

# IMPACTS OF HEAT WAVES: ARE WE READY?

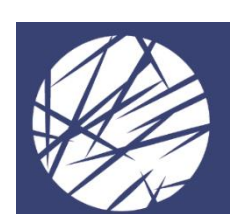


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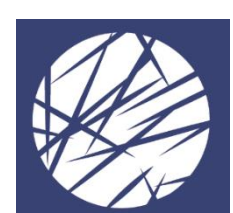
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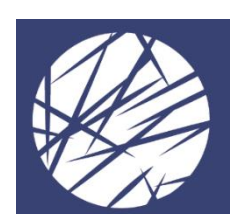
## Introduction

The room for doubt about global warming has collapsed. Over time, despite increasing warnings about climate change, the arguments about assessing potential risks have come to an end. It is now time to face the dangers and to deal with the consequences. Among these, the impact of heat waves (HW) on our societies will be so widespread that it is difficult to predict the outcome. The costs of HW impacts are not yet known, but the poorest countries and their communities will certainly suffer the most.



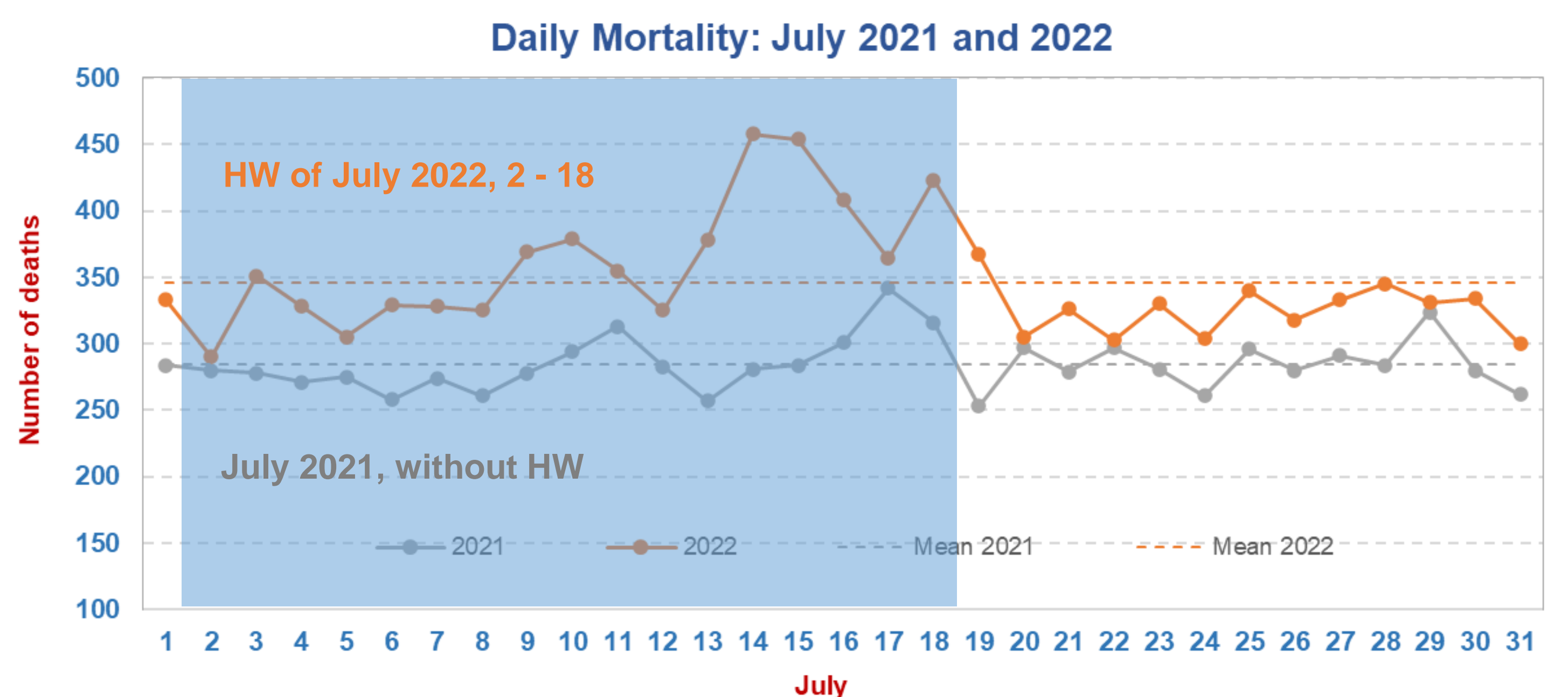
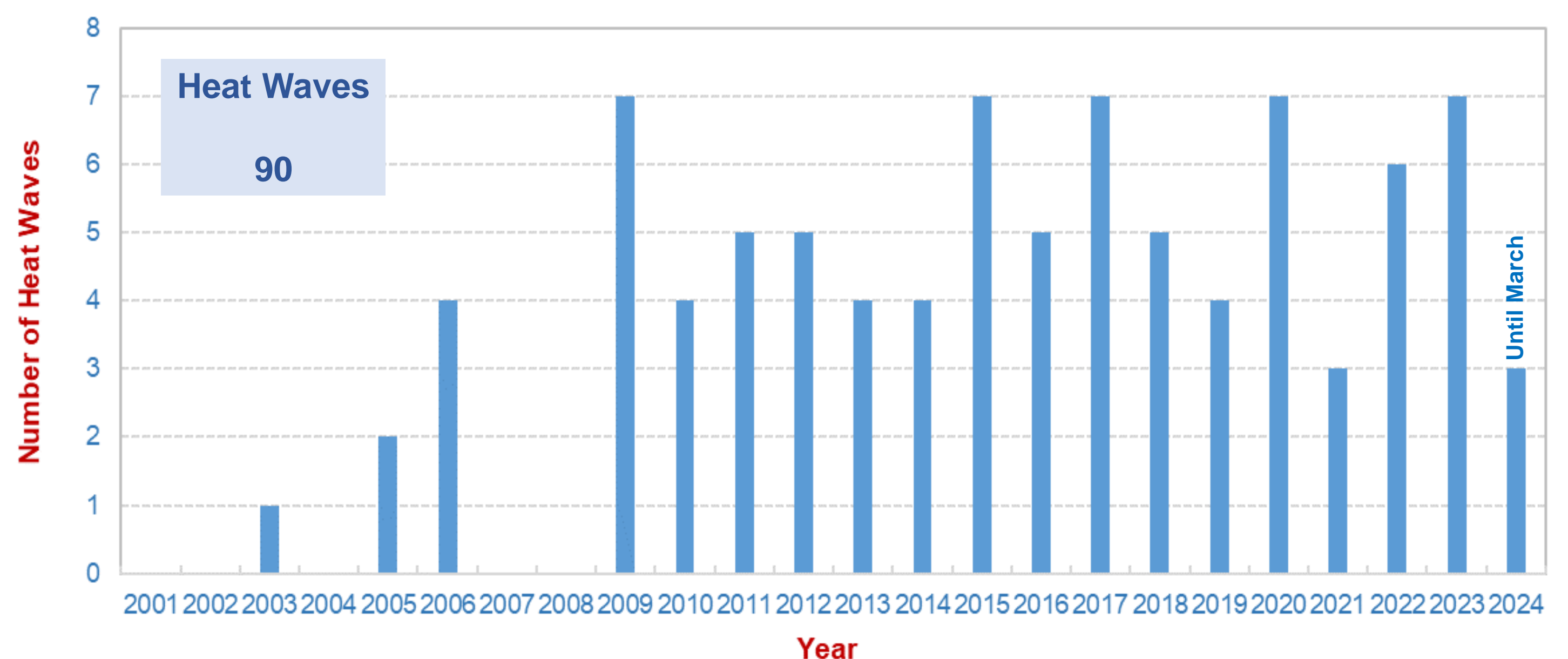
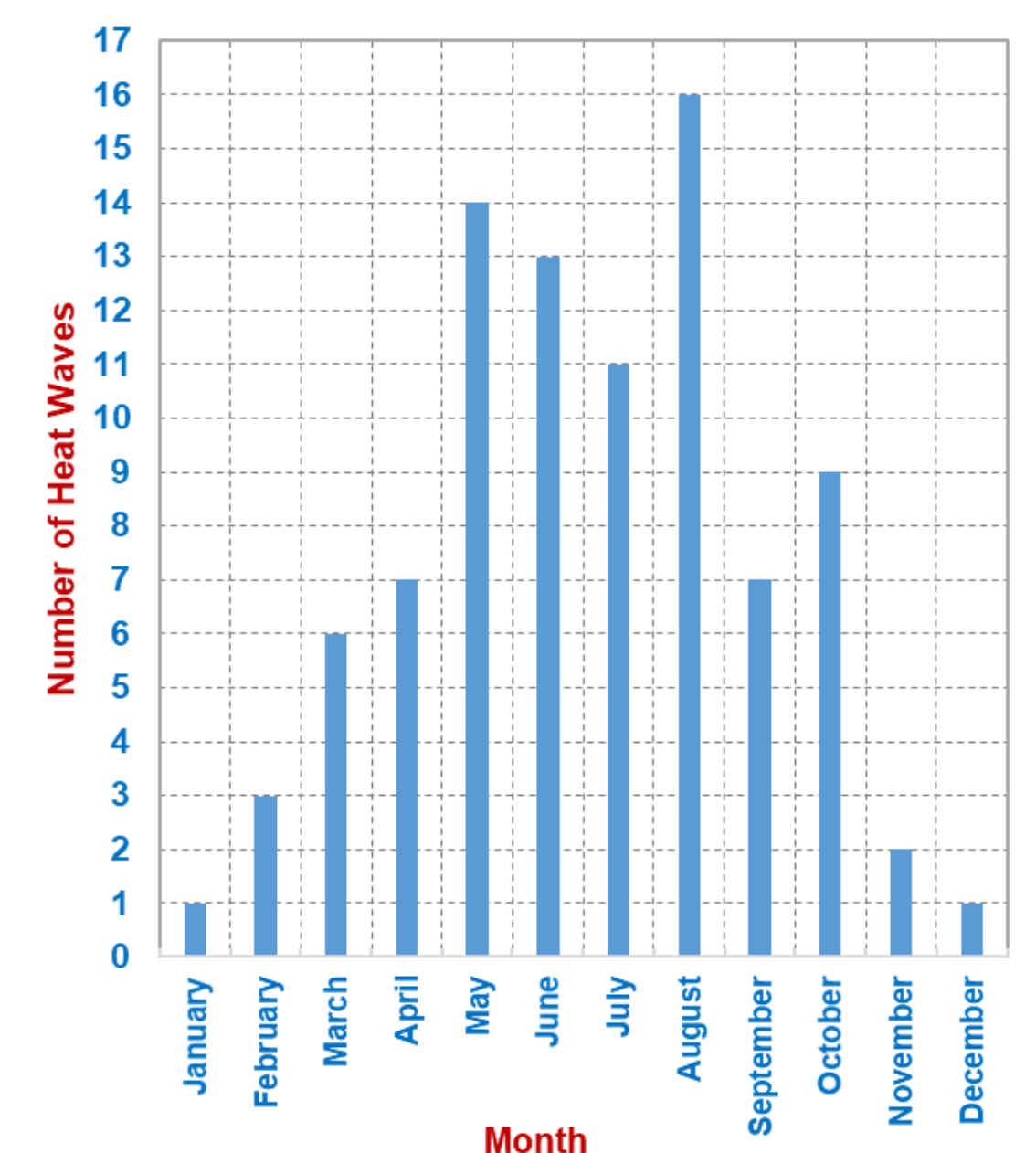
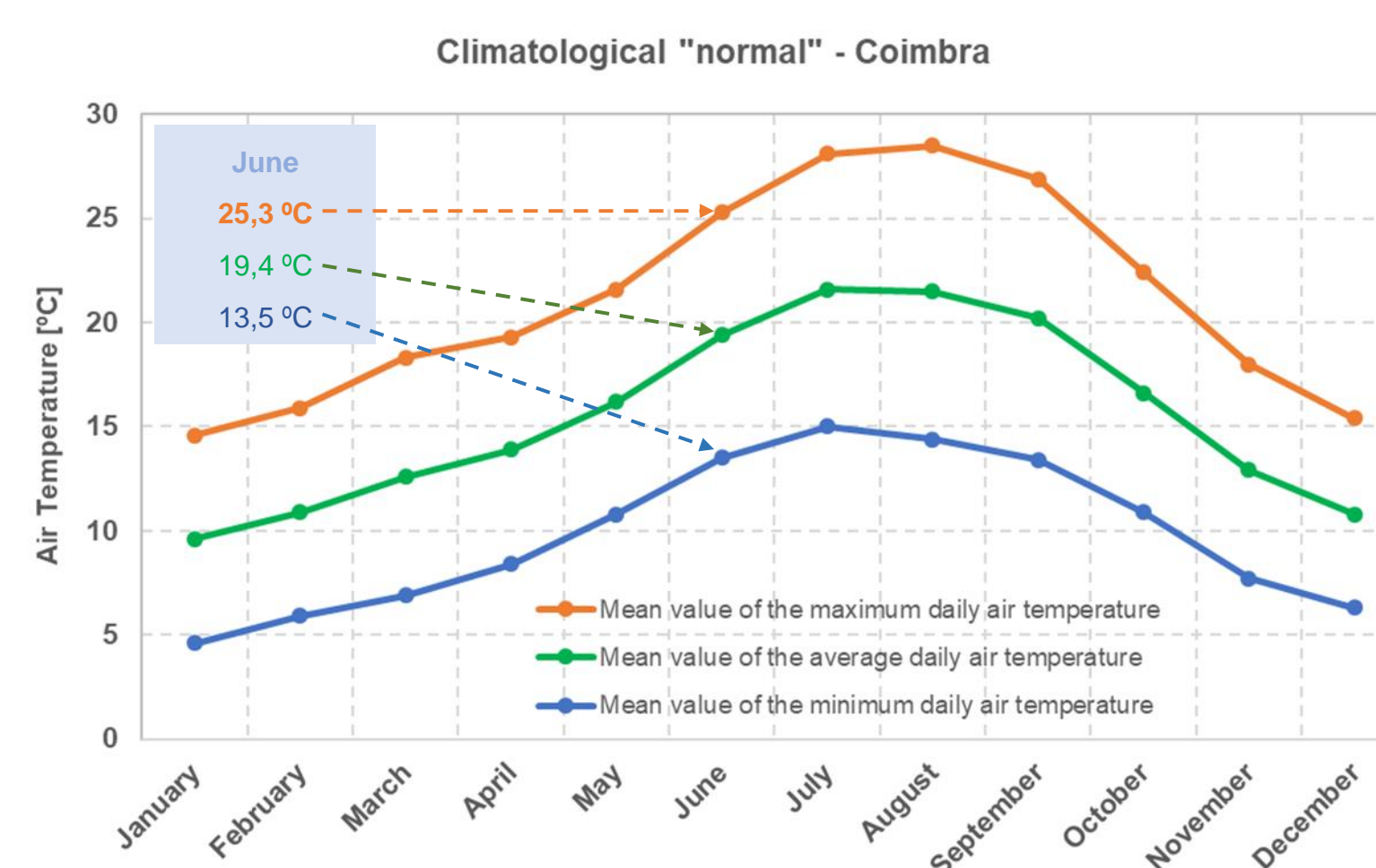
## Objectives and Methodology

The present poster aims to characterize the HW that have occurred in Portugal mainland, during the XXI century (years 2001-2024), in terms of intensity, frequency, duration, spatial extent and mortality. The Heat Wave Duration Index (HWDI) was used, but with the definition given by the Portuguese Meteorological Service ([www.ipma.pt](http://www.ipma.pt)), which states that "an HW occurs when the maximum air temperatures are 5°C higher than the average maximum temperatures in a given location during the reference period, for at least six consecutive days". The reference period covers 30 years (1971-2000 in this work).



## Results and Discussion

Between January 2001 and March 2024, a total of 90 HW occurred on the Portuguese mainland. The highest number of occurrences were in 2009, 2015, 2017, 2020 and 2023 with seven HW; at least three yearly HW occurred between 2009 and 2023; this year one HW happened in January, for the first time in this century, and another in February. August stands out with 16 HWs, followed by May with 14, June with 12 and July with 11. Due to the heat island effect, the air temperature in city centres might be several degrees higher than in rural areas; therefore, the consequences of HW are more harmful for people living in urban areas, which are increasing in number worldwide, being 6.3 million (61%) in Portugal (United Nations Demographic Yearbook of 2022). Episodes of heat stress are thus expected to increase significantly, with serious consequences in terms of morbidity and mortality. Accordingly, productivity losses and socio-economic costs could be unprecedented!



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