

# POLICY BRIEFING

## Tipping points, extreme events and uncertainty: How can studying the Arctic help us predict future European climate beyond the mean?

Improving scientific predictive capacity is key to **developing robust action plans**

The Arctic is warming **twice as fast** as the rest of the world (Arctic amplification)

Abrupt climate changes and extreme weather events require **early warning systems on different timescales**

Through monitoring and observations of current changes we can **predict future climate changes** in the Arctic

These skilful models mean we can begin to **predict extreme weather events across Europe**

These include identifying signals for **potential abrupt climatic changes (tipping points)**

We are improving our capacity to predict these effects through **modelling ocean and atmospheric processes**

Changes in the Arctic also have far-reaching effects across the Northern Hemisphere through **teleconnections**

## KEY MESSAGES

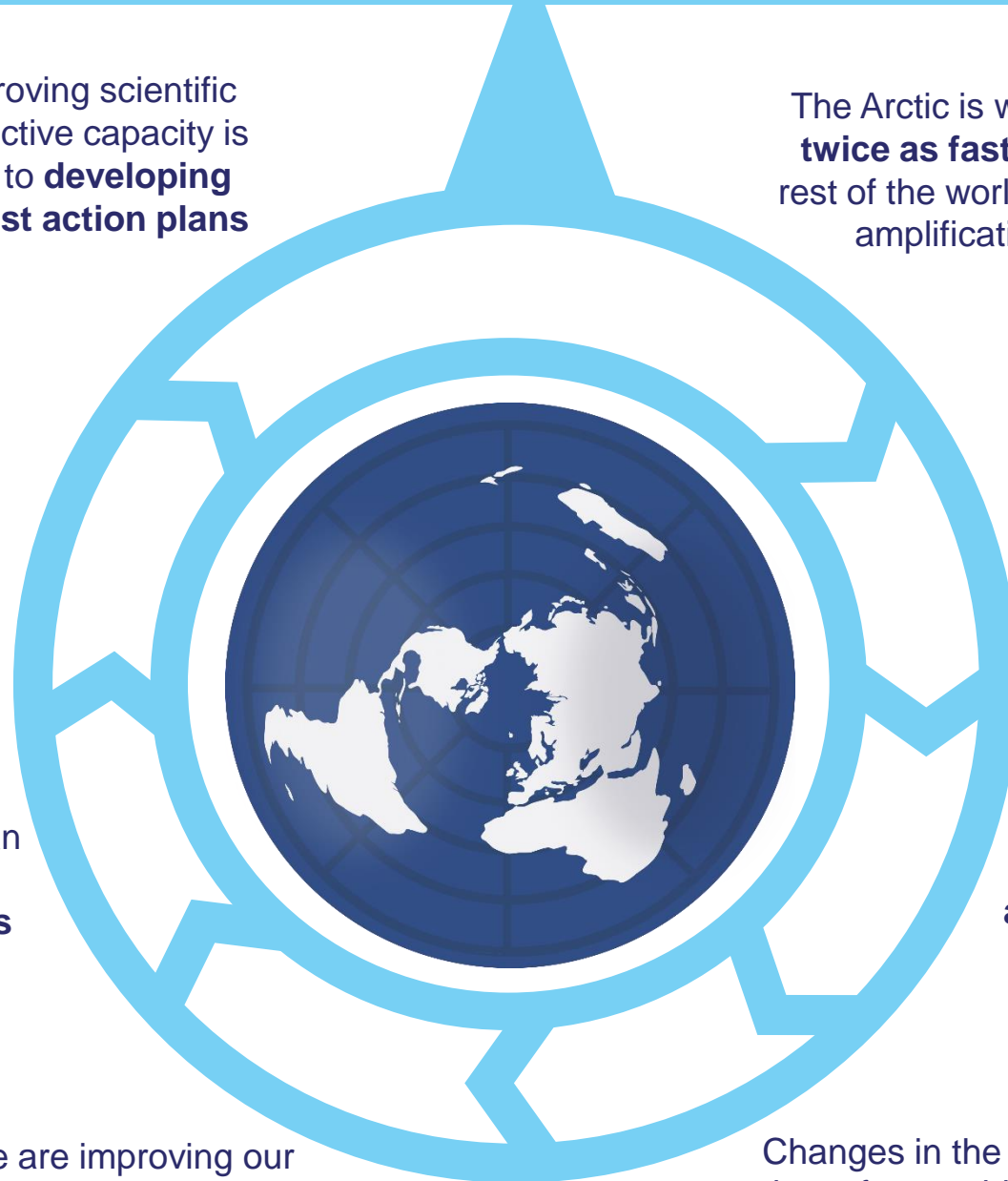
Economic losses from weather and climate-related extremes across Europe are already on average EUR 12 billion per year\*  
EU Strategy on Adaptation to Climate Change

Climate adaptation requires not only planning for gradual changes over time, but also preparing for high impact consequences such as abrupt climate shifts and extreme weather events.

Understanding climate change in the Arctic is key to help us predict high impact consequences and develop early-warning systems.

To improve these predictive skills, long-term sustained observational North Atlantic and Arctic networks are required.

Greater integration between researchers and end-users are needed to develop meaningful climate services and action plans.



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