# Cascading ensemble of uncertainties in climate and hydrological modelling to predict future water availability and river flow characteristics

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Climate change impacts on water represent a cross-cutting issue affecting people, agriculture, industries and ecosystems. Robust projections of future water availability and hydrological characteristics are needed to assess climate change impacts on water and related sectors and to design and implement adaptation options.

This presentation will discuss the limitations, and science challenges and opportunities in predicting climate change impact on future water availability and river flow characteristics.

These include:

* interpreting and communicating climate change projection data from many different sources and global climate modelling and climate downscaling products;
* robustly bias correcting downscaled rainfall and climate data for use in hydrological modelling; and
* adapting and extrapolating hydrological models to predict a future that is different from the past (higher temperature, enhanced CO2, changed precipitation patterns).

The interconnected modelling components, and the main sources of uncertainty, are shown schematically below. Research progress in these areas will lead to more robust next generation climate and water projections to better inform risk-based planning and adaptation options.

