



# Climate modelling: A guide to investment decisions

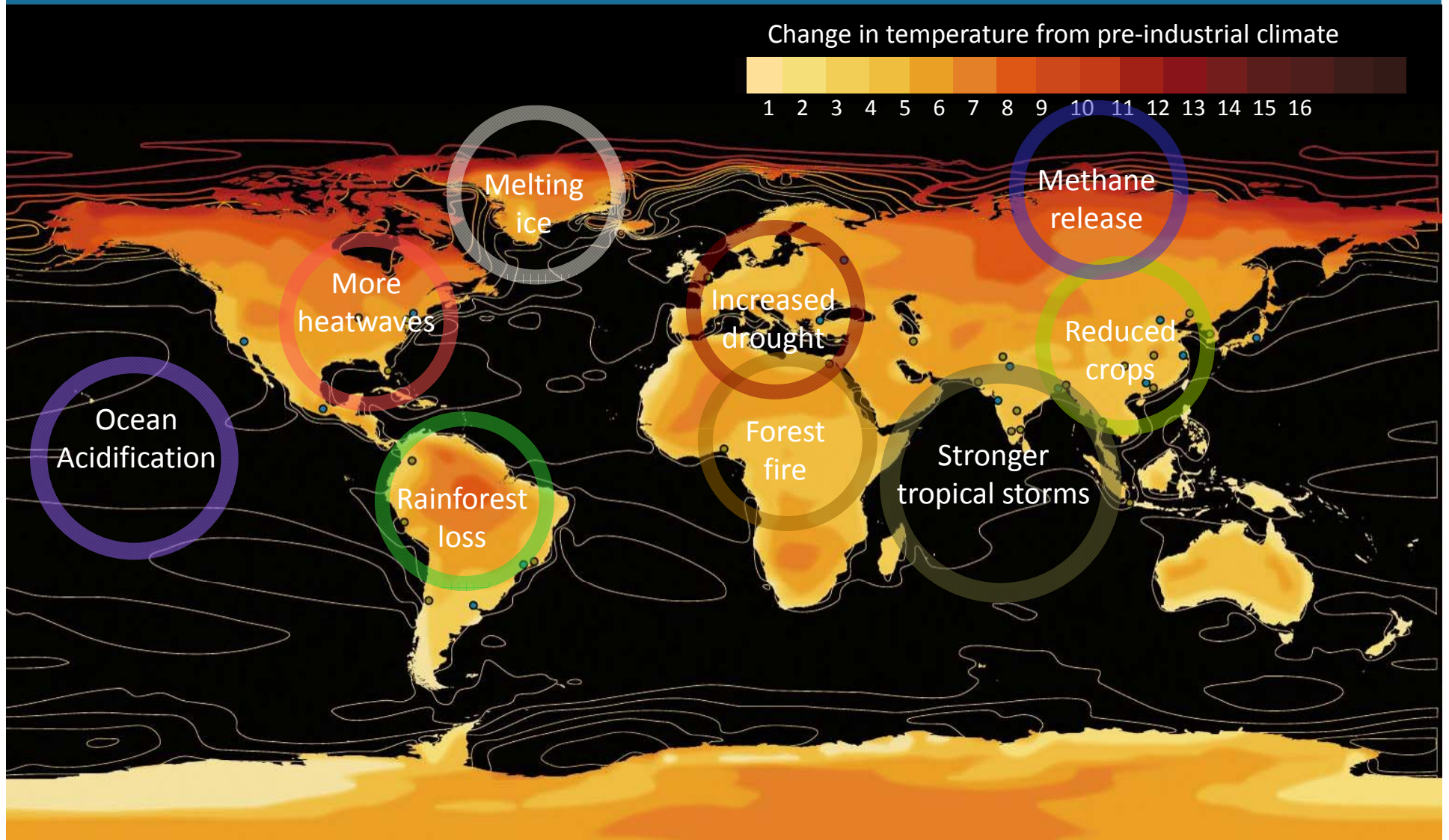


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# The impact of a global temperature rise of 4 °C





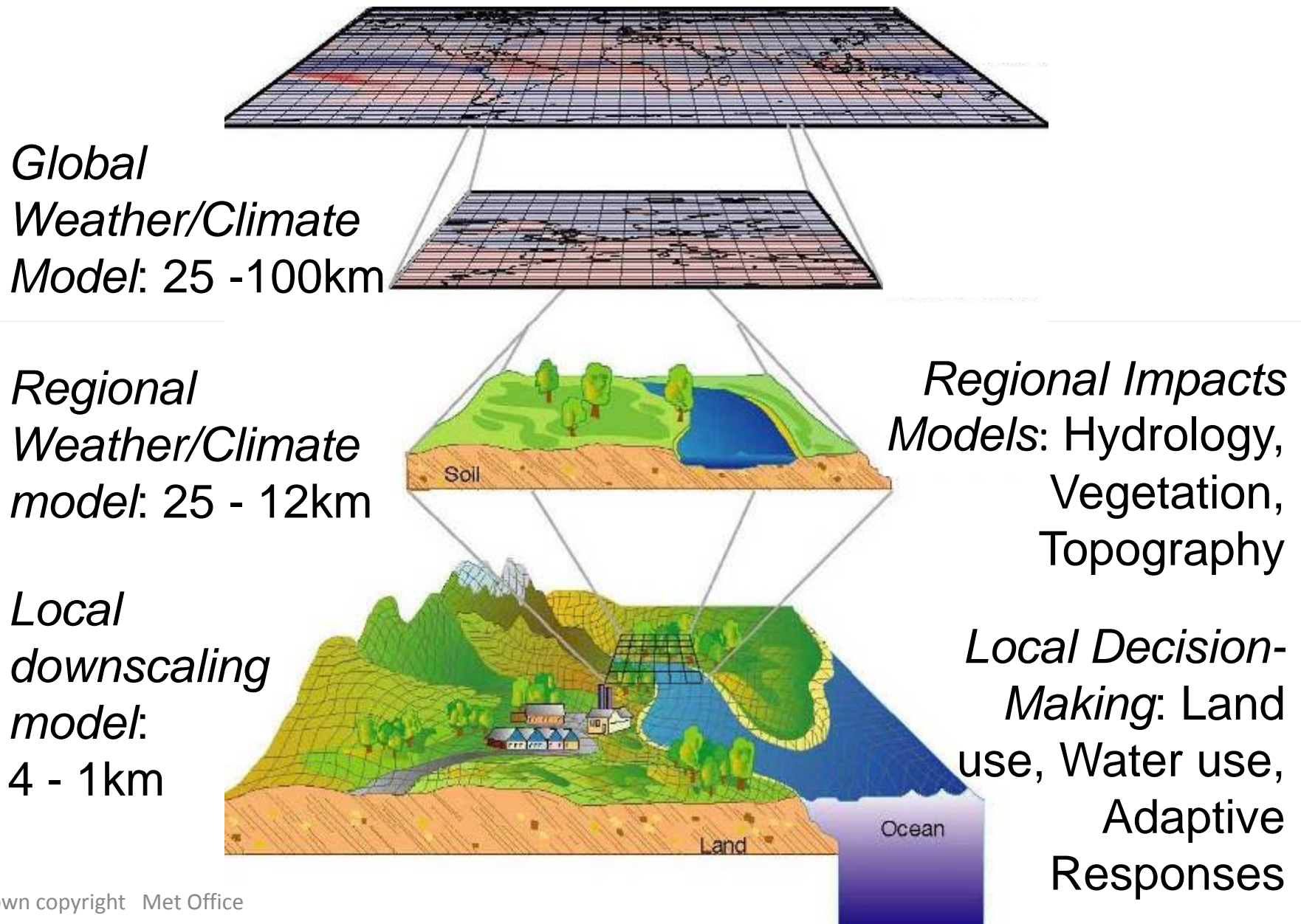
Asia Water Week 2013  
13–15 March • ADB Headquarters, Manila, Philippines



## **The benefits of integrated services: for policy and long term planning**



# Bridging the Gaps and Bridging the Scales



# Future Nile flow:

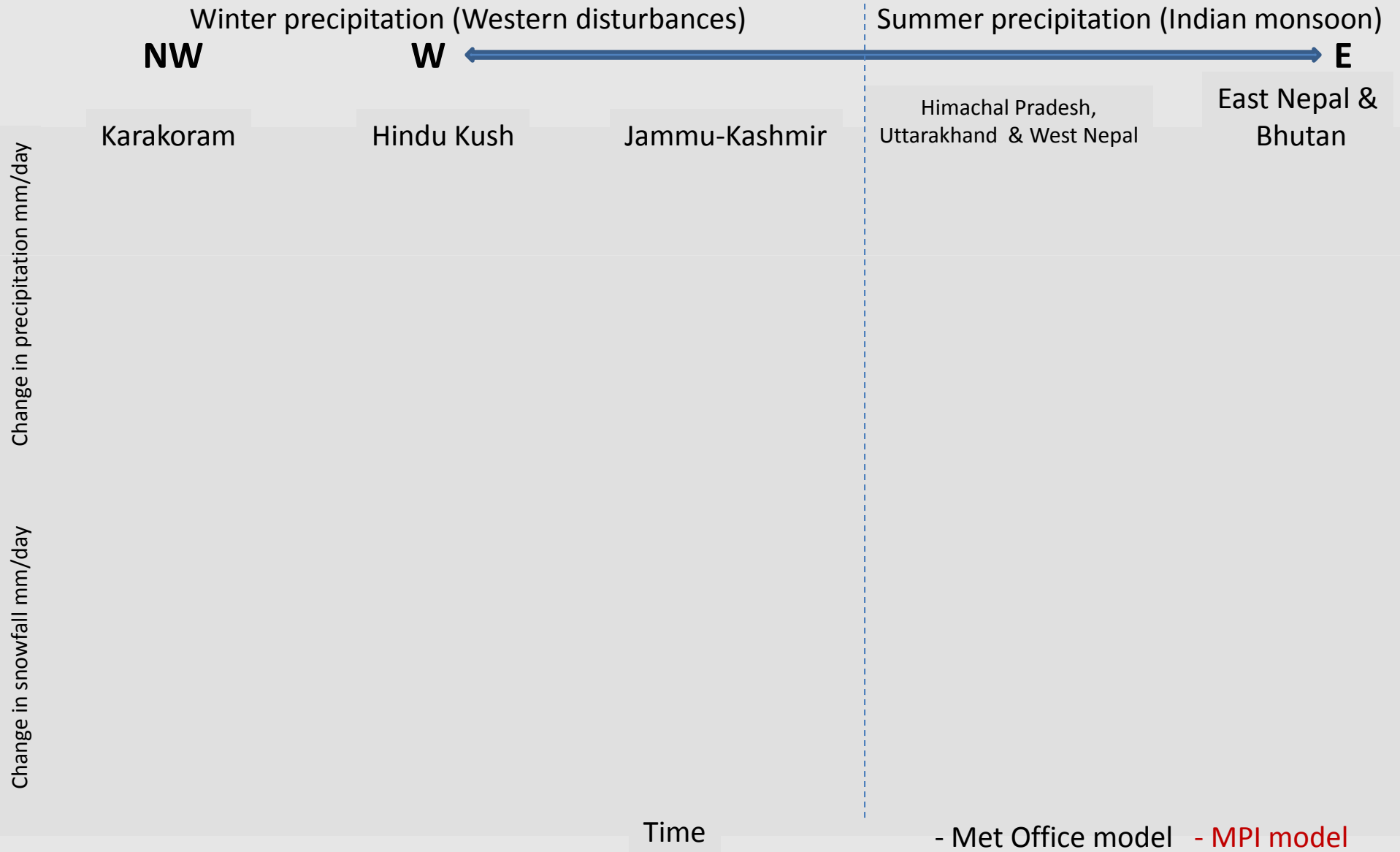
## A Climate Change Risk Management Programme

- Impact on water resources by 2050s
- Possible adaptation
- Regional climate models and Nile forecasting system
- Risk based approach
- Rainfall and river runoff – wide range of possible outcomes





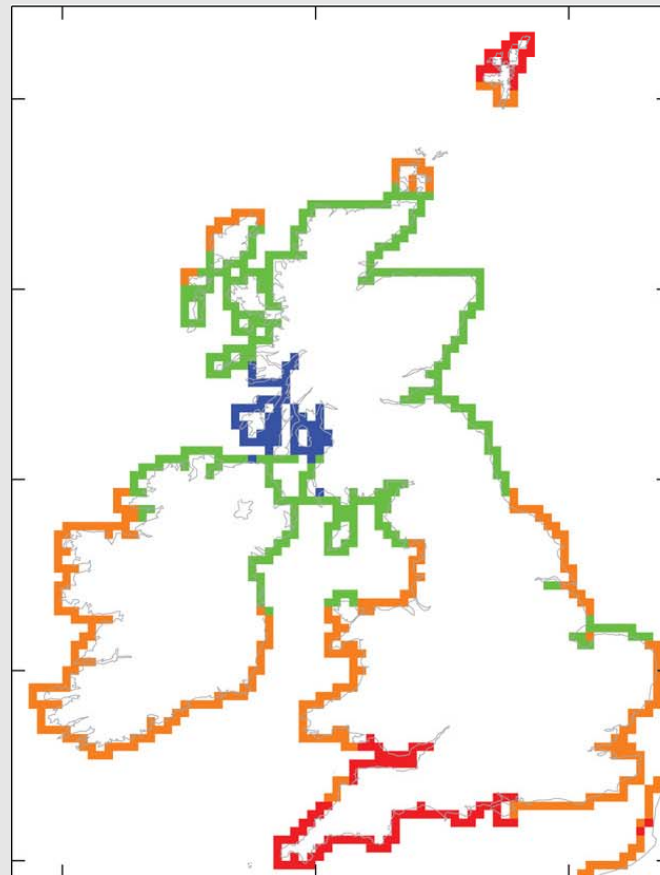
# Changes in rain and snowfall in the high mountains of South Asia





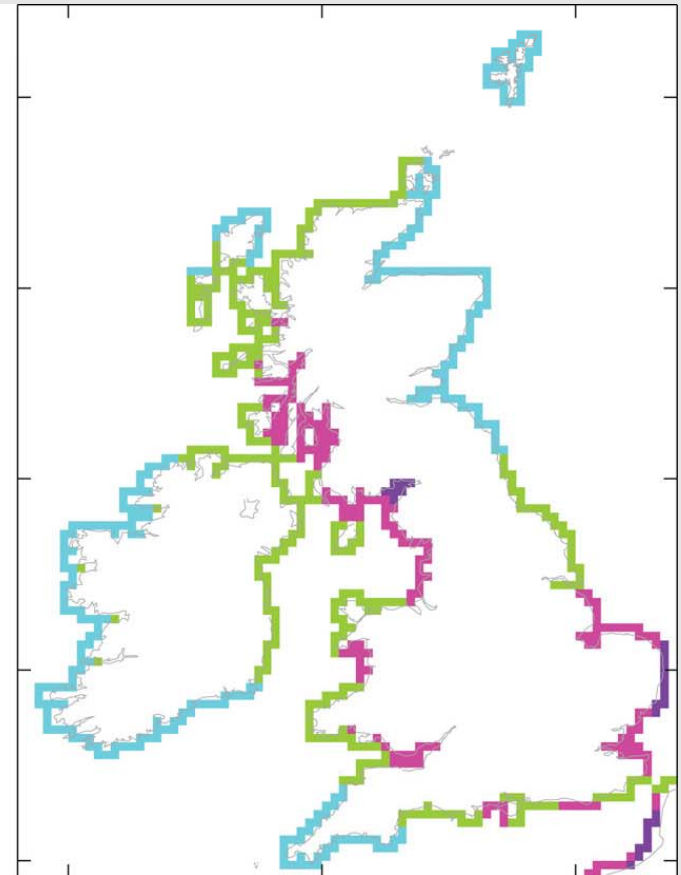
# Probability forecasts of coastal flood risk: Balanced approach to decision making

Change in  
extreme sea  
level of 50 year  
storm



20 30 40 50 60

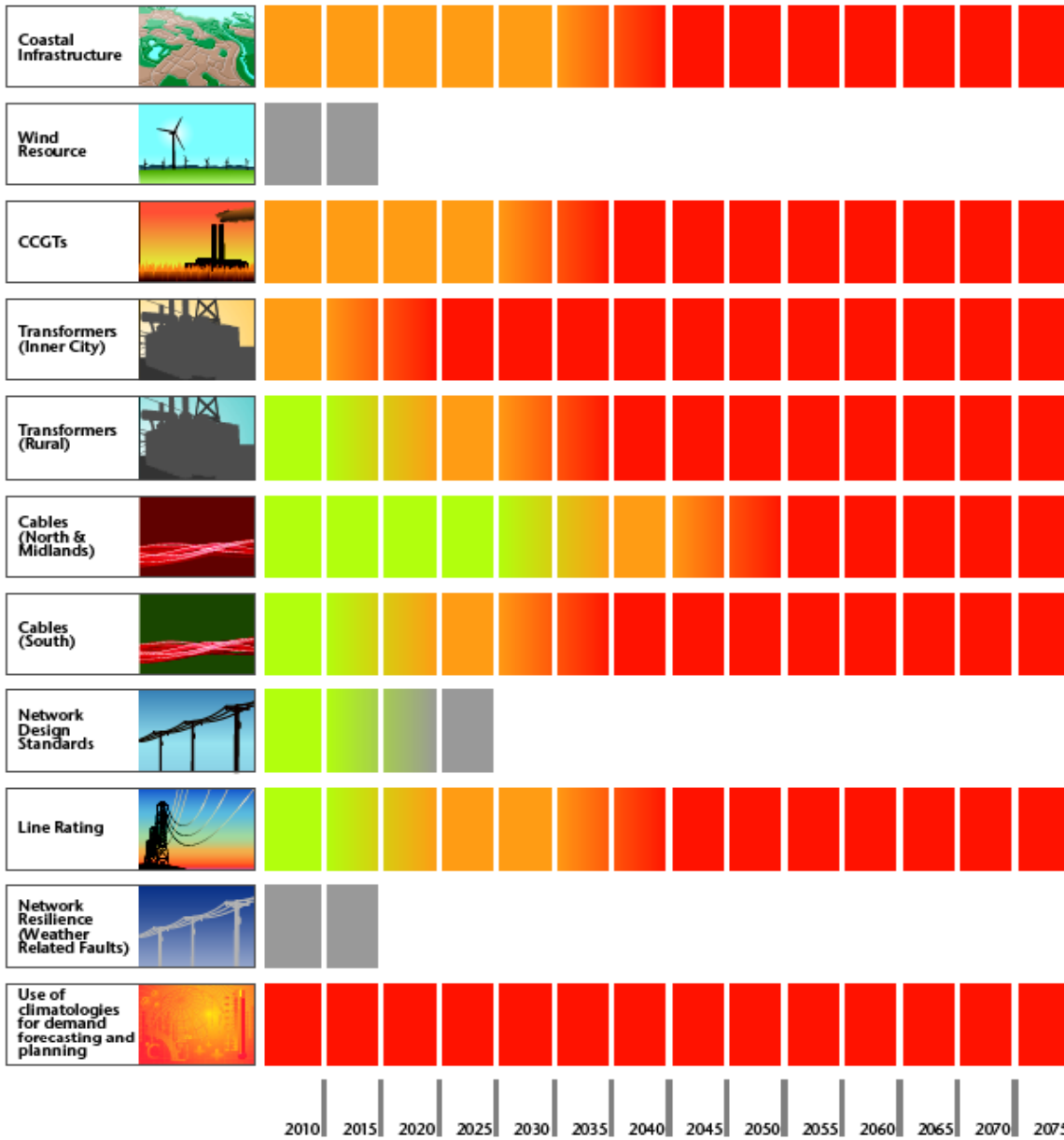
Sea level change (cm)



210 240 270 300 330

Sea level change (cm)

## Climate Change Adaptation Planning Guide



# Energy project Headline results







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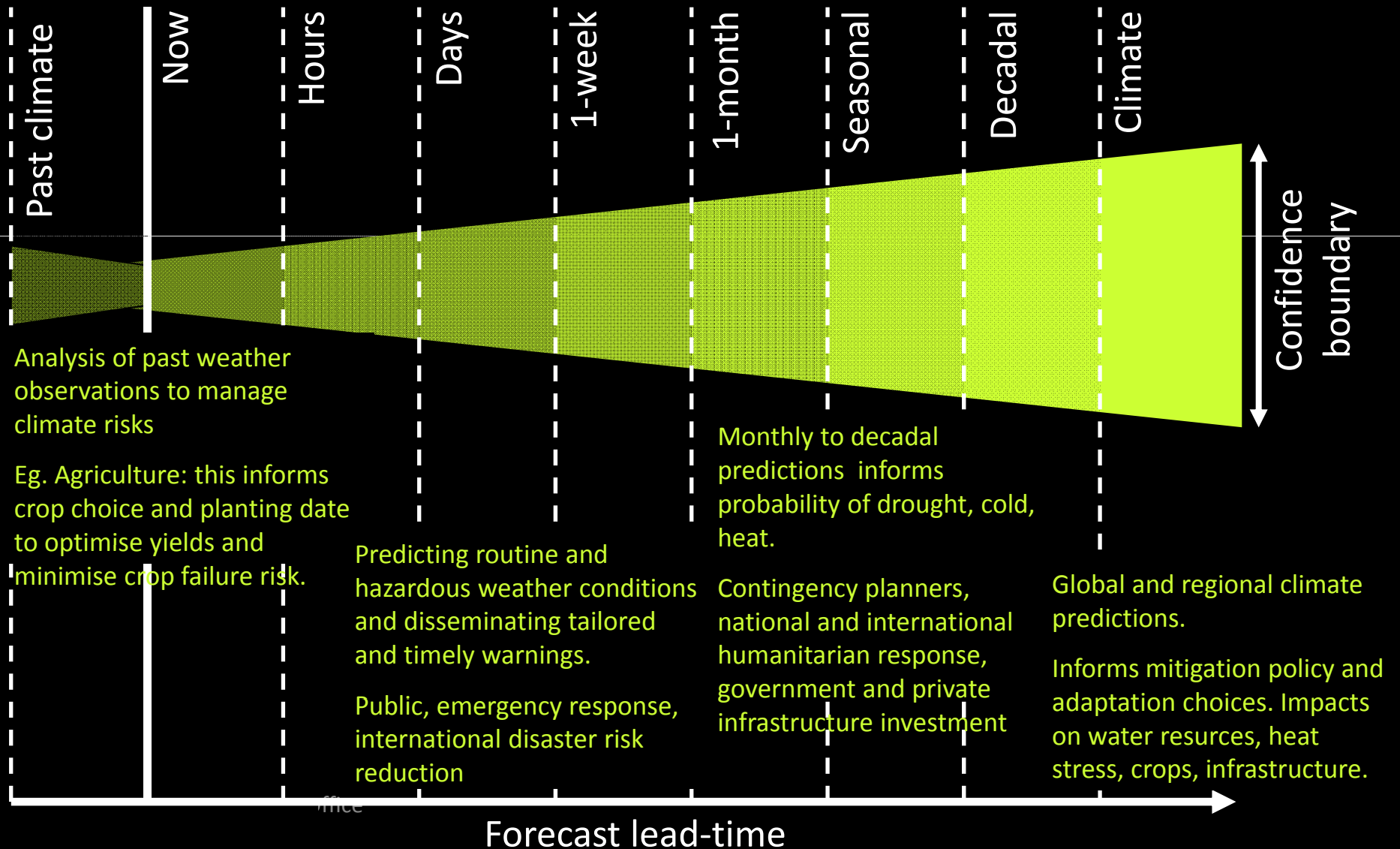


## **The benefits of integrated services: for planning and civil contingencies**



# Seamless prediction

Supporting decision making



# Example of seasonal prediction of reservoir management

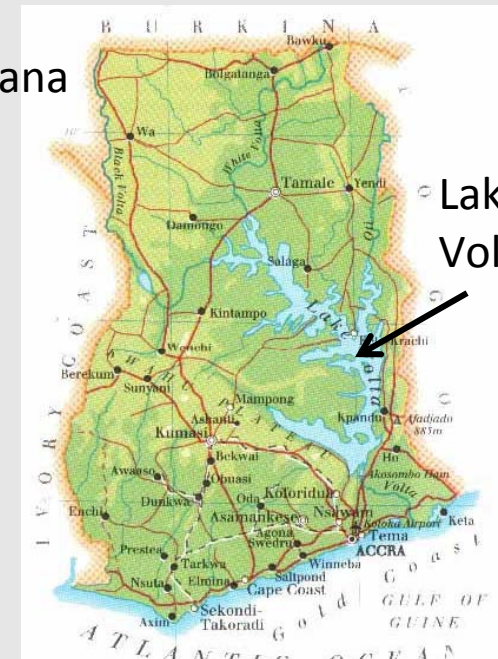
## Lake Volta dam, Akosombo

- 1000MWatt facility: provides ~50% of Ghana's electricity
- Rainfall has strong seasonal dependency: peak months June-September
- Inflow prediction needed to assess likely requirement for oil-fired generation
- ...thus lake-level is monitored closely!



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Ghana



Lake Volta



BASIN



## Summary

- Useful risk based climate information for adaptation - e.g. River Nile, Hamalayas
- Long range forecasts for decision tools. More skilful in some regions and aggregated over regions such as large water catchments – Volta
- ‘Seamless prediction’ addresses climate variability and change
- Integrated approach provides environmental information for decision making

