Water Scarcity in the Himalayan Water Towers

by Rinan Shah, Ph.D. Student

Garnai paryo, milaunai paryo', 'We have to make do with what we have' was a common statement that I came across while carrying out my fieldwork in Darjeeling municipal town. The fieldwork was a part of my Ph.D. study on understanding how the water-rich Eastern Himalayan Region has been facing water scarcity for decades. The statement was a response to the questions on water availability, its sufficiency and coping with the amount of water they could access.

Water scarcity studies in the urban mountain towns have had a narrow focus. Most studies begin with water scarcity as a pre-existing condition and then look at how the situation unfolds. They do not engage with how such scarcity came into existence in the first place. Additionally, the studies tend to largely focus on the state sources which is important to understand their efficacy. However, a very small fraction of around 15% is dependent on such supplies.

This leaves out the majority of the households which fall outside the state supplies. Those that lie outside the state supply system depend on a plethora of water supplies such as springs (community and private), 6000-litre water tankers, 2000-litre pick-up trucks, hand-drawn carts, households who share/sell ‘their’ spring water or surplus water, self-drawn supplies directly from the springs or streams, or indirectly via a broker, and the cantonment of the Indian Army. Lastly, very few studies have looked at how water access is at a household level and what factors determine water access.

My Ph.D. thesis attempts to fill in the above gaps by mapping the journey of water from its natural state – streams, springs and rivers – to water for consumption at the household level. This journey of translation of water availability to accessibility is a multiple hurdle race. The scarcity will exist even in the absence of any climatic drivers. This also implies that it might get exacerbated with climate variability and climate change. Changes in the nature of springs whether perennial or ephemeral and their quantity and quality are observed on the ground.

The number of institutions that do/don't govern water sources and their interactions, affects how water scarcity is understood and how its alleviation is carried out. This is specifically so, in the case of Darjeeling, which is environmentally, financially and politically marginalized. Similar to many countries in the world, water scarcity alleviation projects have high financial and energy costs with an “add more” framework and low success rates. A low success rate which does little to increase the supply from the municipality and low coverage has led to the emergence of a plethora of informal suppliers. Additionally, the municipality supply has a low supply frequency.

All these aspects marginalize the majority of the communities living in the town. Households with and without municipality supplies need to seek other sources to buffer the little water they get. More than 80% of the households have less than 80 LPCD (litre per capita per day) when the world standards are at 135 LPCD.

The households try their best to get access to water sources and in many cases it is “Garnai paryo, milaunai paryo” .

A new approach to decontaminating Bengaluru’s wastewater

by Dr. Priyanka Jamwal, Fellow, CED and Ramya, Research Assistant

Some lakes in Bengaluru have sewage treatment plants (STPs) to treat wastewater to improve its quality. In-stream treatment systems can be deployed to treat the dry-weather flows in the drains and allow the treated water to enter the lakes.

Based on the study by ATREE's Dr. Jamwal, Ramya and team the next step is to work with the municipal corporations of urban and peri urban areas to adopt this system for their lakes. Data from this system is further used to extrapolate the findings into scaled-up watershed models. The results will help determine pollution hotspots in cities.

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Assessing the role of groundwater recharge from tanks in crystalline bedrock aquifers in Karnataka, India, using hydrochemical tracers

by Dr. Veena Srinivasan
Senior Fellow, CED and Director, CSEI

Status of important coastal habitats of North Tamil Nadu: Diversity, current threats and approaches for conservation

by Anooja A, M.Sc student

New paper coauthored by Anooja A

New paper coauthored by Veena Srinivasan examines the impact of tanks in three crystalline bedrock catchments in Karnataka, southern India, by analysing the isotopic and hydrochemical composition of surface waters and groundwaters, combined with groundwater level observations.
The majority of India's rural drinking water supply is sourced from groundwater, which also plays a critical role in irrigated agriculture, supporting the livelihoods of millions of users.
The results indicate that tanks have limited impact on regional groundwater recharge and quality in rural areas, where recharge from precipitation and groundwater recycling from irrigation dominate the recharge signal.

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discusses the importance of five coastal hotspots from North Tamil Nadu along with their threats.
The Pulicat Lagoon's mangroves are rapidly declining due to the invasion of Prosopis juliflora shrubs. The Adyar Estuary that nests the Olive Ridley Sea Turtles is being assaulted by untreated effluent from 60 sewage pipelines. The pristine Kovalam-Muttukadu Backwaters, Odiyur-Mudhaliyarkuppam Lagoon, and Kaliveli Lake are also facing extensive commercial and plant invasion threats. We cannot coast through climate change, we need these marvelous ecosystems to combat it. These habitats host tremendous species diversity and need to be given great conservation importance.

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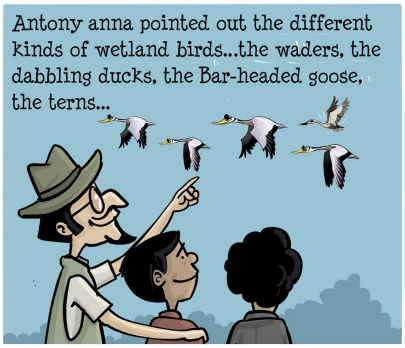
This story "Arasu and his feathered friends" is based on the 11 year bird count study done by over 100 volunteers across 122 irrigation tanks of Tamiraparani river basin in Agasthyamalai.

Arasu and his friends were in their class when their teacher came in with a group of people whom she introduced as field researchers from an NGO.



Illustrated by: Deborshee Gogoi

World Wetlands Day Events

Wetland day cleaning drive -Vembanad lake

An initiative of the Lake Protection Forum to highlight the importance of responsible actions to ensure conservation and sustainable use of wetlands.

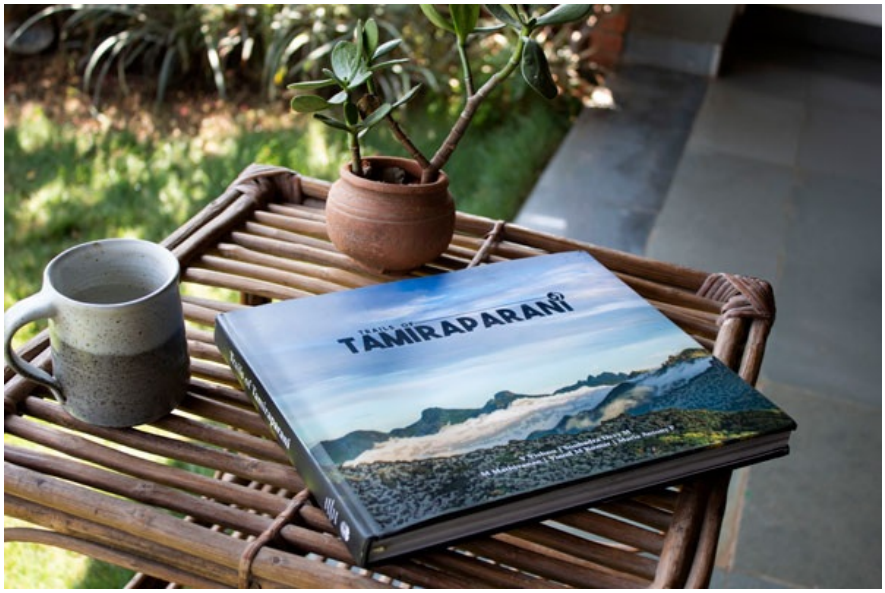
The Biodiversity photography competition

As a part of World Wetland Day celebration, Cochin College in association with ATREE CERC organized a state level ‘Biodiversity Photography Competition’ for college students.

Wetlands birding based drawing contests at Agasthyamalai

On the occasion of World Wetland Day, ATREE Agasthyamalai Community Conservation centre organised birding based drawing contests for school students on February 2nd 2022. Over 50 students from classes 6 to 10 participated in the event. The event took place at the Arumugamangalam irrigation tank which is one of the largest irrigation tanks in the Tamiraparani basin and was organized in collaboration with the Tamil Nadu Forest Department, Pearl City Nature Society, Sundaram Finance and Brakes India Limited. The Program was inaugurated by Dr. K Senthil Raj, IAS and Shri Abhishek Tamor, IFS.

Trails of Tamiraparani



The coffee table book `Trails of Tamiraparani' captures the nature and culture along the river Tamiraparini as it journey from its headwater to its culmination into the Bay of Bengal.

Click here to donate.
Your donation will support our conservation education initiatives in the Tamiraparani Landscape.

You can create a huge impact, we look forward to your contribution

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Ashoka Trust For Research In Ecology And The Environment,
PO, Royal Enclave, Srirampura, Jakkur, Bengaluru, Karnataka 560064
communications@atree.org |+91-80-23635555