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DAAD

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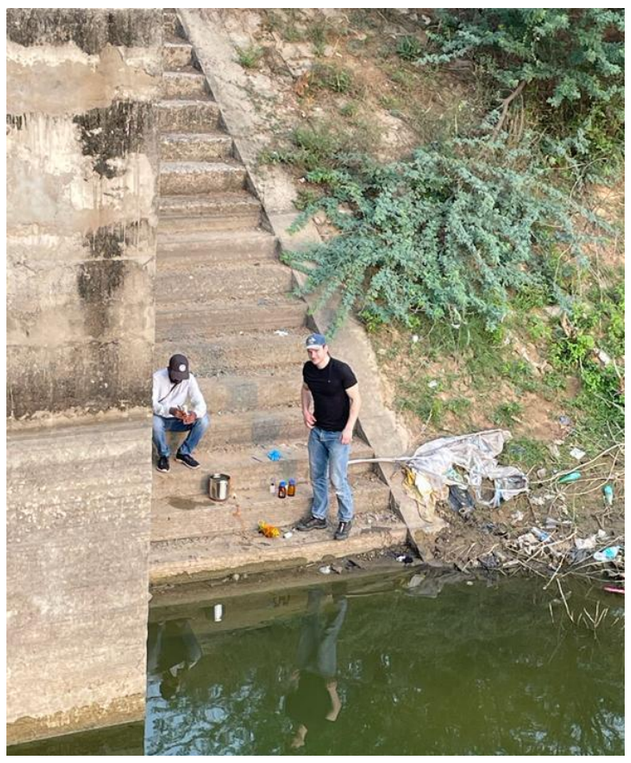
1. Influence of irrigation structures for farmers

The first student research project revealed that climate change directly impacts cropping patterns and land use development, with fewer cropping cycles occurring in dry years and more land remaining fallow. This emphasized the need for a reevaluation of irrigation structures, advocating for water to be managed sustainably, equitably, and participatively, highlighting community wells and increased tank storage capacity as potential solutions.

Five students got the chance to visit Chennai and Madurai for field work and research activities



2. Salt water intrusion in Chennai

The study on the Arani-Koratalaiyar basin near Chennai, India, reveals significant insights into combating saltwater intrusion through a detailed analysis of groundwater over five years, highlighting improvements in quality and identifying key hydrogeochemical processes. Despite noted advancements, it underscores persistent challenges in managing regional groundwater salinity and quality, informed by data on organic contaminants and various water sources

3. Groundwater quality

The analysis of groundwater and surface water samples revealed that a considerable portion of groundwater does not meet drinking water standards due to high levels of various contaminants, pointing to seawater intrusion and inland salinization as key factors affecting water quality. Additionally, the detection of numerous emerging contaminants underscores the environmental challenges impacting water resources.

4. Impact of tanks on groundwater

Tank cascade systems in southern India, historically crucial for irrigation, have declined due to modern water management changes, but are now being rehabilitated due to their role in enhancing water resilience against climate change. This study evaluated their impact on groundwater recharge in Madurai District and confirms their positive contribution to groundwater recharge.

5. MAR in Tamil Nadu

A study conducted underscores that Managed Aquifer Recharge (MAR) methods primarily aim at improving groundwater quantity, which tends to enhance quality through dilution, yet outcomes vary. It highlights the effectiveness of certain techniques like in-channel modifications and the critical role of community involvement in ensuring the sustainability and success of MAR projects in regions like Tamil Nadu.

6. Other activities

Several capacity- building activities have been conducted, including four online workshops aimed at teaching soft skills specifically to Indian students, four online courses focused on hydrogeological applications and modelling, and multiple invited lectures from experts.

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