



FINAL PROJECT EVENT

Adapting wildfire risk management to the changing climate in Mediterranean forest areas

*Valencia
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The project *LIFE RESILIENT FORESTS – Coupling water, fire and climate resilience with biomass production from forestry to adapt watersheds to climate change* is co-funded by the LIFE Programme of the European Union under contract number LIFE 17 CCA/ES/000063.



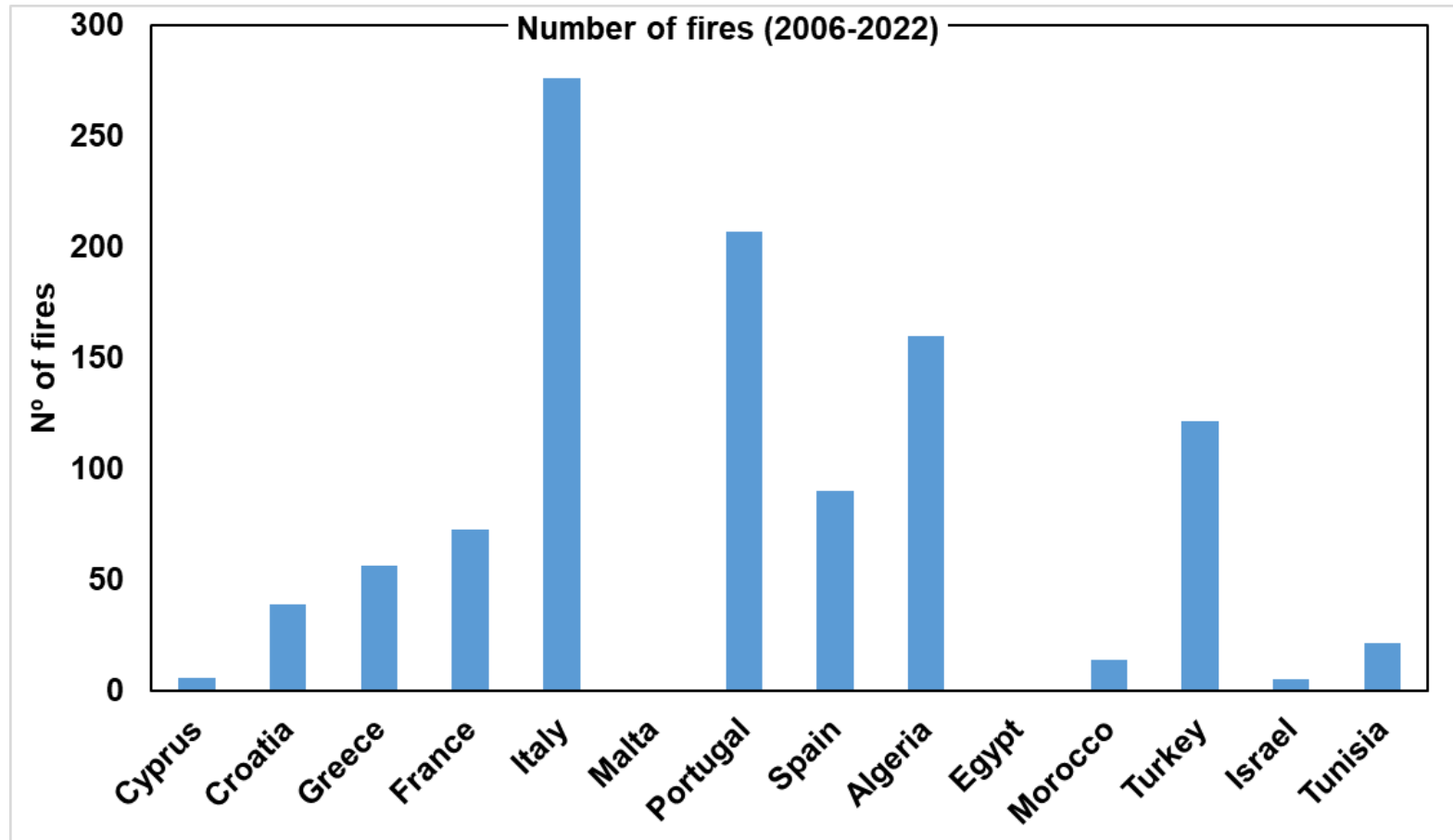
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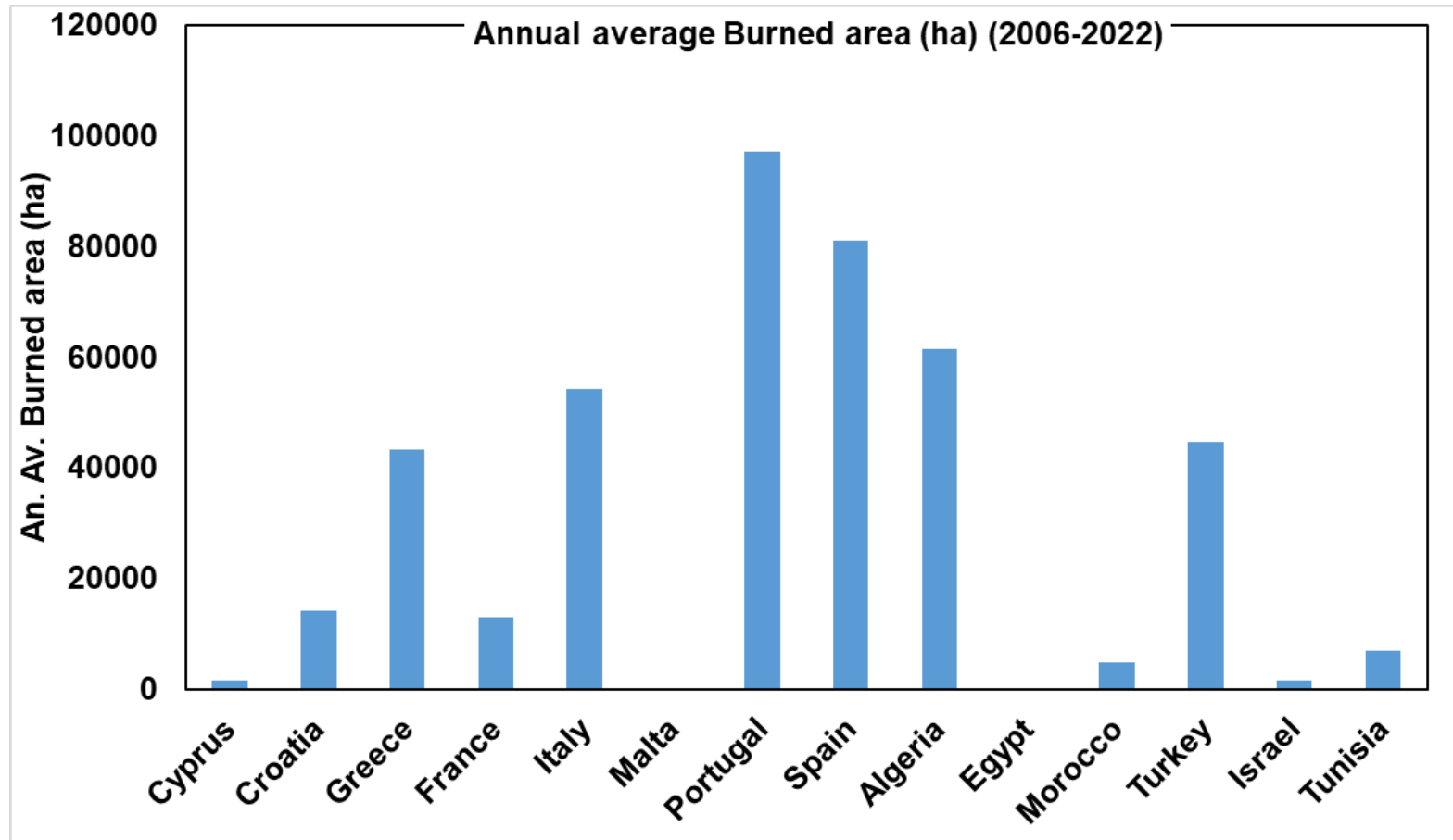


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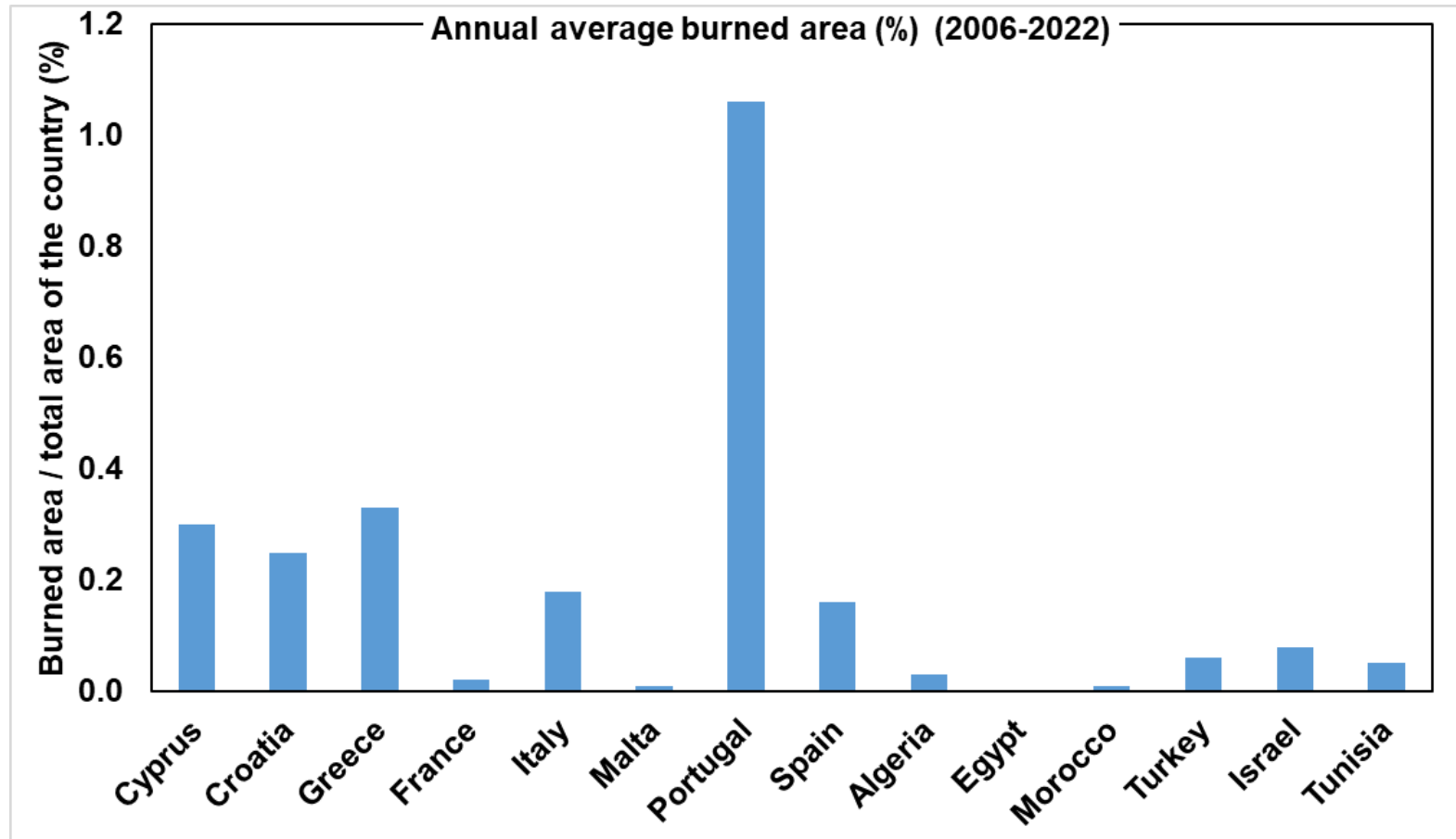
Wildfires in Mediterranean countries (Source: EFFIS)



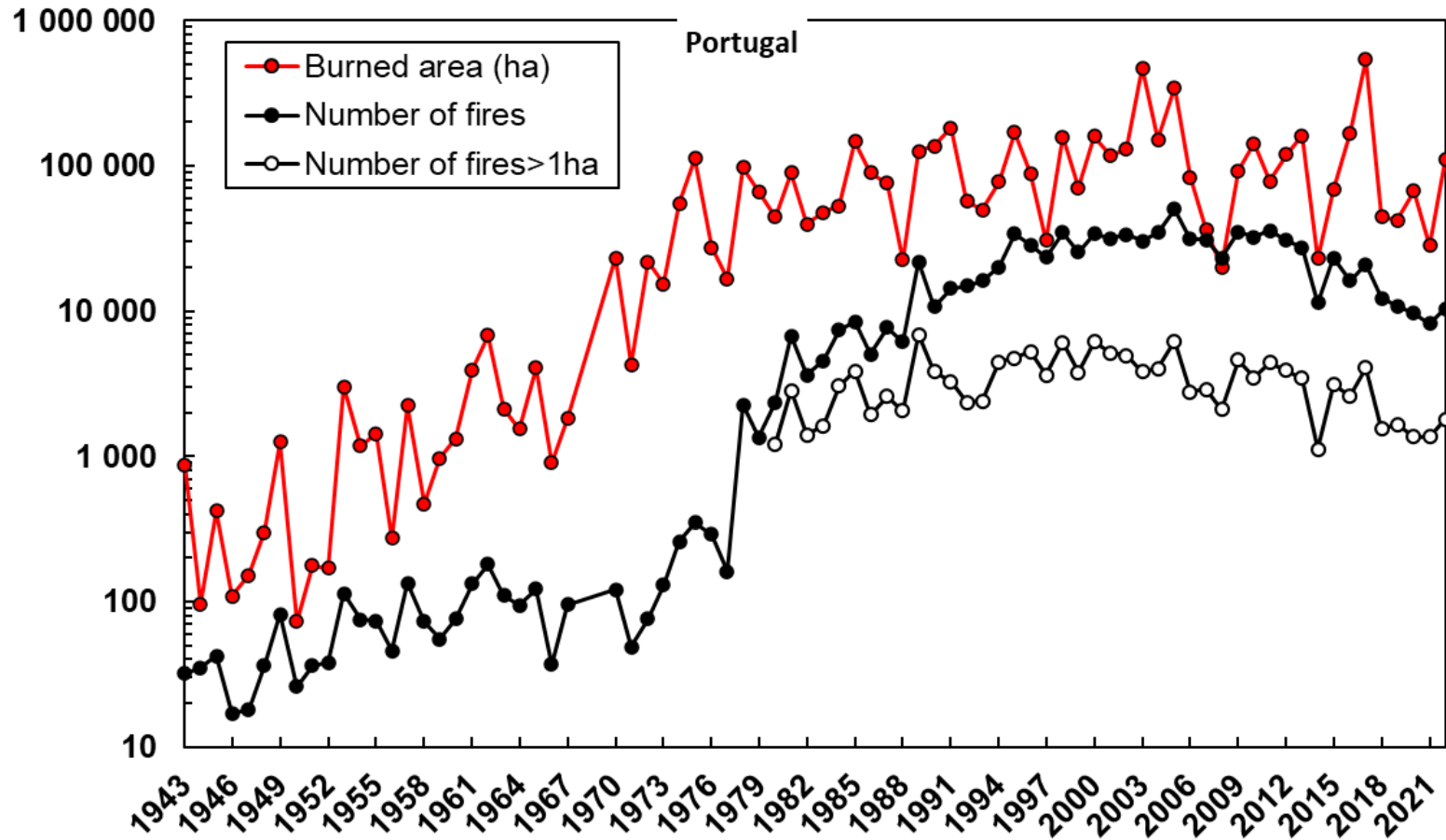
Wildfires in Mediterranean countries (Source: EFFIS)



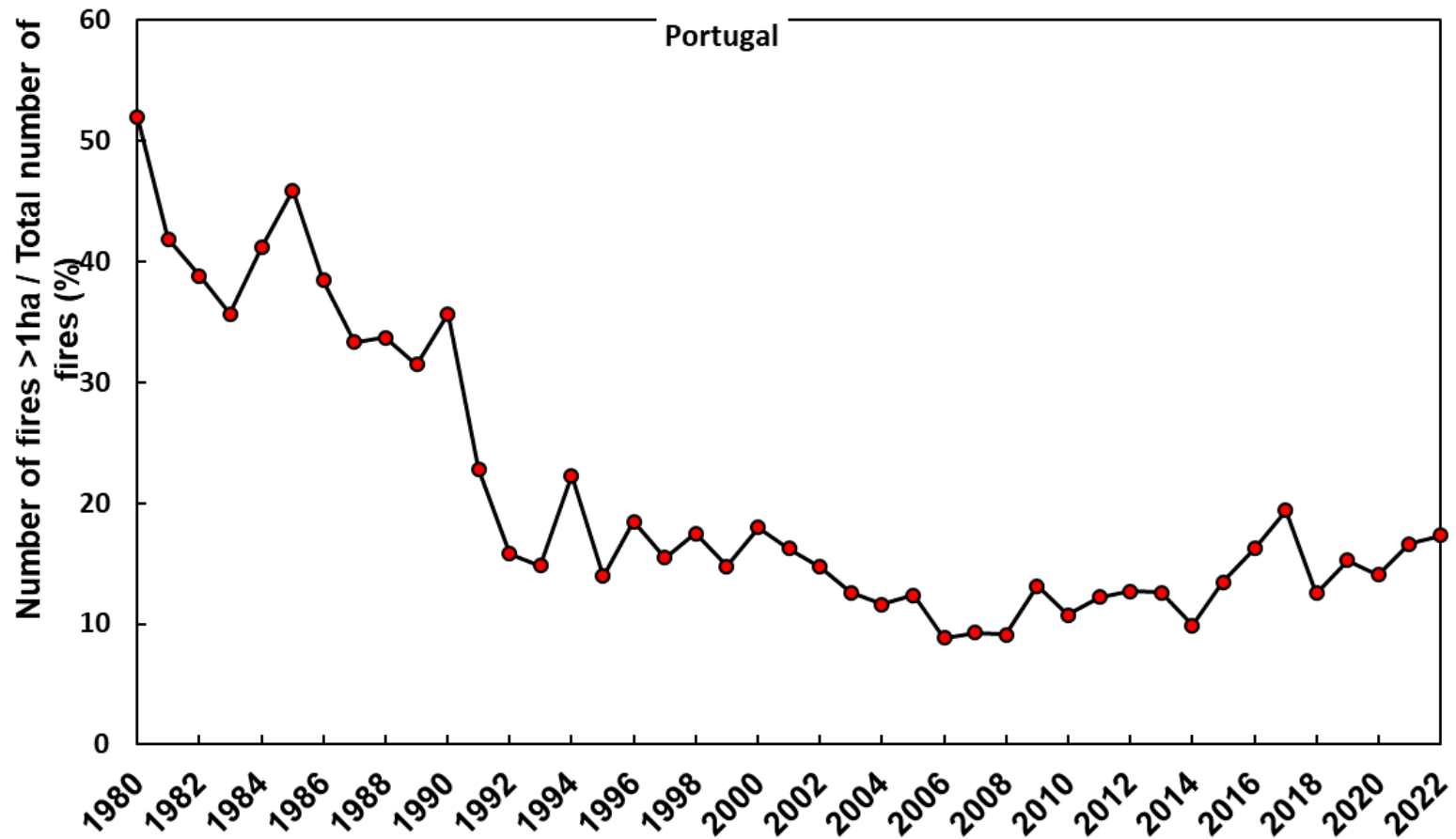
Wildfires in Mediterranean countries (Source: EFFIS)



Wildfires in Mediterranean countries (Portugal)



Wildfires in Mediterranean countries (Portugal)

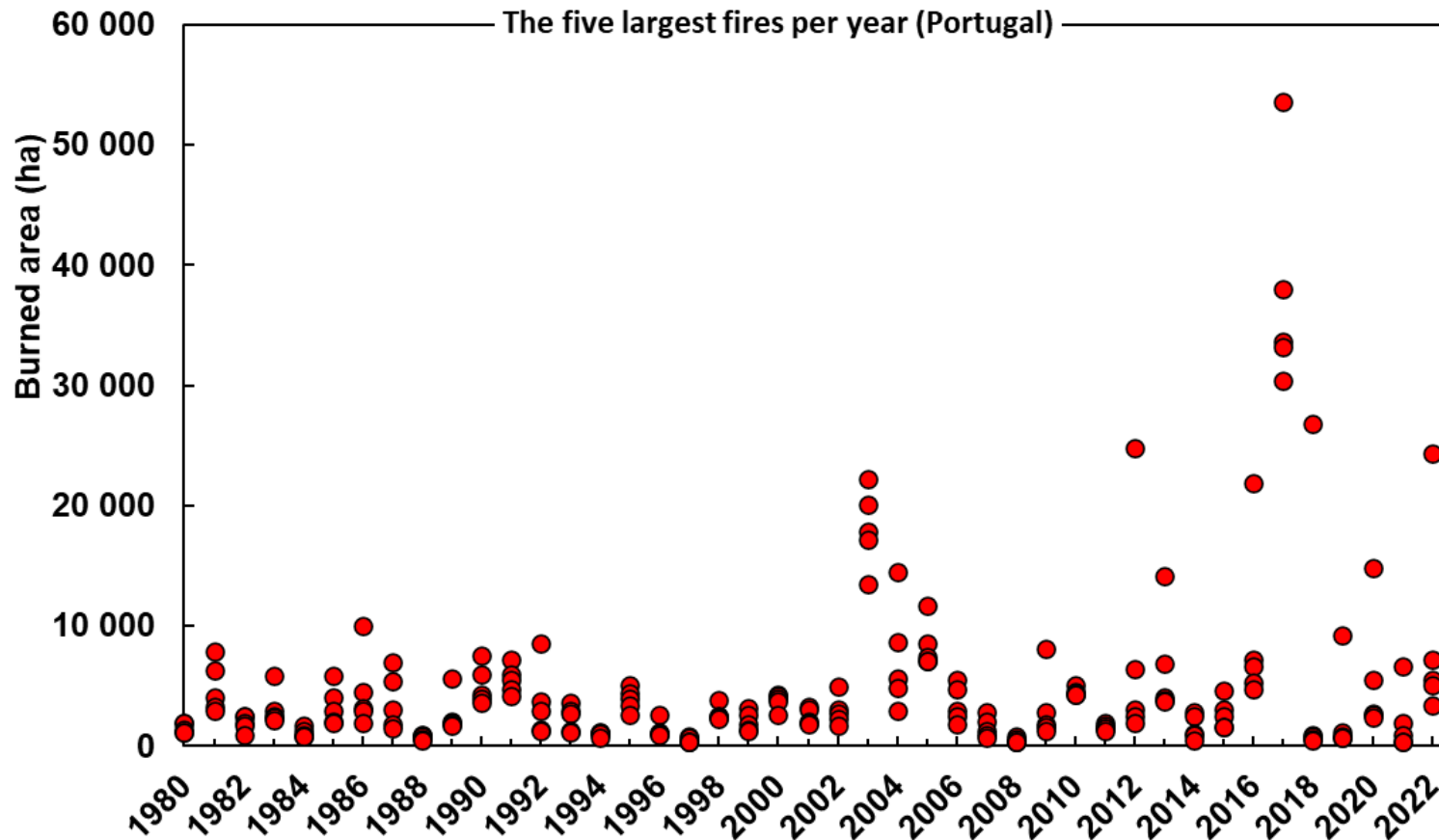


Wildfires in Mediterranean countries (Portugal)

Number of fire events decreasing! Burned area constant! Number of large fire decreasing! **So, the problem is not getting worse?**

More impacts specially at the WUI

More intense and largest fires



Wildfires in Mediterranean countries (Portugal)

Why are the large fire events become larger?

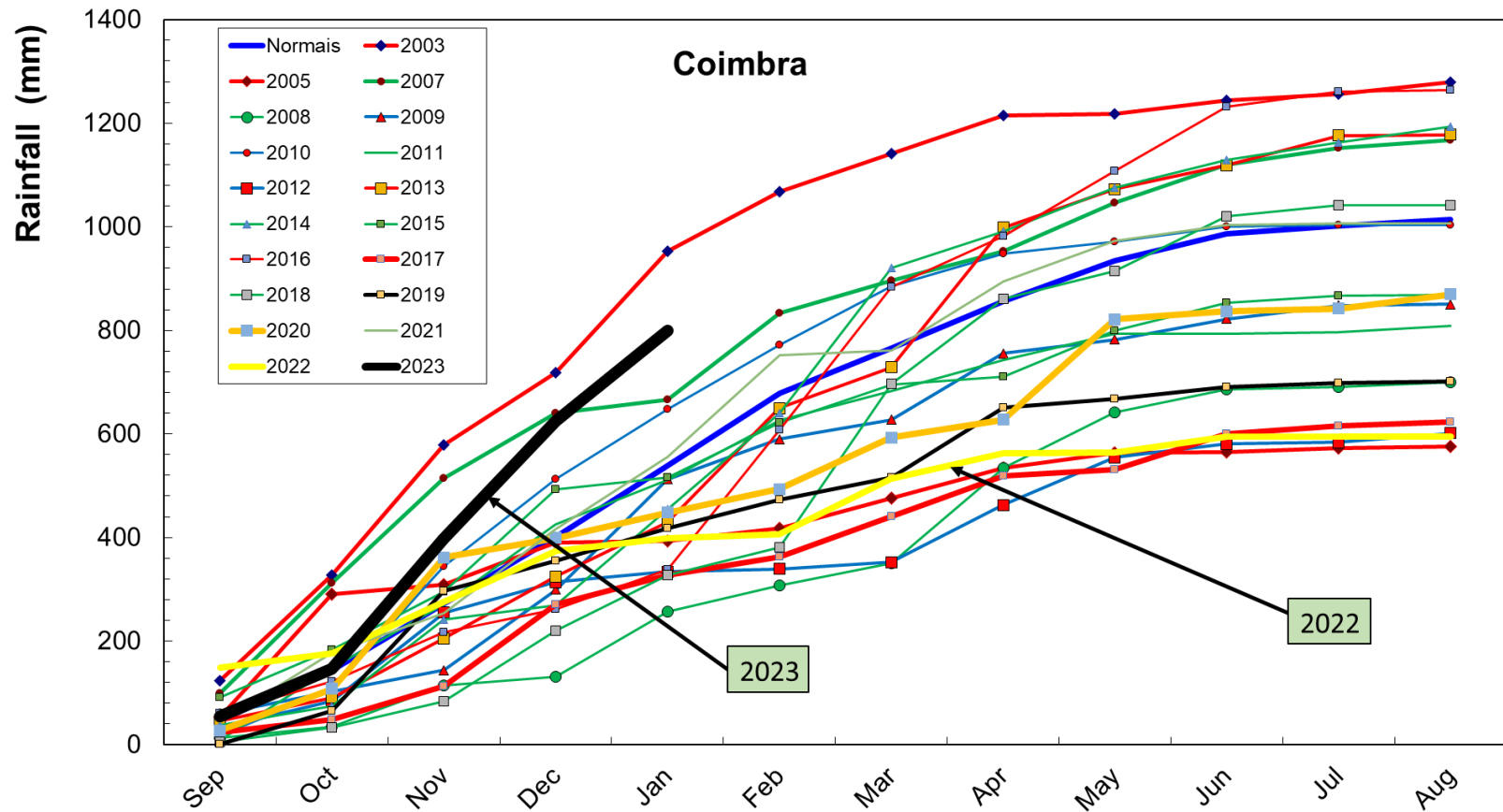
Abandonment of primary activity (livestock, agriculture, forestry, ...)

Success of the first intervention - fewer medium-sized fire events that were key to fire management

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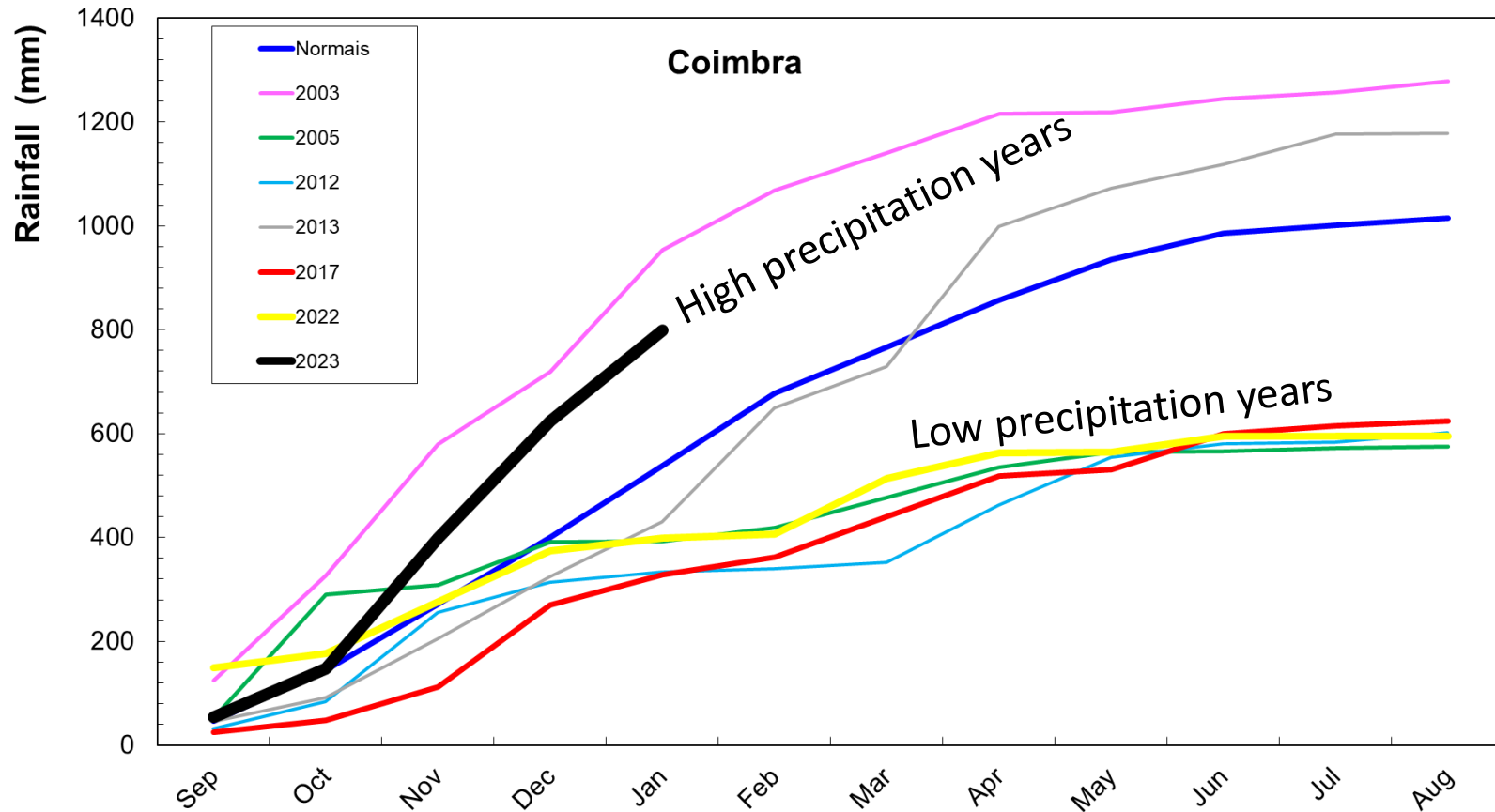
Climate changes (more concentrated rainfall over time, longer periods of drought, heat waves,...)

Wildfires in Mediterranean countries (Portugal)



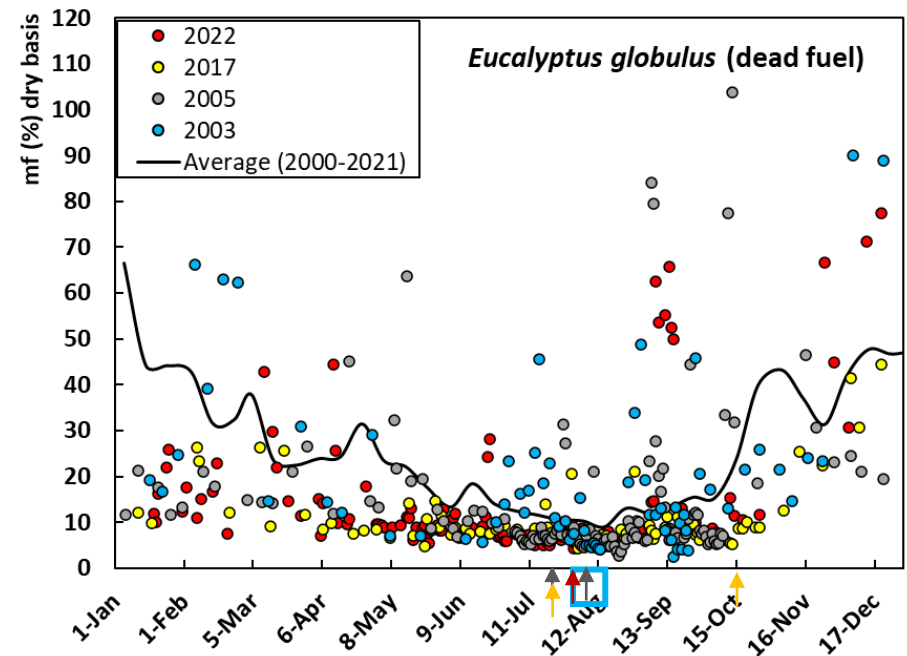
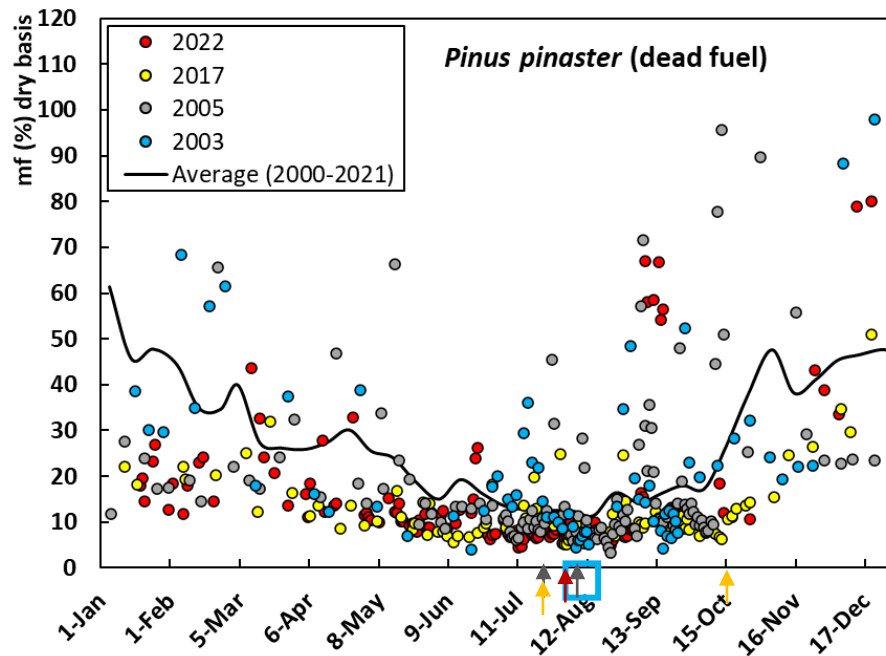
2023 is being one of the rainiest years. Will it be a year with less wildfires?

Wildfires in Mediterranean countries (Portugal)



- Very dry years drive the fuels to be available for burning.
- Much rainfall concentrated until May/June increase the growing of fine vegetation (herbaceous), which after drying become available to burn with a large rate of fire spread.

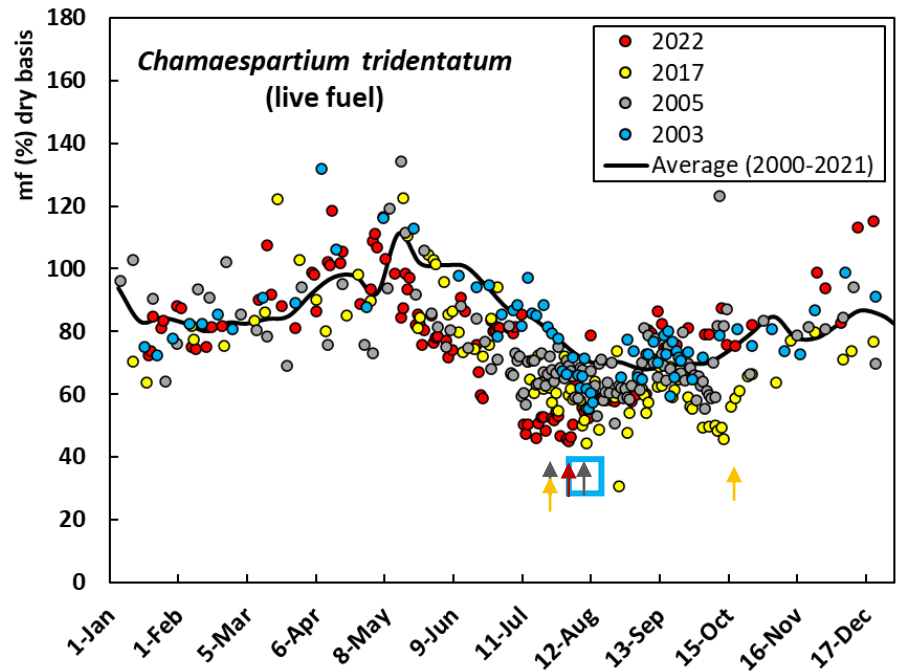
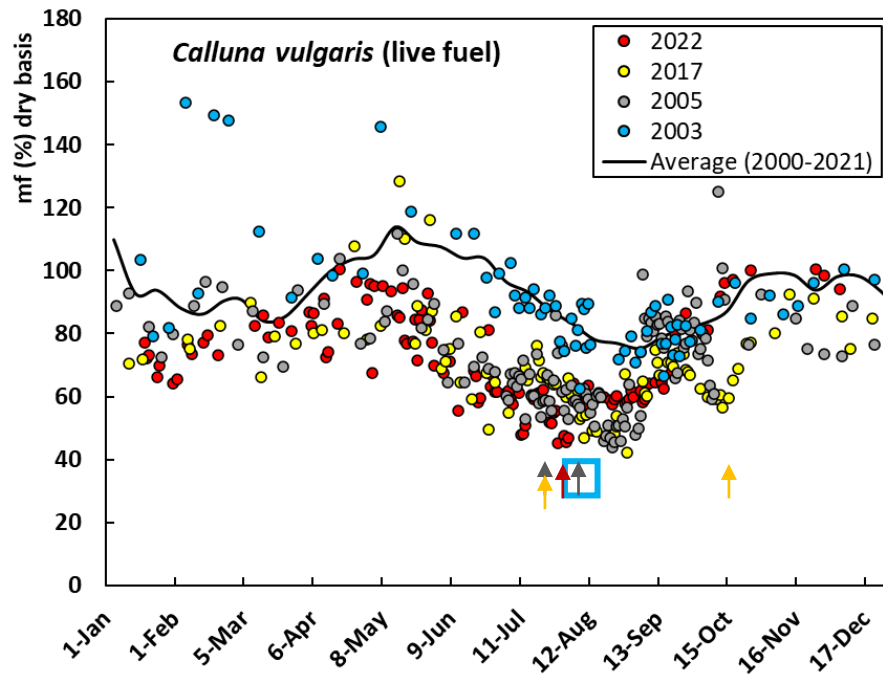
Wildfires in Mediterranean countries (Portugal)



The most intense fire events always occurred when the moisture content of the dead fuels was extremely low.

Better performance for years with high precipitation

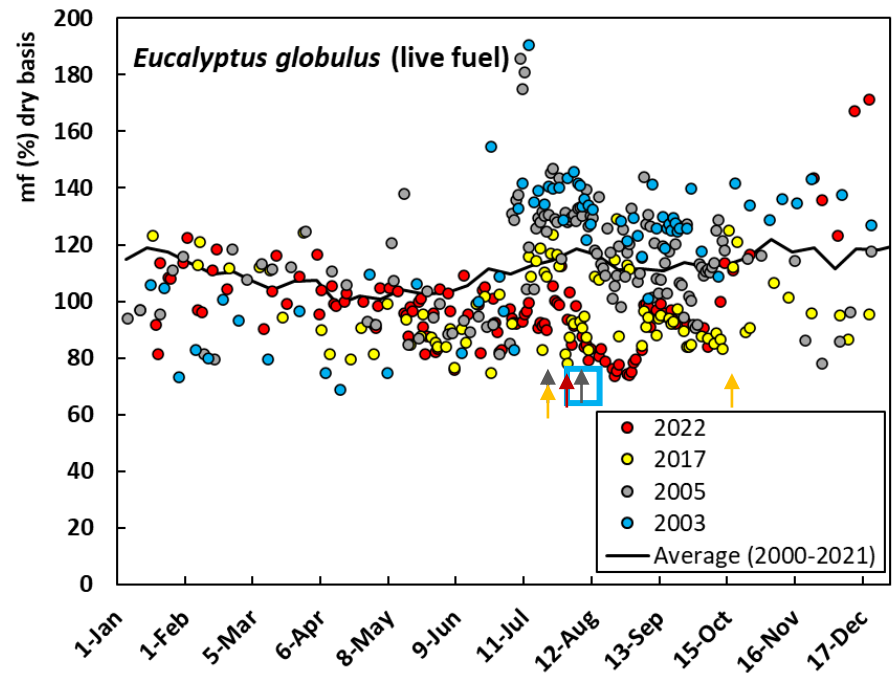
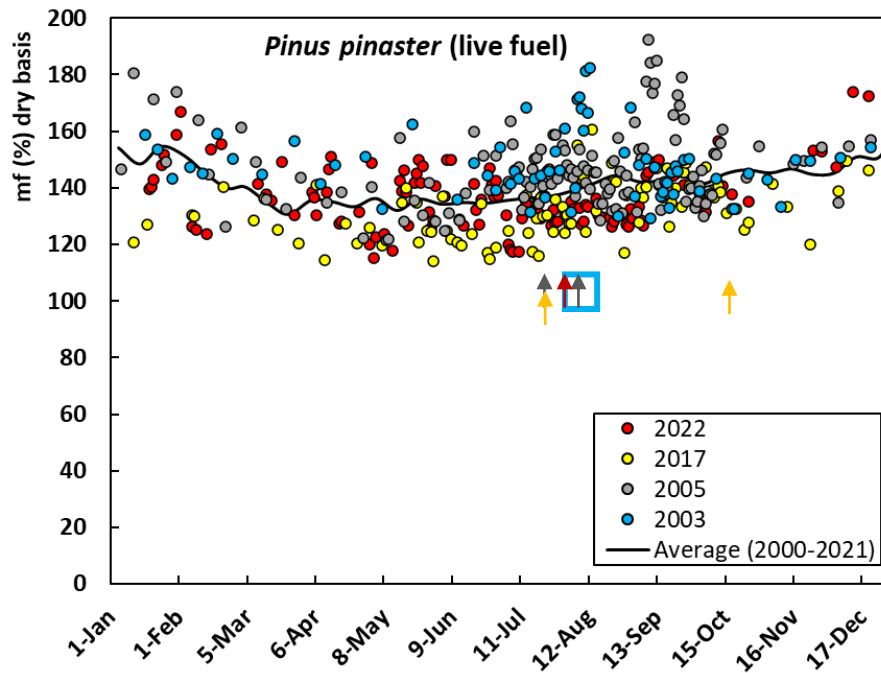
Climate changes and wildfires (Portugal)



The most intense fire events occurred when the FMC was low.

Good performance for years with high and low precipitation

Wildfires in Mediterranean countries (Portugal)



The most intense fire events occurred when the FMC was low.

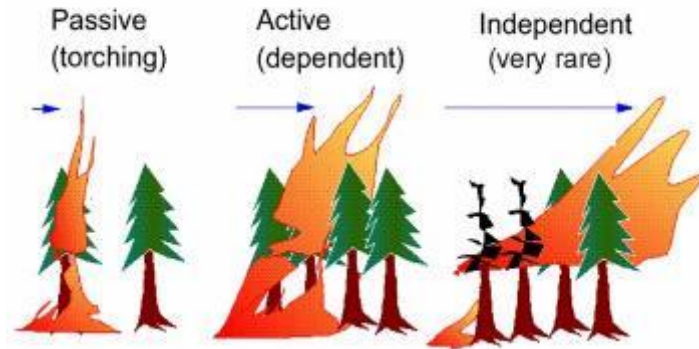
Good performance for years with low precipitation. Not so good for years with high precipitation

Extreme fire behavior associated with extreme meteorologic conditions (dry conditions)

Crown fires



Types of crown fire



Spot fires



Fire behavior with extreme meteorologic conditions

Other examples



Adaptation of institutions dealing with wildfires to the expected climate scenarios (sample)



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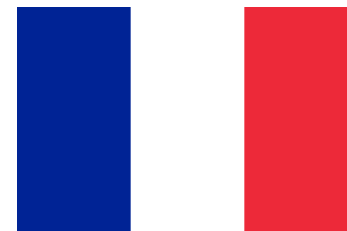
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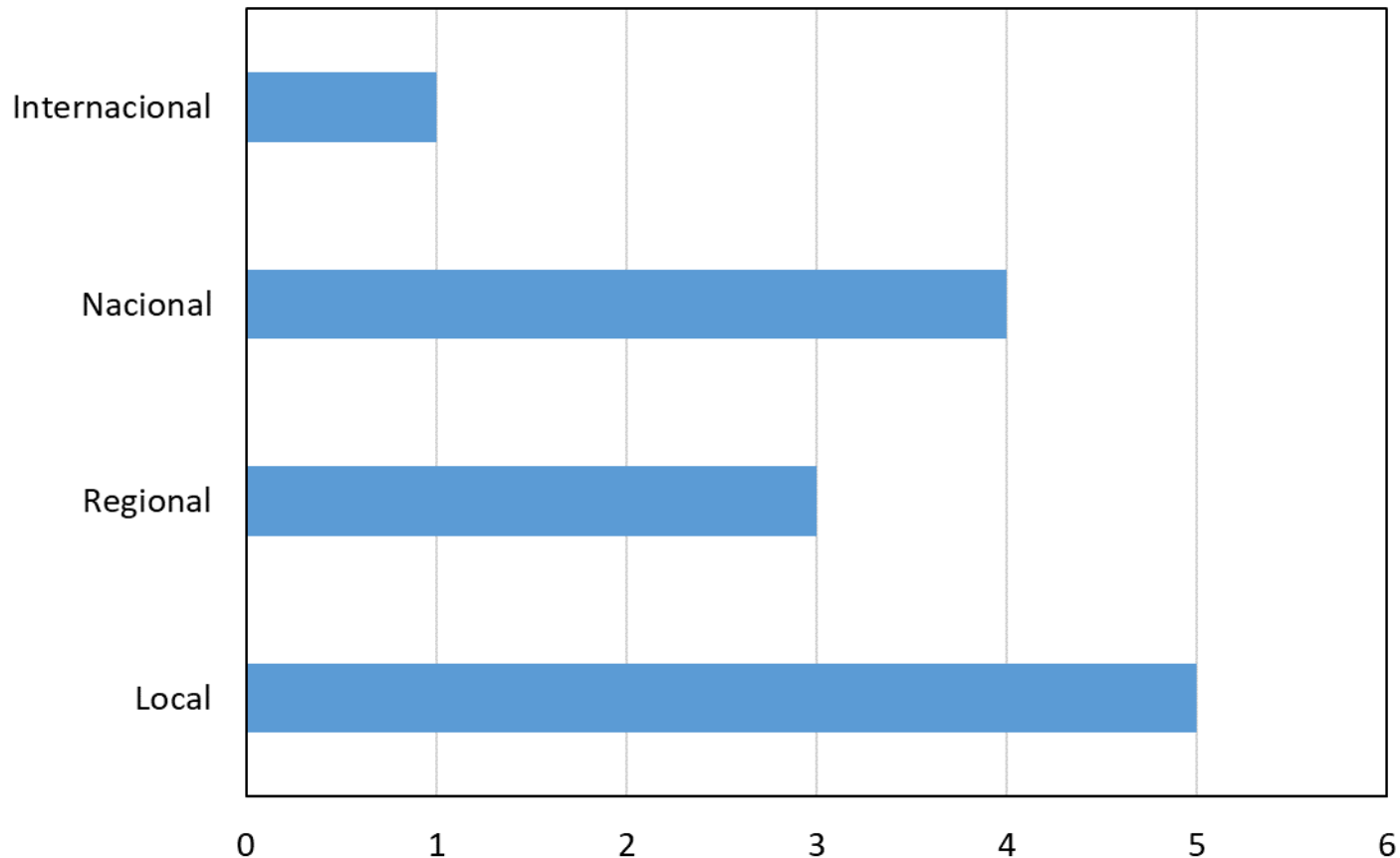


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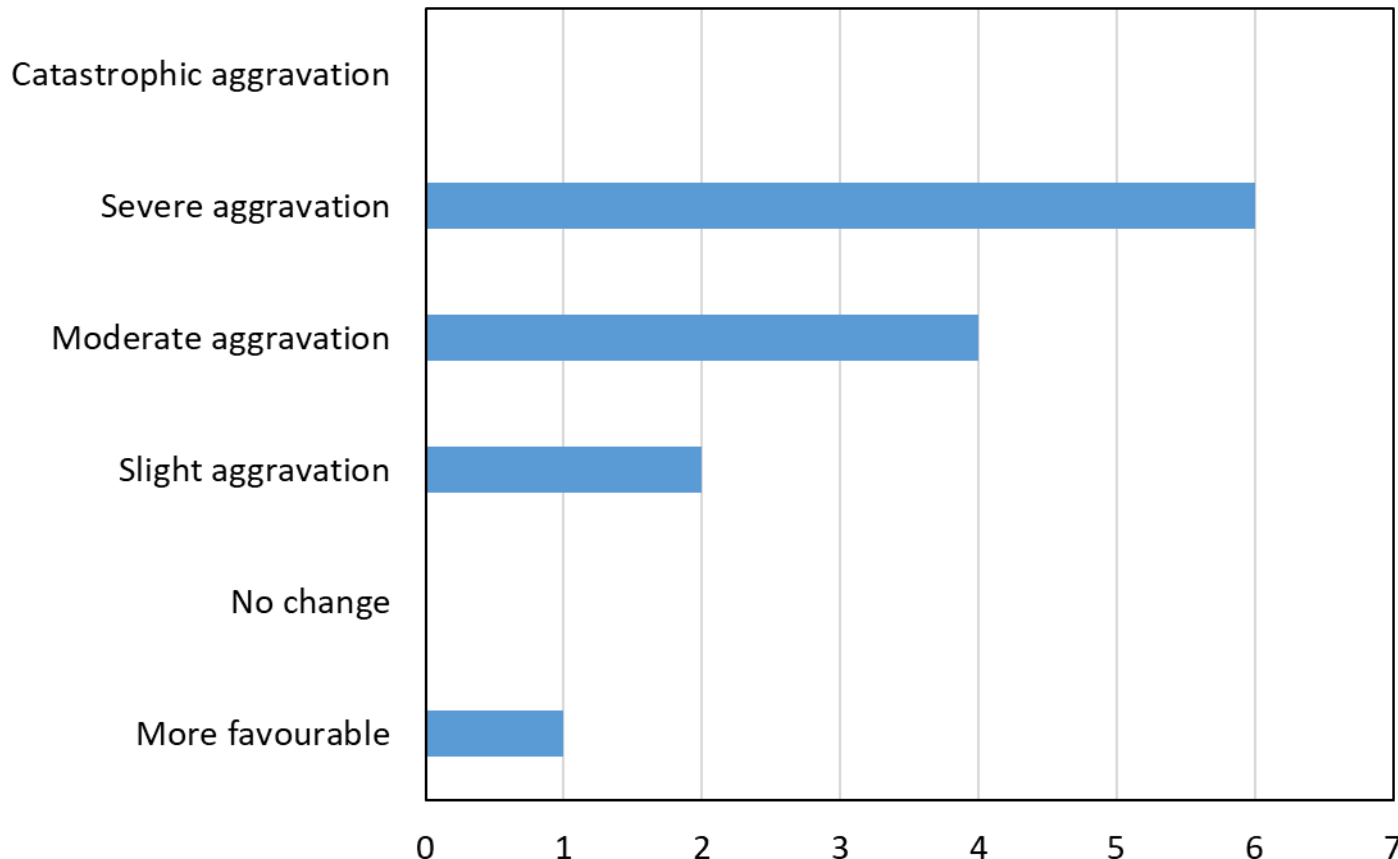
Adaptation of institutions dealing with wildfires to the expected climate scenarios (sample)

1.6) Scope of activity of the institution



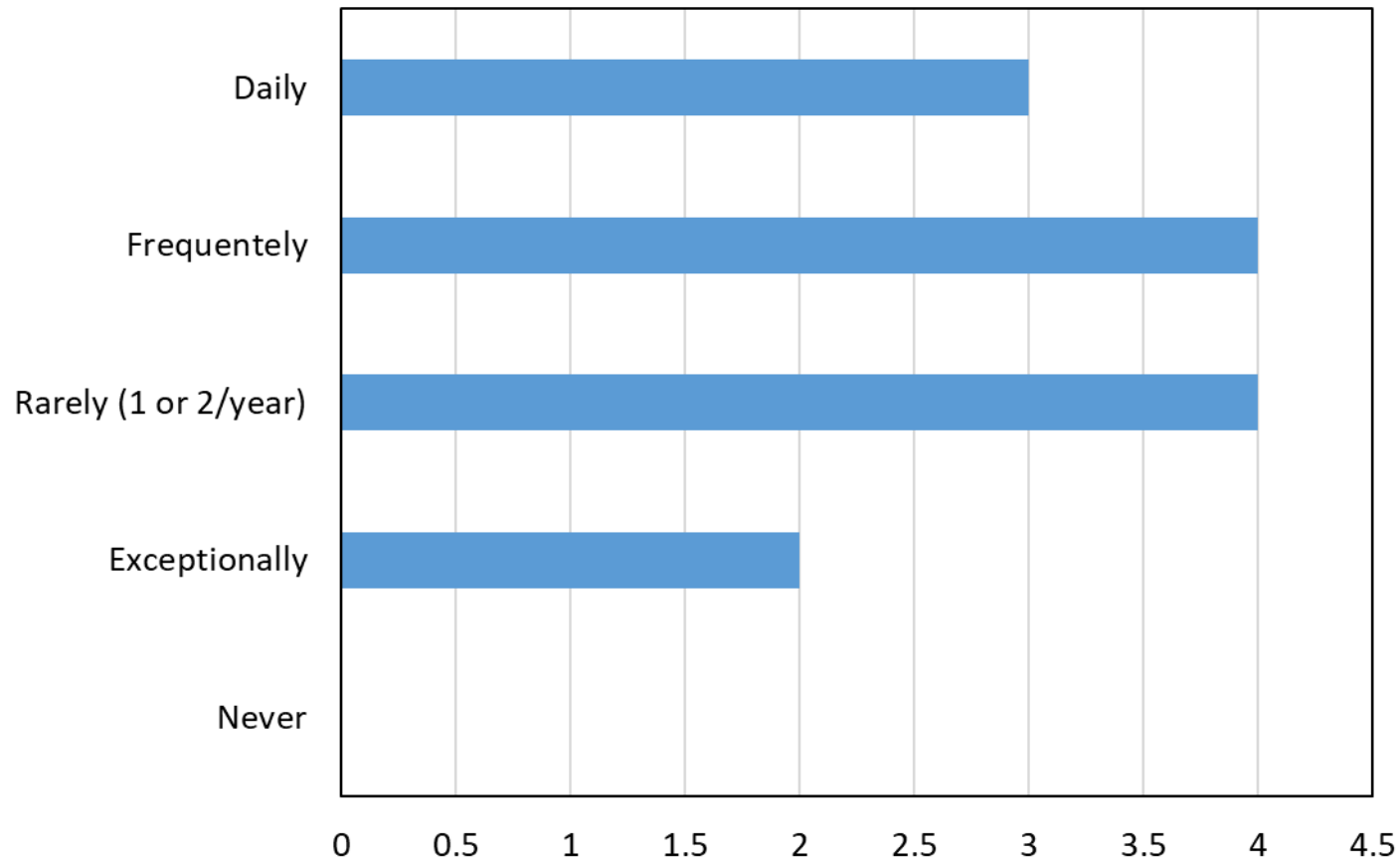
Adaptation of institutions dealing with wildfires to the expected climate scenarios (Sensitivity to climate change)

2.3) What is your expectation, or the expectation of the institution you represent, regarding the climate scenario of your area of intervention in 2050?



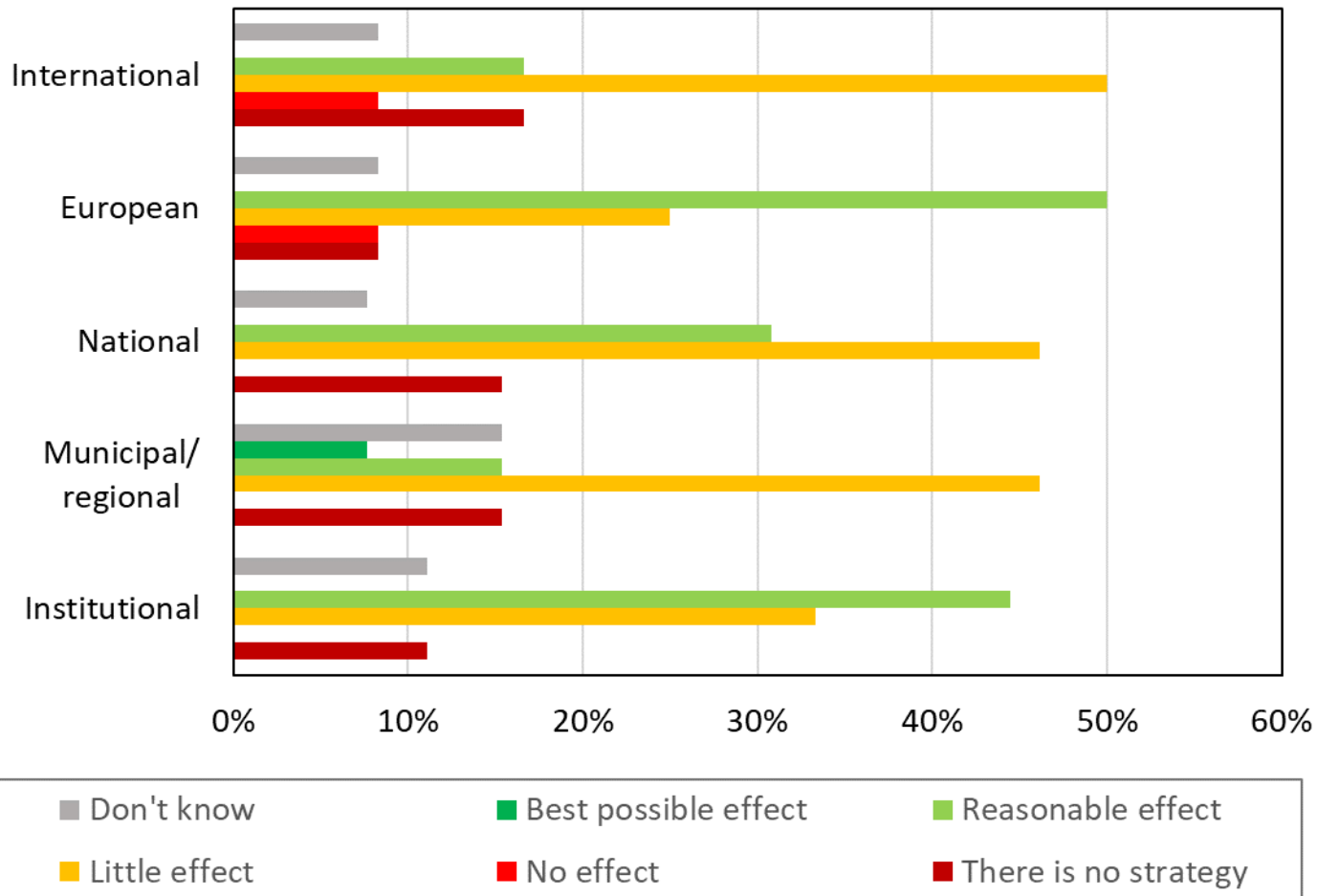
Adaptation of institutions dealing with wildfires to the expected climate scenarios (Sensitivity to climate change)

2.4) How often do you think we should adapt fire risk management strategies to climate change?



Adaptation of institutions dealing with wildfires to the expected climate scenarios (Climate change policies)

3.1) In your opinion, how effective is the current risk management policy strategy in terms of preparing for a future climate change scenario?



Adaptation of institutions dealing with wildfires to the expected climate scenarios (risk management)

4.4) What kind of information and tools or methods would the institution **need to play its role** in risk management and ensure its ability to cope with future climate change scenarios?

More accurate and disaggregated information

Scientific publications/data

Examples of innovative and exemplary projects

Cooperation with research institutions and territorial actors

Awareness raising among the general public

Adaptation of institutions dealing with wildfires to the expected climate scenarios (risk management)

4.6) What are the main challenges that climate change may bring to the institution?

Uncertainty of data

Extension of the most critical wildfires period

Incapacity to respond to wildfires or droughts

Appearance of cascade effect triggered by wildfire

Loss of attractiveness of the territory

Economic, social and political disruption

Main conclusions

- Citizen awareness and increased fire fighting capabilities are reducing the number of fires and maintaining the area burned, however, the **number of catastrophic fires is increasing**.
- Years with **heavy rainfall** until May/June followed by a dry period accompanied by a heat wave can lead to years with large fires that spread quickly.

Dry years are also very prone to large fires.

Years without fires increase the danger in the following years.

Average years are the most favorable.

- Extreme weather conditions, leading to very low values of FMC, trigger extreme fire behavior, making firefighting difficult or virtually impossible.
- Institutions are aware of the problems related to climate change but their reaction to the problem is more reactive than of preparedness (anticipatory)
- The scientific community shall make efforts to reduce the uncertainties associated with climate change because they discourage the preparedness measures that are essential.

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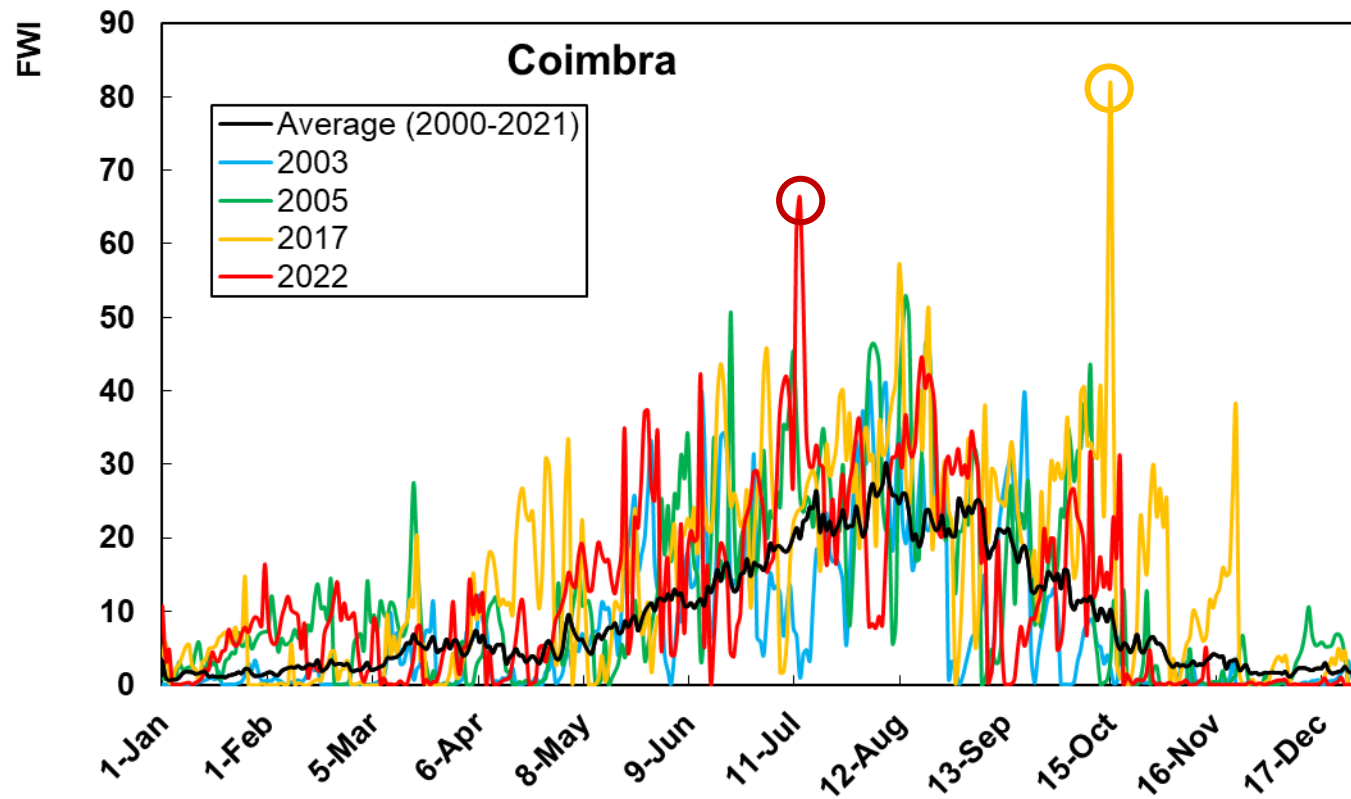
Adapting wildfire risk management to the changing climate in Mediterranean forest areas

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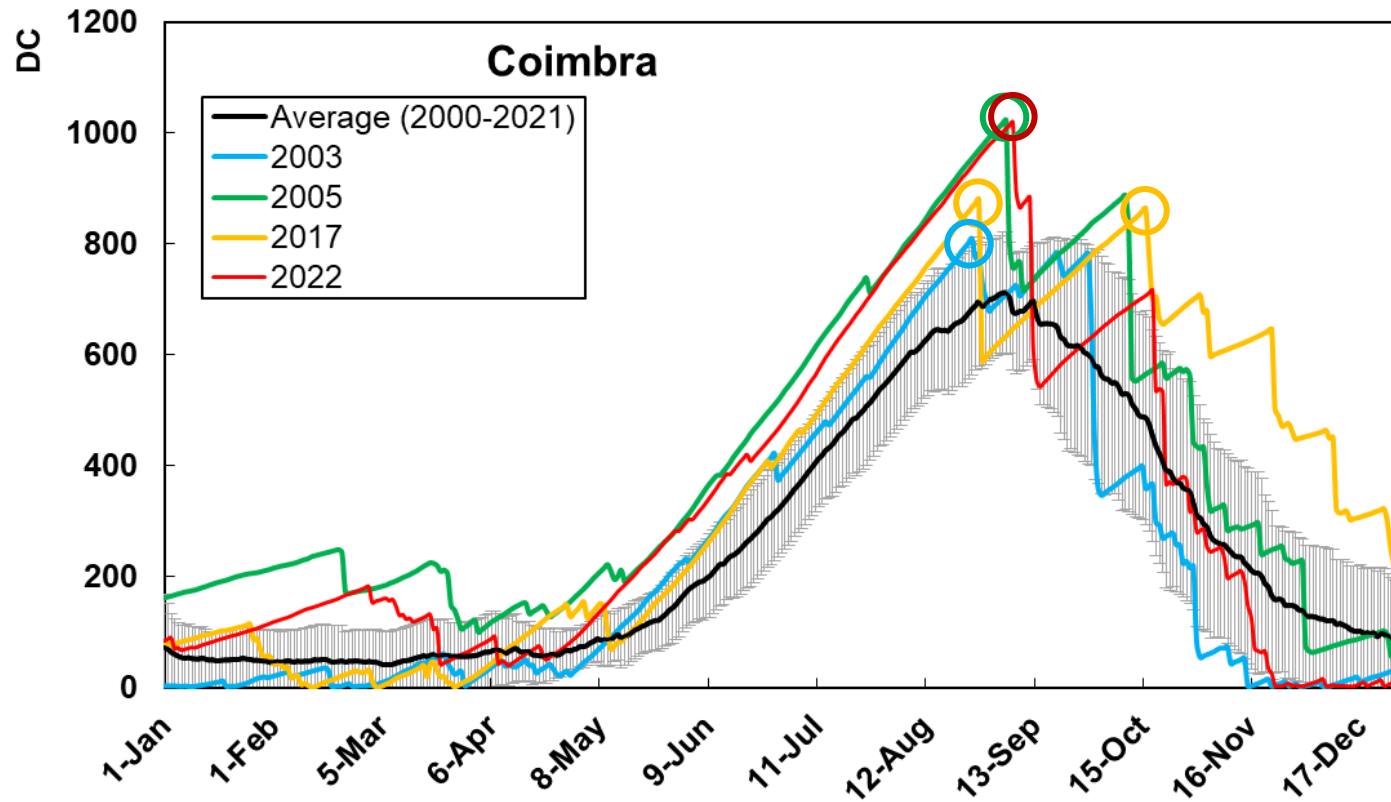


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Climate changes and wildfires (Portugal)

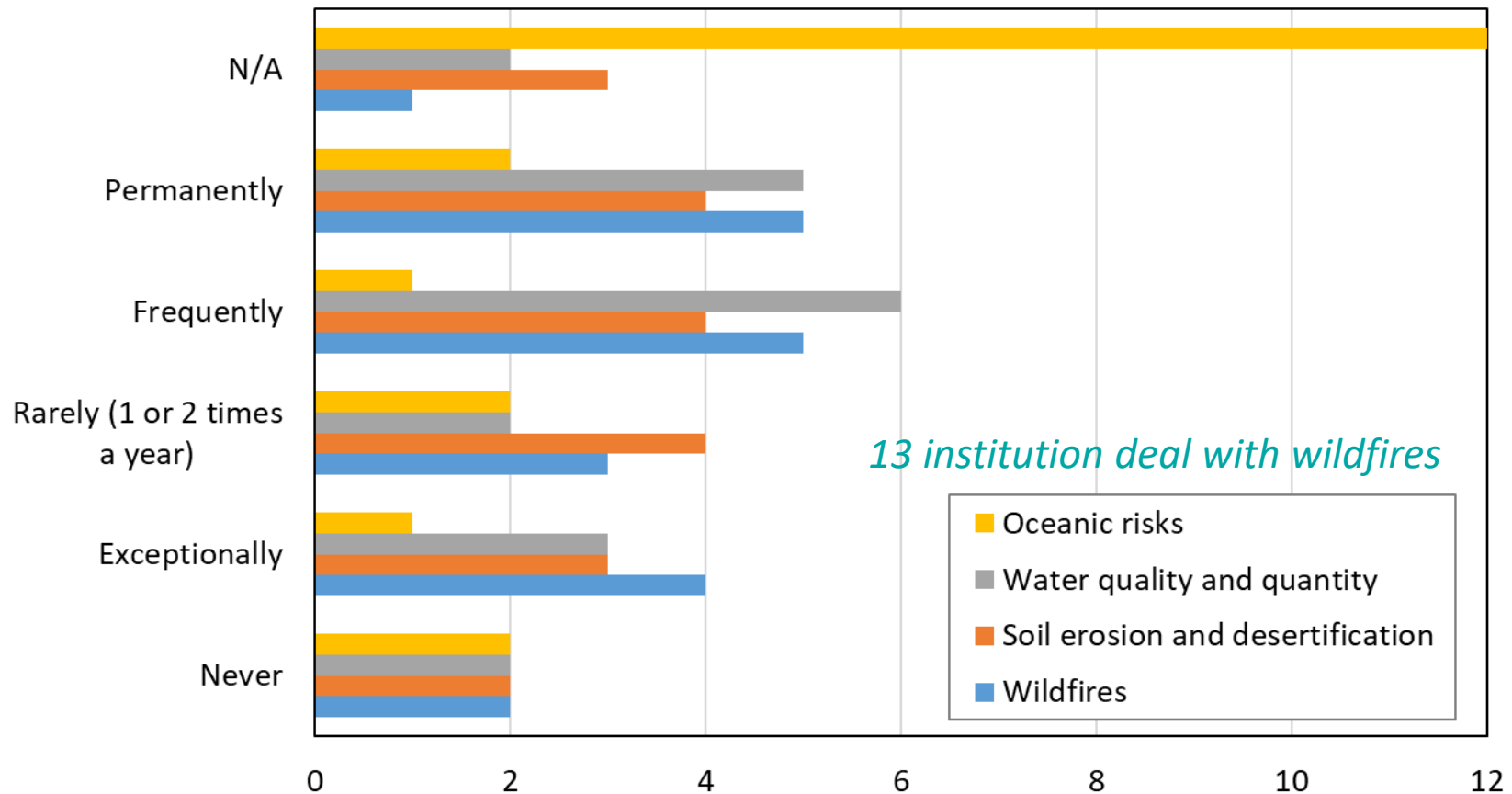


Climate changes and wildfires (Portugal)



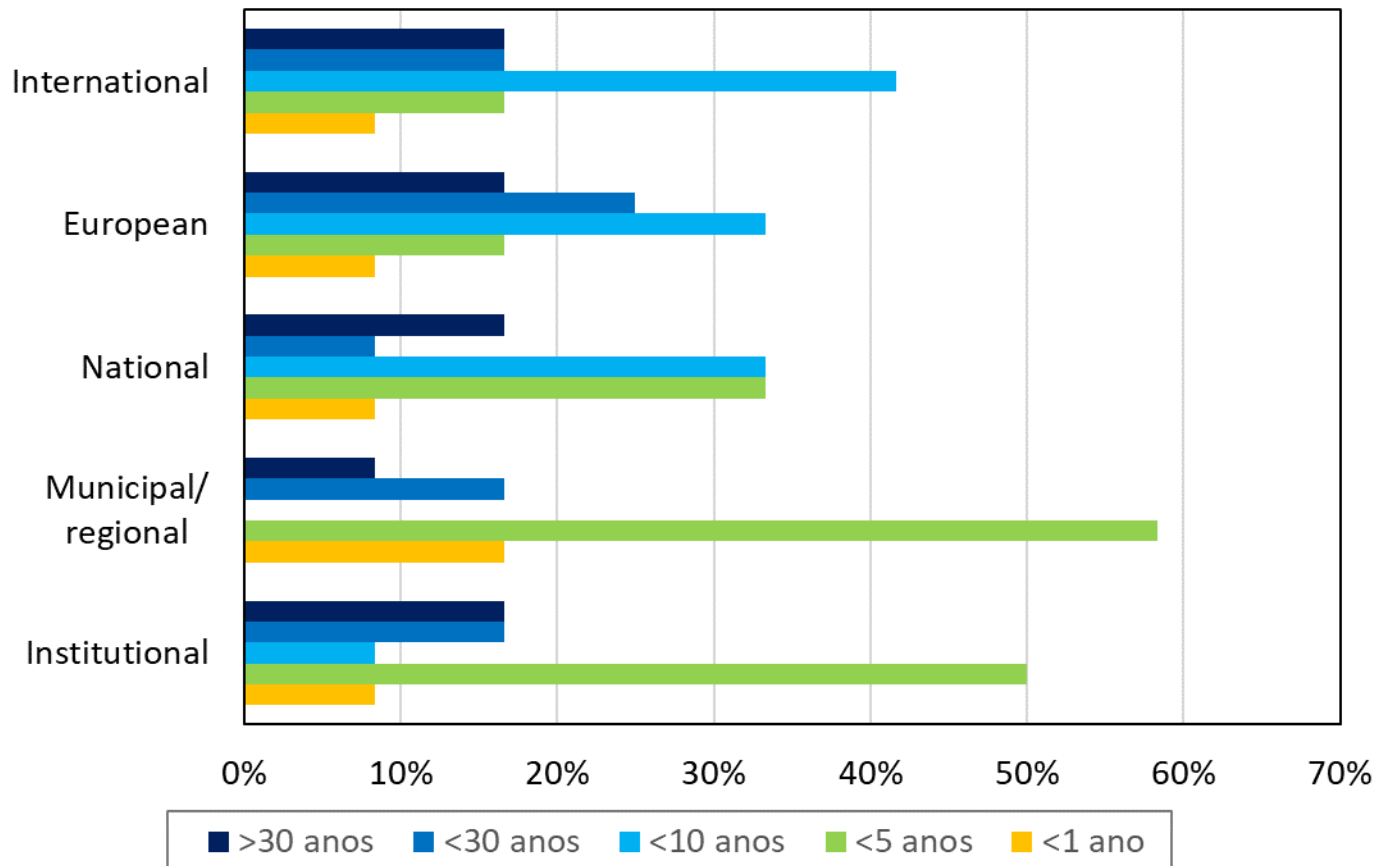
Adaptation of institutions dealing with wildfires to the expected climate scenarios (sample)

4.1) Is the institution facing any difficulties or increased responsibilities due to climate change?



Adaptation of institutions dealing with wildfires to the expected climate scenarios (Climate change policies)

3.2) Given the uncertainties associated with the predictability of climate change, what should be the time horizon of the overall risk management strategy?



Adaptation of institutions dealing with wildfires to the expected climate scenarios (risk management)

4.2/3) What type of information and tools does the institution **use to define** the risk management strategy for future climate change scenarios?

Climate Change Adaptation Plan (projections, risk maps)

Monitoring of research projects

Decision support and risk management systems

Civil protection reports, news and various indicators, municipal information

Fire-related parameters (meteorology, slope, fuel maps)

Published data relative to the territory

