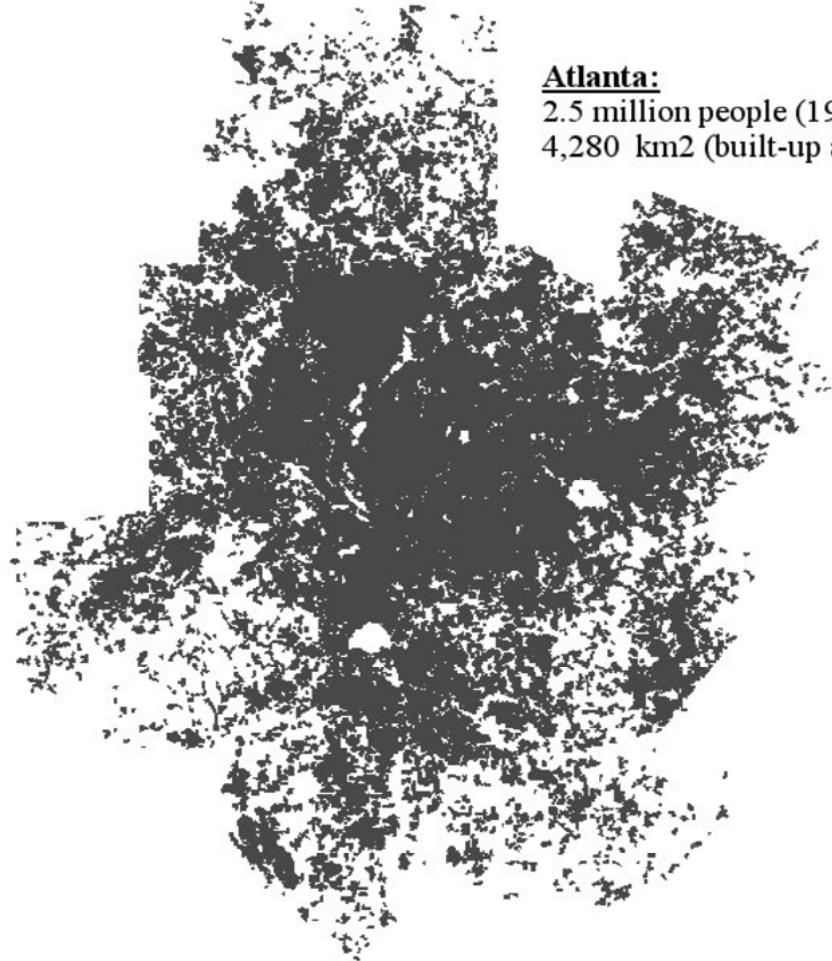


Urban forms influence GHG emissions

The Built-up Area of Atlanta and Barcelona Represented at the Same Scale



Atlanta:
2.5 million people (1990)
4,280 km² (built-up area)



Barcelona:
2.8 million people (1990)
162 km² (built-up area)



Lower emissions in Barcelona because of:

1 - Shorter travel distance;

2 – Easier use of public transport:

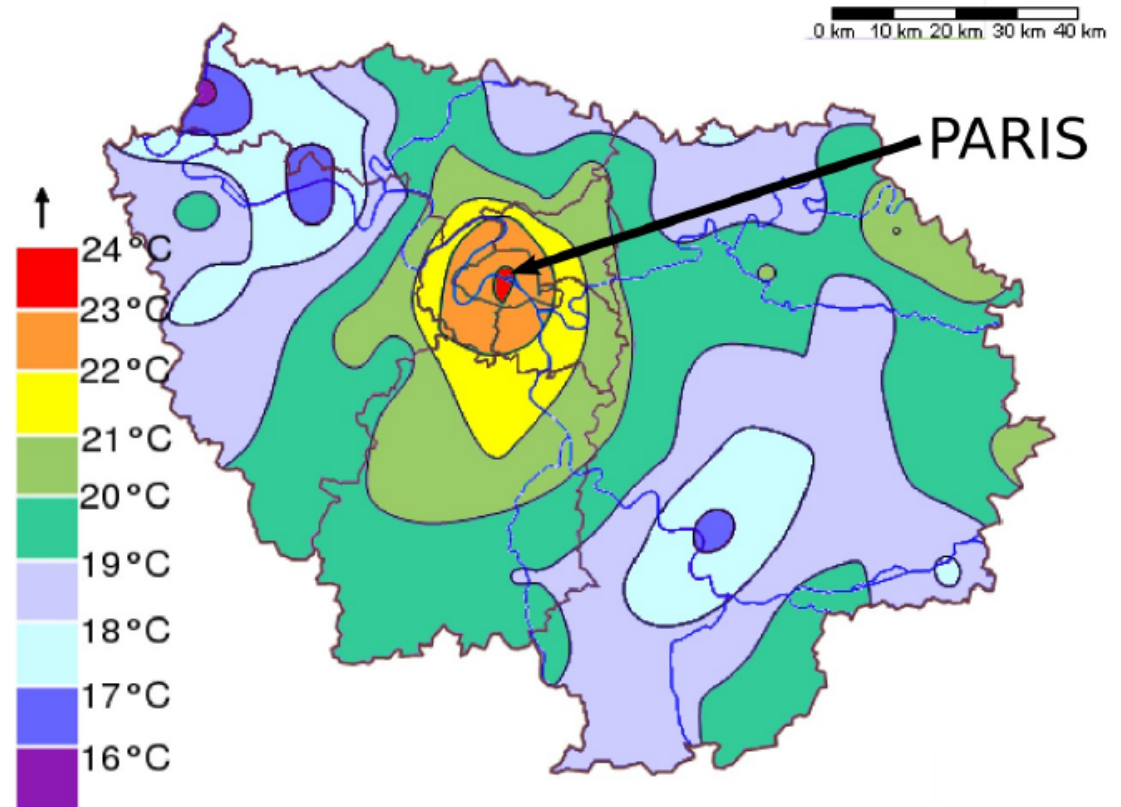
Barcelona has 99 km of metro line.

To provide the same accessibility to metro in Atlanta, 3400 km would be necessary.

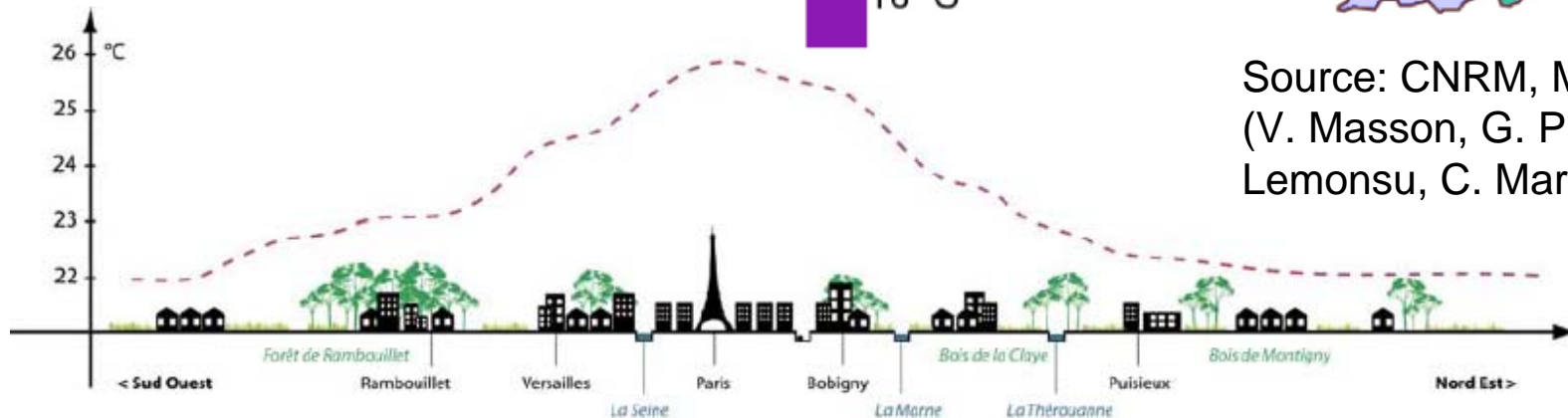
Source: Alain Bertaud

The urban heat island was large in Paris during the 2003 heat wave...

Temperatures are higher in cities than in rural areas, especially at night

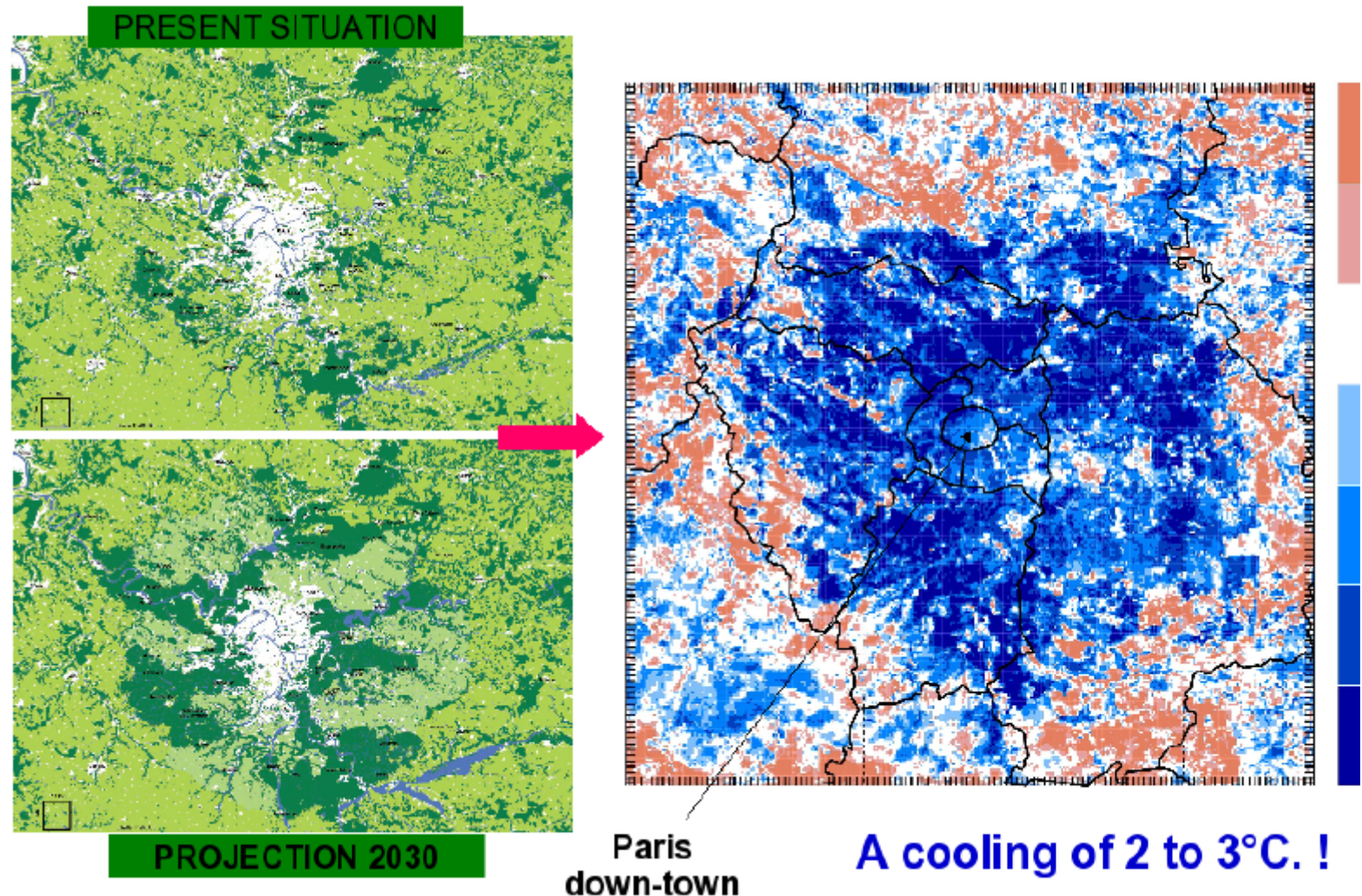


Source: CNRM, Météo-France
(V. Masson, G. Pigeon, A. Lemonsu, C. Marchadier)



... but we can do something about it

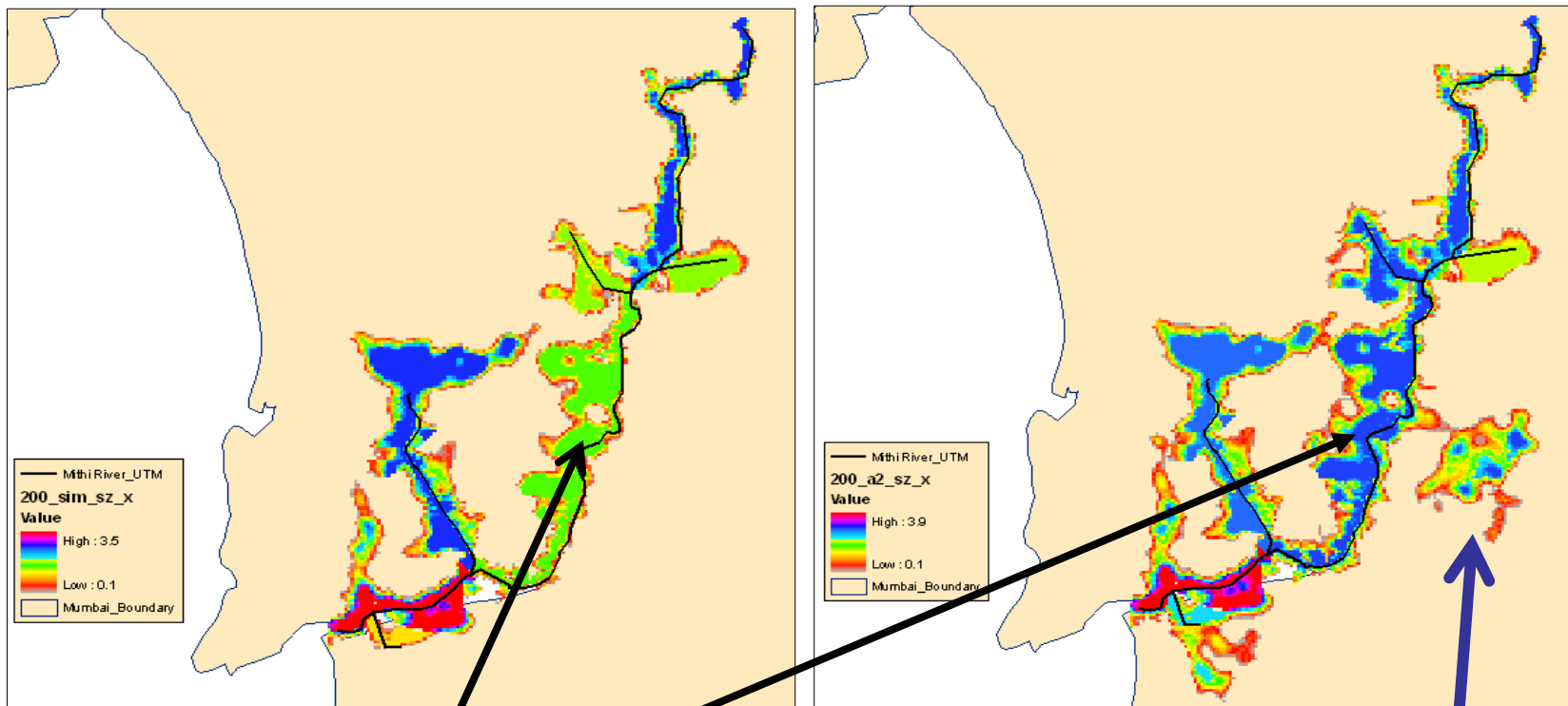
Assuming the implementation of specific measures to limit the urban heat island.



Source: CNRM, Météo-France (V. Masson, G. Pigeon, A. Lemonsu, C. Marchadier)

Flood footprints will change, so urban plans need to change too

200-yr flood maps in Mumbai for present day (left) and 2080s (right)



Deeper flooding

Extended flood footprint

Which urban plan?



Credit: Joe Harder Buxtehude

-Mumbai has about 18 million inhabitants

-50% of the Mumbai population lives in slum and work in the informal sector

- Dharavi is the largest slum in the World

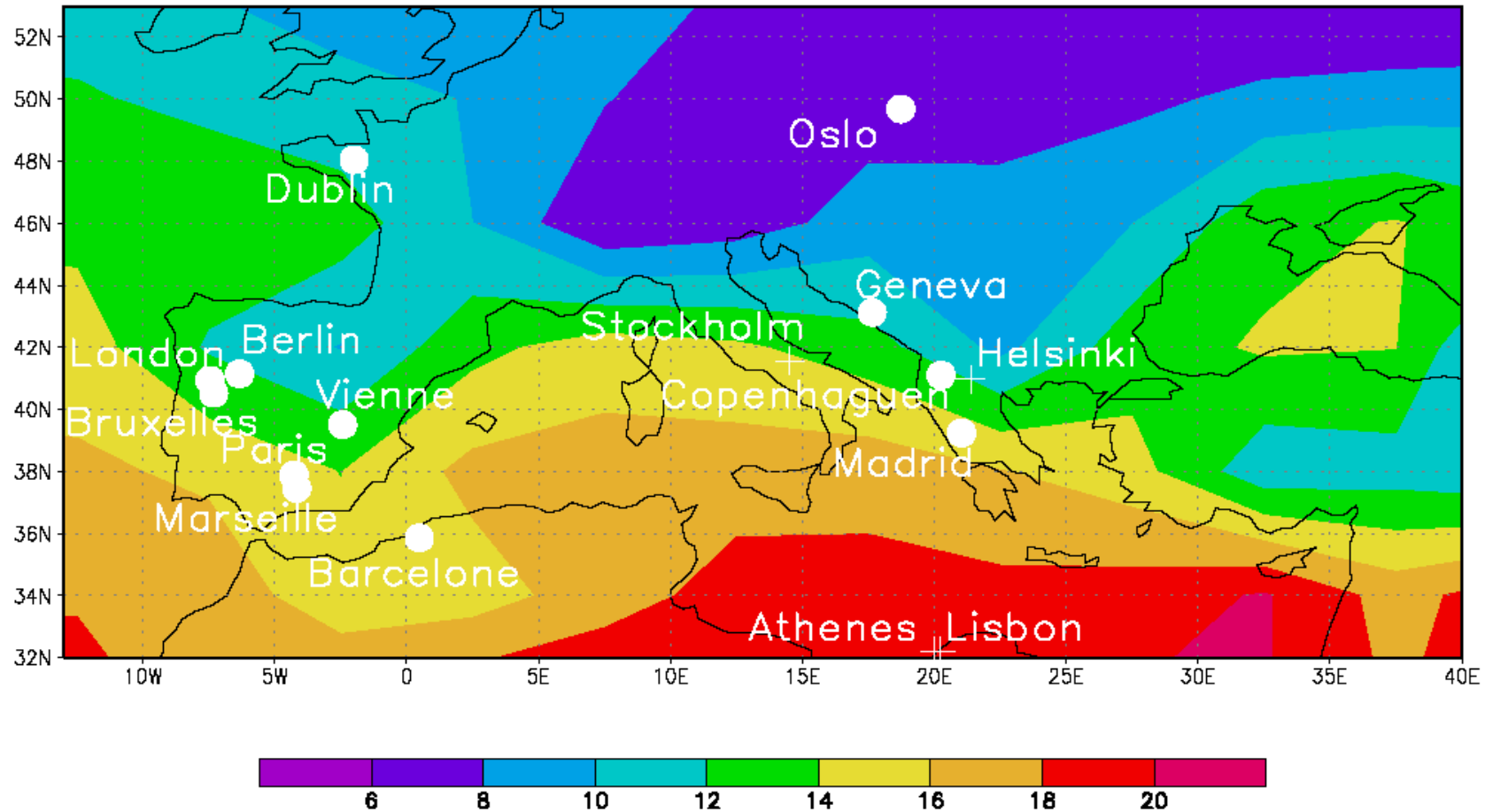
**4. We have to cope with an unavoidable
uncertainty on future emission targets and
future local climates**



METEO FRANCE
Toujours un temps d'avance

One possible climate...

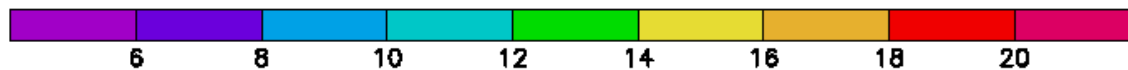
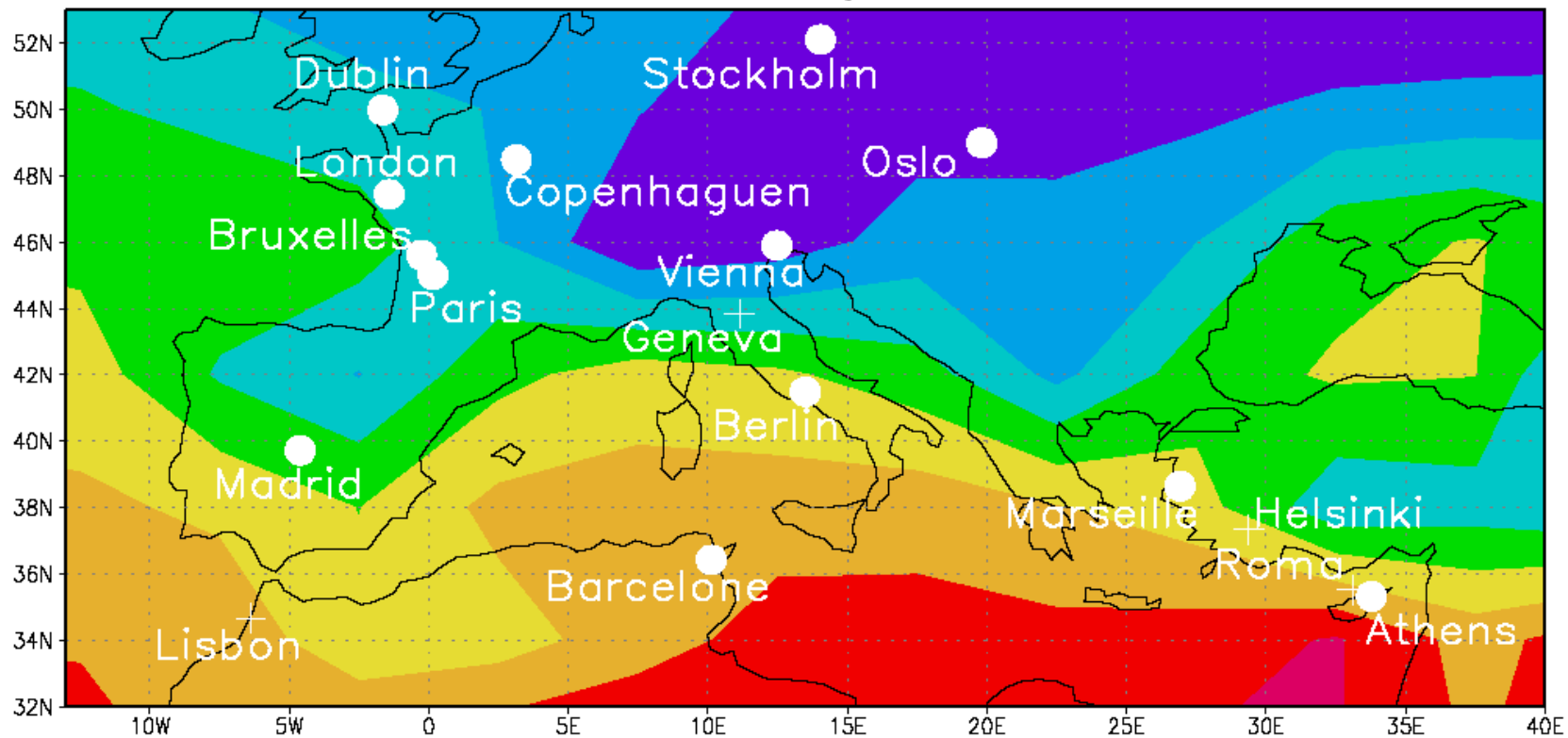
Climate analogues in 2070, Hadley Centre Model, SRES A2



After Hallegatte, Ambrosi, Hourcade (2007)

... and another...

Climate analogues in 2070, Météo-France Model, SRES A2



After Hallegatte, Ambrosi, Hourcade (2007)