



# The Tale of Three Tanks: A Story about Rejuvenation, Research and Responsiveness in the Kaveri Delta, India

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## ABSTRACT

This paper traces contemporary grassroots efforts to rejuvenate *eris*, or irrigation tanks, in the Kaveri Delta in India, through a detailed case study of three interconnected tanks: Mudavan, Ayyampettai, and Shikkapattu. Drawing on mixed methods—including interviews, participant observation, Geographic Information System (GIS) analysis, and auto-ethnographic reflection—we analyze this case of tank rejuvenation as a version of care. Guided by four bearings—collective, situated, iterative, and attentive—to notice care in practice, we show how returning migrants, local youth groups, and activists mobilize emotional memories, social media, cultural ties, and new forms of working together to restore degraded water bodies, largely outside formal state-led rehabilitation works and policies. The study highlights how these new actors and actions shape agrarian realities while encountering historical hydrological regimes, caste relations, and institutional interventions that not only lead to new alliances but also conflict within rejuvenation efforts. The paper concludes that taking care of tanks is a fragile, iterative endeavor where research and rejuvenation work co-evolve, requiring continued responsiveness, collective negotiation, and openness to new dialogues and future reworking.

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## 1. INTRODUCTION

Somewhere in Orlando, Florida, Senthil was at home sending out tweets and sharing photos and videos on Facebook of a dry lake overgrown with mesquite (*Neltuma juliflora*). The photos and videos were accompanied by or contained messages that called for support to rejuvenate this lake, called the Mudavan eri, which was located halfway across the world in the Kaveri Delta, Tamil Nadu. Senthil was actively involved in the Federation of Tamil Sangams of North America (FeTNA) and had a small charitable trust—an NGO that was dedicated to improving education and helping college students in the delta. Among other things, Senthil's parents were farmers in the village of Munnavalkottai. During one of his visits home, he was asked by members of the local youth group to, through this trust, help rejuvenate the eri, which had been a part of the village landscape for as long as people could remember, but had fallen into disuse decades ago.

It so happened that Senthil was already in contact with an activist who had reached out to him and his FeTNA network to help rejuvenate another water body in the delta, called Peravurani Lake, in 2019. The two, through online communication, knew each other already from the Neduvasal protests in 2017 against the government's plans for hydrocarbon extraction in the region. This activist, Nimal, also lived abroad in Dubai, where he worked as a software engineer. Both were delta-natives, sons of farmers, and involved in social media to spread the word of this injustice and mobilize support. Later, following Cyclone Gaja in 2018, Nimal moved back home and subsequently got involved in improving the water situation in the delta villages.<sup>1</sup> This is how Senthil ended up facilitating contact between Nimal and the Munnavalkottai youth group.<sup>2</sup>

The Mudavan eri became the second water body to be restored, not by the government's Public Works Department (PWD) or by organized landowning farmers who drew water from the eri for irrigation, but by an initiative of activists, local youth groups, and emigrants (see also [de Raad, 2021](#)). This grassroots rejuvenation movement has so far improved over 200 water bodies,<sup>3</sup> mostly in the Kaveri Delta, since 2019 (see also [Agrawal et al., 2024](#)). These improvement works are characterized not only by different actors championing rejuvenation and desilting, but also by a shift away from irrigation, emphasizing different uses, such as village patrimony, groundwater recharge ([Reddy, Mandala & Palanisami, 2018](#)), or the creation of islands to enhance local biodiversity. Often, lost ancestral practices and connections with other water bodies are revived or (re) made as well.

In this paper, we give an account of these actions, the ways in which new actors take responsibility, and how this is reshaping agrarian relations and

realities. It is important to note that delta villages, like Munnavalkottai, have undergone profound changes over the last decades—not only water-related ones (which we will describe here), but also in terms of social mobility, migration, and livelihoods (see [Nair, 2024](#)). Most families have members who have college degrees, live in large cities or work abroad. Farming is no longer the only or even the largest source of income, yet agriculture is still the foundation of the Kaveri-Delta society, or so we argue, in terms of economic and cultural significance. Emigrants and students return, invest, and re-engage with the local waterscapes. With this paper, we hope to increase recognition of this new agrarian reality.

We are also invested and engaged in rejuvenation work, with the first two authors being members of local youth groups of neighboring villages. One author was actively involved in the restoration of the Mudavan eri, which connects to two more water bodies upstream: the Shikkapattu eri and the Ayyampettai eri, located in the village where the second author lives. We will thus trace and tell the tale of three tanks,<sup>4</sup> considering this grassroots initiative to rejuvenate eris as a version of care ([Domínguez-Guzmán et al., 2022](#); see also [Jackson, 2023](#); [Leonardelli et al., 2023](#)). Section 2 elaborates on this consideration. In the third section, we present our methodology or research approach, followed by the results. The concluding fifth section is used to reflect on care-ful research and rejuvenating tanks and considers a potential way forward in our tale of three tanks. First, however, we present a short review of tanks in Tamil Nadu.

### 1.1 TANKS, DISCONNECTIONS, AND DECAY

The emergence of a grassroots tank rejuvenation movement is, in great part, a response to structural shifts in social relations, livelihoods, water flows, and related challenges in the Kaveri Delta. Monsoons are becoming less reliable, which leads to both longer and repeated droughts, as well as more sudden floods ([Gowri, Dey & Mujumdar, 2021](#)). There is increased upstream water use that diminishes water flow to the delta ([Ekka et al., 2022](#)). More so, a decaying irrigation canal network, whose infrastructure was modernized and expanded during colonial times ([Barbar, 1940](#)), means that water is no longer distributed to all areas anymore,<sup>5</sup> including to the sites of many of the 1000+ tanks that are scattered across the delta ([Neelakantan, Suribabu & Selvakumar, 2017](#)).

Historically, tanks in Tamil Nadu receive water during the Northeast monsoon through fast-flowing, short-duration rivers or channels that carry the accumulated runoff flows. The ways in which land use around the tanks has evolved since the colonial period are marked by disconnections between the tanks and their catchment area and/or supply channels (see also [Manimohan, 2017](#)). The introduction of high-yielding paddy varieties, farm machinery, and chemical inputs (as part of the Green Revolution in India in the 1960s)

further changed how land and water resources and labor were used (Harriss-White & Janakarajan, 1997). Tank-based irrigation systems could not support the water-intensive cropping pattern, and farmers began relying on borewells (aided by the supply of free electricity) to cultivate for multiple seasons on more land, which altered the practices and institutional arrangements around tank management even more. Investments were made to pump groundwater, while the maintenance and desilting of tanks were neglected.

As a result, many, if not most, Kaveri Delta tanks are found in conditions similar to the Mudavan eri. They are degraded, encroached, or transformed completely into agricultural land and disappeared. The current generation of youngsters is barely aware of what tanks do or where their water comes from (Agrawal et al., 2024). The general situation of decay (soil erosion in the catchment leading to siltation, damaged bunds and weirs, and inoperable sluices), encroachment, and invasive species (cf. Balasubramanian & Selvaraj, 2003) has decreased the collective storage capacity of the tanks as well as the collective responsibility to look after them (Shah & Sakthivadivel, 2018). This, in turn, negatively affects the groundwater table, which is falling fast in a region where the dependence on groundwater has grown manifold (cf. Chinnasamy & Agoramoorthy, 2015; Chowdhury & Behera, 2018; Janakarajan & Moench, 2006). The response has been for farmers in many parts of the delta and Tamil Nadu to drill deeper to access water (Prayag et al., 2023).

Today, with wells becoming increasingly unreliable and inoperative due to a combination of factors, such as the lowering water table, a lack of energy supply, and increased salinity, many actors in the delta are rediscovering tanks as a means of groundwater recharge and are contemplating restoring them (Agrawal et al., 2024).

## 1.2 TANKS, INTERVENTIONS, INTERACTIONS, AND IMPACTS

Tank restoration or rehabilitation is not new or particular to the Kaveri Delta. In fact, tanks are a key source of water throughout South India, shaping social, economic, and religious aspects of village life (Shah, 2008). Ever since their existence—at least three millennia ago (Palanisami & Easter, 1983)—tanks needed periodic upkeep: desilting beds, reconstructing bunds, clearing feeder canals of weeds and debris, repairing sluices, and cleaning irrigation ditches (Reddy, Mandala and Palanisami, 2018). Historically, community-led management of tanks was promoted by the rulers through various incentives (Mosse, 2003; Reddy, Mandala & Palanisami, 2018). External interventions to improve tanks—whether by Chola kings, sultans, Indian government officials or NGOs (Ramesh, 2019)—are also timeless.

For our tale of three tanks, however, we center on the impacts of interventions to enhance the irrigated

areas made since colonial times. The advancements in infrastructure, changes in institutional arrangements and so on, as detailed later, altered tank-based environments in ways that are felt until today. Still, some older insights on how people took care of tanks are helpful to understand our story.

Prior to colonial interventions, the upkeep of the tank systems was a village affair, directed by upper-caste villagers who owned land in the irrigated area downslope from the tank bund (Manimohan, 2017). Locally, the tank as a collective and multipurpose resource required social interaction as well as rules regarding distribution and maintenance activities at the village level or with neighboring villages in case of connected or cascading tanks (ibid.). *Kudimaramathu* is the traditional or ancestral principle and practice on which this village-based water governance rested (Reddy, Mandala & Palanisami, 2018; Shah & Sakthivadivel, 2018). It refers to the shared or collective responsibility of people or a community (*kudi*) to maintain or repair (*maramat*) a water body (Palanisami et al., 2008). Herein, farmers and villagers who benefit from the tank voluntarily<sup>6</sup> contribute (labor) to its upkeep (cf. Shah & Sakthivadivel, 2018; Venkatachalam & Balooni, 2018).

While celebrated as an ancestral grassroots approach to water management and governance, it is related to caste-based and user-group inequities. In the traditional system, upper-caste elites contributed funds, food, and possibly tools; often accompanied by festivities. They also made decisions regarding distribution and maintenance activities, while members of the lowest caste (certain Most Backward Class (MBC) and Scheduled Caste (SC) groups<sup>7</sup>) did the laborious tasks, such as silt removal (while also doing the on-farm work elsewhere). What is striking, in the Kaveri Delta at least, is that in many villages, Brahmin landowners sold their lands and moved to urban centers since the 1950s, and intermediary caste groups (including Backward Class (BC) castes) became local elites. Situated between the upper-caste and lowest-caste groups, these non-Brahmin intermediary castes were often the on-farm managers of the landholders (now the BC groups). They contributed time (overseeing) as well as manual labor to water management, and could usually make decisions on farms while owning certain agricultural implements (van Schendel, 1991).

Regardless of inter-caste frictions and power differences, this early approach had its merits and appeared to work—so thought many external interveners. Later, it was not the grassroots or decentralized aspect of *kudimaramathu* that interested colonial (and postcolonial) rulers, nor was it the shared responsibility, the honorary work of taking care of a water body, or the local inequities, but the simple ability to mobilize local resources (labor, and later, cash). We will briefly explain this.

Colonial hydrology, as D'Souza (2006) calls British intervention, changed the interaction between land, water, and society. The new hydraulic works were not designed to co-exist with the traditional or in-situ water management approaches (ibid.), while policies were not sensitive to local socio-cultural realities. According to colonial engineers, tanks (systems) in South India had more of a protective function than a productive value for the colonial economy. To remedy this, many traditional tanks and their local command areas were incorporated into an overarching and more intensive canal irrigation network and, in some form, were replaced by it (Ramesh, 2019). This was certainly the case in the Kaveri Delta, where large irrigation works were realized to regulate surface water delivery beyond monsoon seasons.

For the upkeep of the hydraulic infrastructure, it is said that the British looked to mold and mobilize existing village institutions to assure labor contribution (Mosse, 1999; Reddy, Mandala & Palanisami, 2018). Thus, in 1858, the idea of kudimaramathu was reintroduced under the Madras Compulsory Labour Act—also commonly known as the Kudimaramathu Act. It was passed to enforce laborers' participation, yet the voluntary or honorary work/contribution that re-enacted village relations no longer made sense, as control shifted from the local community to the branches of state government;<sup>8</sup> after independence, it reduced the agency as well as the interests of the local communities in the traditional form of collective management of tanks (Janakarajan, 1993).

In the contemporary state-led rehabilitation<sup>9</sup> of tank systems—like the Tamil Nadu Farmer's Management of Irrigation Systems Act (2000)—it was the landowners in the command area of the tank that were eligible to participate in the Water Users Association (WUA). In many places in Tamil Nadu, the members include farmers belonging to dominant castes and those who have political clout (Aubriot & Prabhakar, 2011). This distances multiple users of these tanks, prioritizing irrigators. At the same time, we note that the formation of the WUAs in the delta never got any traction.

In 2017, the newly elected Tamil Nadu government ran a scheme for tanks under the control of the PWD that again relied on this notion of kudimaramathu (and was named after it). The idea was to revive and promote this old village institution, and it was an electoral promise. The eligibility condition was to first form an irrigation committee in case the WUAs were non-existent—an irrigation committee was smaller and more local. While thousands of tanks were targeted and successes were claimed (cf. Shah & Sakthivadivel, 2018), many also questioned their instrumental top-down execution and the participation of only the landowning farmers (see also de Raad, 2021). These recent rehabilitation programs, however, were aimed at repair and modernization to improve the performance of the tanks (see also Palanisami et al., 2008).<sup>10</sup>

In contrast, the rejuvenation of the Mudavan eri, mentioned in the introduction of this paper, was a grassroots initiative, based on the voluntary input of villagers and others living abroad or elsewhere. It is part of a movement that, we believe, is different from earlier rehabilitations; it is not led by engineers, nor does it focus on farmers first, or solely. Instead, it is about engaged community members sharing in a collective concern. This movement is not motivated by production or efficiency first, but by the thought of bringing liveliness back to the village. It could therefore be a starting point to rethink rejuvenation not as a mere rehabilitation of hydraulic infrastructure or a lacustrine ecology, but as a way to renew or revitalize a local waterscape that is more flexible, adaptive, and caring.

## 2. CONCEPTS

As action-researchers, we felt enriched and reinvigorated by the activities of Nimal, Senthil, and many other youths who worked on improving eris in the delta. These are actions—and actors—that you do not read a lot about in tank literature. Yet, they significantly shape contemporary village and water relations and realities. To move the needle on how water and tanks in the delta and beyond may be approached, we propose to explore these grassroots rejuvenation activities as a version of care (Dominguez-Guzmán et al., 2022; see also Jacobs & Wiens, 2024). In doing so, we follow Domínguez-Guzmán et al. (2022) in foregrounding versions of care as a way to resist a generic and encompassing theorization of care. Versions emphasize situatedness and relationality among particular sets of actors, actions, materialities, and meanings—and thus are a move away from abstracting or universalizing care. Still, some heuristic bearings are needed to make versions of care analytically useful and to allow contrasting and comparing cases. Before presenting these, however, we briefly elaborate on rejuvenation.

### 2.1 REJUVENATION

Rejuvenation of water bodies is a commonly discussed intervention in applied water science literature that refers to the revival or restoration of rivers, lakes, or wetlands, countering the degradation resulting from pollution, eutrophication, reduced flow, or biodiversity loss (Tammeorg et al., 2023; Wohl, Lane & Wilcox, 2015). This is typically done by mobilizing knowledge from disciplines such as limnology, geomorphology, environmental geography, and environmental engineering. The restoration designs for different water bodies often include measurable parameters on channel reconfiguration, silt removal, and habitat and water quality (cf. Bernhardt & Palmer, 2011).

In the case of state-led tank restoration, or tank ‘modernisation,’<sup>11</sup> in India, improvement strategies often seem to prioritize sluice modification and management and rehabilitation of inlet and outlet channels, whereas most NGO-supported projects focus more on increasing storage capacity by desilting (Reddy, Mandala & Palanisami, 2018). Scientists, practitioners, and activists have shown interest and concern over fading traditional water storage tanks in the Indian context since the 1990s (Agarwal & Narain, 1997). Although community involvement for the success of rejuvenation is readily acknowledged for rivers (cf. Bhattacharya & Chattopadhyay, 2025; de Groot & Tadepally, 2008; Vyas et al., 2023) and tanks (cf. Shah & Sakthivadivel, 2018), it remains (studied and documented as) a largely technocratic endeavor (cf. Sharma et al., 2023), rather than being a grassroots mobilization (cf. Vos, 2024) where communities engage techno-scientific actors to further community interests and improve local environments. In this paper, we explore the latter direction, having been inspired by and involved in local initiatives to rejuvenate tanks and lakes in the Kaveri Delta.

## 2.2 CARE/CARING

We are also inspired and guided by Science and Technology Studies (STS) scholarship on care/caring. As a starting point, we thus consider care or caring as ‘the emotional engagement of being concerned and the practical engagement of contributing to restoring, sustaining, or improving something’ (Mol & Hardon, 2020, p. 185). But not all practices of restoring water bodies or improving village life are care practices. Rehabilitation of a canal by engineers who look to increase efficiency or enforce formal distribution rules, or desilting an irrigation tank by an external company to maximize profit from silt extraction, are not necessarily care practices. Care, rather, refers to how the practice is done—to a way of relating to and being involved in something. This allows for new or alternative understandings of what is often analyzed as managerial and detached (see also Zwartveen et al., 2024), as it shifts the emphasis more onto the cultural, quotidian, and ritual elements of water bodies and the embodied practices of the carers (cf. Verzijl et al., 2023).

To observe care in practice (to identify whether particular restoring or sustaining practices may be versions of care), some bearings are needed. For this, we again draw on the work of Annemarie Mol (2008). She conveys throughout her book that ‘care is a process [...] open ended’ that ‘involves a team [...] working together’ (pp. 18–19) on ‘specific problems ... in specific circumstances’ (p. 23), all the while being ‘attentive to what happens, adapt this, that or the other, and try again’ (p. 53). From this, we take caring to be a practice—or better, we take a practice to be caring—when done in a collective, situated, iterative, and attentive way (see also Agrawal et al., 2024; Zwartveen et al., 2024), involving

a multitude of human and nonhuman interactions and coordinations. We will use these attributes as bearings and briefly elaborate.

In our consideration, being attentive refers to the emotional sensitivity and practical responsiveness to emerging issues (Mol & Hardon, 2020). Indeed, noticing what matters and adjusting accordingly highlights the iterative and tinkering aspects of care (cf. Domínguez-Guzmán et al., 2022; Kemerink-Seyoum et al., 2019; Mol, 2008); it is an open and fluid practice of laboring with and through differences, rather than a process aimed at resolving something once and for all (Mol, 2008). And those differences are necessarily particular (in their relationships and materialities), making care both grounded in and distributed across diverse human-water relations. This relationality is in many ways reciprocal: People maintain lakes or tanks as much as water bodies nurture families (Verzijl, 2020). Indeed, engaging caringly with water, with the world, suggests maintaining more-than-human relations (cf. de la Bellacasa, 2017).

Put differently, caring is a collective and situated endeavor that is not focused on perfect techno-managerial solutions or full control (Zwartveen et al., 2024) but rather goes along with what works in fragile settings, making countless adaptations to smoothen frictions encountered on the way. It is learning by doing. Fragility, friction, and missteps are part of the iteration of care (see Domínguez-Guzmán et al., 2022). More so, says Mol, headache situations and environmental suffering, such as social conflict, degradation, or pollution, are not ‘taken to be offensive transgressions to be avoided at all costs [...]. Instead, they are talked about and tinkered with, they are attended to and subjected to doctoring’ and adaptation (2008, p. 93). With the above bearings in mind, we further explore how the contemporary tank rejuvenation movement in the Kaveri Delta and South India is a version of care.

## 2.3 REJUVENATION AS CARE

Our previous work on tank rejuvenation in the delta (Agrawal et al., 2024; de Raad, 2021) shows it is shared between and entrusted to many different actors, starting with youth, farmers, migrants, and activists, but also enrolling branches of the government, other communities and castes, as well as social media, drains, deities, and the tank-dependent environment itself. In this collective, water appears as an active agent through seasonal flows and infiltration rates to recharge groundwater alongside other actors that shape the process of storage by means of silt removal and the conveyance of channel flow. Native species planted on tank bunds and the creation of artificial islands in the rejuvenated tank afford care to many other beings and protect biodiversity. This in turn allows other more marginalized use(r)s—other than water extractors—to be attended to by means of, for example, harvested fruits from the bund, fish stock in the tank, or even a spot of shade and peace of mind.

Rejuvenation seems to be a practical response with the aim to improve the (groundwater) storage processes. But it is also an emotional and cultural engagement, grounded in memory, meaning, and ritual practices. Memories of rejoicing, honorary commitments, communal heritage, leisure activities, connected temple-water festivals, and stories that link tanks to Tamil history are continuously re-enacted—and sometimes also revived—to assure improvements. It is a complex set, or site, of actions that is often fragile and rarely friction-free. In fact, rejuvenation as care involves dealing openly and positively with tensions and uncertainties as part of its iterative practice. What follows in the remainder of the paper is a tale of three tanks in which we trace rejuvenation work through this set of analytical bearings—attentive, collective, situated, and iterative.

### 3. METHODOLOGY

Our methodological approach is captured implicitly in the previous sentence: Following Zwarteveen et al. (2024, p. 386), we do not propose the concept of care as a ‘new container term’ or a ‘grand explanatory concept’—instead, we mobilize care as a mode of inquiry oriented by attentive, collective, situated, and iterative antennae. Here, we draw on the notion of care-ful research (Law & Lin, 2022), which requires from researchers an openness to surprises and otherness, staying with unfolding situations and keeping uncertainties alive by jointly cultivating sensibilities, rather than relying on predefined methods (ibid.; see also Agrawal et al., 2024).

Such an approach is thus grounded in cases that are understood as enactments wherein the description itself is not considered as impartial or objective, but an already deliberate and situated interpretation that connects empirical moments together. In other words, here care-ful research is a way of analyzing (and relating and making) the world that is shaped by but also shapes those doing the analysis (see Law, 2004). Rigor in analysis then refers to responsiveness to the empirical material, accountability of the team’s positionalities, and transparency of tools and choices. To move toward these descriptions (in the Results section), we first briefly introduce the case, the team, and the tools.

#### 3.1 CASE

The tale of three tanks—Shikkapattu, Ayyampettai, and Mudavan—takes place in the Kaveri Delta. More precisely, the tanks and the three corresponding villages—Shikkapattu, Ayyampettai, and Munnavalkottai—are located in the Vadavaru sub-basin. Vadavaru is a branch of the Vennar River, originating in the Thenbarambur head regulator. This branch forms the border of what is known as the Vennar Delta and the new delta—both command areas of the larger Kaveri Delta (see Figure 1).

The villages are small, with the first two having about 1,000 inhabitants, and Munnavalkottai about 4,000 on paper. We estimate that 55% of the population belongs to BC (Agamudayar, Kallar and Chettiyar) groups, with the remainder split between MBC (Valaiyar and Ambalakarar) and SC (Pallar and Paraiyar) people living in separate hamlets. Landholdings are mainly in BC hands, while MBC people have smaller plots. No upper-caste households are living in the villages. Many (younger) BC people are highly educated and tend to migrate to Indian cities or abroad. Over half of the population, across caste groups, has moved out of the delta for work. It is not uncommon, however, for people to return and settle in the villages after an extended period away (see Table 1 and Figure 2 for village and tank characteristics and locations).

The Kaveri Delta begins at the Kallanai Dam or Grand Anicut (Figure 1, left), a structure built two millennia ago by Chola king Karikala to irrigate the floodplains. It is still in use and serves as an emblem of the Cholas’ hydraulic mastery (cf. van Schendel, 1991). Their works instill a sense of pride and patrimony in the delta inhabitants till today. Hydrologically, the Grand Anicut divides the river flow into three branches: the Kaveri River (continuation), the Vennar River and the Grand Anicut (or GA) canal, corresponding to the old delta, the Vennar Delta and the new delta, respectively (see Figure 1). The first is known for its dense canal network and field-to-field irrigation, while the Vennar was characterized by its many tanks that were fed by natural drains and river diversions. The new delta was added during colonial times, in 1925, when the old irrigation system, including the Kallanai headworks, was modernized (Barbar, 1940). The modernization also entailed the construction of the large Mettur dam, located upstream of the delta in Salem district, which allowed for the expansion of the irrigated area. The Vadavaru sub-basin was particularly targeted (ibid.), incorporating many tanks in a centrally operated scheme and compelling institutional, socio-cultural, and economic change. Today, there are close to 1,000 tanks in the Kaveri Delta, of which 70% are fed by irrigation canals (system tanks), and others receive water from the local catchment during the Northeast monsoon (non-system tanks) (Neelakantan, Suribabu & Selvakumar, 2017).

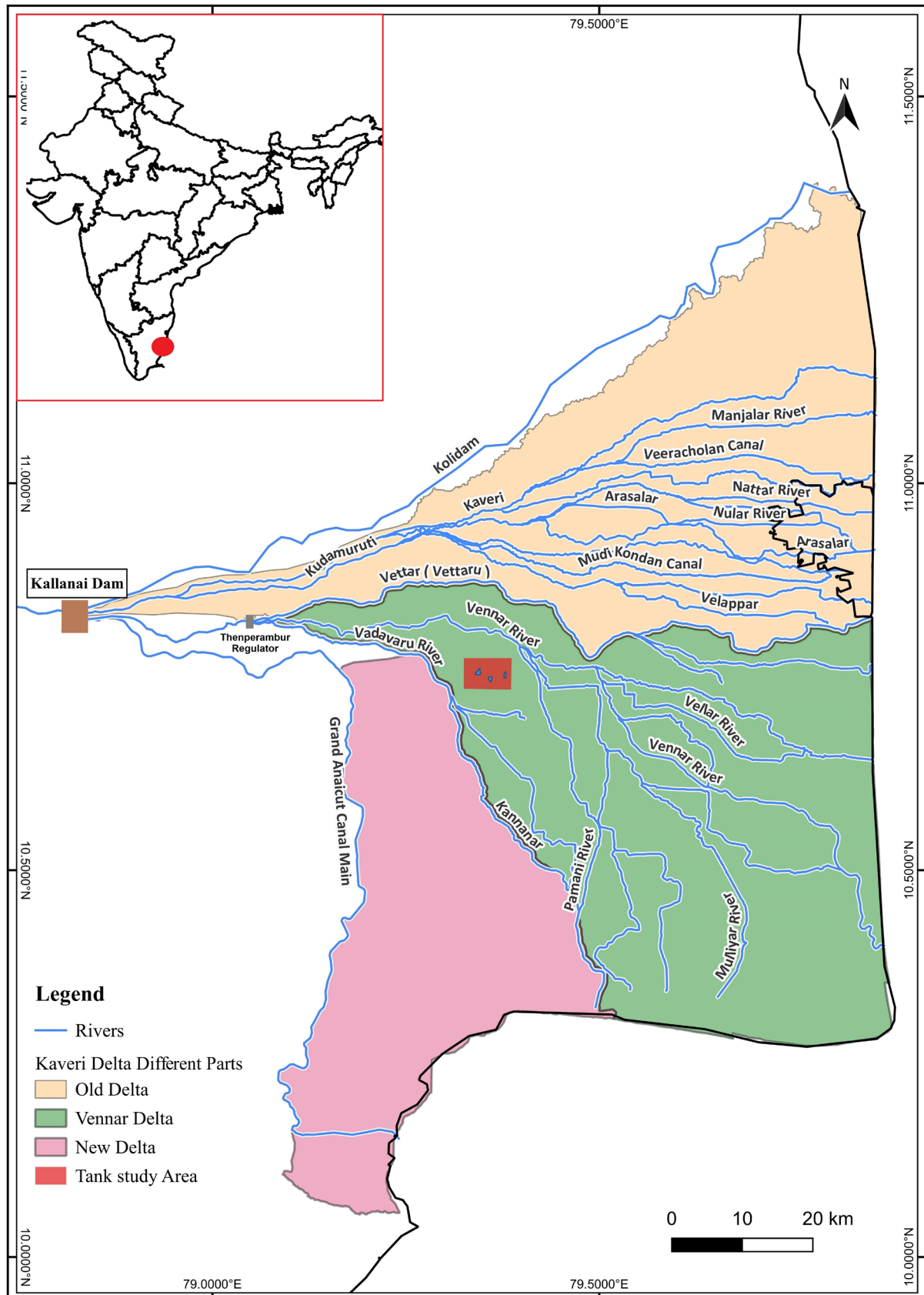
#### 3.2 THE TEAM

The first two authors are from the study area; they live in Munnavalkottai and Ayyampettai. Although they live close by, they only met each other at the Anjalai Ammal Mahalingam Engineering College while studying civil engineering. This college is located in the rural town of Koilvenni, less than five kilometers from both villages. Here, they partook in a course on irrigation that got them thinking about the state of the tanks in their villages. Both come from BC families that obtained land in the 1950s and 60s and that currently have siblings who do off-farm work. They are active members in their

village's youth groups, which are caste-based. The first author initiated the rejuvenation of the Mudavan tank in his village, while the second author is his family's main farmer and a direct beneficiary of tank water. After graduation, they—first as interns and later as staff—joined Ashoka Trust for Research in Ecology and

the Environment (ATREE), where they participated in a project that looked to understand deltaic water flows in collaboration with Dutch research institutions.<sup>12</sup>

The third and fourth authors were involved in the same project and its follow-up. They are both social scientists from elsewhere in South India and far beyond, who



**Figure 1** Kaveri Delta, India.

research and support socially just and environmentally sustainable transitions. One did her doctoral study in the old delta area of Kaveri, understanding the interlinkages between diversification, water stress, and ongoing agrarian change. The other, a Dutch researcher, works, among other things, on grassroots mobilization and the nurturing of local water bodies (lakes and wetlands).

All four authors are currently involved in the Policy learning, Local Knowledge and Advocacy (POLKA) project and meet regularly for online conversations that often turn

to questions of caste and class (articulated through BC and MBC categories). At times, these were uneasy talks with moments of friction, misunderstanding, and hesitation. Rather than seeking to convince or reach a consensus, we allowed this tension to inform the analysis we present here.

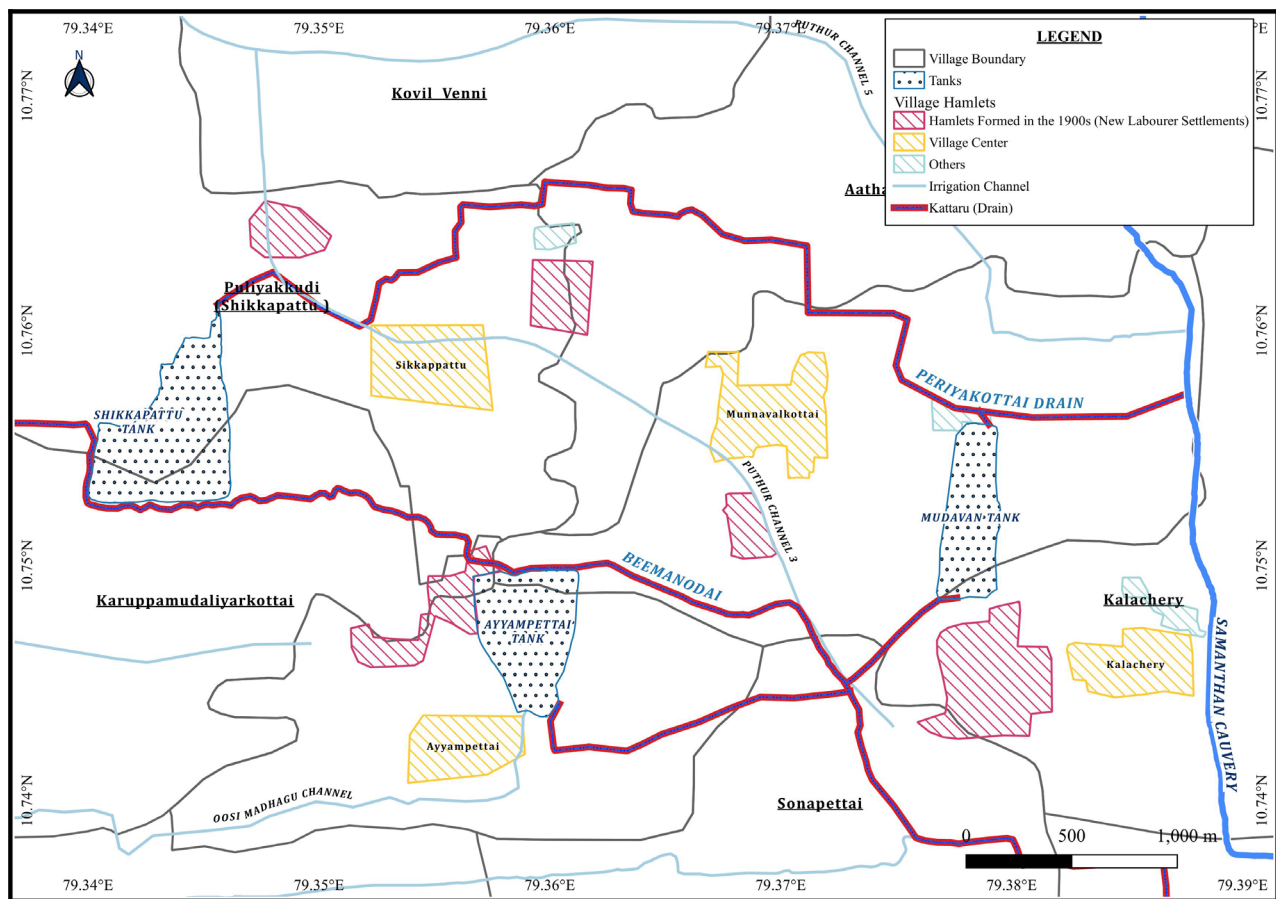
### 3.3 TOOLS AND METHODS

In a grounded approach, method follows case. That is, methodological choices, to a great extent, take shape through engagement with the empirical world rather

| PARAMETER/CATEGORY                               | MUNNAVALKOTTAI<br>(MUDAVAN ERI)               | AYYAMPETTAI<br>(AYYAMPETTAI ERI)  | SHIKKAPATTU<br>(SHIKKAPATTU ERI)              |
|--------------------------------------------------|-----------------------------------------------|-----------------------------------|-----------------------------------------------|
| <b>District</b>                                  | Thiruvapur                                    | Thiruvapur                        | Thanjavur                                     |
| <b>Name of Panchayat</b>                         | Munnavalkottai                                | Chettichatram                     | Puliyakudi 2                                  |
| <b>Village Area (Ha)</b>                         | 615.88                                        | 329.25                            | 660                                           |
| <b>Tank Characteristics According to the PWD</b> |                                               |                                   |                                               |
| <b>Size of Tank (Ha)</b>                         | 23.7                                          | 24.96                             | 27.71                                         |
| <b>PWD-Registered Ayacut Area (Ha)</b>           | 74.18                                         | 151.8                             | 74.18                                         |
| <b>Combined Catchment (Ha)</b>                   | 10,359                                        | 9,713                             | 12,902                                        |
| <b>Top Bund Level (m)</b>                        | 24.16                                         | 25.42                             | 29.16                                         |
| <b>No. of Sluices</b>                            | 2                                             | 2                                 | 2                                             |
| <b>No. of Weirs</b>                              | 1                                             | 0                                 | 1                                             |
| <b>Supply Channel</b>                            | Beemanodai drain                              | Oosi Madaghu Channel              | Beemanodai drain                              |
| <b>Demographic Details</b>                       |                                               |                                   |                                               |
| <b>Total Population</b>                          | 3823                                          | 947                               | 2513                                          |
| <b>Backward Class (BC)</b>                       | 2102 (55%)                                    | 535 (56.5%)                       | 1055 (42%)                                    |
| <b>Most Backward Class (MBC)</b>                 | 956 (25%)                                     | 175 (18.5%)                       | 578 (23%)                                     |
| <b>Scheduled Caste (SC)</b>                      | 765 (20%)                                     | 237 (25%)                         | 880 (35%)                                     |
| <b>Migration and Education Pattern</b>           |                                               |                                   |                                               |
| <b>Backward Class (BC)</b>                       |                                               |                                   |                                               |
| <b>Migration %</b>                               | 60%                                           | 66.40%                            | 55%                                           |
| <b>Education Trend</b>                           | High school, undergraduate education          | Undergraduate education           | High school, undergraduate education          |
| <b>Type of Job Abroad</b>                        | Skilled and degree-based jobs                 | Skilled and degree-based jobs     | Skilled and degree-based jobs                 |
| <b>Most Backward Class (MBC)</b>                 |                                               |                                   |                                               |
| <b>Migration %</b>                               | 40%                                           | 48.60%                            | 56%                                           |
| <b>Education Trend</b>                           | High school, undergraduate education, diploma | Undergraduate education           | High school, undergraduate education, diploma |
| <b>Type of Job Abroad</b>                        | Semi-skilled and labor migration              | Semi-skilled and labour migration | Semi-skilled and labour migration             |
| <b>Scheduled Caste (SC)</b>                      |                                               |                                   |                                               |
| <b>Migration %</b>                               | 65%                                           | 59%                               | 70%                                           |
| <b>Education Trend</b>                           | High school                                   | High school, diploma              | High school                                   |
| <b>Type of Job Abroad</b>                        | Predominantly unskilled migration             | Predominantly unskilled migration | Predominantly unskilled migration             |

**Table 1** Hydrological and demographic data.

Source: Tank data from the PWD office, Vennar branch; Demographic data from field interviews and the secondary data collected from the Village Administrative Office of Chettichatram and Shikkapattu.



**Figure 2** Map of the study area locating the three tanks.

than preceding it. From the outset, we mobilized multiple tools and techniques to trace the tale of three tanks in the Kaveri Delta—not to converge on a single truth or attain a holistic view, but to attend to complexity and partiality. Our methods were not preset, but followed from evolving concerns and sensibilities while researching and rejuvenating.

Quantum Geographic Information System (QGIS) was adopted early on. The first two authors were still in college, attending their irrigation engineering course. As part of an assignment, they used QGIS to make sense of the Ayyampettai tank and its inlet. Later, the first author created a map of the Mudavan tank to get support for its rejuvenation. Once they joined ATREE, channel and tank location data were obtained from the PWD Water Resources Department in Thanjavur, which provided more hydraulic details. We also got an overview map, roughly sketched in AutoCAD and lacking a proper scale. QGIS helped digitize the data and create maps to identify potential connections between tanks and canals as well as drainage ways. These, in turn, were examined against historical maps of the delta.

As a second tool, transect walks were used to verify the course of the drains and record their actual state (cf. Rojas, Nomedji & West, 2022). We also observed and mapped areas that could have been tanks—or eris—in the past, but were converted into arable land over time. Thirdly, we interviewed a range of actors. These included landowning farmers irrigating directly

from the tank, those in proximity to the tank who seem to have benefited from the recharge, members of local youth groups, elders, practitioners, and officials.<sup>13</sup> Verbal consent was obtained from the respondents.

Finally, even though we are not ethnographers, we took inspiration from what ethnographic methods allow us to interpret and analyze. We engaged in a kind of (auto-)ethnography (Ellis & Adams, 2020) and participant observation. The first two authors are beneficiaries of the tank water and have been involved in rejuvenation efforts locally. They shared and reflected on their lived experiences and how they related to shaping their caring for the waterscapes presented in the study. Therefore, we feel it would be prudent to continue our story with some early recollections of the first two authors about the tanks.

## 4. RESULTS AND DISCUSSION

This section is about the research results on rejuvenation as care. Next to early recollections, we discuss village reorientations toward tanks, reconnections of canals and drains, and the reignitions of tensions during attempts to improve the eri-based environments. We use, as analytical guidance, the four bearings or sensibilities we set forth in previous sections, and look at how the village-tank relations are enacted in attentive, collective, situated, and iterative ways.

#### 4.1 TO TREES AND TANKS AGAIN

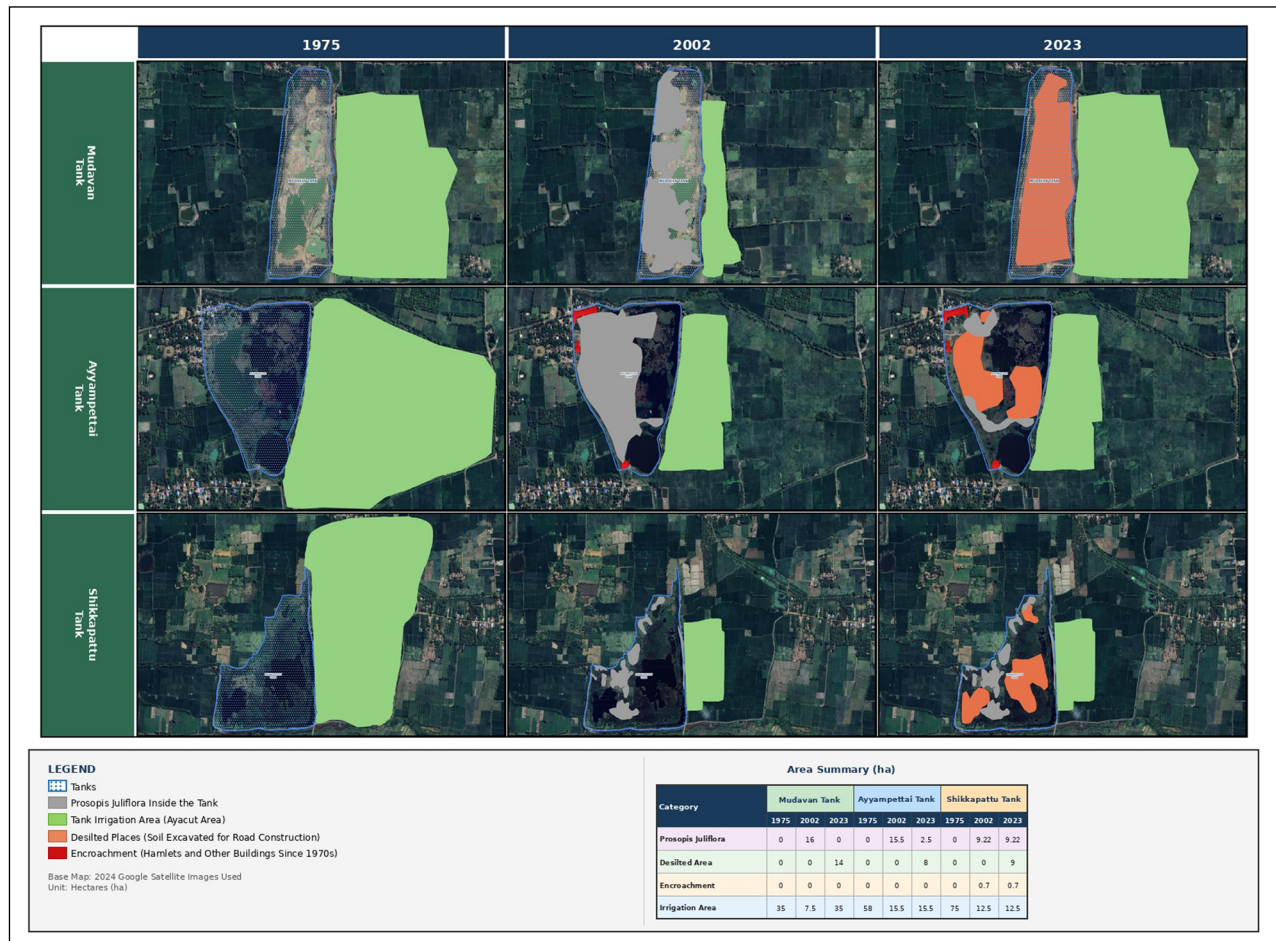
The author living in Munnavalkottai comes from a BC family. He remembers passing a large forest close to his family's farmland. His father was working abroad and so his mother was in charge of farming. When she went to the field, she took him along. He never entered that forest as the trees were thorny and unwelcoming. The trees were used for firewood by the MBC groups living in hamlets around the forest. The forest was also used by people lacking sanitation facilities. It was not until he was a teenager, when Agam Trust supported an effort to clear vegetation inside the eri, that he realized it was not a forest but a water body. This was in 2012. His family lives on the higher elevation side of the eri. They used to own land in the eri's irrigation command area, which was farther from home and less productive. However, they sold this land, like many villagers did, to people from a neighboring community in the late 1990s, a few years before the author was born. This move can be explained by the fact that the eri no longer stored water, the field delivery canals had collapsed, and people relied more on borewells.

The second author, also from a BC family, lives in Ayyampettai. He also has memories from early childhood: noticing a small pond in a larger area, which he too thought was a forest. It was only later that he came to realize that the area was a big eri. Today, his family uses

that eri water to irrigate paddy fields, and he recalls how cows in the village are taken for an evening bath during Mattu Pongal,<sup>14</sup> followed by a pooja (a reverence ritual) with traditional music played on the thappu, kombu and sangu.<sup>15</sup> 'Observing the eri full of water is amazing,' he says. 'I am proud of this beautiful, big structure in my village.'

In both memories, there was a forest with thorny trees, *Neltuma juliflora*. For parts of the year, the environment looked swampy, with pockets of trees standing in water. While in Ayyampettai, the (reduced) lake continued to function as a source of water for irrigation and ritual celebration, the lake in Munnavalkottai was largely abandoned. Yet in both examples, these memories participate in care, since remembering how water was once stored helps to identify present-day concerns and responses.

The third, Shikkapattu eri, appears not to have been affected by *Neltuma juliflora* to the same extent. It was the first one in a cascade, and kept receiving water from the Beemanodai drain more regularly, inundating the sprouting *Neltuma juliflora* inside the eri for months at a time. This prevented trees from prospering. Shikkapattu was faced with siltation problems, though—or so we so were told. Figure 3 provides an overview of the *Neltuma juliflora* invasion of the tank bed in the 1970s, 2002, and 2023.<sup>16</sup>



**Figure 3** *Neltuma juliflora* invasion and ayacut (or irrigation command) area of the three tanks (Source: Authors).

The presence of a thorny forest, as per local explanations, was itself the consequence of an act of caring to deal with a drought experienced in the state during the 1980s. At this time of crisis, villagers saw television discussions about how planting trees could bring more rainfall. The ruling AIADMK<sup>17</sup> government encouraged village panchayat leaders to plant *Neltuma juliflora* inside tanks as part of a new initiative. The villagers embraced this ‘happily and with hope.’ They told us that back then (part of the) ‘eri was silted up, which is why we planted the trees there.’ Pockets of forest were created on the higher elevation parts of the tank bed, which had not been inundated for years, and on the bunds. Villagers, leaders among them, believed it (i.e., having more forests throughout the delta) would bring more rainfall and so improve water storage in the lower parts.

It was a collective concern, this drought, and through televised responses and village conversations, a shared orientation about how to deal with it emerged: a practical response that included many actors such as the government, panchayat leaders, and alien trees, among others. This was also a contested decision, with huge, and for many, unforeseen and unwanted consequences. Trees were overgrowing designated areas and did not bring rain. Decreased water volumes stored in the lake led to a lowering of the groundwater table, while less available irrigation water contributed to villagers relying more on and expanding the use of borewells. The surface irrigation infrastructure decayed and disappeared, and the command area was permanently reduced (see [Figure 3](#)).

The eri environment became inaccessible, which corresponds to the memories of the younger generations. An elderly farmer from Ayyampettai contrasted that environment by telling a story from his own youth—a time before the forest:

When I was young, my friends and I used to go to the eri to play and swim. Back then [late 1970s], the eri was always full of water, with no trees or thorny plants around or inside the eri or on the bunds—only water everywhere [see [Figure 3](#)]. When we got in, the water reached our knees, and we could see algae growing beneath the surface. We’d race from one side of the eri to the other, and there were lotus flowers growing in the water. We’d pick the lotus flowers with their stems, make garlands, and wear them around our necks. But after *Neltuma juliflora* was planted, the activities in the eri gradually stopped.

Such storytelling is an important practice in that it shapes how villagers feel (are sensitive) and respond to the eri—with joy, pride or commitment—as it connects past carers to present ones. Storytelling is talk, but not just that. It is also a form of sustained preservation that might potentially renew care.

In the 2010s, the Kaveri Delta suffered another drought. Several years of low rainfall preceded a complete failure of the monsoon season in 2016/17. It was the driest period in over a century. For most villagers, the borewells they came to rely on ran dry. During that crisis, the Tamil Nadu government, led by the DMK<sup>18</sup> party, now urged people to remove *Neltuma juliflora* from tanks because it negatively affected groundwater. In Ayyampettai village, this was swiftly followed up, though removing *Neltuma juliflora* turned out to be much more laborious than planting it. Under the auspices of the village’s ruling party, which had a DMK connection, trees were felled and the wood was sold to a private company for future panchayat expenditures. Trees were cut down in Munnavalkottai as well. This happened in 2017. But here, more than the government, it was Senthil’s Agam Trust that was involved, and the wood was not sold but left on the lake shores for local people to use.

Also at the time of the drought in 2017, the first two authors, as students, were taught about the connection between tanks and groundwater at their college in the town of Koilvenni. The course was called Irrigation Engineering. The professor, himself a farmer in the Vennar Delta, explained passionately about the many tanks that once existed in the area and how infiltrated water fed (open) wells. For the students, it was the first time they used QGIS to visualize and understand the tanks and feeder channels in their villages. Inspired by these teachings as well as the elders’ stories and confronted by a water crisis, the authors, together with their professor, started to think of and cultivate ways to improve the villages’ futures; it started their engagement with tank rejuvenation and the mobilization of others in their village youth groups.

#### 4.2 TRACING TANKS

Within the Vadavaru sub-basin, the Mudavan eri was the site where contemporary grassroots rejuvenation efforts began. Following conversations with Agam Trust, one of the early actions that the Munnavalkottai youth group undertook was to map the water courses and water bodies potentially connected to their eri. At the time of the QGIS mapping, all of these hydrological connections were severed. The youth group was told by elders that no irrigation supply canals ever fed into their eri; these are the kind of canals constructed by the British in one of the earlier modernization interventions. Instead, they mentioned two jungle streams or *kattarus*<sup>19</sup> (Periyakottai and the more potent Beemanodai), which are like natural drainage ways that seem to converge on the Mudavan eri. Additionally, they mentioned an irrigation canal, the Puthur canal, located in the vicinity of but separated from the Mudavan eri.

Through interviews, transect walks, and QGIS, we traced kattarus, which caught our attention and curiosity, both as researchers and rejuvenators. They are

a local source, not system-dependent, and they allowed for new questions about how tanks are known, lived with and cared for. Through interviews, transect walks, and QGIS, we traced—spatially and temporally—the tanks and waterways. Figure 4 shows the elevation map we created with tanks, canals, and drainage ways. It shows the Puthur canal running along elevated ground, while the two jungle streams that feed the tanks connect the lowest points.

From all waterways, Beemanodai is the crucial actor in the tale of the three tanks. It is much wider and deeper—up to three times—than, for example, the Puthur canal. Yet, it is only half the length and lacks a clear source. Still, Beemanodai runs with water for longer periods and more continuously than irrigation canals in the area. During a transect walk upstream from the Mudavan eri, we learned that Beemanodai fringes the eris of Ayyampettai and Shikkapattu, that it feeds into the latter but not the Ayyampettai eri, and that farmers encountered along the way mentioned a lack of inter-village coordination. Following the water course further upstream, it emerges, so it seemed, mid-field somewhere after crossing underneath the Ammapettai road, only three kilometers from Shikkapattu, near a hamlet that carries the same name as the kattaru—Beemanodai. It was rather surprising to us how such a short water course could feed different tanks and not run dry; we noticed it

with running water in February 2024, the hot *kodai* (or summer) period, when it graciously kept feeding both the Shikkapattu and Mudavan eris.

Its name, Beemanodai, is in that respect telling. The Tamil word *odai* translates as small stream or creek, while *beema*, villagers agree, likely refers to Bhima, a prominent heroic figure in the well-known Mahabharata epic. Without going into detail, Bhima is immensely strong but also loyal and protective, known for feeding his relatives during difficult times. *Beemanodai* thus means protective and potent creek. It feeds the eri as a wild kattarru following monsoon rains, but also in the more difficult summer period. Like the character, its care is not gentle but powerful and embodied; it is not lined neatly but is rugged. Beemanodai is a force that nurtures and is steadfast. In return, it is to be attended to by cleaning and maintaining its course.

After mapping the watercourses and water bodies in the area, the decision was made in the Mudavan rejuvenation effort to reconnect Beemanodai to the eri (see also the next section). One of the next steps, thus, was to clear and dredge the kattaru from vegetation and sediment.

Where a connection between Beemanodai and the Mudavan eri was being re-established, a more obvious one—at least according to our transect walk—remains disconnected. The map shows how the Beemanodai runs along the upper elevation side of the Ayyampettai eri,

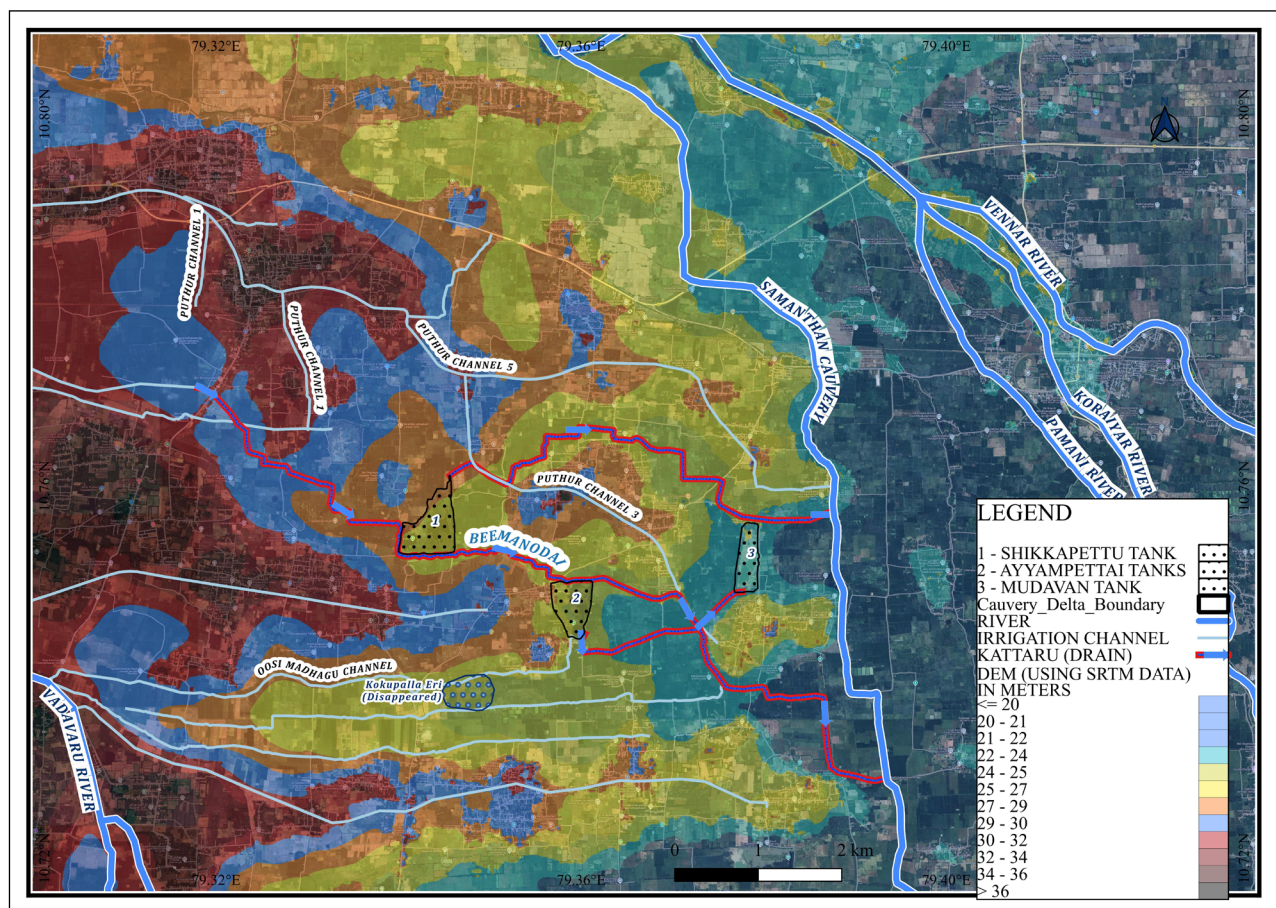


Figure 4 Elevation map of tanks and waterways.

yet, as the villagers told us, it does not supply water to this eri. Instead, their lake is filled by the Oosi Madaghu canal (see Figure 4), supplying water from ‘below.’ This is hydrologically peculiar and was surprising to us. Due to the inlet position, the supply canal can never fully fill the tank. We reasoned that, spatially, a traditional inlet to the lake should be at the highest point, in the north-west corner of the lake. Different farmers from the village shared explanations with us.

About a century ago (around the time of the British modernization of the Vadavur canal), a Brahmin from a neighboring village with considerable landholding constructed the Oosi Madaghu canal and connected it to the larger scheme (see Figure 4). In Ayyampettai, however, land was under the control of a BC family. At the time, the Oosi Madaghu canal first filled the eri on the Brahmin’s property called Kokupallaeeri. By the 1980s, the Brahmin family transferred the landholdings to local villagers and left the area. The new owners turned Kokupallaeeri into farmlands (around, 1985), and Ayyampettai villagers were allowed to use all the water from the Oosi Madaghu canal for their eri.

We asked whether, before that time, they would get water from Beemanodai, because the connection appeared so obvious to us. However, there was no clear answer. Some said they might have gotten it, some said the drain bed was too low to fill the eri, and others believed there was a different water course, possibly a branch of Beemanodai, flowing into the eri on the upper side. What seems certain, though, is that by the time the Oosi Madaghu canal was extended, the kattaru fringed—but did not fill—the Ayyampettai eri. This was puzzling to us, but we infer the following.

Brahmins left agriculture and the Kaveri Delta countryside in the 20th century; BC communities became the rural rulers in the village of Ayyampettai, while the MBC groups that previously worked for Brahmins seasonally settled in the area, forming new hamlets. One of these hamlets in Ayyampettai, known locally as SC Street, was near the higher-elevation side of the tank, where a connecting road parallel to Beemanodai granted easy access. MBC people began to encroach on the eri, and eventually, a government-sanctioned building—a community hall—was constructed inside the eri boundaries in the 1950s (see Figure 3). On the lower-elevation side, BC groups held the land titles in the ayacut area. The relations between caste groups were and continue to be filled with tension: The inlet was contested. When drought in the 1980s affected even Beemanodai, village rulers decided to plant trees in the upper part of the eri. At that moment, the Oosi Madaghu canal could be considered a more secure option to fill the lower part of the eri, causing the traditional inlet to wither further into obscurity—or so we hypothesize.

It was not until the contemporary grassroots-led rejuvenation works in the delta that care-ful conversations emerged about reconnecting the Ayyampettai eri with the natural drains, and we are ourselves part of those talks. When Ayyampettai villagers came together to remove *Neltuma juliflora* from the tank bed (see Section 4.1), they also collectively desilted the Oosi Madaghu channel. The silt that was cleared was used to strengthen the bund near the road. These combined maintenance efforts sparked some interest within the village about the eri. A WhatsApp group was created by the youth to discuss village matters further, and they shared their story with local media. However, it did not result in further improvement work. The second author was aware of and eventually joined the youth group, and later saw potential in mobilizing it for tank rejuvenation at Ayyampettai.

In June of 2025, we organized a knowledge-sharing gathering at the first two authors’ alma mater, the Anjalai Ammal Mahalingam Engineering College. Here, the youth groups of Amblapattu and Munnavalkottai villages talked about their rejuvenation efforts in the presence of Ayyampettai youth. In October 2025, these Amblapattu youth came to Ayyampettai village to exchange experiences. These meetings might herald the rejuvenation of the tank. But for that to happen, Ayyampettai’s youth group needs to cultivate closer relations with MBC village members as well. The advice came from Amblapattu youth; it is a crucial connection, as we show in the next section.

The history<sup>20</sup> of the Ayyampettai eri is not one of linear decline-restoration but of continuous tinkering and situated adaptations that are not just technical or hydrological but shaped by negotiated frictions of proximity, access, and caste. The renewed conversation to connect eri and drain is not to be seen as a return to a past waterscape but as another iteration in the unfinished work of eri and village care.

How far back these iterations go may correspond to the age of the tanks themselves. This we know not. Elders recalling their grandfathers’ stories allow us to say with some certainty that the eris preceded the Cauvery-Mettur project. Vallalardhasan G., a Tamil archeologist from Mannargudi, pointed to a Kalahasteswarar temple (and connected Mudavan eri) in Munnavalkottai village, which is associated with the medieval Cholas—making that tank at least 500 years old (personal communication, 30 April, 2021). Other villagers claim these eris are almost 2,000 years old, constructed in commemoration of the victory of the famous Chola King Karikalan at the battle of Venni (130 AD), near the contemporary town of Koilvenni (see Figure 4). Taken together, tanks, or so we hold, bind maintenance work and restoration to Chola identity, hydraulic pride, and local heritage in acts of situated care.

### 4.3 STAYING WITH THE TANK

The current delta-wide grassroots-led effort to restore tanks started in 2019.<sup>21</sup> We followed half a dozen initiatives, including those in Amblapattu, Kalatur, Perumagalur, and Peravurani. Out of the few hundred tanks, the Mudavan eri was the second to be improved. Rejuvenation here too, was a process of ongoing iteration, fragile relations, and working with friction, making adaptations and remaining responsive—a process of staying with the tank. We will briefly detail.

Like the first author's family, other BC farmers from Munnavalkottai had been selling their land in the Mudavan ayacut area since the 1990s. The tank no longer stored water and they were relying on borewells. But more importantly perhaps, while the tank and higher areas were located in Munnavalkottai, the sold land fell within the Kalacheri panchayat, a mainly MBC community (see [Figures 1](#) and [3](#)). Improvements to the eri-environment, in this case, required inter-village and inter-caste collaboration.

In January 2019, facing a ground and surface water crisis, both villages, together with a third, Periyakottai, requested the government to do maintenance work on irrigation infrastructure, including the Mudavan eri. But there was no response. Also concerned with the water situation, Agam Trust invited the young and old of Munnavalkottai to participate in a meeting at the village library to discuss how to combat the crisis. One idea from some youngsters was to register as an official irrigation committee with the PWD to repair and extend the Puthur canal, betting on future government funds to keep this canal in operation (see [Figure 4](#)). After that, representatives from Periyakottai and Kalacheri were invited to the Mariamman temple in Munnavalkottai to further discuss this plan. The location was carefully chosen: Mariamman is a popular and protective non-Brahman village goddess, worshiped by both BC and MBC groups for fertility and water. Her name derives from the Tamil words 'mother' and 'rain'; as such, she nourishes the local fields and kattarus.

The meeting was a success. All participants from the three villages agreed and signed a petition, which was handed to the PWD office. In parallel, they started the registration process to form an official irrigation committee. Their agreement laid out the benefits: irrigation water for the MBC of Kalacheri, fishing rights (and income from fish auctions) to the Munnavalkottai panchayat, and groundwater recharge for the well owners around the tank in both villages. This was a striking reversal of earlier caste relations where irrigated land was under control of the ruling BC group.

Time passed, and there was little prospect from the government or the PWD. Then, after more than a year, the founder of Agam Trust (Senthil) brought the activist (Nimal) to the Mudavan eri (see opening section). This happened during the Aadi month (July/August) of 2020.

The timing is significant, as it is the period when Kaveri waters arrive in the delta and refresh the lands. It is the month of the important festival, Aadi Perukku, which celebrates the return of Kaveri water and agricultural life after the hot summer period.

On the banks of the Mudavan eri, Nimal explained the rejuvenation of the Peravurani Lake, the role of crowdfunding, and how many people, local children, and married couples chipped in to help restore it. Nimal talked about how he helped set up an association, Kadaimadai Area Integrated Farmers Association (KAIFA), to organize rejuvenation work and mentioned WhatsApp groups that were created for accountability vis-à-vis the donors. They collaborated with an ecologist to create islands inside the Peravurani Lake for leisure and biodiversity care.

After Nimal's speech, it was the Munnavalkottai youth group's turn. They spoke to bystanders about the Mudavan eri, the tank inlet, and other water bodies in the area. After this, they shot a video against the backdrop of the eri, in which Nimal explained the importance of the tank and the need to rejuvenate it. Senthil and the youth group inserted their GIS map, connected the video to an online crowdfunding campaign, and circulated it on social media.<sup>22</sup> The set amount of three lakh Indian rupees, corresponding to some 4,000 US dollars, was quickly collected. After this, a pooja was performed near the tank to initiate the improvement works.

The Mudavan plan shows a care distributed (or shared) across actors, histories, and scales. It mobilized local youth, regional activists, international NGOs, online communities, and different caste groups, bound by a revered river, Chola cultural memory, and a sense of village belonging. An impressive collective, though not necessarily stable. In fact, from the onset, the Munnavalkottai advocates encountered obstacles—first, Munnavalkottai village elites objected to the work because there was no income generation from the silt to be removed; second, many borewell farmers were not involved, believing in their deeper wells; and third, the government did not give permission to start work in the tank. Set aback, the youth group and Agam Trust decided to use the funds to clean and widen a stretch of the Puthur Canal and connect it to Beemanodai. The kattaru was then extended to the eri's inlet. In February 2020, water began flowing into the still-to-be-desilted tank, which was also posted on social media. Many people from the three villages rejoiced. Next steps were discussed and embraced. Then the COVID-19 pandemic paralyzed it all.

In 2021, some Munnavalkottai elites brokered a deal between the village panchayat and a road construction company that was building a nearby highway. And the government granted permission for silt removal. With the prospective income, the decision was made to rebuild the Mariamman temple. This broke the delicate inter-village, inter-caste collaboration and the fragile shared

future of the eri. During a big operation that took up most of 2022, some 3,000 trucks of sand were removed, generating almost five lakh Indian rupees. People from Kalacheri believed they had the right to a share of this income. In contrast, Munnavalkottai elites (and many others) reasoned that the lake was on their territory and had been theirs since time immemorial; therefore the silt was theirs too.

There were several heated discussions, with Kalacheri farmers threatening to step to the government, which was downplayed by the other party and deemed pointless. After this, people from Kalacheri went and raised their caste flag on a tree near the lake, claiming it as theirs. While silt removal by the contractor continued, no islands were created inside the eri, fearing it could later be the landmark across which a new border could be drawn.

By February 2023, after being shown a video about desilting beyond the legally established depth, the government forced the contractor out, leaving some 40% of the tank bed to be desilted still. In the second half of that year, Kalacheri farmers and the PWD department formalized an irrigation committee, by law consisting of landowners in the tank's ayacut or irrigation command area. Although there are a handful of Munnavalkottai irrigators, the majority are from Kalacheri. By 2024, the committee also obtained the fishing rights. The Mariamman temple is left unfinished.

## 5. CONCLUSION

As a team, we have contemplated, many times, the concerns around the Mudavan eri, the story of the three tanks, and the water futures in the Kaveri Delta, and we repeat that the four of us are—in very different ways, obviously—emotionally and practically involved in the tank realities that we help to realize or enact (Agrawal et al., 2024; Law, 2004). Indeed, we all believe that for a sustainable future delta, tanks are vital (see also Srinivasan, 2019). We share here some of our concluding thoughts and further musings on how care-ful research and rejuvenating tanks are done and how one can make that happen—bearing attentiveness, collectivity, situatedness, and iteration in mind.

Eris are old. Through interviews, transect walks, and GIS mapping, we found that they predate colonial modernization schemes, have been incorporated into them by the British, transformed into forests under the Indian government, and reclaimed today as recharge potential and part of village patrimony and local pride by youth groups and migrants. Eris or tanks have thus, in different ways, been restored, cleared of vegetation/trees, desilted, and maintained throughout their existence (see Sakthivadivel, 2016). But the contemporary efforts

are something else. Today's grassroots rejuvenation movement has improved some two hundred (about one-fifth) of the delta's tanks, including the kattarus that supply them, in a markedly different way. The works are led not by landholding irrigators or government officials, but by (returning) migrants and educated youth, using online communication channels and crowdfunding mechanisms, while emphasizing non-extractive uses, the fostering of biodiversity, and village patrimony. We see this kind of youth-led environmental advocacy in the Kaveri basin and across wider India (Bhattacharya & Chattopadhyay, 2025), and consider it indicative of changing agrarian realities in delta village societies. Yet at the same time, many of the historic (hydrological, cultural, and caste-based) relations shape and situate contemporary rejuvenation and tank care.

The tale of the three tanks in the Vadavaru sub-basin showed how practices to restore and improve tanks are fuelled by memories, recollections, and voluntary contributions, cultivating forms of attentiveness and responsiveness to the behaviors and needs of eris and kattarus. In that sense, tanks and jungle streams are not hydrological or infrastructural objects but more-than-human actors that participate in and shape how farming and village life are organized and experienced (Verzija, 2020).

There are also collaborations with different institutions (such as NGOs, PWD department, caste groups, local farmer-rooted investigators and different panchayats, and intra-village elites), illustrating that rejuvenating is a collective endeavor but also a fragile one, full of friction. The Mudavan eri is a case in point: BC youth and well owners from Munnavalkottai and irrigators from Kalacheri's MBC community forged a fruitful but frail alliance.

Here, migrants, activists, and educated youth acknowledged the need for more inclusive ways of organizing around tanks. Unfortunately, the alliance was broken over silt revenue (monopolized by the Munnavalkottai panchayat elite) and further undermined by formal PWD regulation. It is at that point that we feel tinkering and attentiveness are trumped by control and profit-driven choices. Not all desilting and sustaining practices are caring: When practices are geared toward dominant uses (landholding irrigators) or optimizing singular objectives (profit maximalization), there is little space for the sustained nurturing of the different relations and actors involved (Mol, 2008; Zwarteveen et al., 2024). Something similar may unfold in Ayyampettai and Shikkipattu. It is in fact likely. Returning migrants and more educated youth are challenging established village hierarchies and positions of BC and MBC groups. Today's eri-based waterscapes reflect those changing relations: The Shikkipattu eri and ayacut area are also located in neighboring villages, while in Ayyampettai, MBC groups

have taken position in—encroached, say others—the eri. A recently initiated rejuvenation effort for the latter eri is led primarily by BC youth, including one of the authors, who from the outset, sought to involve all caste groups while carefully navigating uncomfortable relations. Eventually, obtaining panchayat approval required accepting limited participation from other groups, at least initially, as negotiations and tinkering continue.

Returning to the bearings set forth in this paper, we restate that their purpose is not to prevent conflict or offer solutions for situations mentioned above. Instead, it is to make visible and stay despite frictions and fragilities, to acknowledge and nurture the (non)human entities and relations that hold tanks together, and to foreground local realities and embodied practices over generalized conclusions. Such an approach, we hold, allows researchers and practitioners of tank rejuvenation to appreciate differences and see forms of exclusion, negotiation, and care that might otherwise remain obscured.

Unfortunately, the PWD and water legislation still operate under the surface irrigation logic, creating tension with well owners, MBC micro-farmers (who cultivate the banks of canals and tanks), and those who champion recreational or other non-extractive objectives. A PWD reorientation on tanks is needed, so it seems to us.

We have discussed this last point several times among ourselves. It is a concern that became more prominent over the course of our work, eventually leading to the consideration of a new sensibility on how to engage PWD officials in conversations about tank care (Law & Lin, 2022). We are cultivating it now. But is this rejuvenation work or research? Here, the line between empirical and conceptual becomes fuzzy as our intervention and interpretation efforts blend (Law, 2016). It confirms that cases are not detached descriptions but enactments being renewed or redone. The insight that research is itself an iterative, world-making practice means that we have to be accountable for our work. This tale of three tanks, we hope, showed not only rejuvenation as a version of care, but also demonstrated that research can be as well.

## NOTES

- 1 See: [Dubai Techie Quits Job to Help 90 Cyclone-Affected Villages, Revives 564-Acre Lake](#) (accessed 28 December 2024).
- 2 People like Senthil, Nimal, and others who have worked or studied outside of, but remain connected to, the delta region, have emerged as key actors in local efforts to improve water bodies or village infrastructure. Such improvement efforts are inherently political and often rooted in (inter)village caste and land relations; these actors also create needed awareness locally about the pressing problems of tank infrastructural decay and groundwater depletion. It is on this that our analysis focuses.
- 3 See: [https://x.com/being\\_nimal/status/1854368088483098838?mx=2](https://x.com/being_nimal/status/1854368088483098838?mx=2) (accessed 28 December 2024).
- 4 In English literature on South India, this type of eri is most often translated as tanks, indicating that these are artificial water

reservoirs. In Tamil, however, *eri* refers both to these and natural water bodies, and Tamilians translate this as lakes. We will use these terms, based loosely on whether we engage literary works on tanks or village stories on eris/lakes.

- 5 Beyond the delta, the decay of local irrigation infrastructure is well documented in South India. See, for example, de Groot and Tadepally (2008) and Shah and Sakthivadivel (2018).
- 6 Different authors subscribed to the voluntary labor contribution. Whether this contribution is non-compulsory or (might be considered) honorary is a discussion beyond the scope of this paper. However, the lack of economic alternatives for scheduled caste groups and the cultural framing of caste-based roles in society lay bare that this 'voluntary' work is situated in power imbalances and conditioned choices.
- 7 These are class categories, which constitute specific caste groups, used by the government to identify disadvantaged groups eligible for affirmative action. The Most Backward Class category was created within the Backward Class category in Tamil Nadu to include the marginalized sections within BC groups.
- 8 Different resources of the tank, which used to be a local village affair, now became the responsibility of different institutions: 'water and fish in tanks fell under the Fishery Department, the tank bund and sluices under the PWD or Panchayat Union, the tank bed under the Department of Revenue, and the tank catchment area under the Forestry and Revenue Departments' (Aubriot & Prabhakar, 2011, p. 331).
- 9 State rehabilitation programs, through bilateral agencies like the European Economic Community and the Ford Foundation, were initiated in Tamil Nadu since the 1980s, while NGOs such as the Development of Human Action (DHAN) Foundation also had initiatives to rejuvenate the traditional tank systems (Palanisami et al., 2008).
- 10 There were a few cases where tank rehabilitation was built on existing social institutions through interventions from NGOs to sustain the maintenance and management (cf. Aubriot & Prabhakaran, 2011; de Groot & Tadepally, 2008).
- 11 The two are often simultaneously mentioned in science and policy documents (Palanisami & Nagothu, 2024; Sakthivadivel, Gomathinayagam & Shah, 2004).
- 12 We have elaborated on this collaboration elsewhere; see Agrawal et al. (2024).
- 13 A total of 40 villagers (farmers and/or youth group members), 6 officials (2 Village Officers, 2 PWD assistant engineers, and 2 Laskars), and 5 scholars/practitioners (2 assistant professors, 1 retired assistant engineer from the PWD, 1 Tamil literature scholar, and 1 archeologist).
- 14 Day of the Tamil harvest festival dedicated to the celebration of cattle.
- 15 Tamil musical instruments.
- 16 The figure was made using QGIS, after analysis and mapping of irrigation canals, elevation, and drainageways.
- 17 All India Anna Dravida Munnetra Kazhagam.
- 18 Dravida Munnetra Kazhagam.
- 19 In Tamil, the word *kadu* means forest/jungle while *aru* means river. A jungle river reflects its wild uncontrolled flow, especially during monsoon rains.
- 20 We traced the age of the three tanks.
- 21 Following a climatic one-two punch of the worst drought in 2017/18 and the most destructive cyclone (Gaiya) in November 2018 in living memory.
- 22 See <https://www.facebook.com/vijaisenthil.pk/videos/10217012884137422/?app=fbl> (accessed on 06 May 26).

## ETHICS AND CONSENT

Due to cultural considerations, written consent was not feasible; therefore, verbal informed consent was obtained from all participants.

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## COMPETING INTERESTS

The authors have no competing interests to declare.

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Kalaivendhan Kannadasan – Conceptualization, field investigation, formal analysis, writing (review and editing).

Kulothungan Chokkalingam – Conceptualization, field investigation, formal analysis, writing (review and editing).

Andres Verzijl – Writing original draft, review and editing, conceptualization, supervision, field investigation, formal analysis.

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