



Climate Risk Informed Decision Analysis: A Hypothetical Application to the Waas Region

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More frequent and intense hydrologic events under climate change are expected to enhance water security and flood risk management challenges worldwide. Traditional planning approaches must be adapted to address climate change and develop solutions with an appropriate level of robustness and flexibility. The Climate Risk Informed Decision Analysis (CRIDA) method is a novel planning approach embodying a suite of complementary methods, including decision scaling and adaptation pathways. Decision scaling offers a bottom-up approach to assess risk and tailors the complexity of the analysis to the problem at hand and the available capacity. Through adaptation pathways, an array of future strategies towards climate robustness are developed, ranging in flexibility and immediacy of investments. Flexible pathways include transfer points to other strategies to ensure that the system can be adapted if future conditions vary from those expected. CRIDA combines these two approaches in a stakeholder driven process which guides decision makers through the planning and decision process, taking into account how the confidence in the available science, the consequences in the system, and the capacity of institutions should influence strategy selection.

In this presentation, we will explain the CRIDA method and compare it to existing planning processes, such as the US Army Corps of Engineers Principles and Guidelines as well as Integrated Water Resources Management Planning. Then, we will apply the approach to a hypothetical case study for the Waas Region, a large downstream river basin facing rapid development threatened by increased flood risks. Through the case study, we will demonstrate how a stakeholder driven process can be used to evaluate system robustness to climate change; develop adaptation pathways for multiple objectives and criteria; and illustrate how varying levels of confidence, consequences, and capacity would play a role in the decision making process, specifically in regards to the level of robustness and flexibility in the selected strategy. This work will equip practitioners and decision makers with an example of a structured process for decision making under climate uncertainty that can be scaled as needed to the problem at hand.

This presentation builds further on another submitted abstract “Climate Risk Informed Decision Analysis (CRIDA): A novel practical guidance for Climate Resilient Investments and Planning” by Jeuken et al.