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Title: Communicating Uncertainty in Climate Information for China: Recommendations and Lessons Learned for Climate Services

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ABSTRACT: Uncertainty is an inherent characteristic of climate forecasts and projections. While there is an expanding body of international research focussed on identifying what climate information users need to know about uncertainty, and how this should be communicated, very little of this has been conducted in a Chinese cultural context. In this paper we report on the findings of interviews with climate experts (n=28) and (potential) users of climate information in China (n=18) at seasonal and multidecadal timescales, with the objective of addressing the following research questions: 1) What information about uncertainty in climate forecasts and projections is currently provided to users in China?; 2) What do climate experts believe that users need to know about uncertainty?; 3) What information about uncertainty would (potential) users like to receive?; 4) What challenges do providers and users perceive with respect to the communication of uncertainty? We find that while seasonal forecasts are predominantly presented deterministically current and potential users are aware that there is uncertainty associated with them. Climate experts highlight the probabilistic nature of forecasts and the conditional nature of forecast quality, as areas for communication development. Interviews with (potential) users indicate a) that preferences for deterministic information are not unanimous; b) probabilities associated with conditions being above/below normal may only be considered useful for decision making if they are >60%; and c) preference for forecasts that provide probability of user-relevant thresholds being crossed. At multidecadal timescales we observe lower engagement with projections, and less evidence of interaction between providers and recipients, suggesting that development of climate services at multidecadal timescales will need to first highlight the added value of these. We present key recommendations for communicating uncertainty in seasonal forecasts, and exploring the potential value of multidecadal projections.

