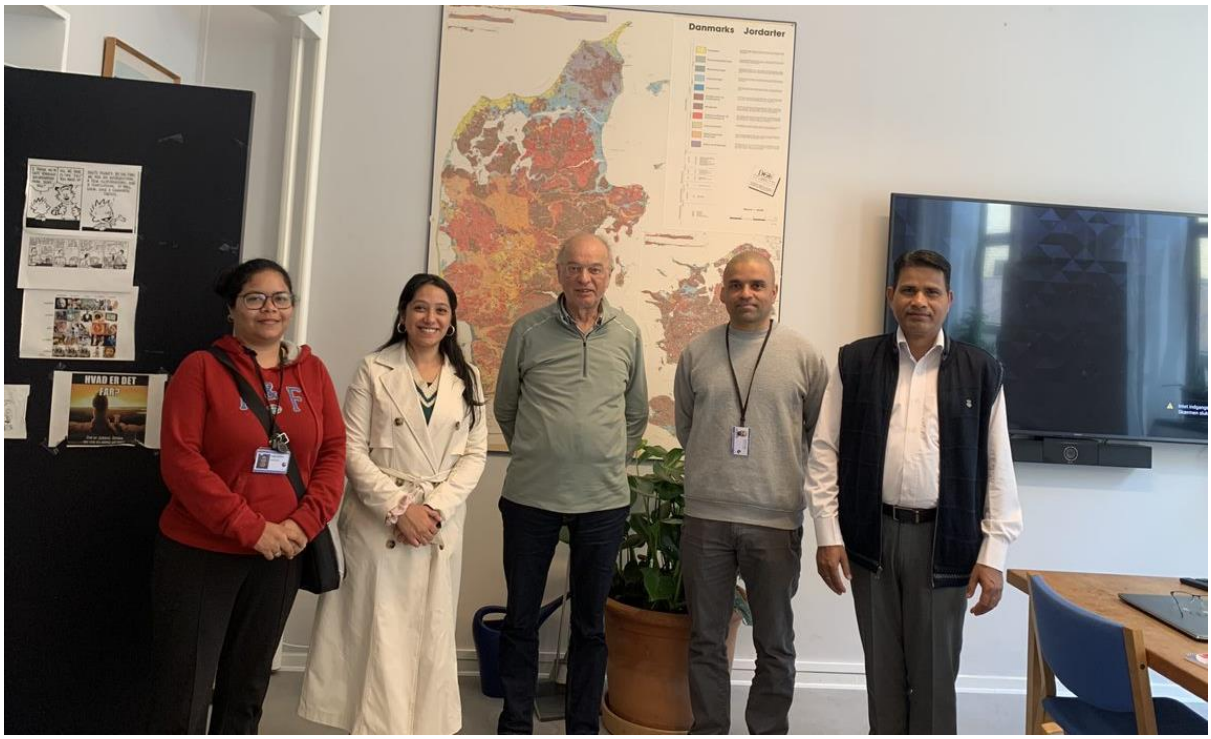
Knowledge-Sharing Training Programme at University of Copenhagen, Denmark

In India, the growth of urban cities has led to increased pressure on water resources due to an increased population, intensified agricultural production, changing food habits with growing income and industrial development, and pollution of the surface and subsurface waters. Therefore, understanding the hydrological system and capacity building is needed for better and sustainable water management.

One of the growing urban areas is Udaipur city of Rajasthan, richly endowed with a network of lakes and rivers that has been oiling the engines of growth for centuries. The city is experiencing many challenges due to climatic and artificial factors. The solutions have mostly remained technical, with no involvement of local citizens.



In this context, Development Alternatives, through support from the Danish Ministry of Foreign Affairs-DANIDA Fellowship Centre, is implementing a research project titled "Integrated Water Resources Assessment of Upper Berach Basin (Ahar River), Udaipur District". The research project is a collaboration between Danish and Indian research institutions and universities. Udaipur Municipal Corporation, the Municipality of Aarhus, and Aarhus Water in Denmark are also involved.

The project has an apt amalgamation of technology and community engagement through a citizen science approach. Within two years of the completion of the project, the study has enabled us to develop a holistic understanding of the overall water balance of the Udaipur district. Some of our study achievements are as follows:

- A web-enabled and GIS-supported data support system (DSS) has been established, containing a time series of hydrological and meteorological data and geo-referenced information on the physical elements of the Ayad River catchment.
- An integrated model using MIKE SHE software has been developed to understand the hydrological and hydraulic functioning of the Ayad River system and the associated catchment area.
- Established the Citizen Science Network in Udaipur involving a cohort of 20 senior secondary schools, academic universities, and subject experts of Udaipur. This network was established

to enable community engagement in water resource management using the Citizen Science approach. The citizen science network is undertaking the following activities:

- Rainfall Measurement by installing rain gauges in the selected schools
- Water Quality Monitoring of the dug well and the tube wells, which includes pH, TDS, Temperature, Fluoride, Chloride, Nitrate, Hardness, and dissolved oxygen
- Well Monitoring
- Ecological Health Monitoring

Following the project's progress, the University of Copenhagen invited Indian researchers of the project from Development Alternatives, DHI (India), and Vidya Bhawan Polytechnic to the university to collaboratively work and train the researchers through knowledge sharing on integrated water resource management.

From Development Alternatives, Tanya Issar, Project Manager (NRM & Livelihoods), visited Copenhagen, Denmark as a visiting researcher at University of Copenhagen to share the progress of the project, build capacity on integrated water resource management and develop a framework for the sustainability of the programme. Additionally, knowledge sharing was an integral part of the visit, wherein she shared her knowledge and experiences of carrying out citizen science intervention in Udaipur with other researchers at the university.

The assessment carried out by the research project will provide the collaborating academic agencies, local government and government departments with essential know-how for improving water management to ensure the future water quality and supply in Udaipur.