

## UPSCALING, DOWNSCALING AND RESCALING: HOW TO FIT CLIMATE SERVICES INTO THE REAL WORLD?

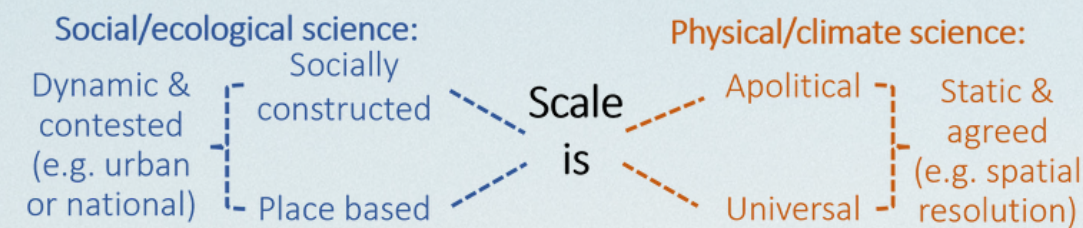
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### Intro

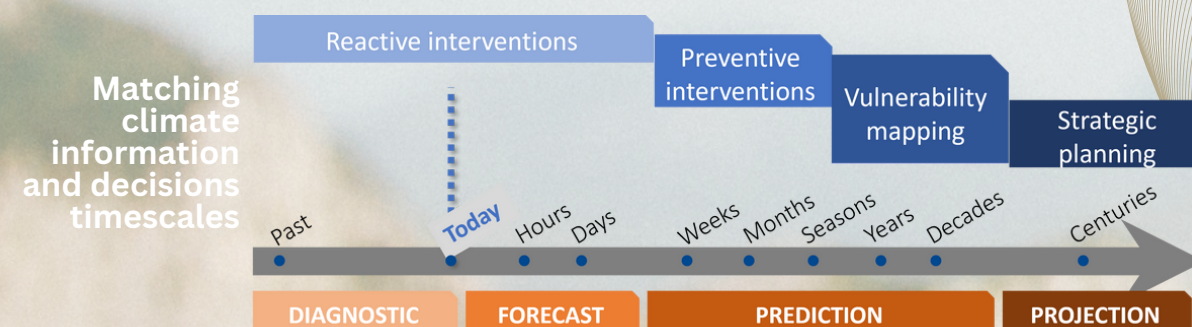
Effective adaptation requires we align the scale of the expected climate impact with the scale at which the problem is governed. But how do we right-size our efforts when those working on the same problems interpret "scale" differently?

### Climate services across the scale: whose scale?



### Linking cutting-edge climate science to real-world decisions

State of the art climate modelling is arriving at the fine scales at which impacts of the phenomena these models study are felt and decisions are taken. Advances in "seamless" climate forecasting seek to link climate outputs across temporal scales, i.e., producing consistent information across seasonal and decadal predictions and into climate projections. Meanwhile, decision makers are starting to integrate interventions into holistic adaptation planning.



### Top down vs bottom up approach

In climate science, the key approach to arriving at finer scales has been by using downscaling techniques. When studying socio-ecological systems, we rather focus on fine scales to understand how information is transferred and affects the organisation of a broader scale.

### Impetus4Change (I4C) approach

Impetus4Change (Improving Near-Term Climate Predictions for Social Transformation) gathers an interdisciplinary team of researchers and practitioners, employs the latest scientific achievements in high-resolution climate modelling and attempts to bridge modelling timescales. Exploring the interface between top-down and bottom-up approaches, I4C aims to reinvent the treatment of scale in climate services. Involving stakeholders as equal partners and committing to knowledge coproduction in Demonstrator cities aims to provide the inputs needed for informed and just climate interventions.

### I4C Demonstrator Example: Heatwaves in Barcelona

In Barcelona, stakeholders, like local governments and citizens, experience and perceive climate impacts at many spatial and temporal scales. We will co-design harmonised climate services to provide climate information at the scales of urban resilience initiatives, such as managing public spaces and services during heatwaves, supporting the policy of shade and infectious diseases control or planning urban redevelopment.



View of Barcelona

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Impetus4Change has received funding from the European Union's Horizon Europe research and innovation programme under grant agreement number: 101081555