

Civic Resistance for Environment Justice: A Study on Historical Conflicts of Waste Management in Kerala

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Abstract: *In the discourse of sustainable development in the state of Kerala, waste management holds a multidimensional significance—socio-political and ecological. The improper waste management treatments are seen as a plot for persistent conflicts in the history of Kerala. In these conflicts the grassroots participants question their right to have a healthy environment and life justice. Through a systematic review, the study aimed at tracing out the historical conflicts on waste management in Kerala; to identify the key players and their dynamics in these conflicts and to analyze the overall cost and outcome of these struggles. This study identified more than thirty historical conflicts of the civic against the unscientific and harmful treatment of waste which was detrimental for their daily life and the big centralized landfills which polluted the native natural resources. The state government, private companies and the public were the key players in these conflicts. Environmental degradation, human health problems both physical and mental, legal conflicts, long lasting injuries from the conflicts between the police and the commoners were able to be identified as the costs of these conflicts. It was also found that these costs are being persisting through generations after. But these conflicts were a pathway to the decentralized waste management system in the state.*

Keywords: Resistance, conflicts, environment, waste management

1. Introduction

The disparities in how the burden of environmental issues is distributed among people are the first step in the field of environmental justice. Social movements are addressing environmental justice and environmental challenges in almost every country worldwide. The unequal allocation of benefits and burdens of environmental practices and policies among individuals is the essence of environmental justice. Environmental justice refers to the conceptual connections and casual relationships between environmental issues and social justice there is two dimensions for social justice one is distributive and the other is participatory. Figueroa, R. M. (2022). Considering environmental justice in terms of distribution, it is disproportionate among different people. Who all are benefiting from it? And who all are bearing the burdens, like positive and negative externalities of environmental practices and policies? In this, the vulnerable people, like marginalized, backward, and indigenous people, are unequally distributed by the high burdens. and the wealthy are benefiting from it.

Waste management has been a persistent challenge for every state, in Kerala marked as a significant plot for many conflicts related to waste management. The unscientific treatment of waste often leading to many conflicts between civilians, governments and the private institutions., Rapidly increased urbanization and population growth, new life style and consumption patterns made crucial for the exacerbated waste generation. It made difficulty to the existing infrastructure and policies related to waste management. While waste management is essential for environmental sustainability and public health, its implementation has frequently sparked resistance from local communities, environmental activists,

and marginalized groups who bear the brunt of its social and ecological impacts.

The history of waste management in Kerala is marked by a series of conflicts arising from landfill site selections, unscientific waste disposal practices, and governmental inefficiencies. Civic resistance movements have played a crucial role in shaping policies, challenging institutional negligence, and advocating for sustainable waste management practices. These struggles have not only highlighted environmental and health concerns but have also brought forth issues of justice, governance, and social inclusion.

This study explores the historical conflicts surrounding waste management in Kerala, focusing on the dynamics between key players, including local communities, government authorities, environmental organizations, and private waste contractors. By examining the outcomes of these conflicts, the research aims to understand their impact on policy reforms, environmental sustainability, and social justice. Through this lens, the study contributes to a broader discourse on civic resistance and its role in fostering environmentally just and sustainable communities.

2. Objectives

- To trace the historical trajectory of civic resistance in waste management conflicts in Kerala.
- To analyze the roles and interactions of key players in these conflicts.
- To evaluate the socio-environmental and policy outcomes of civic resistance in Kerala.

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3. Methodology

This paper is descriptive in nature. with the available literature researcher considers articles, journals, government reports, newspaper reports, web magazines and books for review purpose. The searching key words are waste management conflicts, landfills of kerala, garbage issues in kerala, dumping yards in kerala. With the identified conflicts, researcher only selected 8 conflicts plot on the basis of centralized waste management methods.

3.1 Inclusion Criteria

- Historical protests and movements against centralized waste disposal.
- Government policies and legal responses influenced by public resistance.
- Studies, government reports, news reports and articles documents of waste-related struggles in Kerala.

3.2 Exclusion Criteria

- Conflict related to industrial or biomedical waste management.
- Cases without significant civic engagement or resistance movements.
- Study focus only socio-political analysis without technological aspects.

4. Discussion

Historical conflicts on waste management in kerala

Laloor –Thrissur -1942-2012
Chelora –Kannur -1952-2011
Pettipalam –Kannur -1952-2013
Chakkumkandam –Thrissur -1970 –still continues
Njeliyanparamb – Kozhikode -1994 - still continues
Vaduvathur –Kottayam -1998-2014
Vilappilsala –Thiruvananthapuram -2000-2015
Brahmapuram – Ernakulum -2007 - 2021

The state of Kerala has witnessed many conflicts related to waste management. Centralized Improper waste disposal in landfills is the primary reason for the conflicts. The harmful impact of waste disposal adversely affects the environment and lives of the people who live in the landfill. The suffering made the people struggle against improper waste management treatments. Throughout the history of struggles, the study identified 11 important places as the ground of the central conflict. Most conflicts happen simultaneously in specific regions.

Laloor

Laloor is the foremost ground in the history of waste management conflicts. Laloor lies at the center of Thrissur District in Kerala, within Ayyanthole Panchayat. The conflicts exist for more than 30 years. Waste dumping in landfills started in 1942. the waste is from the different regions in the Thrissur district. The waste includes chemical, food, agriculture, human and biomedical. The hazardous potential of this waste has deteriorated the quality of the environment and negatively affected people's lives. The major participants in the struggles are civilians from the surrounding area, activists, and Naxals. In the initial stages, people used Gandhian methods of struggle like satyagraha and hunger strikes, and they began to defend themselves more harshly due to the continued neglect by the government and officials. In 1992, the released air from the burned waste on the Laloor landfill caused the death of two young men. The people dump the landfill waste in government offices and officials' houses to inform them of their resistance. In 1996, a survey on the water quality in Laloor identified 10 wells that were unusable in Laloor. In 2008, the number increased to 85. In 2009, on July 17, due to the heavy rain, the waste from the landfill yard moved along with the rain. The police arrested the people in the middle of the struggle and charged them with 30 cases during the conflict. After the struggles, the local authorities set up the Decentralized Waste Management Project and the IM Vijayan Sports Academy in that area.

The groundwater contamination in Laloor, a locality in Thrissur district, has been scientifically documented in an article titled "*Physico-Chemical Characteristics of Ground Water Samples from Different Areas of Thrissur District, Kerala State, India*" published in the *International Journal of Environment*. The study evaluated key water quality parameters such as oxygen demand, chemical oxygen demand (COD), total coliform count, and the presence of *Escherichia coli* (E. coli) bacteria . most physicochemical parameters exceeded the desirable limit however they remained within the permissible standards established by the World Health Organization (WHO) for drinking water. Although the total coliform counts in all samples were within acceptable limits, E. coli contamination was detected in samples collected from Thrissur town (T), Guruvayoor (G), and Laloor (L), whereas samples from other areas tested negative for E. coli. The indiscriminate disposal of waste along roadsides, frequent floods brought on by severe rains, and insufficient waste management procedures at hospitals, markets, and residential apartments were all identified by the study as contributing to the deterioration of groundwater quality. These results demonstrate the urgent need for better public health initiatives and trash management in Laloor and the adjacent areas (*International Journal of Environment*, 2018).

The "Characteristics Study on Leachate Samples of Laloor, Thrissur" study examined how groundwater quality in and around the Laloor dump site was affected by leachate percolation. Solid waste from various regions under the Thrissur Corporation—including plastics, metals, glass, rubber, domestic hazardous waste, and organic waste—was collected and dumped at the Laloor site. Rainwater combines with this trash during the monsoon season, causing waterlogging in neighboring residential areas and raising serious health and environmental issues. During the 2018 rainy season, water samples were taken from twelve wells

within a one-kilometer radius of the dump in order to determine the level of pollution. The impacted area's water quality index was plotted using Geographic Information System (GIS) technologies, and several physicochemical characteristics were examined to ascertain how leachate affected groundwater. The investigation verified that local water sources are significantly harmed by leachate percolation. Based on the findings, the researchers recommended the use of membrane filters for analyzing wastewater to obtain more accurate results and emphasized the urgent need to raise public awareness about water quality and pollution in the area (Characteristics Study on Leachate Samples of Laloor, 2018).

Chelora

For more than 60 years, the Kannur Municipality has dumped waste in Chelora, which is around 14 kilometers from the city. Although the region has abundant groundwater resources, the severe contamination of wells and natural water bodies has rendered the area uninhabitable, making access to fresh air and clean water a pipe dream for the locals. What began in 1952 as a municipal initiative to manage waste through the acquisition of 23 acres of land in Chelora- with promises of a factory and local employment- soon transformed the region into a sprawling dump yard. Over the decades, repeated protests and agitations by the local population have been met with political apathy and suppression, including police crackdowns, arrests, and unfulfilled agreements.

Notably, the 1985 agitation was brutally put down, and a 160-day demonstration in 1999 resulted in an agreement brokered by the District Collector at the time. However, this agreement did not provide any concrete outcomes other than the drilling of a single well. Locals have recently renewed protests, blocking garbage trucks and calling for clean drinking water. Plans for bio-gas plants and a new waste disposal facility in Chelora are still pending government clearances. Locals are in a dire condition as a result of the ongoing neglect, which has sparked public outrage and brought attention to the widespread environmental and public health issues in the area (archive, 2012).

Pettipalam

Pettipalam Colony in Thalassery, Kannur district, Kerala, has faced significant environmental and public health challenges due to poor water and soil quality. The area, which spans two acres of land and is inhabited by residents, was previously used as a municipal dumping ground until 2014, and informal waste disposal continues to this day. Soil and groundwater have become severely contaminated due to the accumulation of plastic, organic, and chemical pollutants. These pollutants worsen the already declining water quality and can cause health problems for locals when they wash into adjacent water bodies during rainy seasons. Continuous monitoring and efficient waste management are necessary to solve this issue. M. V. Ramesh et al. (2017) recommend evaluating environmental parameters, such as soil, water, and pH, turbidity, dissolved oxygen, hydrocarbons, and metal concentrations, using a real-time Internet of Things (IoT)-based monitoring system. These sensor systems can help with remediation decision-making and enable timely pollution identification. In particular, the study highlights bioremediation and vermi-composting as potential ecological

solutions, which require precise identification of contaminants to be effective. This IoT-based approach for water quality monitoring offers a technologically advanced way to manage the environment sustainably and safeguard public health. (Ramesh et al., 2017).

Chakkumkandam

After 1970, Guruvayoor developed into a township, marking the beginning of conflicts between the residents of Chakkukandam and the authorities over waste management issues. The high number of devotees and tourists to Guruvayoor temple led to the advancement of the township. However, the improper building regulations made the township a primary cause of people's struggle in Chakkukandam.

The historical conflicts over waste management in Kerala illustrate how environmental degradation has repeatedly provoked civic resistance, particularly in ecologically fragile and culturally significant areas. In Guruvayur, research indicates that the temple precincts generate enormous quantities of municipal solid waste, with estimates suggesting nearly 20 metric tonnes are produced during large ceremonies, such as weddings. The daily accumulation of waste, including approximately 2,750 kilograms from temple functions and over 13,000 kilograms from ancillary establishments such as the elephant sanctuary, has overburdened the fragile local environment (Govind & Keskar, 2015). The absence of adequate waste treatment mechanisms has resulted in untreated sewage being discharged into canals, such as Valiyathodu, which flow into the Chakkamkandam backwaters, severely contaminating water resources and creating adverse health conditions for the surrounding communities (Harikumar, Aravind, & Vasudevan, 2017). Field-based assessments of the Chakkamkandam Lake further confirmed this trend, with the Canadian Council of Ministers of the Environment (CCME) Water Quality Index categorizing the water body as having a "poor status," primarily due to low dissolved oxygen, high ammonia content, and widespread fish mortality (Rakesh & Ammini, 2013). These findings highlight how urbanization driven by pilgrimage, coupled with institutional neglect, has transformed once-productive landscapes into zones of environmental vulnerability, depriving residents of access to agriculture, fishing, and safe water. Consequently, civic resistance in these regions emerges not merely as opposition to waste dumping but as a demand for environmental and life justice, positioning community struggles within the larger discourse on sustainable waste governance in Kerala.

Njeliyanparamb

Njeliyanparamb in Kozhikode is one of Kerala's significant waste dumping yards. City authorities dump waste from urban areas into this village plot. They dispose of more than 300 tonnes of waste in the landfills. The slaughterhouse waste is a significant issue for the people. The waste deteriorated the purity of water in the wells and rivers. In 1994, the people began a struggle against the Corporation. The police charged them with 250 cases. In 2007, 2020, the government initiated a plan for a waste plant and electricity generating plant from waste, but all the initiations failed. In June 2021, a fire happened in the dumping yard.

Vaduvathur

Another plot for the conflicts on waste management happened in Vaduvathur village in Vijayapuram Panchayat. In 1998, the Kottayam Corporation took over the land. It dumped urban waste from Kottayam into the waste plant. Each day, the Corporation disposed of 30–35 tonnes of mixed waste on the five-acre site and burned tonnes of waste daily. The people are being affected by respiratory diseases. The waste from the abattoirs and hotels increased the suffering of the local people. In the rainy season, the people move with wastewater at the knee level. Also, the high geographical area of the waste plants allows the wastewater to flow into the water resource, meenachalattil. Studies of pollution control boards have identified 25 wells in Vaduvathur that have a high presence of coliform bacteria. In 2000, residents formed a strike committee, leading to several conflicts. Political representatives from the panchayats actively joined the struggles. In 2014, the panchayat locked down the dumping yard.

The most renowned civic resistance towards the improper treatment of the waste plant happened in Vilappilsala. The Chovvallur ward in the Vilappilppilsala panchayat at the capital of Kerala has made the plot for these struggles. The conflict between the government of Kerala and the resident people in Vilappilsala started in the year 2000. The authorities initiated the waste plant to manage waste, but it ended up functioning only as a dumping ground. They had selected a plot for the plant in the middle of Kanikanumkunnu to develop a new garden. However, the ruling government later changed this plan for their convenience without consulting the people living in the area. The people are very aware of the impact of hazardous waste. The waste plant polluted their land and air. It poisons their Meenampallithode, which is an important natural water resource. People suffer from pollution. It has destroyed the natural resources and Vilappilsala from the central regions in terms of social activities.

People are struggling against violating the right to a quality of life and environment. 2011, on January 9, people started their struggle; they closed the plant gate to hinder the waste vehicles. They initiated a march towards collecting rete, started longing hunger strike, marched to the offices, campaigns against the waste dumping, people siege the secretariat. The primary factor in this struggle was the decentralized system that supported the people. People's

representatives participated in the struggles of ordinary civilians. The government has used its defense powers to oppress the people and their struggles: Baton charges, cases against the people, and prohibition. People initiated Hartals and closed the shops, schools, offices, and panchayats.

Brahmapuram

In 2007, the Corporation started the waste plant in Brahmapuram, producing manure from waste. Conflicts emerged in the initial stage because the Corporation acquired agricultural land. As a result, the Corporation forced many farmers to abandon their land. Two hundred tonnes of waste was dumped in the plant to regenerate manure from the waste, but the process harmed the environment and the people around the plant. After drying the bio-waste, workers burned the separated plastic waste. This practice adversely affected the air, water, and soil. The primary water resources are kabrayar, chithrapuzha, and manakkapuzha polluted. Some civilians and activists have identified many issues. Other than the environmental and livelihood issues, the interstate migrant workers of the plant were treated worse. They lived in the waste dumping areas. After the efforts of people and activists, the Corporation evacuated the people from there.

In 2019 and 2021, the Brahmapuram plant's fire hazards got worldwide attention. In any case, the government is moving to set up a plant to generate electricity from waste here. The project includes a plant processing up to 500 metric tons of solid waste. Officials claimed 12.65 MW of electricity generation from the waste. Workers will collect and deliver 330 metric tons of unsorted solid waste daily to the Corporation's facility in Brahmapuram (Rubbish Clearance Hackney, 2025). Project proponents claim that the plant will not cause any pollution. They plan to install a bag house filter to prevent air pollution and use lime to neutralize acidic gases released during electricity generation. They also promise to implement a fume monitoring system. According to them, temperature-controlled gasification will reduce the production of dioxins and furans. The project authorities claim they will eliminate the odor-causing particles by spraying water and chemicals into the atmosphere. However, residents strongly oppose the plan, stating they will not allow the plant to operate under such harmful conditions.

5. Conclusions

Civic Movement	Key players	Dynamics	Outcomes	
			Socio-environment	Policy
Laloor Movement	Civilians, activists and corporation	People Vs state	1992 – 3 young people died from breathing polluted air. In 2018, a pollution control board study found 80 wells in laloor became too unusable for the people.	LAMP (Decentralized), IM Vijayan sports academy
Chelora Movement	Civilians and corporation	People Vs state	<ul style="list-style-type: none"> Wells in 500 household contaminated. 22 protesters were remanded and sentenced to 3 moth in prison	Modernized Bio Park
Pettipalam Movement	Civilians, panchayat, political parties	State vs state	Women and children injured in police violence in 2012. Protesters were named by the government authority as terrorist. <ul style="list-style-type: none"> Protester’s tents were burned Cases registered against the parents under the child abuse prevention and treatment act for participation in the participation of children in the protest.	-----

Chakkumkandam Movement	Civilians, township, devasaam, elected representatives	People vs people	The purity of Vayilathode lake has been lost Chakkumkandam lake, which is about 50 acres, has been polluted. Due to that 5000 households lost their right to water.	-----
Njeliyanparamb Movement	Civilians, coporation	People vs state	250 cases registered against the people who protested.	2007-decentralized waste management project 2020-Waste to Energy Project
Vaduvathur Movement	Civilians, corporation and panchayat	State vs state	A study by the pollution control board found that the level of coliform bacteria in 25 wells in the region has increased significantly.	-----
Vilappillsala Movement	People, corporation, panchayat	State vs state	Respiratory problems such as asthma among those who are living within a one a half kilometer radius. <ul style="list-style-type: none"> • Meenampallithode has become toxic. Wedding proposals from the regions have been put on hold.	-----
Brahmapuram Movement	civilians, farmers, migrant workers, activists, corporation	State Vs state	<ul style="list-style-type: none"> • Farmers lost their farmland. In 2019 and 2021, fires broke out in waste plant, causing toxic smoke to spread over more than six villages. • Exploitation of interstate migrant workers. 70 interstate migrant workers and their family evacuated from the dumping site. 	

References

[1] Figueroa, R. M. (2022). *Environmental justice*. In The Routledge companion to environmental ethics (pp. 767-782). Routledge.

[2] Balasubramanian, S. (2023, June 8). *Brahmapuram landfill fire: Points towards the need for decentralized waste management*. The Energy and Resources Institute (TERI). <https://www.teriin.org/article/brahmapuram-landfill-fire-points-towards-need-decentralized-waste-management>

[3] Choudhury, K. (2017, May 1). *Raising a stink: How people power forced a waste-management revolution in Kerala*. The Caravan. <https://caravanmagazine.in/reportage/people-power-waste-management-revolution-kerala>

[4] Devika Kulasekaran, C. (2023, March 28). *How plastics caused fire & affected air, water, soil, life in Brahmapuram*. Down To Earth. <https://www.downtoearth.org.in/news/waste/how-plastics-caused-fire-affected-air-water-soil-life-in-brahmapuram-88504>

[5] Living on Earth. (2013). *Trash in Kerala* [Audio podcast transcript]. Public Radio Exchange. <https://www.loe.org/shows/segments.html?programID=13-P13-00030&segmentID=5>

[6] New Indian Express. (2012, April 16). *Vilappillsala strike enters 100th day*. The New Indian Express. <https://www.newindianexpress.com/cities/thiruvananthapuram/2011/apr/18/vilappillsala-strike-enters-100th-day-245631.html>

[7] Scribd. (n.d.). *Waste disposal—Laloor: Environmental studies project report*. <https://www.scribd.com/document/572922687/EVS-Report>

[8] Times of India. (2012, October 2). *Laloor’s war against waste turns 25*. Times of India. [Archived article; original source no longer accessible, retrieved via media reports]

[9] Varghese, S. (2023, March 31). *Were the recent air pollution and landfill fires in Brahmapuram at odds with Kerala’s vision of sustainable development?* SSRN. <https://doi.org/10.2139/ssrn.5176655>

[10] World Bank. (2020). *Environmental and social management framework: Kerala Solid Waste Management Project (KSWMP)* [Report No. ESMF v1]. <https://documents1.worldbank.org/curated/en/788471589794618595/pdf/Environmental-and-Social-Management-Framework-Introduction-and-Environmental-Assessment.pdf>