

Climate change, wildfires and challenges to tourism development in Portugal's marginal regions

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Introduction

- Climate change will inevitably impact the geography of tourism in Europe in the coming decades
- Among the most frequently cited threats in the literature are the reduction in snowfall in mountain regions and the loss of beaches due to increased coastal erosion (Rice et al., 2022; Romero-Martín et al., 2025)
- Several studies suggest that these changes are likely to alter the attractiveness of destinations and lead to shifts in seasonality (Amelung-Moreno, 2012; Garcia-Leon et al., 2025)
- This has created the illusion that climate change might reduce inequalities in the spatial distribution of tourists by opening up new opportunities for currently marginal tourism regions (Carrillo et al., 2022)

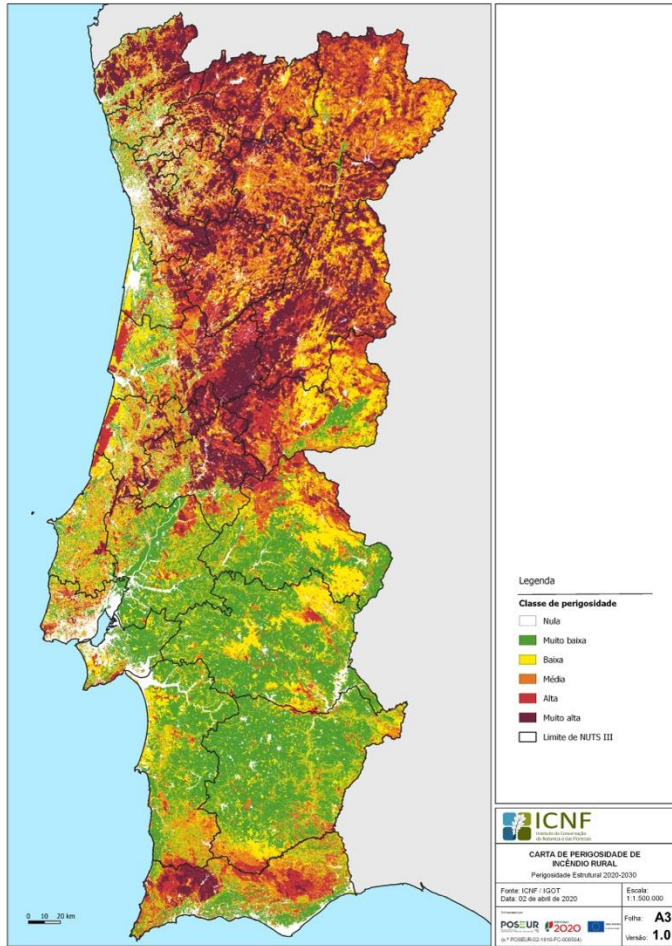
Introduction

- Climate change will exacerbate existing risks that may affect established and emerging destinations in varying ways
- Wildfires are one of the climate risks that are likely to increase
- Extreme wildfires are becoming increasingly frequent in all types of flammable biomes (Tyukavina et al., 2022; Huang et al., 2025)
- Climate change projections suggest a 20 to 50 per cent increase in the number of days prone to extreme wildfires, namely in the European Mediterranean basin (Bowman et al., 2017)
- Portugal is one of the EU countries where the risk of wildfires is highest: 20,465 wildfires/year on average in the period 2001-23, and 129,149 ha of burned area/year (about 1% of the country's surface area each year)
- Wildfires coincide seasonally with the peak tourist season, posing an increased threat to tourism

Research questions

- How do wildfires relate to tourism development in Portugal?
- Which regions are most exposed to this hazard?
- To what extent do wildfires clash with policies aimed at decentralising tourism and promoting alternative offerings in marginal regions?
- How wildfires interact with regional inequalities in tourism?

Methodology



GIS Applications



Tourism Accommodation

Explore the Tourism Accommodation data on the web application and access open data on this topic.

[Web App](#)

[Open Data](#)



Tourism Activities

Explore the Tourism Activities data on the web application and access open data on this theme.

[Web App](#)

[Open Data](#)



Tourism Planning

Explore the Tourism Planning data in the web application and access open data on this theme.

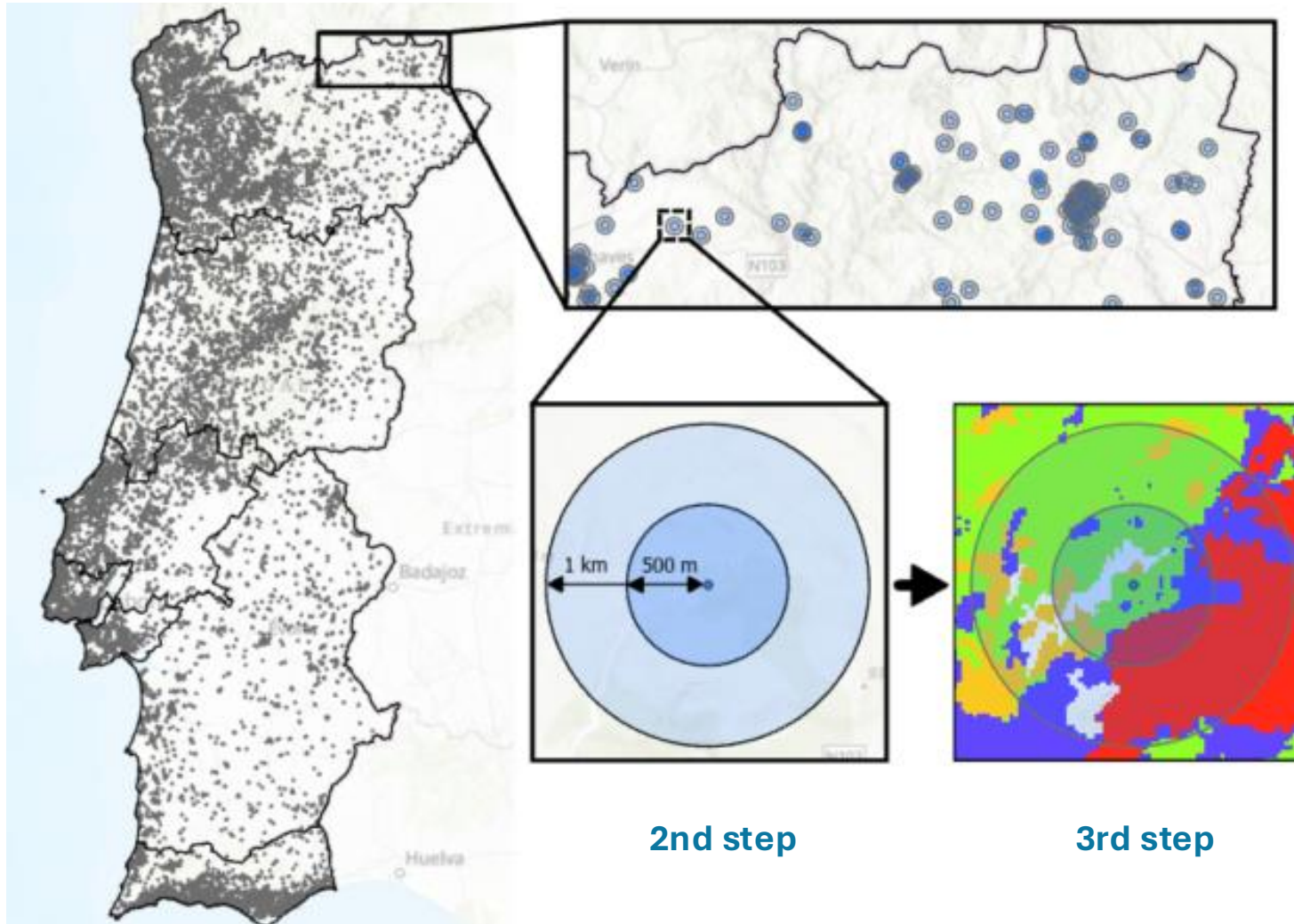
[Web App](#)

[Open Data](#)



Methodology

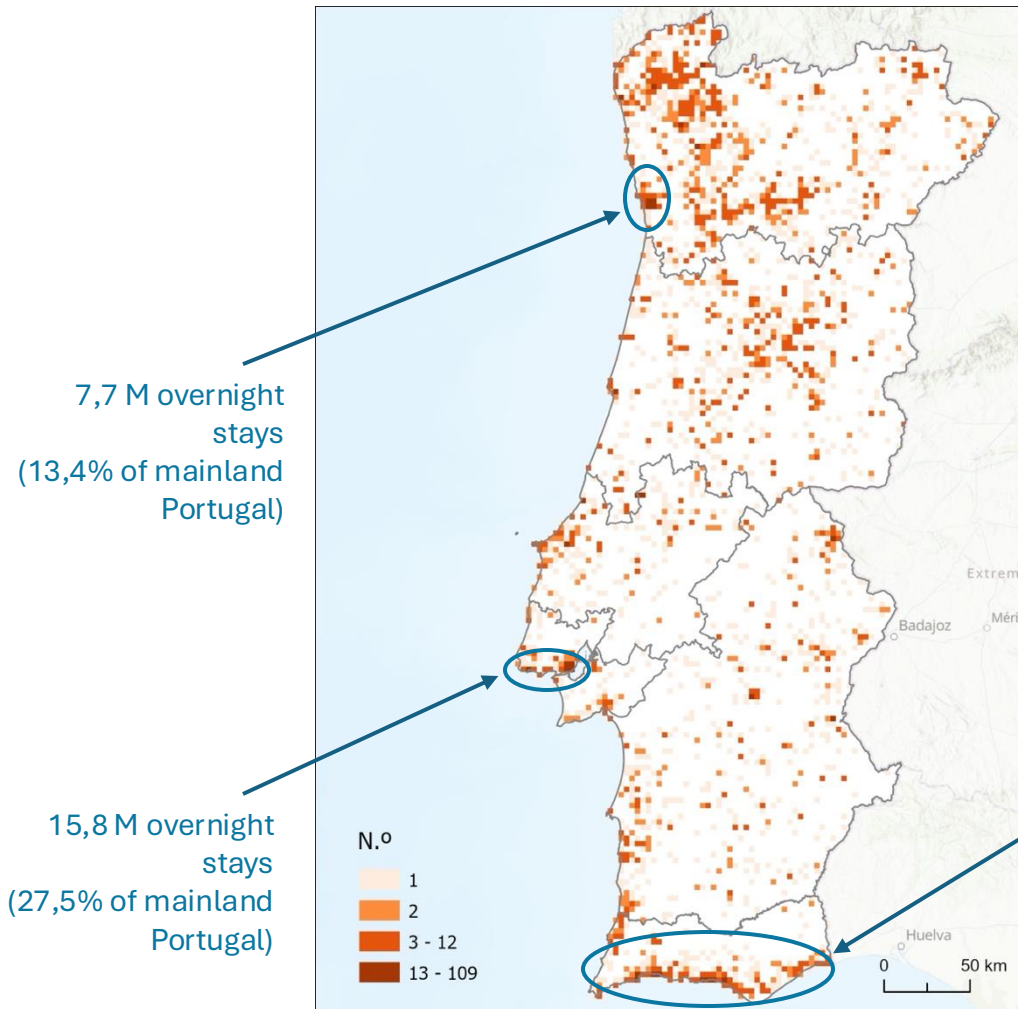
1st step



2nd step

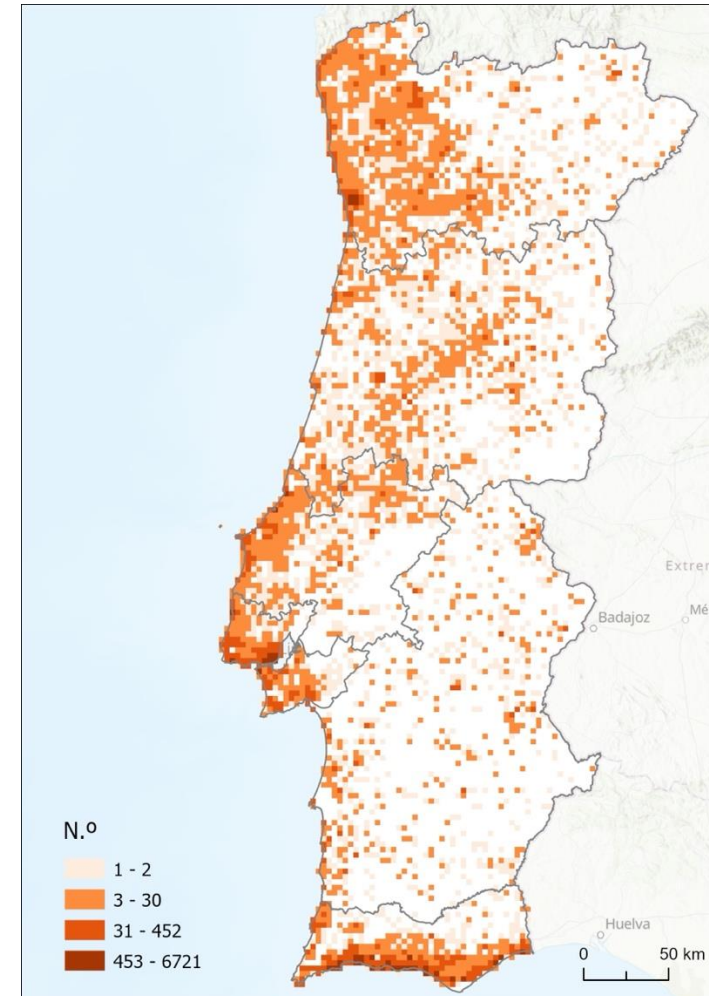
3rd step

Tourism and regional inequalities in Portugal



Tourist accommodation establishments (collective) per 10 km² grids (2025)

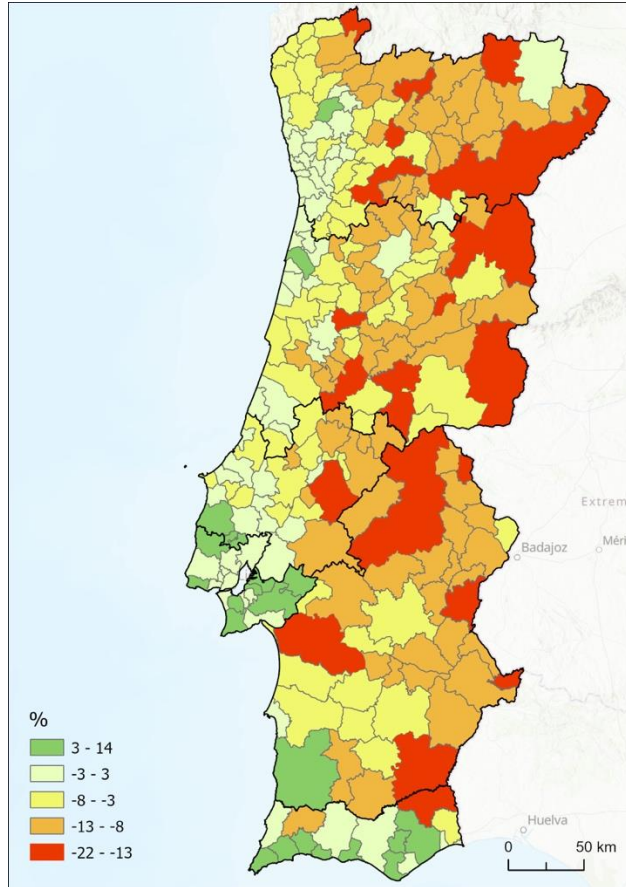
Source: Own calculation based on SIGTUR data



Short-stay accommodations per 10 km² grids, 2025 (2025)

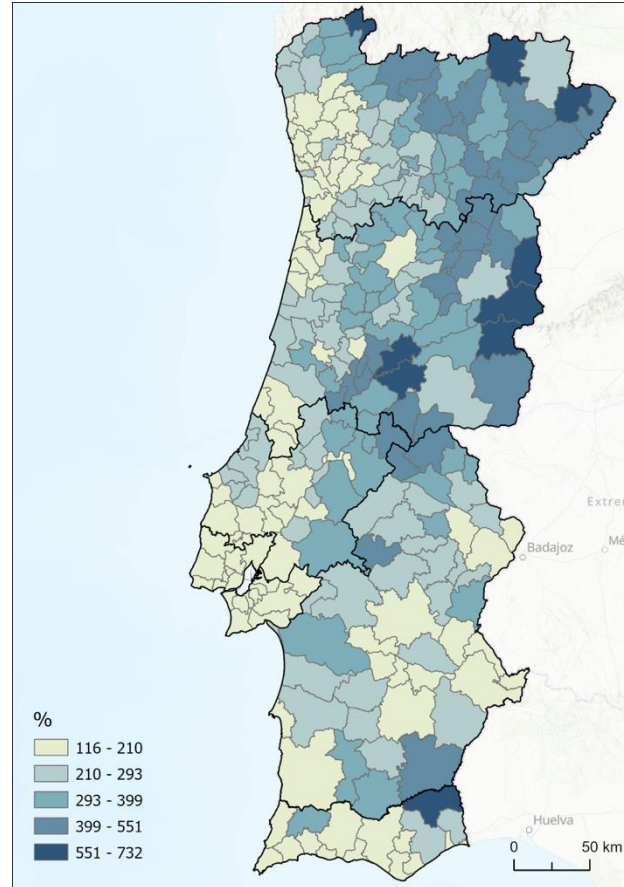
Source: Own calculation based on SIGTUR data

Tourism and regional inequalities in Portugal



Population change rate by municipality (2011-21)

Source: INE

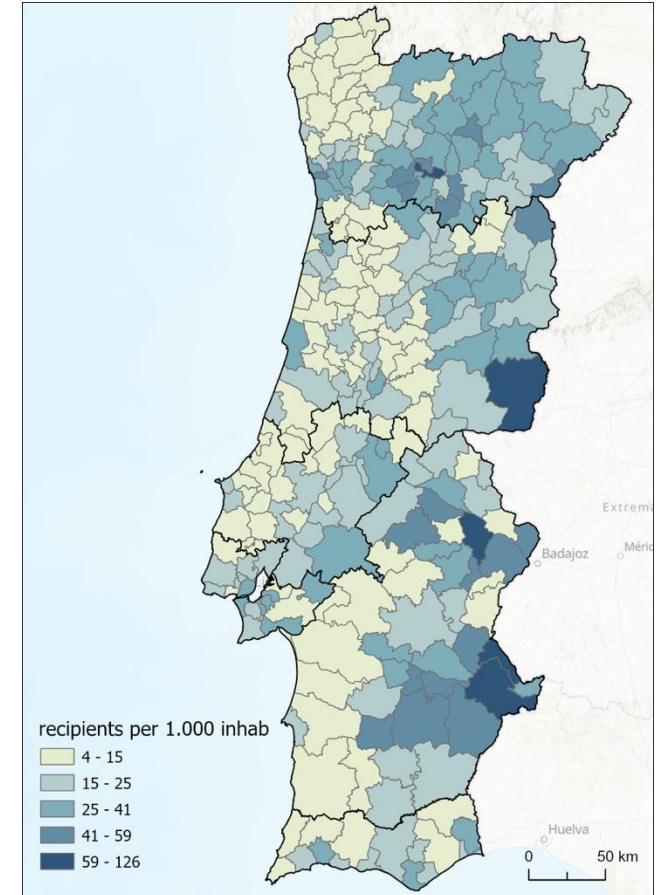


Ageing index by municipality (2021)

Source: INE

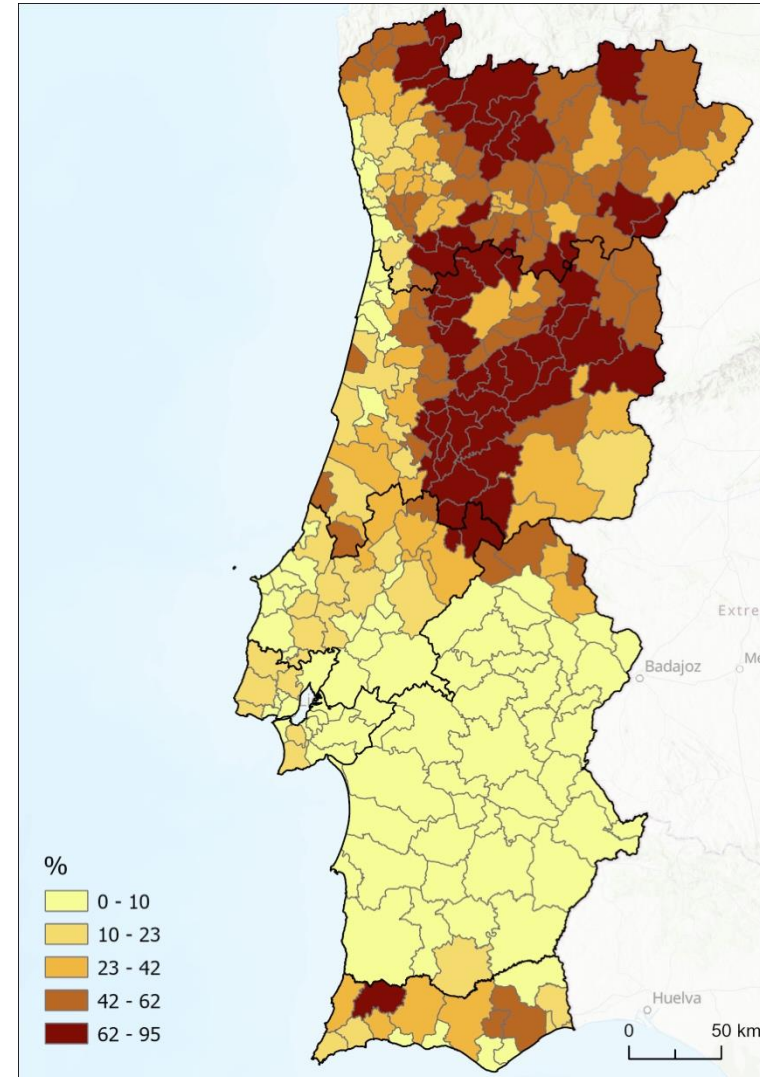
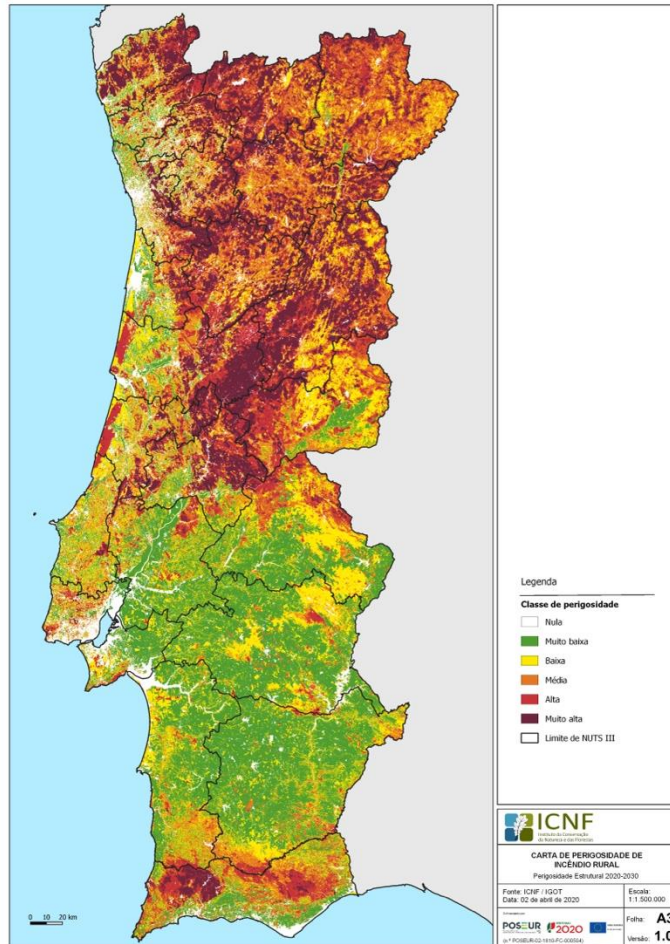
Beneficiaries of minimum income schemes by municipality (2023)

Source: INE



Wildfire hazard potential

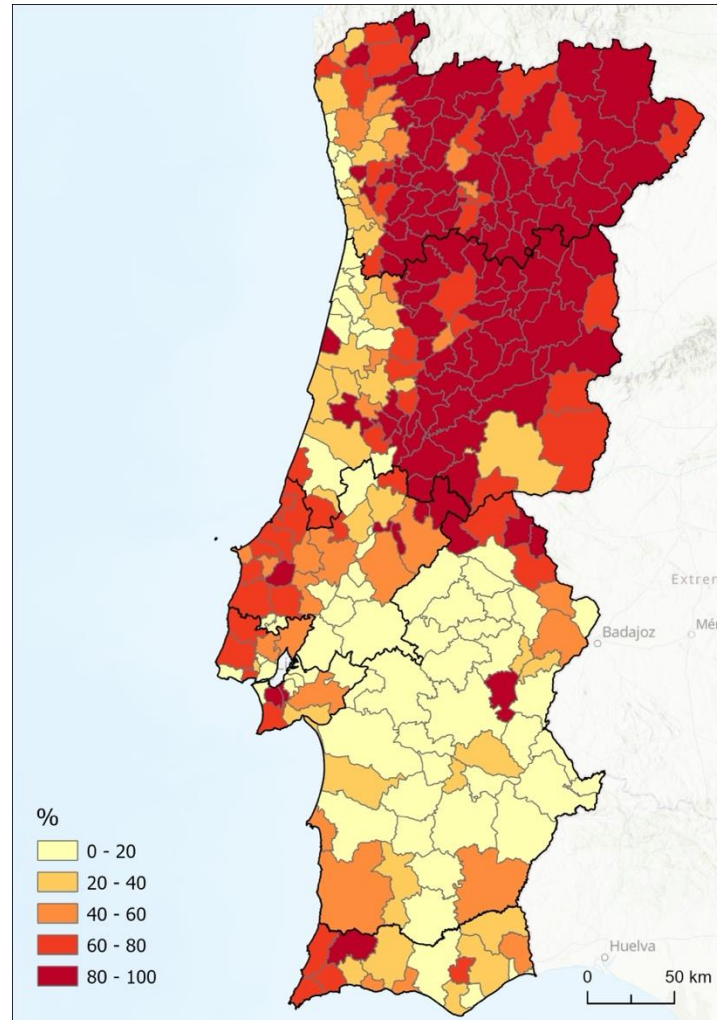
Structural
Wildfire
Hazard Map
for 2020-30
(ICNF)



Very high and
high zones of
wildfire
hazard by
municipality

Source:
Own calculation based
on ICNF

Tourism exposition to wildfire hazard

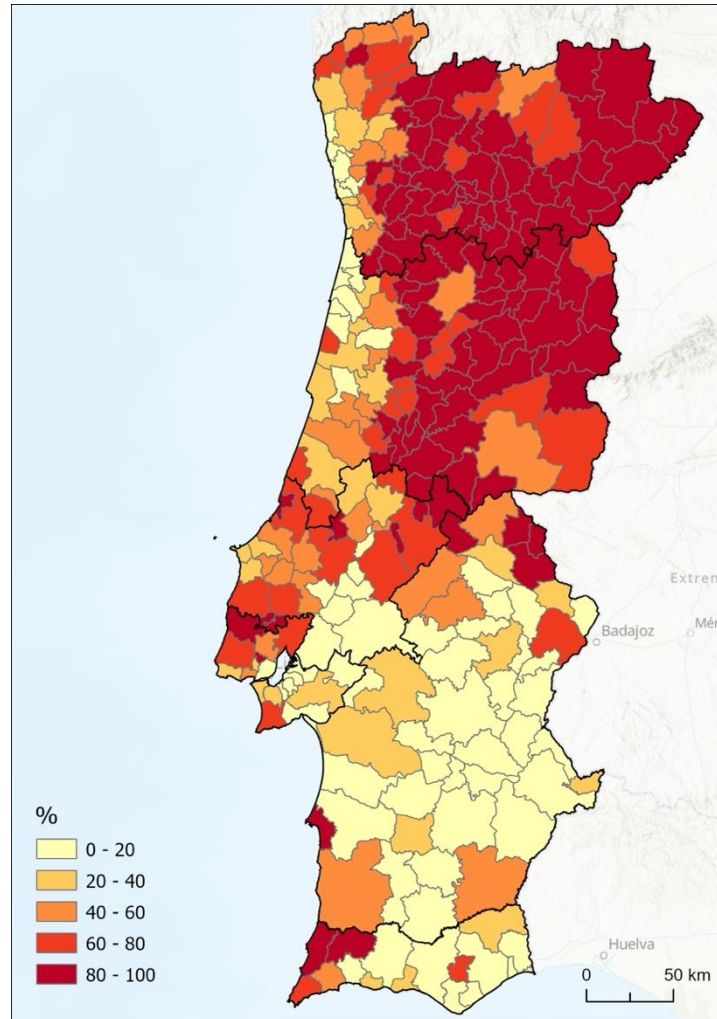


Tourist accommodation establishments (collective) located 500 metres or less from a very high or high wildfire hazard zone (2025)

Source:
Own calculation

In mainland Portugal, 2962 tourist accommodation establishments are located 500 metres or less from a very high or high wildfire hazard perimeter, which corresponds to 55.4%.

Tourism exposition to wildfire hazard



Short-stay accommodations located 500 metres or less from a very high or high wildfire hazard zone (2025)

Source:
Own calculation

The number of short-term rentals located 500 metres or less from a very high or high wildfire hazard perimeter amounts to 37,081 units, or 32.3% of total.

Conclusion

- Tourist accommodations in Portugal are highly exposed to wildfire hazard, particularly in the marginal regions of inland Northern and Central Portugal, where almost all establishments are highly exposed
- In addition to the threat to accommodation infrastructure and tourists, wildfires cause biodiversity loss and damage the landscape, thus reducing the attractiveness of these regions
- In Portugal, wildfires are an exacerbating climate risk that particularly affects socially vulnerable and disadvantaged regions in terms of tourism development
- Wildfires may conflict with tourism policies aimed at decentralising tourism and promoting tourism in rural and marginal regions
- The wildfires-tourism nexus in Portugal demonstrates the need for integrated policies that do not consider tourism development in isolation, but rather in relation to landscape planning, agricultural and forestry policies, civil protection and emergency management, and climate change adaptation

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Thanks!

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