



Climate Risk Informed Decision Analysis (CRIDA): A novel practical guidance for Climate Resilient Investments and Planning

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Engineers and water managers have always incorporated uncertainty in water resources operations, design and planning. In recent years, concern has been growing that many of the fundamental principles to address uncertainty in planning and design are insufficient for coping with unprecedented shifts in climate, especially given the long lifetimes of water investments — spanning decades, even centuries. Can we design and operate new flood risk management, energy, water supply and sanitation, and agricultural projects that are robust to shifts over 20, 50, or more years? Since about 2009, better approaches to planning and designing under climate uncertainty have been gaining ground worldwide. The main challenge is to operationalize these approaches and bring them from science to practice, embed them within the existing decision-making processes of particular institutions, and shift from highly specialized “boutique” applications to methods that result in consistent, replicable outcomes accessible to water managers worldwide. With CRIDA a serious step is taken to achieve these goals.

CRIDA is built on two innovative but complementary approaches that have developed in isolation across the Atlantic over the past seven years: diagnosing and assessing risk (decision scaling), and developing sequential decision steps to compensate for uncertainty within regulatory / performance standards (adaptation pathways). First, the decision scaling or “bottom up” framework to climate change adaptation was first conceptualized during the US/Canada Great Lakes regulation study and has recently been placed in a decision-making context for water-related investments published by the World Bank Second, the adaptation pathways approach was developed in the Netherlands to cope with the level of climate uncertainty we now face. Adaptation pathways is a tool for maintaining options and flexibility while meeting operational goals by envisioning how sequences of decisions can be navigated over time. They are part of the Dutch adaptive planning approach Adaptive Delta Management, executed and developed by the Dutch Delta program. Both decision scaling and adaptation pathways have been piloted in studies worldwide.

The objective of CRIDA is to mainstream effective climate adaptation for professional water managers. The CRIDA publication, due in April 2016, follows the generic water design planning design cycle. At each step, CRIDA describes stepwise guidance for incorporating climate robustness: problem definition, stress test, alternatives formulation and recommendation, evaluation and selection.

In the presentation the origin, goal, steps and practical tools available at each step of CRIDA will be explained. In two other abstracts (“Climate Risk Informed Decision Analysis: A Hypothetical Application to the Waas Region” by Gilroy et al., “The Application of Climate Risk Informed Decision Analysis to the Ioland Water Treatment Plant in Lusaka, Zambia, by Kucharski et al.), the application of CRIDA to cases is explained