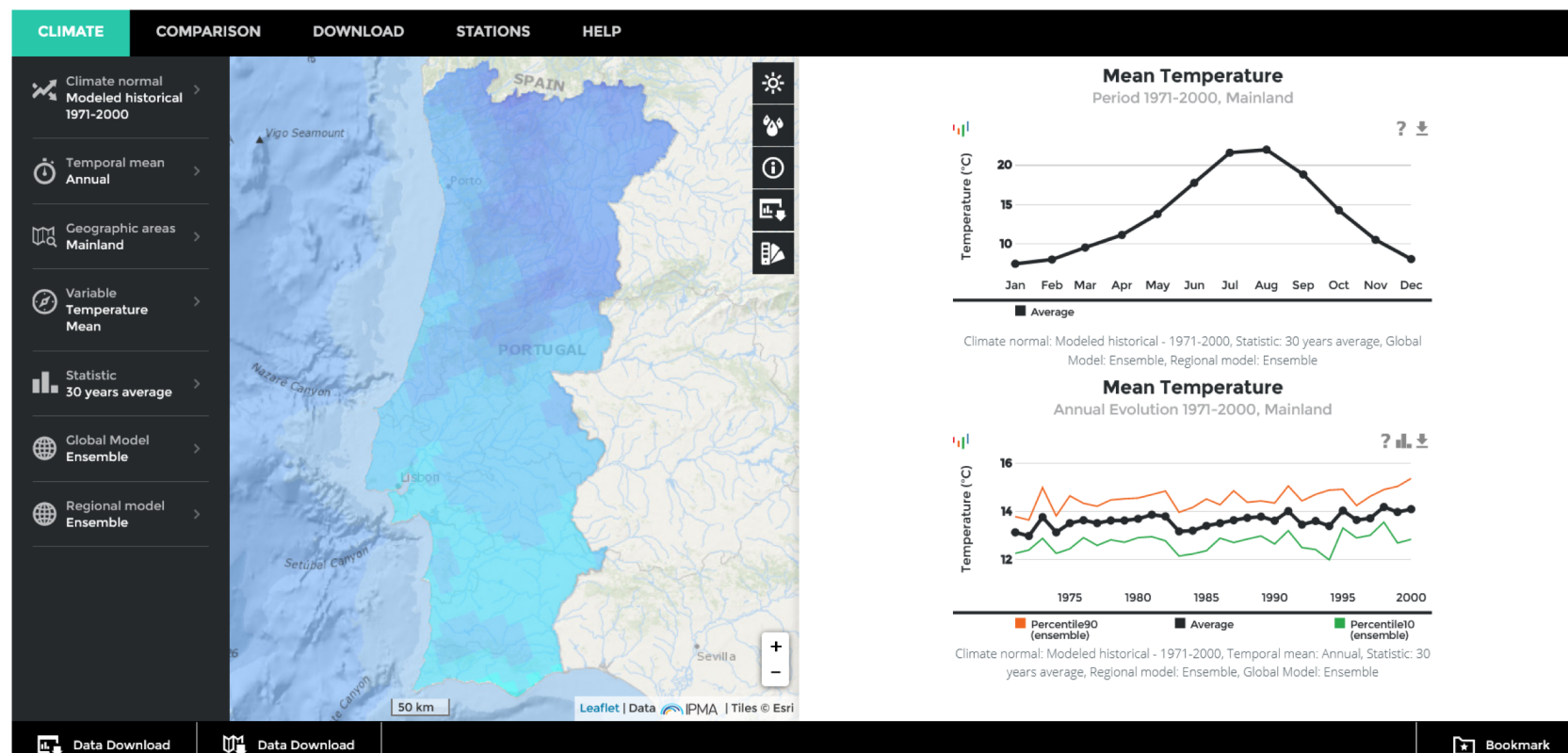




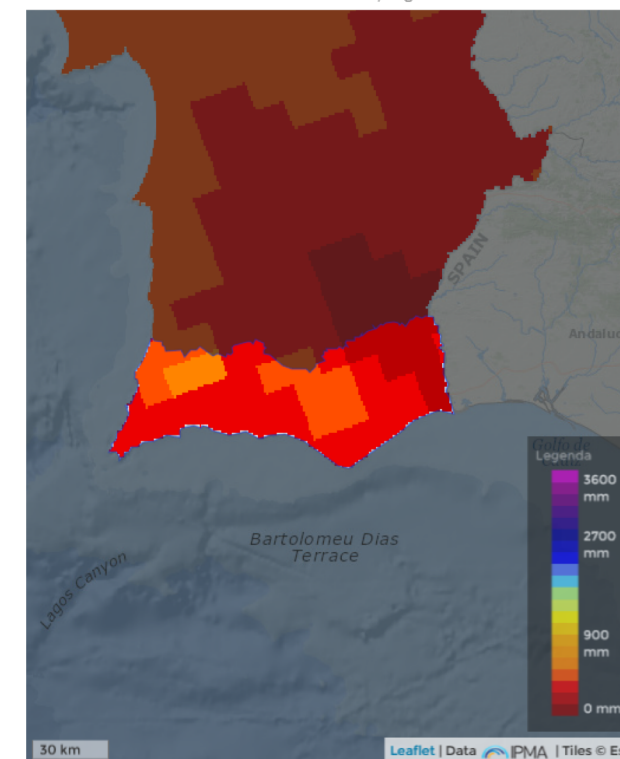
Climate Portal - Provide the information to all users



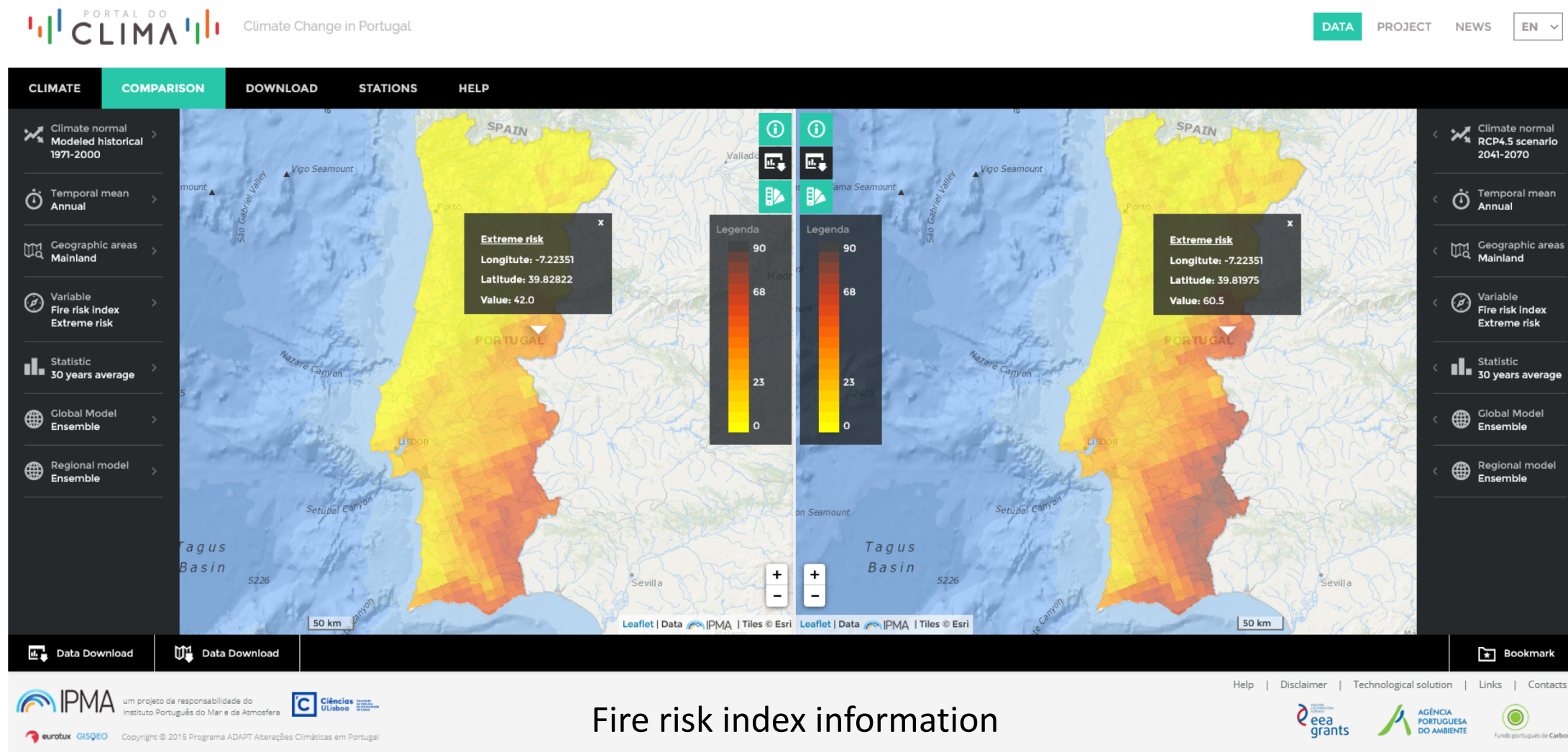
Data manipulation, data download



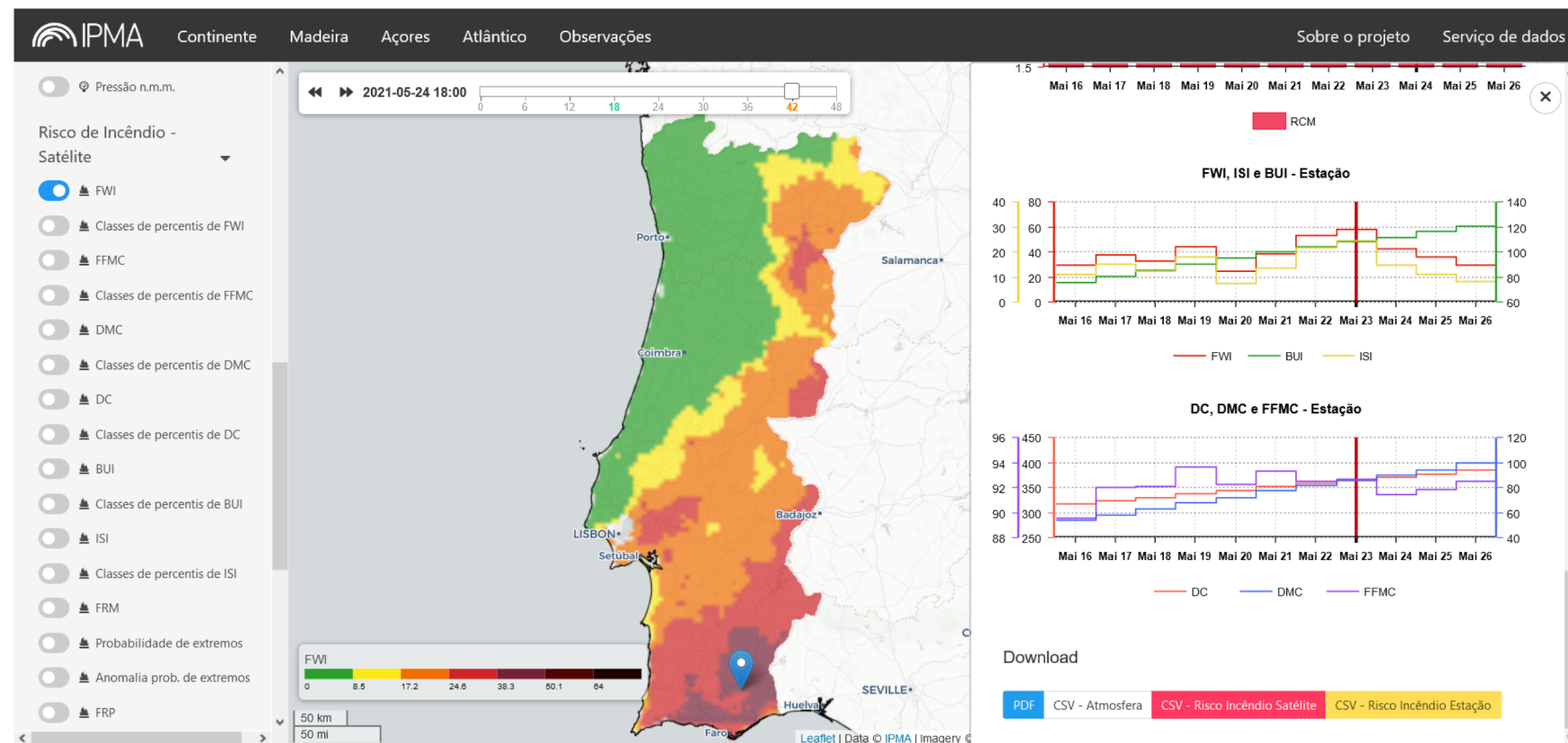
Precipitação
Período 2071-2100, Algarve



Normais climatológicas: Cenário RCP8.5 - 2071-2100, Média temporal : Anual,
Estatística: Média 30 anos, Modelo Regional: Ensemble, Modelo Global: Ensemble



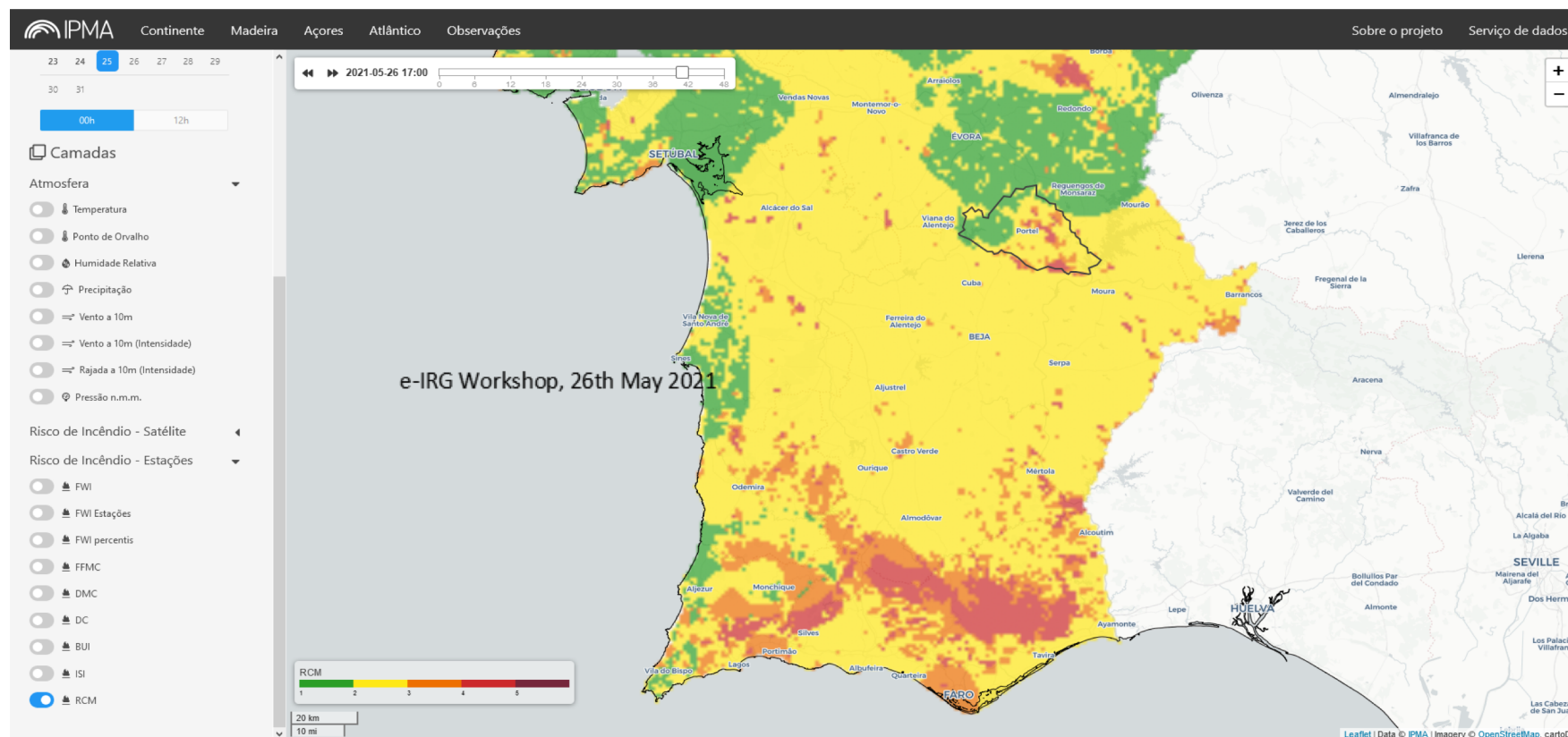
Database with real-time observations and real-time forecasts with tailored products for fire risk in Portugal



Source: mf2.ipma.pt

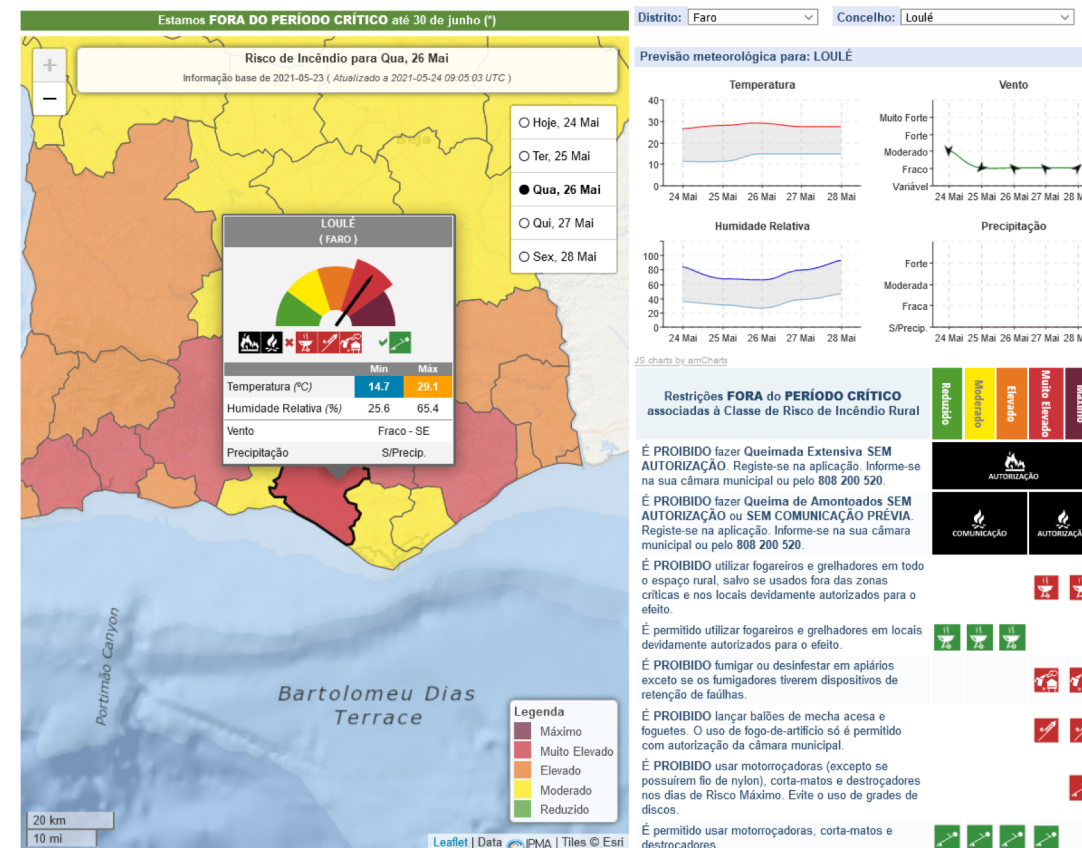
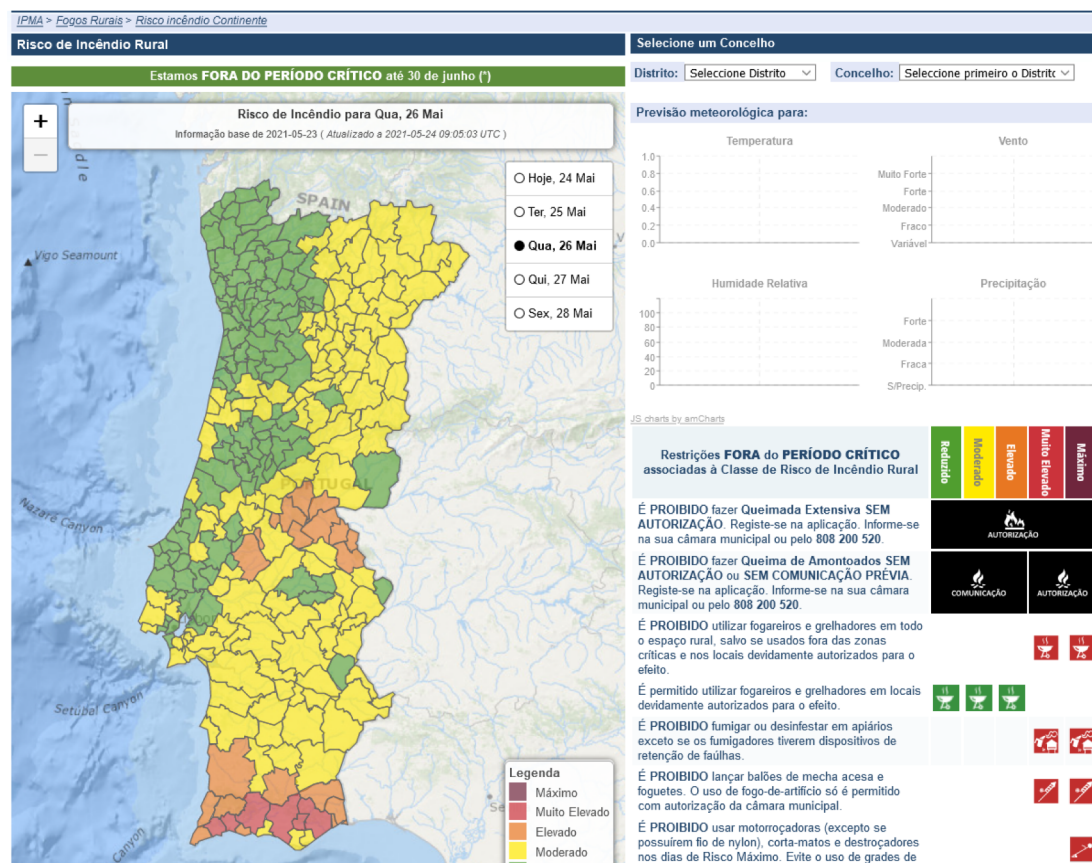
High resolution data
(model and satellite)

All data available for
download



Source: mf2.ipma.pt

Official fire risk index with user friendly interface



Source: www.ipma.pt

Thank you for your attention!