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Building upon existing adaptive capacity and resilience for sustainable water resource management in an uncertain world

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Urbanization in the Global South brings uncertainty to the planning and management of water resources. Competing demands for water and weak institutional arrangements are creating water insecurity in many peri-urban areas, also known as the urban fringe. The Adaptation Pathways approach may be used design adaptive policies for coping and effectively responding to unpredictable futures in complex and uncertain systems. This approach is being piloted in the H2O-T2S project to support more sustainable urban transitions. Decision-makers will be supported in shaping water management strategies that are resilient under a variety of urbanization trajectories.

These kinds of integrative approaches to guide decision making must consider the existing system capacity to cope with changing dynamics. In peri-urban areas for example, water-related vulnerabilities, are constantly occurring, and actors often need to adapt their strategies in order to cope with negative consequences or benefit from the opportunities these vulnerabilities create. In other words, the existing adaptive capacity of the system must be harnessed and improved upon during the intervention. System resilience is also important. Literature on socio-ecological systems highlights ten components (principles or conditions) of resilient systems. By examining the resilience of existing peri-urban systems, targeted improvements to the institutional context can be made for sustainable water resource governance.

Results from this type of baseline assessment of water-related vulnerability, adaptive capacity, and resilience is presented from three case study regions in India (Pune, Hyderabad, and Kolkata). The robustness framework and resilience principles are used for this empirical analysis. This presentation will highlight key differences and similarities between the three geographic, institutional, and socio-economic contexts. An integrative assessment of water use across peri-urban sectors indicates the trade-offs that are made and the social inequalities that result from them. The findings will be used to structure and decision participatory workshops with peri-urban decision-makers and local actors where they will use the Adaptation Pathways to design context relevant transformative pathways for the future.