



# UK Met Office Examples of a Climate Service Provision

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# UKMO Examples of Climate Service Provision

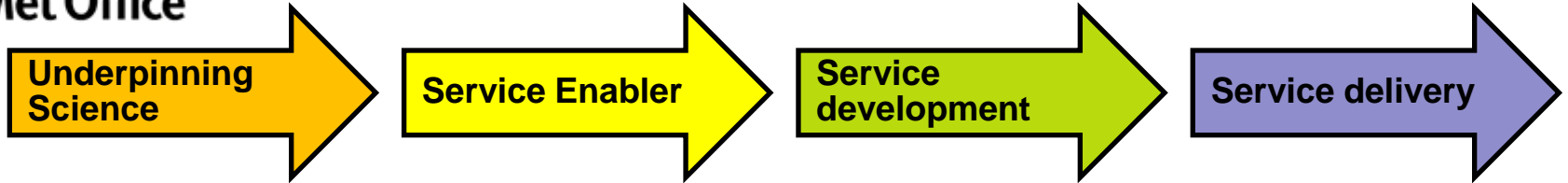
## Examples presented:

- Water management
- Energy management
- Disaster Risk Management
- Coastal inundation
- Supporting National Climate Service Implementation



Met Office

# UK Climate Services Supply Chain



**National  
Climate  
Capability**

**Climate Service  
Provision Capacity**

Basic information

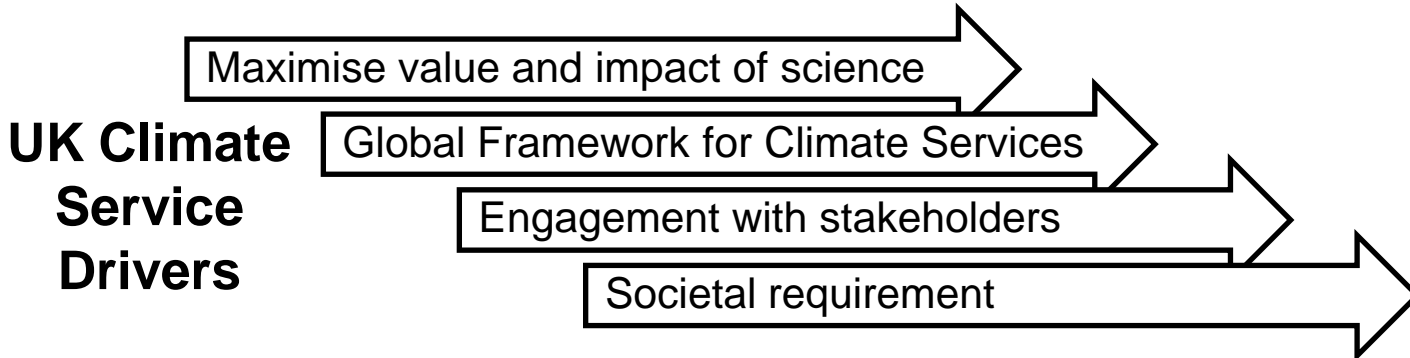
Value-added products

Expert advice

Capacity Strengthening

**UK Climate Services to manage climate risks and opportunities for:**

- Government
- Public
- Commercial



# Water management

## Case study: The Nile Project

<b>Partners</b>	<ul style="list-style-type: none"> <li>• UKMO with Nile Forecasting Centre (of the Egypt Ministry of Water Resources and Irrigation, MWRI) &amp; Danish Hydrological Institute (DHI)</li> <li>• Through Nile Basin Initiative (NBI) with DHI</li> </ul>
<b>Stakeholders</b>	Local government, national government, water management companies, agriculture, hydroelectric power
<b>Geographical Scope</b>	The Nile Basin is shared by 10 countries and is the main source of water in North East Africa
<b>Temporal Outlook</b>	Present day plus projections for 2020 and 2040
<b>Services &amp; tools</b>	<ul style="list-style-type: none"> <li>• PRECIS (Regional Model that can be run on local computers) plus training</li> <li>• High-res climate scenarios used with hydrological models to determine river run-off</li> <li>• Best data available to make informed decisions for the region</li> <li>• Regional climate change information for flood and drought impact studies</li> </ul>

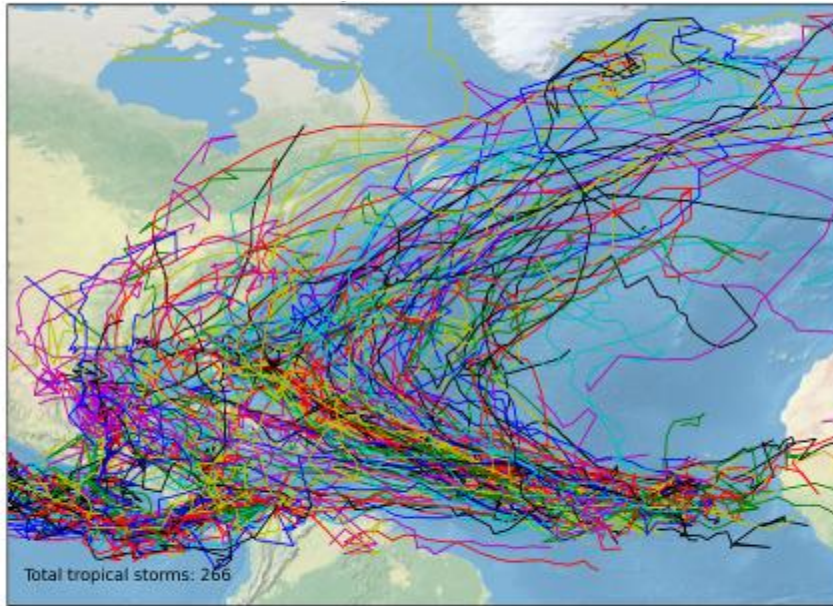




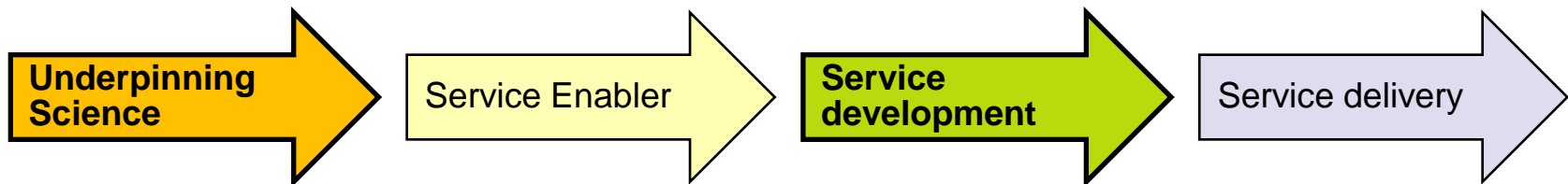
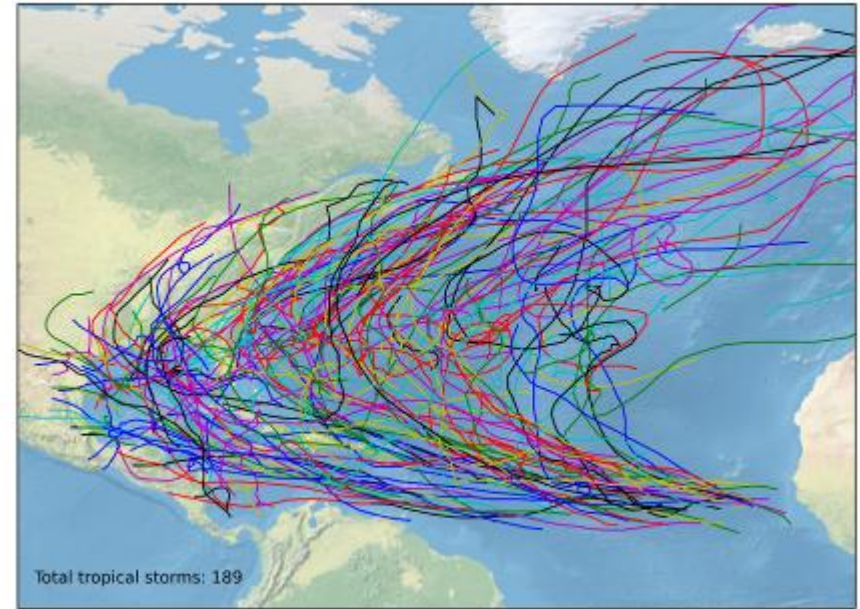
# Disaster Risk Management

## Case study: Seasonal forecasting of tropical cyclones

**Today: GloSea5**  
~53 km horizontal resolution



**Observations**





# Energy management

## Case study: electricity network resilience

<b>Partners</b>	<b>UK Met Office and Leading energy companies</b>
<b>Stakeholders</b>	UK Electricity Network
<b>Geographical Scope</b>	UK, transferable to other countries
<b>Temporal Outlook</b>	Climate change projections Seasonal variability of weather-related faults
<b>Services</b>	<ul style="list-style-type: none"><li>• Assessment of weather related faults: wind, gale, snow, sleet, blizzard (SSB), lightning, solar heat, flooding</li><li>• Translating climate projections into weather-related fault information</li><li>• Information that can be used to help prioritise which adaptation measures to implement and when</li></ul>



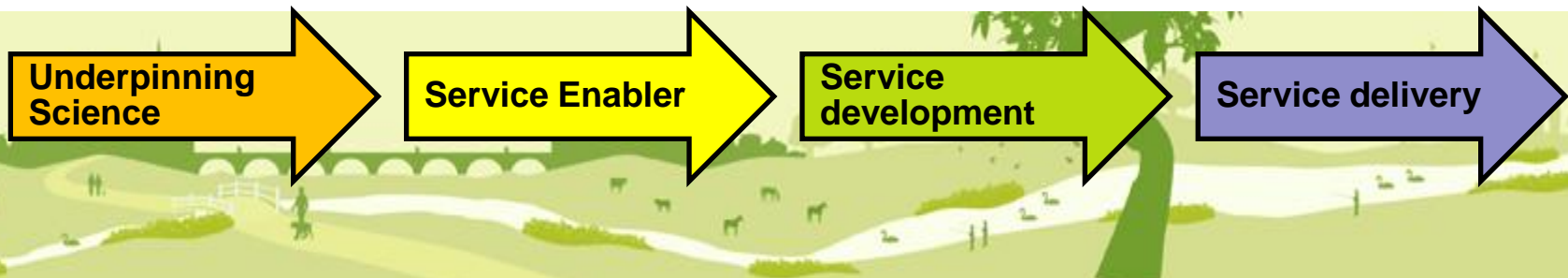


# Coastal Inundation

## Case Study: Thames Estuary 2100 Project

### TE2100 Plan

<b>Partners</b>	<ul style="list-style-type: none"><li>• Led by Environmental Agency</li></ul> With Met Office Hadley Centre, National Oceanography Centre Liverpool, and NERC Centre for Ecology and Hydrology (CEH)
<b>Stakeholders</b>	Flood risk managers for London and the Thames Estuary
<b>Geographical Scope</b>	UK
<b>Temporal Outlook</b>	Established in 2002 Projections for planning through to 2100
<b>Services &amp; tools</b>	<ul style="list-style-type: none"><li>• Ensemble climate projections (Met Office) combined with H++ high-end water level scenario to develop ten-year forecasts for contingency planning</li><li>• Projections of 21<sup>st</sup> Century extreme sea levels: latest information on potential climate driven changes in water levels in the Southern North Sea</li><li>• Estimates of peak river flow (CEH)</li><li>• Providing climate inform to inform long-term flood risk management plan</li><li>• Monitoring of activity in Thames Estuary</li></ul>



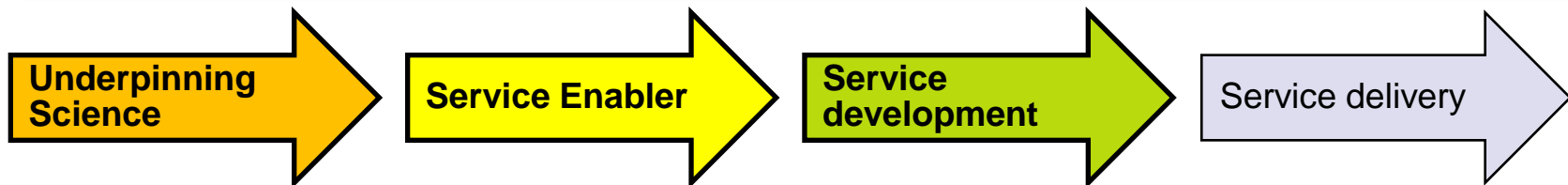


# Building Climate Capability

## Case Study: Climate Science Research Partnership (CSRP)



<b>Partners</b>	Department for International Development (DFID) of the UK Government and the Met Office Hadley Centre. Institutions across African
<b>Stakeholders</b>	African stakeholders
<b>Geographical Scope</b>	Africa
<b>Temporal Outlook</b>	Monthly to Seasonal to Decadal Early warning Near real-time monitoring
<b>Services</b>	<ul style="list-style-type: none"><li>• Improved understanding and modelling of African climate (using HadGEM3)</li><li>• Real-time monthly-seasonal-decadal prediction products for Africa</li><li>• Early warning system development</li><li>• PRECIS (Providing Regional Climates for Impact Studies) system run at African Centres to downscale monthly-seasonal-decadal predictions</li><li>• Near real-time observational monitoring and attribution system</li><li>• Training workshops</li><li>• Study fellowships for African graduate students</li></ul>







**Met Office**

**Partnerships:** working together with Environmental Agency and Natural Environment Research Council

**User driven:** working together through customer partnerships to build knowledge and develop a suite of user-relevant tools, **mainstreaming** the use of climate information in decision making

Ensure a **sustainable service** based on user demand

Built on a solid base of world-leading **underpinning science**

Developed alongside our weather service and building on existing service delivery capability: **a seamless weather and climate service**



**Met Office**

# Climate Service UK

Working together to prepare for tomorrow

