Transdisciplinary Design of Adaptation Pathways in Peri-urban India: Planning for Water Needs in a Sustainable Urban Transition

Sharlene L. Gomes¹, Sarah Luft², Shreya Chakraborty³, Leon M. Hermans¹,⁴, and Carsten Butsch²
¹Delft University of Technology, Multi Actor Systems, Delft, Netherlands (s.l.gomes@tudelft.nl)
²University of Cologne, Institute of Geography, Faculty of Mathematics and Natural Sciences, Südbau, Otto-Fischer-Straße 4, 50674 Köln, Germany
³South Asia Consortium for Interdisciplinary Water Resources Studies, B - 87, 3rd Ave, Sainikpuri, Secunderabad, Telangana 500094, India
⁴IHE Delft Institute for Water Education, Land and Water Management Department, Westvest 7, 2611 AX, Delft, the Netherlands

This research, conducted within the H2O-T2S project, is located in peri-urban areas of three cities in India: Pune, Hyderabad, Kolkata. Peri-urban areas are where the rural to urban transition is most visible. A key challenge for peri-urban areas is sustainable management of water resources. Peri-urban water resources in India are under threat from growing water demand and ineffective institutions. Interdisciplinary research of existing water-based livelihoods, household water use, and peri-urban institutions in these three regions shows that current urban transformations are unsustainable. Given the dynamic nature of peri-urban contexts, short and long-term vulnerabilities must be considered. An adaptation policy pathways approach can help peri-urban actors develop longer-term transformative plans. This study describes the design and execution of a participatory process to design context-specific pathways with peri-urban communities and governments in India.

This presentation outlines the key steps in our customized pathways approach for the peri-urban context. Due to the covid-19 pandemic, initial plans to implement these steps through a series of stakeholder workshops were replaced by remote pathways design using the Delphi method. We present a step-by-step methodology to engage peri-urban actors in the design of longer-term adaptive plans for water resources in the future. Results are presented for Hadia village (Kolkata), one of the three peri-urban case studies. It reveals the range of future normative scenarios developed for this village and a pathways schematic towards these scenarios.

Our results demonstrate the value of engaging local actors in the design of adaptive plans for peri-urban water resources. This study offers insights for ways to conduct transdisciplinary research even when face to face interactions are not feasible.