



Riverine relations, affective labor and changing environmental subjectivity in Kerala, South India

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ABSTRACT

Recent works in political ecology draw attention to affective ecologies that focus on lived experiences and fluid/relational subjectivities. The attention to affect and materiality grounded in vitalist ontology helps imagine new sociological futures and re-envision humanistic notions of agency. In this paper, we build on affective ecology and emotional political ecology literature to demonstrate how people's subjectivity is transformed through their lived experience of polluted waterscapes, memories of emotional and material engagement with their immediate nature, and affective labor practices to protect their rivers from pollution. Through sociological research conducted around two environmental protests in Kerala, we provide insights into local communities' engagement with the changed riverscape. Our analysis shows that formation of environmental subjects does not always occur through environmental discourses and governance techniques as the environmentality literature suggests. Rather, there are different pathways to environmental subjectification, which include embodied practices and affective labor. For activists involved in Eloor and Kathikudam movements in Kerala, India, their interactions with the river- an immediate nature in both cases- and the memories associated with it act as a central force in the becoming of people who care for the environment. We suggest that villagers' everyday involvement in movement work and struggle to protect rivers from pollution strengthen their individual and collective subjectivities.

1. Introduction

"Our villagers were ignorant about environmental issues in the past. [When the movement began], there were only a few people who completed graduation in our village. Even they did not worry much about environmental issues. Now, if you ask a fourth-standard student, they will tell you the pH of our water. Every-one in this panchayath now knows about pollution and environmental issues, even if we don't know how to scientifically tell it" (Interview with Rosamma, Kathikudam, June 2017).

"I used to do angling when I was ten years old. It was a major recreation for many of us. Because of this, I have a relationship with the river. I know its nature. Later, Periyar started flowing in different colors: green, red, and yellow. Water flows in different colors whenever factories discharge their waste ... People began joining the protest when a situation arose that made it difficult for them to live here" (Interview

with Kammar, Eloor, December 2017).

Rosamma, a 60-year-old woman from Kathikudam, a village in Thrissur district in central Kerala, who was at the forefront of the protest movement against the Nita Gelatin company, which polluted the Chalakudy river recalls how the movement and people's engagement with it helped inculcate environmental values locally. Likewise, in the second quote, Kammar, a 65-year-old activist from Eloor, shares his memories of how a once resource-rich river of his childhood became polluted, forcing villagers to protest. People of the village, who were not aware and concerned about environmental issues in the past, were now aware, and many of them have become activists fighting to protect the river. This transformation of subjectivity from passive villagers who were not environmentally aware, to active citizens who worry about their surroundings and wider environment, calls for attention on how local memories and embodied relationships with immediate nature,¹ along with participation in protest movements, lead to the formation of

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¹ We use the term immediate nature to denote a tangible nature that is nearby and plays an important role in the daily lives of the people live in the area.

environmental subjectivities.

This paper examines the formation of environmental subjectivity around polluted waterscapes of central Kerala. It engages with critiques of Agrawal's work on environmentality (Singh, 2013) and draws from recent literature on emotional and feminist political ecology, emotional geography, and affective ecologies. Specifically, we draw upon the concept of "affect" and "affective labor" (Hardt, 1999; Hardt and Negri, 2000; Singh, 2013) to establish the role of embodied practices and emotions in forming environmental subjectivity among individuals and communities. Affective labor is a concept that emerged from theories of post-Fordism that emphasize "the centrality of affect in new forms of production, recognizing that such labor engages at once with rational intelligence and with passions or feeling" (Hardt, 2007, cited in Singh, 2013). The concept describes the true 'product' of the work as being constituted by the "mobilization, performance and enactment of subjectivities and social relationships are critical to the labor performed, and in which the creation of sensations, emotions, or embodied experiences constitutes" (Farrugia et al., 2018, p.2).

Central Kerala's communities joined protests after observing and experiencing changes in their local rivers due to pollution by industries on the banks. For activists involved in the Eloor and Kathikudam movements, memories associated with their interactions with the rivers-an immediate nature in both cases- and involvement in collective action against pollution, combined in enabling a process of "becoming" (Deleuze and Parnet, 1987; Deleuze and Guattari, 2019) environment-caring people. The affective relationship with their immediate nature, i.e., the river, ensured their active and passionate participation in various movement activities. Following Singh (2013), we argue that their understanding of an environmental issue like pollution is not only through larger environmental discourses or environmental governance techniques but also from "perceived and lived in affective relations" (2013, p. 193) with their immediate nature. Their involvement in movements is a response to the loss of the riverscapes to which they are affectively attached.

Consequently, we argue, their involvement in the protest movement is "affective labor" (Hardt, 1999; Hardt and Negri, 2004, 2000) emerging from multiple and complex individual and collective experiences of pollution, and memories of their interactions with the river. Hardt and Negri (2004, 2000) use the term to denote new forms of labor in economic production. Such labor entails not only rational intelligence but also passion and emotion (Hardt, 2007). Regardless of financial conditions and the time their other conventional labors like farming or coolie work demand, villagers spent time on movement activities due to this affective relationship with nature. We claim that through their daily practices in the movement and their relationship with the river, villagers transformed their individual and collective subjectivities and cultivated an environmental subjectivity or a sense of caring about the environment.

The remainder of this article is organized as follows: The section following immediately discusses literature on the role of affect in environmentality and contextualizes the relation between affective practices in nature and subjectivity. It then introduces two case studies on environmental movements against industrial river pollution in Kerala. The section that follows discusses how people in these landscapes respond to certain events of pollution or 'pollution shocks,' as we call them, and to the degradation of their riverscape. The final section discusses how people's memories of their relationship with immediate nature, the rivers, and affective labor practices to protect them from pollution, together aid in transforming their subjectivities.

2. Environmentality, affective relation, and emotional geographies

Environmentality literature probes how local people inhabiting 'natural' areas care about and act to protect the environment they live in (Cortes-Vazquez and Ruiz-Ballesteros, 2018). Through their

environmental protection practices, they become active participants in conservation government and management (Agrawal, 2005). Environmentality literature also explores the relationship between certain governmental regimes in conservation-targeted areas and the formation of environmental subjectivities among local inhabitants (Cortes-Vazquez and Ruiz-Ballesteros, 2018; Fletcher, 2010).

Building upon Luke (1995), Agrawal examined the formation of environmental subjectivities in the context of community regulatory mechanisms in Kumaon hills of Himalaya, India. Agrawal uses environmentality to "denote a framework of understanding in which technologies of power are involved in the creation of new subjects concerned about the environment" (Agrawal, 2005, p. 166). His Kumaon work detailed how technologies of power, which "determines the conduct of individuals and submit them to certain ends or domination, [leading to] an objectivizing of the subject" (Agrawal, 2005, p. 165), produce environmental subjectivities through "intimate government". Agrawal mapped the process by which hill-men become individuals participating in intimate government (a technology of power) of the community to regulate and protect their forests. While Agrawal's environmentality analytic led to many studies on environmental governmentalities (Anand and Mulyani, 2020; Birkenholtz, 2008; Choi, 2020; Fletcher, 2010; Hanson, 2007; Jepson et al., 2012; Ward, 2013), scholars also critiqued the analytic.

Environmentality has been critiqued for giving undue importance to technologies of power and less to technologies of self (Cepek, 2011; Singh, 2013). This focus on technologies of power resulted in the application of environmentality in an inordinately structural and totalizing way (Rutherford, 2007; Singh, 2013). Agrawal's work, in particular, has been critiqued for insufficient attention to local agency (Gupta, 2005), its ahistorical approach while engaging with various identities and positions (Hathaway, 2005; Narkotzy, 2005), and inadequate engagement with complex biographical practices (Singh, 2013). Critiquing Agrawal's work, Singh (2013) argues that the structural focus is due to the mixing of Foucault's initial ideas on neoliberal governmentality, which was not fully developed and remained inaccessible till recently, with his early work on power and subjection.

2.1. Affect and biopower from below

Recently, scholars have approached subjectification as a bottom-up process by engaging with Foucault's later work on technologies of the self (Singh, 2017, 2013). This approach provides space for local agency, emotion, and historically created identities of people (Singh, 2013) in the process of becoming (Deleuze and Parnet, 1987) environmental subjects. For Deleuze, "becomings belong to geography, they are orientations, directions, entries and exits" (Deleuze and Parnet, 1987, p.2). The becoming process is always located between two multiplicities, but neither term transforms into the other; becoming is something that exists between the two (Mikaels and Asfeldt, 2017). Therefore, the meaning of becoming is "becoming-other," not becoming or imitating the other (Deleuze and Guattari, 2019). Drawing from these concepts, we use the term becoming to highlight how everyday practices help mutually constitute environmental subjects and the river. This mutual constitution of humans or otherwise "do not preexist their relationship but emerge through their relational praxis" (Radonic, 2019).

The explosion of interest on the role of affects within humanities and social sciences (Hardt, 2007, 1999; Hardt and Negri, 2000; Negri and Hardt, 1999; Pile, 2010) encouraged scholars examine the role of affects in subjectification. This 'affective turn' is partly fueled by an engagement with Spinoza's ideas about affects (Hardt, 2007; Ruddick, 2010). For Spinoza, affects are a subclass of the body's 'affectations' that augment or diminish the body's power of acting (Deleuze, 1988), wherein "a body can be anything; it can be an animal, a body of sounds, a mind or an idea; it can be a linguistic corpus, a social body, a collectivity" (Deleuze, 1988, p. 127).

Along with affect, affective labor also provides new ways to

understand how subjectivity is shaped. The terms immaterial or biopolitical labor are also used to denote affective labor. For [Hardt and Negri \(2004\)](#), biopolitical labor aids a better understanding of this new labor since labor involved in the immaterial production, such as knowledge, ideas, relationships, and affects is material. In other words, the output of the immaterial labor is not material in nature, but the labor used for its production is material, as in the case of any other labor. Biopolitical labor is “labor that creates not only material goods but also relationships and ultimately social life itself” (2004, p. 109).

For Hardt and Negri biopolitical labor is biopower from below, which inverts Foucault’s use of biopower ([Casarino and Negri, 2004; Hardt, 1999](#)). This biopolitical labor from below, or affective labor, produces new subjectivity, sociality, and society ([Singh, 2013](#)), and offers a robust analytical tool to understand the emergence of environmental subjectivities. For example, in her work on community initiatives to conserve forests in Odisha, Singh demonstrates how individual and collective subjectivities of “jungle surakhyakaris” came to care for “their forest through their daily engagement.” These forest-caring activities result from biopower from below ([Singh, 2013, p. 197](#)). [Cortes-Vazquez and Ruiz-Ballesteros \(2018\)](#) and [Cunningham \(2018\)](#) also focus on the importance of agency of people subjected to conservation and on how affective qualities of local life challenge the mainstream modes of “conservation, resource development, and capital accumulation” ([Cunningham, 2018, p. 41](#)). For instance, [Cunningham \(2018\)](#) demonstrates how the unexpected eruption of Ontake-san, a volcano in Japan, destabilized narrow capitalistic projects aimed at accumulation. The event created opportunities for local human inhabitants to interact with the various organic and inorganic elements of their environments and to engage with the qualities of relationships that sustain ecologies.

2.2. Affective ecologies and emotional geographies

The affective turn in anthropology, feminist geography, and feminist political ecology underpins a surfeit of research that go beyond the binaries of individual and collective, structure and agency, and turn to affect and materiality in imagining novel socioecological futures ([Singh, 2018](#)). Studies in anthropology and feminist political ecology (FPE), and geography show that various subjectivities emerge relationally from people’s interactions with the social and natural or nonhuman world ([Bear and Eden, 2011; Nightingale, 2013, 2011](#)).

Feminist political ecology examines multiple ways in which gender, race, and class shape struggles for access to resources ([Johnson and Zalik, 2021](#)). For instance, the works of Sultana engage in intersectional FPE along with emotional political ecology ([Sultana, 2015, 2011](#)), where “emotions, embodiments, politics, power relations, spatiality, and ecological change are imbricated simultaneously” ([Sultana, 2021, p. 393](#)). These works foster an understanding of how emotions matter in nature-society relations. Along similar lines, recent research by [Pandya \(2022\)](#) reveals how women’s intersecting identities such as gender, caste, and class influence decision-making, unlike the common notion about the formation of subjectivity through market-based incentivizing techniques of neoliberal environmentality.

Studies that used the affective ecology framework examine how inhabitants historically shaped relationships to nature, whose conservation depends on gendered ecological and socioeconomic relations ([Cieloa and Sarzosab, 2018](#)). Studies also propose affective labor as an alternative explanation for participation in environmental activities. For instance, [Foster \(2018\)](#) discusses how environmental stewards volunteer their time and labor due to the emotional attachments with their surroundings, including nonhuman others, through affective labor and relationships. Affective ecology as a broader framework is also employed to convey how affective experiences with animals play an important role in developing “therapeutic relationality” ([Haggerty et al., 2018](#)).

While environmentality research focused on terrestrial conservation efforts ([Agrawal, 2005](#)) and multiple and variegated subjectivities ([Anand and Mulyani, 2020; Rutherford, 2007](#)) around resource use,

ethnographic research on affective geographies of waterscapes illustrate how the affectual qualities of waterscapes are continually woven into being through material and embodied practices ([Djohari et al., 2017](#)). Like air, water is a tangible, sensorial, and omnipotent environment. But unlike air, historically, human beings are attached to water, which occupies an important space in the cultural imagination of societies (2017). The observable and experiential characteristics of water, its essentiality; its fluidity and transmutability; and its aesthetic qualities make it sensory in nature ([Strang, 2005](#)). Anthropological research and ethnographies of water state that “water is always more than itself” ([Ballestero, 2019, p. 495](#)), and its material presence nurtures an understanding of collective lives “in a world that is always more than human” (2019, p. 495).

What people do in space is important. It shapes their experiences. “Spaces are bought into being through people’s interactions and sensorial relationships with the materialities and nonhuman agencies of the world” ([Djohari et al., 2017, p. 3](#)). In the case studies discussed in this paper, what individuals did in a particular location in the past and what they feel compelled to do in the present matter. Their daily contact with immediate nature has changed as a result of their relationships with two distinct material spaces and states, the ‘clean’ and ‘polluted’ riverscapes. In addition to what people are capable of doing in clean riverscapes, what they are not capable of doing in polluted riverscapes is equally important because it results from the material changes in space. In this paper, we demonstrate how environmental subjectification is aided by both action and inaction (or the inability to act) in contaminated riverscapes.

Drawing on these different streams of literature, and foregrounding affect, we demonstrate that peoples’ subjectivity is relational and is transformed through situated lived experiences and emotional and material entanglements with a nature they have lost. Governmentality and environmentality studies focus on how the system under capitalist or neoliberal capitalist regimes, forces and controls human beings in a certain way and ensures its success. Initial political ecology works focusing on neoliberal environmentality showed how large conservation projects had impacted humans and their relationship with nature because of conservation governmentality. While structural influence drives human actions, all the actions by ordinary people to save natural spaces and resources cannot be subsumed under this. Their actions are not just motivated by capitalistic economic logic but also emerge from their emotions and concern for nature. While humans are known to be political, economic, and cultural beings ([Lynch et al., 2020](#)), they are also *homines curans* (caring people) ([Tronto, 2017](#)). They care for each other, nonhuman beings, and abiotic nature. Affective relationship perspective helps thinking about, and understanding, relational and interdependent lives of humans, other species, and environments. It also aids social justice thinking, recognizing the interdependency of human and natural worlds and their creation, management, and protection ([Lynch et al., 2020](#)). Foregrounding affect and affective relations “as a fount of ethical thinking, relating and working; and in so doing identify “cultural residuals” ([Williams, 1977](#)) of care practices that could be generative sites of resistance to the logic and ethics of neoliberal capitalism” ([Lynch et al., 2020, p. 12](#)).

To summarize, literature that followed [Agrawal’s \(2005\)](#) environmentality analytic focused on the creation of environmental subjects through governmental rationality in the context of biodiversity and forest conservation. The studies have primarily given importance to technologies of power in the formation of environmental subjects. On the contrary, recent studies from various sub-disciplines of political ecology and emotional geographies examine the combination of technologies of power and self in the subjectification process. This new scholarship enriches environmentality research and provides a framework to engage with subjectivities beyond governmental rationality and rigid conceptions of environmentality by considering local agency, technologies of self, identities, embodied practices, and entanglements.

3. Methodology

This study is based on the first author's sociological field research conducted between 2016 and 2018, using in-depth qualitative interviews, participant observation, and archival research. The first author interviewed local inhabitants turned activists involved in the movements, local inhabitants of the polluted riverscapes, panchayath (village council) members, and company workers. The informants were selected through snowball sampling, starting with key informants who subsequently helped identify potential informants. The interviews were conducted in Malayalam, the local language, and later transcribed into English for analysis by the first author. While the cases described here are based on 15 interviews from two environmental movement sites, the first author's research on environmental protests across Kerala has also contributed to the understanding of affective relation with immediate nature.

The duration of the interviews ranged from thirty to ninety minutes. We sought the interviewees' consent for participating in the study and tape-recording verbally to build trust and avoid discomfort that physical consent forms and formalities create. We used pseudonyms to maintain the anonymity and privacy of all respondents except for the two life-history narratives provided. The life history narratives are not anonymized since the stories of these two activists have often appeared in mainstream media. Field-noted data was also collected by participating in the meetings organized by actional councils, attending council's regular meetings, and being a part of movement action planning. We also analyzed life histories of selected activists, textual materials related to the movements, pamphlets, newspaper reports, and scientific and popular articles in English and the vernacular.

The first author's position as an environmentally inclined researcher and his acquaintance with the Society for Environmental Education in Kerala (SEEK), a pioneer environmental organization in Kerala, helped him gain access to local activists and organizations. This environmentalist position and participation in local protest activities enabled him to build trust with movement activists and create a communicative space.

4. Two movements against industrial pollution in Kerala—the case of Eloor and Kathikudam

Kerala occupies a unique place among Indian states due to international attention it received for its development model, the 'Kerala model of development.' Scholars across the world hailed the state for its outstanding accomplishments in human development and poverty reduction (Véron, 2001; Chathukulam and Tharamangalam, 2021). Kerala's history is distinctive as it is one of the few regions globally that has succeeded in bringing modernity without the aid of advanced industrialization. While Kerala's unique foray into development made it a relatively better place to live, the environmental and livelihood risks inherent to the development projects in Kerala were relatively high (Raman, 2012). The highly vibrant civil society of Kerala has been challenging these risks through various protest movements.

The number of environmental struggles that emerged in response to multiple environmental challenges ranging from forest loss to industrial pollution makes Kerala an important region for environmental activism in India (see Gopinath, 2022; Haridas, 2017 for details of various environmental struggles in Kerala). While the state government promotes Kerala as a unique travel destination, focusing on "wellness tourism" and using the catchphrase 'God's Own Country' (Bandyopadhyay and Nair, 2019) on the one hand, corporate-led pollution has been wreaking environmental destruction on the other (see Charuvilayil, 2013, Nambesan, 2017, Rajesh, 2019). In this paper, we present two movements against industrial pollution—Eloor and Kathikudam movements—as case studies to demonstrate how affective labor, namely, involvement in protest movements and embodied practices in polluted waterscapes, shapes environmental subjectivity.

4.1. Eloor movement

Eloor is a suburb of Kochi city in the Ernakulam district of Kerala. It is an island (14.21 km²) formed between two distributaries of the river Periyar. Massive industrialization since the 1970s in Eloor and the industrial waste generated caused severe pollution in the river and the surrounding landscape. People of Eloor have participated in protests to save the river and land from severe pollution by heavy metals and hazardous organochlorine chemicals such as Dichloro-diphenyl-trichloroethane (DDT) (Labunska et al., 1999). The Eloor movement against industrial pollution began in protests around the illegal discharge of wastes into the Periyar river by about 200 industries in the Eloor-Edayar industrial area (See Fig. 1). Greenpeace, the international environmental NGO, declared Eloor a "toxic hotspot of global proportions" in 1999 (1999). The history of Eloor movement goes back to the Silent Valley movement period in the 1970s.² Kunjappan, a Naxalite³ turned social activist (former municipality councilor from Eloor), built the struggle during the 1970s and 1980s. According to Prakasan, the coordinator of *Periyar Malineekarana Virudha Samithi* (Periyar anti-pollution group, PMVS hereafter), a citizen movement fighting against industrial pollution in the area:

"The initial protest was started in 1972 by Kunjappan *chettan*,⁴ who is in our *Samithi*, and now a municipal councilor... During that time, if you come out to Eloor, there was so much fog that humans can't see [each other] even if they sit very close...Kunjappan staged the first protest by holding a board saying, 'Welcome to the Gas Chamber in Eloor'." (Interview with Prakasan, Eloor, June 2016)

While pollution has become a part of the daily lives of the residents of Eloor since 1972, an incident of Kuzhikkandam creek catching fire in 1990 intensified local inhabitants' concern around pollution. The creek caught fire due to the presence of the highly inflammable chemical toluene discharged from a company-Hindustan Insecticide Limited. As a result, in 1990, the inhabitants of Eloor and adjacent places gathered and formed PMVS to fight against river pollution.

4.2. Kathikudam movement

The Kathikudam movement involved protests against the Nitta Gelatin India Limited (NGIL) company which discharged wastes into the nearby Chalakudy River in the Thrissur district of Kerala. Kathikudam is a small village in the southern part of Thrissur District. The Kerala State Industrial development corporation (KSIDC) and a Japanese company - Nitta Gelatin - started a joint venture named Kerala Chemicals and Proteins Limited (KCPL) in 1975.⁵ Later in 2008, Mitsubishi Corporation bought some of the shares from KSDIC, and the company was renamed Nitta Gelatin India Limited.

Commercial production by the joint company started in 1979. The company produces ossein, a chemical used for manufacturing gelatin and dicalcium phosphate from crushed animal bones. The main product, ossein, is produced using 0.12 million liters of hydrochloric acid and 20 million liters of water per day. One hundred and thirty tons of crushed animal bone is used daily as raw material for production (Rasheed, 2013).

The company uses water from Chalakudy River (See Fig. 2) for its processing. It also discharges the wastewater and waste material with a high concentration of chemical content into the same river. In the early 1970s, a chemical factory worker, Kannambalath Ayyappan Nair,

² Silent valley movement was an important environmental movement to protect Silent Valley, an evergreen forest in Kerala. It started in 1973 to protect the forest from a hydroelectric project.

³ People who support Maoist political ideology and engaged in insurgency.

⁴ *Chettan* is the Malayalam word for elder brother.

⁵ See <https://gelatin.in/milestones> for details.

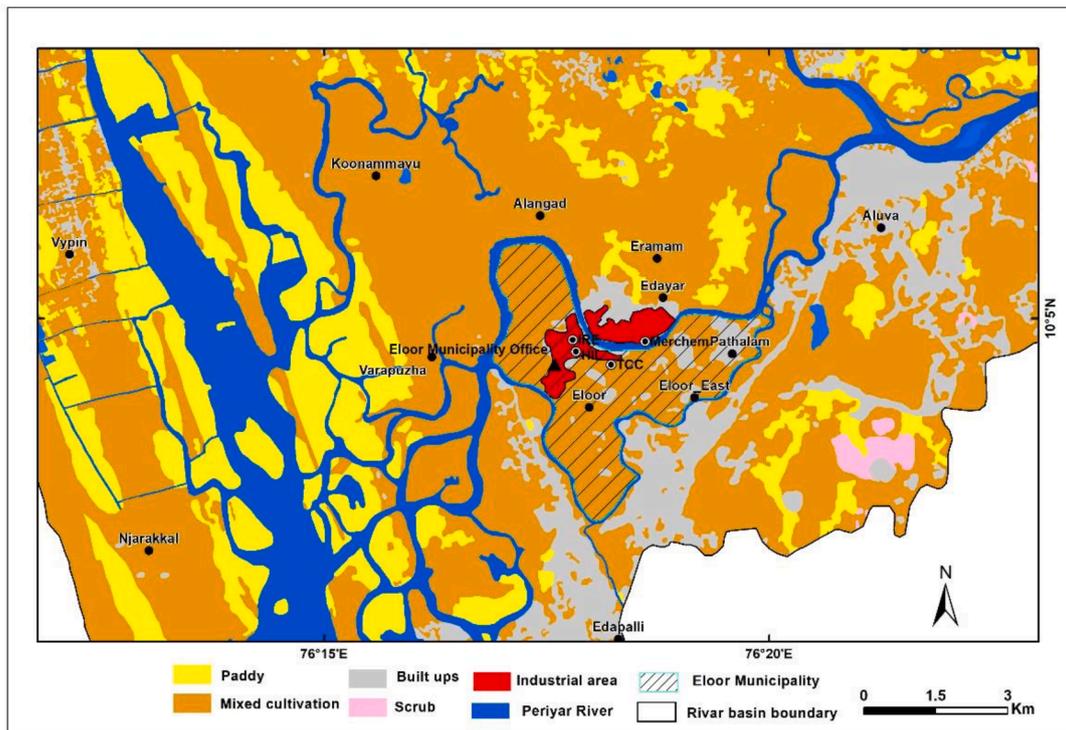


Fig. 1. Map showing industrial areas in Eloor-Edamalaray region and land use in selected areas of Periyar river basin (Credit: Alex C.J.).

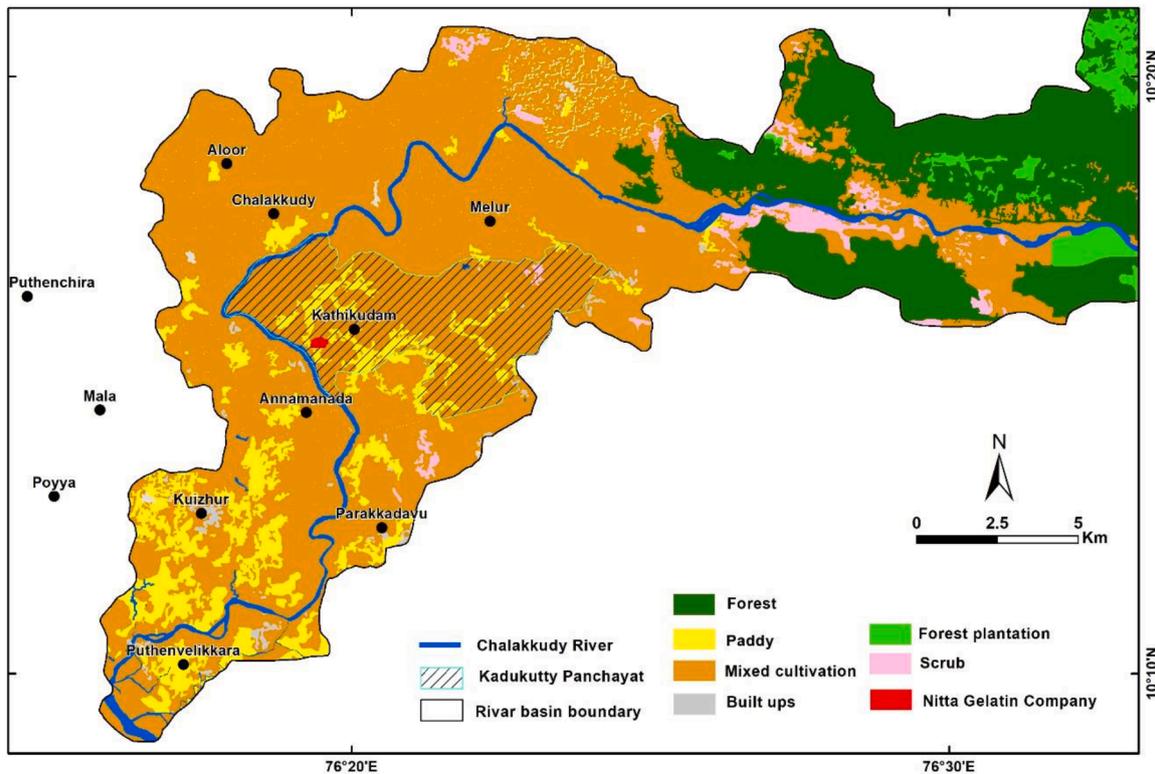


Fig. 2. Map showing Nita Gelatin company and land use in selected areas of Chalakudy river basin (Credit: Alex C.J.).

warned people about the problems they would have to face in the future. But the development aspirations of the general public at Kathikudam did not give ear to that voice (Rasheed, 2013). Later, during 1995–96, under the leadership of a *paurasamithi* (Citizen Committee) people started agitating against the company for its violation of environmental rules

and dumping waste into the Chalakudy River. Cases of several illnesses like cancer, lung diseases including asthma, and skin diseases were recorded in nearby areas (Rasheed, 2013). The agitation was initiated by local leaders and gained support from different social actors. KPCL *Malineekarana Virduha Samithi* (anti-pollution group) organized a

convention at Kathikudam Upper Primary School in June 2003. However, this protest weakened later because of low participation. Villagers' attribute multiple reasons for this, including allegations of movement leaders receiving help from the company.

The Nitta Gelatin India Limited Action council (NGILAC), which is currently organizing and leading protests against the company, was formed on March 23, 2008, under the leadership of two activists, Jayan Pattath and Appu Kuttippat. Post-2008, Kathikudam encountered many issues like surfacing of dead fishes in the river, which led to agitations at the local level and, later, mass-based collective action. The protests intensified in 2013 when people found many dead fishes floating in the Chalakudy River during May 28–31. As a result of continuous activism, in 2017, the National Green Tribunal (NGT)⁶ set 24 conditions to be met by NGIL. The directions included the relay of all underground pipelines which carry effluents, to above ground level, and making efforts to achieve zero liquid recharge to the extent possible.

Both Eloor and Kathikudam are movements that lend themselves as in-depth 'affective' case studies against industrial pollution. In Eloor, there are about 200 industries along the banks of the Periyar river. While the discharge of effluents from many factories in the Eloor industrial belt pollutes the Periyar river, one industry (NGIL) pollutes the Chalakudy river. However, the effect of pollution in both areas had severe impacts on neighboring areas. Periyar and Chalakudy rivers play an important economic and cultural role in the lives of those inhabiting their catchments. Most informants highlighted the importance of these rivers by recalling the glorious past of the rivers and associated memories. We present these two case studies to highlight the importance of affective relationships in forming environmental subjectivities in different locations of pollution. Our intention is not to compare or contrast one another but state the potential for generalizing the role of affective relation with nature as subject-forming force.

Unlike environmental movements like the Silent Valley movement, which was initiated and led by middle-class college teachers, scientists, poets, and activists, the Eloor and Kathikudam movements organically emerged from within and locally. Recent works by Satheesh have shown the Eloor movement as a space of tension between labor and environmental conflicts (Satheesh, 2021, 2020). In the case of Kathikudam, Parvathy Binoy highlighted gendered precarity (Binoy, 2014) and the relationship between pollution governance and everyday life of community (Binoy, 2021). In both cases, the movement gathered pace when villagers noticed effluents from the industries polluting their rivers and extreme events such as rivers catching fire and dead fishes surfacing on the water due to pollution. Sections 5 and 6 contain the analysis of interviews, discussions, and textual materials. They discuss how pollution acts as a major driver for the villagers to come together and participate in movement activities, and how people's subjectivity is transformed through their lived experience of polluted waterscapes, emotional and material engagements with their immediate nature, and affective labor.

5. 'Pollution shocks' and local response to changes in the landscape

Ruined and thus lost landscapes become a paradise of action (Lang, 2019), bringing people together. They organize around it to revive or mourn. Eloor and Kathikudam are lost landscapes or riverscapes for villagers as they degraded beyond limits due to heavy industrial pollution. In this section, we discuss the materiality of everyday lives of villagers as river-dwellers. Villagers' relationship with the river is affective and embodied, but the changes in the river due to pollution are experiential too at a bodily level. Pollution shocks are shocks to affective and embodied experiences, which resonate with people and are articulated

⁶ National Green Tribunal (NGT) is a special tribunal formed to handle and speedy disposal of cases related to environmental issues. NGT is formed under the National Green Tribunal Act, 2010 by the Government of India.

in discussions on what they used to be able to do in the river.

When you walk along the old depot road in Eloor at different times of the day, you realize that the street remains empty throughout. The pungent odor engulfs and suffocates you. Journalist Chithira Vijayakumar notes the chemical stench spreading everywhere in Eloor, and residents' remarks about tasting chemicals in what they eat and drink:

"...to the fact that something is wrong is the migraines and nausea that begin to set in when you spend more than a few minutes in certain areas. Or when several residents talked about how you could taste chemicals even in the tender coconut water and eggs in Eloor. Or the series of smells that follow you, ranging from the sickly stench of decomposing flesh to sharp chemical scents that claw at your throat for hours" (Vijayakumar, 2019, pp. 12–13)

Kammar, a company worker and trade union activist who was part of the movement, attributes heavy pollution in the region to sulfur dioxide emissions. He says:

"In the morning, vehicles cannot move on the road due to the sulfur dioxide emitted from the factory. They used to move very slowly with the lights switched on. If you get trapped in the heavy smoke, you will suffocate. Many people get hospitalized due to breathing issues at that time. I entered the protest movement in such a situation." (Interview with Kammar, Eloor, December 2017).

While the river Periyar continues to be polluted by effluents discharged from the factories, Eloor reemerges in the news whenever it turns sickly yellow, bright blue, dull green, solid black, or brick red (DECCAN Chronicle, 2015; Special Correspondent, 2021; The New Indian Express, 2022). A study in 2015 estimated that Periyar displayed chameleonic properties by changing color 44 times. There were massive fish kills at least on 23 such occasions (Centre for Development Studies, 2019). The main reason behind river discoloration is eutrophication. Excessive nutrients in the water body lead to algal bloom. After a few days, algae will die and decay, resulting in foul smell and discoloration. According to the pollution control board, huge quantities of sewage from the nearby township are the prime reason for eutrophication. However, residents and environmental activists charge that discharge of untreated effluents by chemical industries is causing eutrophication and discoloration (The Hindu, 2018).

Based on an environmental assessment carried out by the Central Pollution Board, the Ministry of Environment and Forest, Government of India has declared the industrial cluster area in the Greater Kochin Area (GKA) as one of the critically polluted areas in the country (KSPCB, 2010). The Comprehensive Environmental Pollution Index (CEPI) score for the area is 75.08.⁷ The GKA has 83 red category industries and seven orange category industries. The red category includes severely polluting industrial sectors and has a pollution index score of 60 and above. Out of the 83 red category industries, 79 (95 %) fall within the industrial cluster in Eloor and Edayar region. Together, these areas constitute 17.4 km² (2.8 %) of GKA (KSPCB, 2010).

Hindustan Insecticides Limited (HIL), an industry in Eloor, produces Dichloro-diphenyl-trichloroethane (DDT). DDT is a harmful chlorinated chemical identified for elimination by the Stockholm Convention on Persistent Organic Pollutants (POPs) in 2001.⁸ In India, DDT is banned, and the production is mainly intended for export to African countries, including Namibia, Zimbabwe, and Botswana. Environmentalists argue that HIL plays a major role in polluting Periyar river. The pollution resulted in the disappearance of 16 fish species, including eels, catfish,

⁷ The CEPI is an index formulated by the central pollution control board in collaboration with Indian Institute of Technology, Delhi to rank pollution in different parts of the country. CEPI greater than 70, on a scale of 0 to 100 has been identified as critically polluted.

⁸ <https://chm.pops.int/Implementation/PesticidePOPs/DDT/Overview/tabid/378/Default.aspx>.

goby, and cyprinids (Shaji, 2008).

A combined study by Greenpeace and Exeter University, Britain, found that water from Nedunkandam creek in Eloor contained more than 100 organic compounds (Stringer et al., 2003). Out of this, 39, including DDT, were highly toxic. DDT and related compounds are highly resistant to degradation and will accumulate in earth and water (2003).

Unlike Eloor, the number of polluting industries in Kathikudam is just one. However, this does not reduce the intensity of pollution and people's suffering. The pollution caused by the effluent discharge by NGIL impacted local inhabitants and the environment in multiple ways. There have been cases of agriculture loss due to usage of the river's polluted waters. For instance, after pumping water from the Kakkad pump house, situated very close to the effluent discharge point in Chalakudy River, a farmer lost his cucumber crop. In December 2005, the Chalakudy Munsiff Court⁹ ordered the collection and examination of samples of water and soil from the area, following the farmer's complaint against the company for polluting the water (Jananeethi, 2010). In May 2006, many fishes were found dead in the Chalakudy River at Pulikkadavu and Appinikkadavu. On receiving complaints from local people, the Annamanada panchayat's authorities visited the area and took up the matter with the District Collector. Water samples were tested in the Regional Analytical Laboratory and were found to contain acidic elements. Water from this pump house was supplied for drinking to thousands of people belonging to Kodungallur Municipality and Mala, Poyya, Kuzhur, Annamanada, Puthanchira, Vellangallur panchayats (Jananeethi, 2010).

In May 2013, fish worth 3–4 million dollars were found dead along the Chalakudy river in Annamanada in Kathikudam (Shaji and Sankar, 2017). The surfacing of dead fishes became a frequent scene for the villagers. While the untreated effluents from the factory poison the river, killing the fish, the village's wells are also poisoned by chemical seepage. "We can't use water from our wells. Can't plant anything in this soil. Can't even breathe the air here", worries Rosamma, who has been at the forefront of the Kathikudam movement. Her husband died because of lung disorders caused by heavy pollution. She sees pollution as responsible for several chronic diseases in the area. Our informants claimed that smoke always surrounds the village area. Hinting at the health impact of the pollution, they mentioned the absence of older adults in the houses. Many of them died at an age range between 55 and 65 years, either due to cancer or lung diseases.

Jessy, another active participant of the movement in Kathikudam, came to the village after her marriage. Her mother-in-law would take her to the river, and she enjoyed bathing in its flowing waters. However, this is impossible now since the "company destroyed the river," she says. "The company discharged solid water into the river, which smells like shit. How can we bath in such polluted river?" she asks. The foulness of the odor was indescribable, forcing Jessy to place soap bars near her bed while sleeping.

Pollution has resulted in various socioeconomic issues as well. Earlier, agriculture was the primary source of income. Due to acid in the effluence, the land has become less fertile. The paddy fields, which yielded 15 quintals of rice per hectare earlier, do not yield anything now. They have to purchase rice from shops now.¹⁰

These 'pollution shocks' - death, disease, stench, color change, and soil infertility - at different periods brought people together as a movement to protect their rivers. Rosamma recalls the memories associated with the river and the reason behind their involvement in the mobilization:

"We grew up with the river, by playing and swimming. We all used to go to the river at night to bathe. Now you can't step into the river. That makes me sad. We used to take water in both palms from the river and drink it. Our ancestors taught us to keep the river clean and pure. Elders won't even allow kids to pee in the river. We treated the river with such high respect. That is what became like this [polluted] now. We decided to act since we want our river back" (Interview with Rosamma, Kathikudam, June 2017).

Pollution in its multiple facets, such as changing the colors of rivers, causing fish deaths, polluted wells, and foul odor in their immediate environment, are everyday sensory encounters for villagers. Jessy explained how desperate she was to escape the foul smells and polluted waters.

"The smell was unbearable, and water was unpotable. I wanted to escape from these. One couldn't sit here like this in the past. The strong odor of that yellow-colored sludge won't even allow you to sleep. Still, they discharge it into the water. People saw this when the pipe was broken the other day." (Interview with Jessy, Kathikudam, June 2017)

Sini, another woman who lives close to the NGIL factory, talks about the frothing river:

"We used to go to the river for washing and bathing. That time it was not this much of a problem. But now froths are seen on the surface of the water in most parts of the river. We see this while working in the nearby area... Every-one in the village joined the movement except a few who work in the company." (Interview with Sini, Kathikudam, June 2017).

The material and psychological effects of these pollution shocks were a wake-up call that brought villagers together. They fought to save their riverscape.

Not just the fish kill or changing color, as Prakasan says, in the case of Eloor, they also experienced incidents of river catching fire due to pollution. Someone like Prakasan, who admits that he was not environmentally conscious, later turned out to be the one who led the movement because of his lived experiences with pollution and the shocks it caused.

"I came to the movement in 1990. At first, my involvement was not due to a clear consciousness of environmental issues. The *Kuzhikandam thodu*¹¹ in Eloor, which is flowing near us, caught fire one night, and we realized that it was due to a liquid called toluene released by a company called Hindustan Insecticides Ltd... The houses in the neighborhood were damaged due to this fire. Those who breathed that smoke had suffocation ... after two days, a big convention was held in Eloor. They called me too and asked me to participate; I had just finished my degree studies. They formed a big committee and appointed me as a joint convener, and it was then I began my involvement in environmental issues and activism." (Interview with Prakasan, Eloor, June 2016)

In her work on environmental subject making in a human-disturbed environment, Lang (2019) discusses the influence of the material nature of waste and its effects on the lives of fishers. The material life of 'things' helps one realize the importance of lost landscapes. Waste and pollutants act as agents of regaining memories. Memories are always there, dormant in mind but not cherished more often. When probed about the reason behind joining the protest movement to defend their immediate nature, local inhabitants quickly mentioned the sight and smell of pollution and the resulting trauma. They also affirmed that they were not initially aware of environmental pollution and its impacts, but their involvement in the movement and subsequent awareness, helped them

⁹ A Munsiff Court is the court of the lowest order in a district, which handles civil matters.

¹⁰ Interview with Jessy, Kathikudam, June 2017.

¹¹ Malayalam word for a canal or creek.

understand the issue better and also become sympathetic to people who undergo similar suffering across the state. Response to the changing riverscape, and memories about its glorious past played an important role in transforming their subjectivity.

For Lora-Wainwright et al. (2012), people consider pollution as 'inevitable' and try to co-opt this state. This means learning to live with the pollution, with protests focussing on compensation instead of against pollution. However, in the cases detailed here, a strong relation with nature meant that the community protested against the pollution instead of fighting for compensation. For instance, a women informant elaborated on how inseparable the river was in her life. She also talked about NGIL's strategies for stopping villagers from joining protests by offering jobs or compensation. When queried about getting a job offer from the company, she expressed her 'hatred' at it for polluting and destroying her village. Her passion was also evident in her voice, and one could sense the hurt she felt looking at the polluted river. She said:

"We will not join the company even if they offer. We prefer to beg [in the streets] instead of taking their offer. The company has not done anything for the village except destroy it. We hate it. We do not even drink the tea served by the company when we go for MGNREGA work."¹²(Interview with Sini, Kathikudam, June 2017)

While in Eloor and Kathikudam, specific pollution incidents motivated villagers to act collectively against river pollution, changes in their everyday material and affective relationship with the river aided in the formation of environmental subjectivity. We discuss this in detail in the following section.

6. Riverine relations and the new individual and collective subjectivities

Ballestero (2019) shows how the "force and material presence" of water frames efforts to address collective lives in an entangled world. Individuals associated with Eloor and Kathikudam movements have fond memories of the river in the neighborhood. They recall the multiple roles of the river in community life. They remembered growing up with the river, playing and swimming in it, taking water in the palms, and drinking.

The properties of water inspired stories of "circulation, fluidity, and movement that include nonhuman life forms and socialities" (Ballestero, 2019, p. 406). Water has become a site for "holistic interconnectivity" (Schmidt, 2017) and plays an important role in subjectification. The constant interactions with water make people realize themselves as water or "hydraulic citizens" (Anand, 2017). At this moment of realization, they turn to the state and assess its responsibility to deliver basic services (Bulled, 2015). Citizenship in this process entails "iterative, discrete and incremental approaches" (Anand, 2017, p. 6) of monitoring, interrupting, and rerouting money and information flows that move water. On the other side, when the relationship with the state is antagonistic, people take subject positions as defenders or protectors of water (Ballestero, 2019). In our case studies, people assume latter positions to protect their rivers from pollution by state-supported industries.

In the following sections, we discuss how villagers' affective relationship with the river leads to their involvement in protest movement activities. The experiences of pollution, affective relationships, and affective labor enables them to continue and advance as environmental subjects. We discuss this both at the individual level by highlighting life histories of two activists who dedicated their lives to river protection despite their adverse conditions, and at the community level by discussing the involvement of villagers in the PMVS and NGILAC in Eloor

and Kathikudam, respectively.

6.1. Life of two activists

6.1.1. "Welcome to Eloor Gas chamber"

The first author heard about Kunjappan during an interview with the convener of PMVS. When he met him, the 69-year-old Kunjappan was on the *Kadavu*- the bathing ghat. That was a rare, unpolluted part of Periyar in Eloor. Regardless of the weather, Kunjappan spends some time swimming and bathing in the river, which he says, provides him the energy to stay active the whole day.

Born in a farmer family, he believed water and soil are crucial parts of his life. However, this belief did not translate into a larger concern about the need for environmental protection and conservation. During the 1970s, Kunjappan noticed changes around him. He realized the Periyar, the lifeline of Eloor, was being polluted. "You don't know how this river used to flow. It was very fast, rich, and pure during my childhood". He recalled the fast-flowing and resource-rich river of his childhood.

"We used to have a fish curry with rice every single day for lunch. After keeping rice for cooking, my mother would go down to the river to catch fish. She would return shortly with juicy fish to cook for us. This was the routine. There has never been a day in my memory without fish. Fishing for my mother never took more than a few minutes. Periyar was full of different kinds of fishes." (Interview with Kunjappan, Eloor, December 2017).

Puzzled by the massive fish kill in the river in the 1970s, Kunjappan began thinking about what was happening around him. During his walk to the office in the early hours, he saw air engulfed by fog. "It took me a while to discover the fog was caused by toxic gases coming from several industries along the banks of the Periyar," he recalled. That was when Kunjappan started his agitations for saving the Periyar. He put up a hand-written board at Eloor junction that read, "Welcome to the Eloor gas chamber." Despite his advancing years, Kunjappan continues his struggle for Periyar, now as an elected member of the Eloor Municipal Council.

6.1.2. The Periyar Riverkeeper

V J Jose, an environmentalist, and social activist, grew up on the banks of Periyar River at Eloor island. When he realized that the river where he learned his childhood lessons in swimming was being contaminated with toxic waste, he decided to act.

"My relationship with the river began when I was only five. I was introduced to the river by my father, who was a schoolteacher. He would teach in a distant place and could come home only on Fridays. I would wait for him to return from school and give me swimming lessons in the Periyar. As a child, I loved to play and swim in the river for hours...I grew up seeing the Chinese fishing nets behind our house lower into the river and come up with nets full of fish. Later with the help of my friends and my father, I learnt to catch fish using the Chinese nets after school hours." (Jose in an interview with Das, 2010).

Jose began his solo fight to save the river. In an effort to obtain information on environmental and human rights issues, he has submitted 254 Right To Information (RTI)¹³ requests. Jose established himself as a valuable source of information for locals in Eloor and the surrounding areas. They also confided in him about their problems with river pollution (Das, 2010).

¹² Mahatma Gandhi National Rural Employment Guarantee Act or MGNREGA, 2005 is a labor law and social security measure in India that aims to guarantee the right to work.

¹³ Right To Information Act 2005 or RTI act mandates response to citizen's request to government information. The primary object of the RTI act is to bring transparency and accountability in the working of the government. See <http://rti.gov.in/> for more information.

Recognizing the relentless work of this ordinary individual in Kerala, Greenpeace India approached him in 1997 to collaborate. In November 2002, Greenpeace announced Jose as a 'riverkeeper'. Jose became the second riverkeeper in the world after Tom Whyatt, the riverkeeper of Hudson River in the United States (Chambers, 2009). The riverkeeper, a trained environmental activist with a boat, a night-vision camera, and other tools, maintained an eye on the discharge of industrial effluents into the river. Jose regularly took water samples from several riverside locations and recorded instances of waste dumping and effluent discharging. After sampling, with his mobile laboratory's help, he conducts tests, records the degree of pollution, and then notifies the KSPCB and other relevant agencies (Charuvilayil, 2013).

Even after Greenpeace ended their Periyar campaign in 2005, Jose continued to use what little money he had to protect the river from pollution until his death in 2019. To meet his daily needs and expense for his efforts to protect the river, he took up the job of an ordinary guard at an ATM for a meager salary of 38 USD (Das, 2010).

Both Kunjappan's and Jose's lives shed light on the lives of many other activists who are a part of movements in Eloor and Kathikudam. Their childhood memories of the river, affective and embodied practices in riverscapes, and its current state drew them to the movement. Once they entered the movement, they spent substantial time on movement-related activities, jeopardizing their livelihoods. While Kunjappan was at the forefront of PMVS, Jose was an independent activist and continued his association with the Periyar protection movement from time to time. As quoted earlier, Kunjappan was the one who first raised concerns over pollution, making villagers conscious of pollution, and later influenced both older and younger folks to be a part of the movement. During interviews, both the elderly and younger informants mentioned how Kunjappan's activities influenced them to join the movement and maintain a spirit in their fight against pollution, even when false cases were filed against activists and the State Pollution Control Board passed orders favorable to toxic industries.

On the other hand, becoming-river keeper, Jose creates a new affective relationship with the river through the act of sampling, measuring and observing changes in the river. Tools such as night vision cameras and test kits aid in the new ways of seeing and interacting with the river. Focusing on angling practices, Bear and Eden (2011) show how anglers' becoming-fish and fish becoming-human. They illustrate "angling as a transformative practice whereby anglers and fish adapt through their coconstitutive encounters" (p. 336). Likewise, here, the mutual practices of seeing and interacting with the river make both river keeper and river. While in the case of Kunjappan, the memories of the river and the experience of changing materiality eventually drive him to act for the river's protection, in Jose's case, along with the memories about the river, new affective relationship with the river as a river keeper plays a role in the becoming of environmental subject.

6.2. Immediate nature and affective relations

In Eloor and Kathikudam, the river is an important factor that brings people to the movement. They saw their river water, clear as glass, turning sluggish and dirty, making it unpotable. In Eloor and Kathikudam, older and younger folks want to bring their river back to life. As Kunjappan says: "I have seen all the stages of this river; my dream is that I should see its re-birth before I die" (Quoted in John and Varier, 2017a).

The villagers are sad about the current situation of their river and want to get away from the feeling of alienation towards it. Unable to satisfy people's needs, its polluted state even ensures they keep their distance from it. According to Yaka (2017), even when physical contact with the river cannot be achieved, memories of the once-materialized corporeal relationship serve as a foundation for an imagined connection with the river. Besides activist influence and memories, this emotional attachment or affective relationship with the river motivates their participation in the movement and protest marches organized by the PMVS and the NGILAC. While their memories about the unpolluted

river and embodied practices led to the transformation of subjectivity, this new subjectivity ensured their involvement in collective action against pollution. Their involvement in the movement, at the same time, strengthened their newly formed environmental subjectivity.

The river played multiple roles in their life before it was polluted. It was a place to take a bath and interact with neighbors for a few. The very process of washing clothes in the river together becomes a social activity and helps establish a bonding between the women in the area. Through practices of soaking, rubbing, and ingesting water, people develop physical and symbolic relations with minerals, viruses, bacteria, animals, plants, and the river as a whole (Ballesterio, 2019). The river thus becomes an unavoidable part of inhabitants' lives. As Suni an activist in the Kathikudam movement says:

"People here can't live by forgetting the river. Even the rich people can't dismiss or avoid the river from their life...Like the way I am attached to the river, others also have an attachment. The intensity of the attachment might vary. But the river is there as the base. It was a part of our virtue...All family members used to go to the river [to wash clothes and bathe]. The riverbanks were a place for social interaction and exchange. After washing their clothes, women will also help wash others' clothes. This is not a simple thing. I have memories of such give and take between people [who gather at the Kadavu]. The basic thing that ties the life of the people here is the river. I believe, to an extent, all involved in the protest has an emotional attachment to the river." (Interview with Suni, Kathikudam, June 2017).

Here, Suni recalls memories of performances where women in the community participate. His recollections about the river and his own community's relationship with it emphasize the river's role in bringing "affective sociality" (Raffles, 2002), where it becomes a site for forming and strengthening social relations. Through its senses, the body interacts with both other human and non-human bodies in the world. Affects arise within these encounters of human bodies and flowing water resulting in the entire range of "sensuous- affective responses that the human body is capable of" (Yaka, 2017, p.12). In addition to being innately embodied, our interactions with water also profoundly influence how we feel embodied (Sultana, 2009; Strang, 2005).

The Spinozian concept of affect helps us understand how "people's sense of self is shaped by their affective capacity to respond to other bodies" (Singh, 2013, p. 190), both biotic and abiotic. The relationship with nature is intimate in the sense that Raffles (2002) describes local knowledge as intimate. Raffles suggests that intimacy aids in the social production of knowledge and reconstitutes human-nature boundaries. However, this intimacy is embodied and relational. For Suni and many others who are active in the Kathikudam movement, their memories of affective interactions with the abiotic river and response to the current polluted riverscapes help in the process of "becoming" of people who care for their environment. For Kunjappan, Jose, and others in the Eloor movement, the river Periyar is a part of their lives, and protecting it from pollution became their goal.

Singh (2013) argues that "everyday embodied experiences of changes in the landscape" (p.193) have an important role in the shaping of local perceptions about the environment. According to her, people's "understanding of environmental crises was not merely delivered to them through discourses of the environment and the techniques of environmental governance; rather, it was perceived and lived in affective relations" (p.193). Men and women of Eloor and Kathikudam joined protests after experiencing industrial pollution of their riverscapes. The memories of movement participants of unpolluted river pasts, the affective river relationships they admired, and material and sensory experiences of pollution together helped form an environmental subjectivity. While the life histories of Jose and Kunjappan are exemplars of affective relationship with the river, many other villagers' embodied experiences of pollution discussed in the paper are testimonies on environmental subjectivity formation.

6.3. Affective labor of protest movement activities

The movements against pollution in Eloor and Kathikudam were coordinated by local councils, the PMVS and NGILAC. These councils were formed when local inhabitants started observing river pollution, its impacts, and when they realized the need to collectivize for the protection of their rivers. Members of these organizations are from various socioeconomic categories and gender—most of them are daily workers struggling to meet their means and ends.

In Eloor, the members of PMVS have been spending their time in various activities to stop industries from polluting the river, including organizing protests marches, sit-ins, relying on legal measures to get stop orders from the courts, and forming human chains. On August 1, 1998, PMVS organized a protest forming a human chain across Periyar. During the interview with the first author, Prakasan said that forming a human chain was the first people's protest organized by the PMVS. He recalled: "there were many small boats...we tied coir across the river for people to hold and stand in the river. The flow strength was very high. It became a big protest, and all media covered it on the front page."

Between 1998 and 2016, Prakasan says, "was a period of protests without any gaps." During this period, PMVS also coordinated and assisted many scientific studies that quantified the intensity of pollution and its impact on the Periyar river. While such affective labor for saving the river, consumed a good amount of members time, they also had to face many setbacks. Industries and trade unions filed many cases against activists, alleging they were Maoists and anti-nationals (John and Varier, 2017b).

In Kathikudam, NGILAC members meet around 8 pm daily in a small shed just outside the main gate of the Nitta Gelatin company that serves as a council room. They discuss the movement's action plans and environmental issues at regional, national, and even global scales. Most action council members are not full-time environmentalists. They are farmers, coolie workers, and government employees who adjust their work timings in participating in movement activities. The number of people gathering thus varies daily; however, a minimum of five to ten members gathers daily. The time these people spend in the council room varies from ten minutes to three hours. As Saji says, this daily gathering and discussions enabled them "to discuss even Trump's withdrawal from Paris climate agreement in 2017". They take turns to patrol during the night to watch if the factory is violating the directions of the NGT and discharging toxic effluents into the river.

Such moment participation and pollution monitoring are suggestive of critical roles played by the PMVS and NGILAC in strengthening environmental subjectivity. The PMVS and NGILAC are councils formed locally as a collective response to river pollution, and their members learned from and evolved as a group through their efforts to safeguard rivers. Therefore, they are not necessarily top-down structural forces that dictate subject formation. These local councils employed their affective labor through different protest methods, including forming human chain across the river and daily gatherings to plan collective action to curtail the pollution and protect their rivers.

While pollution shocks and their affective relationship with the river enabled the formation of environmental subjectivity, everyday involvement in the movement advanced their subjectivity, as evident from Saji's words quoted in the previous paragraph. The affective labor practices such as night patrolling which include walking, watching, and being in the river and observing, discussed in this section, are embodied and situated activities that require time and energy along with an affective relationship with nature. This affective labor helped create new ways of being with the river. It transformed the residents of the river, who had previously merely taken advantage of the resources the river provided and the happiness that came from being in the river and interacting with it, to spend their time and energy on its restoration. New affective relationship is more about giving than taking. Being an activist or caretaker for the river entails developing an understanding that goes beyond acting to save their immediate environment. It

includes showing empathy and support for efforts to conserve other farther away natures.

Though every-one we interviewed shared their relationship with and memories of the river, not all of them became activists or joined protests. There could be multiple reasons, such as different levels of prior relationships and social situations or constraints. One aspect that emerged during the discussion was social situations or constraints. For instance, while empathizing the current situation of the river, many company workers did not join in the protests due to the fear of losing their jobs. As activists claimed, many company workers support the movement against pollution and support the activism privately since they cannot participate in the movement openly. They work in polluting industries and might lose their job if they joined the movement.

7. Conclusion

This article addresses "a central problem in environmental politics: how is it that people come to a sense of commitment to their local 'environment'" (Raffles, 2005, p.183)? We provide empirical evidence for the importance of having a prior affective relationship with the nature/local environment in fostering environmental subjectivities. We explain how peoples' material and sensory experiences of pollution and memories of affective relationship with their immediate nature shape their subjectivities. We argue that this affective relationship helps the villagers notice the change in their riverscape, feel bad about it and come together to revive it. Partaking in the movement deepens their environmental knowledge and awareness of environmental issues not just in their immediate surrounding but globally.

Our findings highlight the need to encourage meaningful, affective interaction with nature if we are to safeguard environmental subjectivities well into the future. It is important to note, though, that having an emotional connection to nature does not inevitably make someone an activist or encourage them to put the environment at the forefront of their actions. The uniqueness of their relationship with nature, the strength of that relationship, and other societal circumstances or constraints, all significantly impact how their action turns out.

Agrawal's concept of environmentality and the literature that followed overemphasized the process of top-down manipulation where state forces exercised a form of intimate government through community forest management. This approach overlooked different ways that local people could self-organize and engage in comparatively independent and locally-directed forms of environmental governance. However, recent literature that applies a multiple environmentalities framing suggests that self-mobilized subjects can emerge from the grassroots through "liberation environmentality" (Fletcher, 2010, 2017; Anand and Mulyani, 2020). Related works focusing on affect and emotion have also begun to explore liberatory environmental politics (Singh, 2013). Following these critical scholarships concerning environmental politics, our analysis shows subject formation emerging from the grassroots by illustrating how emotion, care, and affective relation of people with their immediate nature act as subjectivity-forming forces. In addition, affective labor response to changes in their landscape significantly strengthens newly formed subject positions.

This study emphasizes the necessity of going beyond rigid conceptions of environmentality as a top-down structural force for environmental governance and presents a case for biopower from below by illuminating how affective labor and embodied practices influence individual and collective subjectivity. More research from affective ecology and emotional political ecology perspectives concerning environmentalities, polluted waterscapes and governance can offer more diverse insights into the working of other-than-capitalistic subjectivities and post-capitalistic futures.

CRediT authorship contribution statement

R.K. Sony: Conceptualization, Methodology, Validation, Formal

analysis, Investigation, Data curation, Writing – original draft, Writing – review & editing. **Siddhartha Krishnan:** Conceptualization, Validation, Writing – review & editing, Supervision.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

The authors do not have permission to share data.

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