

Environmental Justice and Inclusive Governance: Haritha Karma Sena's Role in Reducing Inequities in Kerala's Waste Management

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ABSTRACT

Recognising the increasing environmental and public health problems, Kerala has implemented a decentralised solid waste management approach, which heavily involves community participation and local self-governing bodies (LSGIs). In this context, the Haritha Karma Sena (HKS), a network of green technicians and volunteers, mostly women, has emerged as a key player in the collection, segregation and recovery of waste at the state level. Under the Haritha Keralam Mission, the Government of Kerala has established the HKS units and implemented them through the Kudumbashree and LSGIs wherein regular door-to-door collection of segregated waste, transfer of waste to the material collection facility (MCF) and resource recovery facility (RRF) and awareness initiatives are conducted at the community level. However, more recent evidence points to significant progress by HKS in household level segregation, the reduction of unscientific dumping and the creation of livelihoods for tens of thousands of women from self-help groups, leading to a reconfiguration of grassroots waste governance. In this paper, Haritha Karma Sena is discussed from the perspective of environmental justice and inclusive governance as it is not only a waste collection system but also a gendered labour system and a place for local environmental decision making. Based on secondary sources, government policy documents and recent empirical research, the paper posits a conceptual framework that links HKS interventions to three fundamental aspects of environmental justice (distributive, procedural and recognitional) and inclusive governance principles of participation, representation, accountability and transparency. The discussion emphasizes the role that HKS plays in mitigating unequal access to waste services, environmental risks and access to green livelihoods, while also noting the remaining challenges with low and irregular incomes, occupational risks and lack of recognition of women waste workers as professional environmental service providers. Finally, the paper discusses the implications for enhancing the HKS as a fair and inclusive form of environmental governance and points out areas of future research on gender, environmental justice and decentralised waste management in Kerala.

Keywords: Haritha Karma Sena, Environmental Justice, Inclusive Governance, Decentralised Waste Management, Gender Equity, Kudumbashree, Kerala, Local Self-Government.

Introduction

The large population density, high literacy rate and strong local self-government system in Kerala have given rise to opportunities and challenges in urban and rural waste management, particularly with the increase in the volume of non-biodegradable waste and changing consumption patterns. The

closure of the Vilappilsala landfill and the associated protests among the public highlighted the disparities in the centralised waste disposal system, sparking a shift in Kerala towards decentralized solid waste management, which increased community involvement.

In this changing policy environment, Haritha Karma Sena has been a flagship policy that tries to make waste management work at the ward and neighbourhood level by involving Kudumbashree women and other community actors in the door-to-door collection, segregation, and local processing of waste. Although there are numerous studies that have detailed the technical and operational successes of HKS, few studies have examined the role of HKS in promoting environmental justice and inclusive governance, particularly in relation to gender-based labour, decision-making, and the recognition of waste workers as environmental stewards. This paper is an answer to this gap, by positioning HKS as a site of intersection between decentralised waste governance, gender equity and environmental justice in Kerala.

Background

Haritha Keralam Mission's Waste Management Sub-Mission is a vision of a "clean and green Kerala" through decentralised systems of segregation, doorstep collection and community-level treatment, led by LSGIs and with the help of missions like Kudumbashree, Suchitwa Mission and Clean Kerala Company. As part of this mission, Haritha Karma Sena has been officially formed in 2017 as a professional green team to collect cleaned non-organic waste (and in certain locations, organic waste) from households and institutions, to collect user fees, and to drop waste to MCFs and RRFs for further sorting, recycling and resource recovery.

The HKS units are now integrated in the Kudumbashree neighbourhood group (NHG) structure, are predominantly women led and cover over 1,000 LSGIs, containing thousands of units and tens of thousands of women workers who are undertaking regular waste collection and segregation. The initiative has also integrated waste management as a livelihood opportunity by generating user fee revenue, selling of recyclables and producing of upcycled products and upgraded the capacities of the LSGIs to fulfill statutory obligations as mandated under the national and state level solid waste management rules.

Literature Review

There are a number of recent empirical studies that evaluate the effectiveness of Haritha Karma Sena in sustainable waste management in Kerala. The study of 543 households in different local bodies finds that HKS is significantly more effective in improving segregation, regularity of collection and public perception of waste management services, which in turn helps to achieve environmental sustainability and operational efficiency. Another study on Ernakulam district households indicates that the activities of the HKS volunteers are essential for decentralising waste management system by collecting waste, segregating waste and educating people and their activities positively contributed to increasing the environmental quality and reduction of improper disposal.

Case-based and project reports show that HKS has taken out substantial volumes of non-biodegradable waste from public spaces such as over 50,000 tonnes of waste throughout the state from April 2024 to February 2025, creating a cleaner environment and supporting user-fee based income for women workers and local bodies. Conceptual analyses and policy-oriented papers highlight the importance of a partnership between different agencies – Kudumbashree, LSGIs, Haritha Keralam Mission, Suchitwa Mission, and Clean Kerala Company – linking household-level segregation, collection, recycling, livelihood generation, and public health.

However, most of these studies regard HKS mainly as an operational mechanism of solid waste management, and they mainly focus on the technical performance indicators, including the quantity of waste collected, the frequency of collection, the revenue obtained and the level of household segregation. Some of them do recognize gender aspects, such as the women-led and Kudumbashree-based nature of HKS, but they do not use any explicit environmental justice frameworks, nor do they systematically look at power relations, recognition and participation of women waste workers in environmental governance.

Research Gap

Existing literature on Haritha Karma Sena under-theorises its role in reducing environmental inequities and provides good insights into the operational effectiveness and sustainability contributions. Limited attention is paid to distributive justice – how HKS effects the spatial and social distribution of

waste related benefits and burdens, such as differential exposure to uncollected waste, odour, vectors and health risks, among marginalised groups.

Second, most empirical studies do not systematically address issues of justice relating to procedural and recognitional aspects, including decision-making, representation of women from the HKS in gender-relevant committees of LSGIs, recognition of their knowledge and work, access to fair wages, and access to occupational safety. Third, there is a lack of explicit reference to the connection between HKS and the larger discourse on inclusive environmental governance, with a focus on transparency, accountability, multi-stakeholder engagement, and bringing marginalised voices into environmental policy and planning. This paper thus aims to suggest a conceptual framework which places HKS in the debate of environmental justice and inclusive governance with a specific focus on the issues of gender equity and localised waste governance in Kerala.

Proposed Conceptual Framework/Model

This proposed framework conceptualizes Haritha Karma Sena as a gendered decentralized governance mechanism which connects household level environmental justice practices with LSGI level environmental decision-making across four interwoven domains: (1) environmental justice, (2) inclusive governance, (3) gendered labour and livelihoods and (4) health and ecological outcomes.

- **Environmental Justice Dimensions**

Distributive justice: HKS contributes to a more equitable distribution of the benefits and burdens of the environment through providing greater access to regular collection of wastes, removing too much accumulation of non-biodegradable waste in public areas, and reducing exposure to pollution and disease, particularly in low income neighbourhoods.

Procedural justice: At the ward level, in their interactions with the community, and through their involvement with LSGIs, there are opportunities for participative decision-making, complaints redressal and co-production of waste management norms, but the extent of participation in formal planning and budgeting processes varies across LSGIs.

Recognitional justice: HKS brings the environmental work of women waste workers and women segregators of waste at the household level to the forefront, confronting the invisibility of grassroots waste work and its ongoing struggle with under-recognition, occupational risks and social stigma.

- **Inclusive Governance**

Principles HKS's inclusive governance practices are demonstrated by the fact that women workers are represented in committees, have access to information, a voice in decisions on routes, schedules and tariffs and have mechanisms for accountability and grievance redressal that are fully integrated in transparent LSGI systems. LSGI's efforts to publicly recognize the value of HKS contributions, supply adequate infrastructure, pay wages and user-fees on time, and incorporate HKS into environmental and health committees assist inclusive governance.

In the context of Kudumbashree, HKS is a women-led initiative, in which the paid environmental labor is understood as a form of labor that also extends the role of women in the economy beyond the domestic sphere, but at the same time relies on socially constructed links between women, care, cleanliness and community well-being. The framework places HKS in the wider framework of gendered hierarchy of the waste sector, which often sees women working in low-paid, repetitive jobs, including segregation and collection, and highlights the role of HKS members as professional environmental service providers who are entitled to fair compensation, social security and safe working conditions.

- **Health and Ecological Outcomes**

Efficient segregation, collection, and resource recovery have a positive impact on unscientific dumping and open burning and leads to better air quality, better water quality, reduction in disease vectors, and better public health especially of people living close to informal dump sites. These consequences strengthen the case for considering environmental justice as not only about distributive and recognition justice, but also about the protection of vulnerable communities' health and habitats, achieved through inclusive and participatory governance processes.

Discussion

An environmental justice–inclusive governance approach can shed light on the Haritha Karma Sena as a transformative yet contested institution within the context of waste management in Kerala. On

the other hand, HKS has shown it can increase the frequency of regular household waste collection, particularly for those households not served by formal collections, and thus alleviate distributive inequities inherent in centralised waste collection and inequitable reach of municipal collection services. It has a door to door collection model, along with mini MCF's and RRF's which reduces the visible waste, curtails the unscientific disposal in water bodies and public places and improves segregation practices at the household level among various socio-economic groups.

At the other end of the spectrum, the labor conditions and recognition of HKS members pose questions of procedural and recognitional justice. Despite playing a key role in Kerala's waste governance success story, literature indicates that there are significant occupational health and safety concerns regarding the welfare of HKS workers, such as irregular pay, lack of adequate protective clothing, and social stigma. They are not equally represented in formal LSGI institutions and elected representatives and officials can make decisions on tariffs, routes and infrastructure without sufficiently involving and consulting with HKS members, which weakens the inclusive governance opportunity of the initiative.

Gender-wise, HKS has a negative impact on pre-existing hierarchies in the waste sector, but also also has a positive impact. It disturbs them by creating paid environmental work spaces for women who were hitherto engaged in unpaid domestic waste work, for income generation and public visibility. Meanwhile, women continue to be engaged in activities lower in the waste value chain, including collection and segregation, while men generally dominate in activities that are more capital intensive, like aggregation, transport and ownership of recycling enterprises as evidenced elsewhere in India and waste systems. It is important to acknowledge the expertise of HKS members as a skilled technician and as environmental facilitators, and to ensure their livelihoods are heard in local decision making in order to promote gender equitable environmental governance.

Practical Implications

The analysis points to various concrete steps to make Haritha Karma Sena a stronger institution, one that is environmental justice focused and governed in an inclusive way. First, LSGIs and state missions need to make explicit efforts to include environmental justice and gender equity indicators in their monitoring of the HKS, for instance, tracking service coverage in marginalised wards, exposure reduction for vulnerable groups and participation of HKS members in local committees.

Second, the wage structures, user-fee systems and viability gap funding should be revisited to provide fair, regular remuneration, social security and occupational safety for HKS workers as professional providers of environmental services, and not as informal 'waste collectors'. Third, training programmes through institutions such as KILA, Kudumbashree and Haritha Keralam Mission should include gender, rights and environmental justice modules, which will enable the members of HKS to raise their demands and press for better working conditions.

Finally, participatory governance structures like ward-level green audit committees, public hearings on waste management plans, and social audits of HKS performance can help ensure transparency, accountability, and inclusivity of a variety of community perspectives, including those of HKS women, in local environmental decision-making.

Limitations

This paper is more conceptual and mainly relies on secondary sources such as journal articles, government reports, mission documents, media reports, etc. and does not provide original field information on any particular LSGIs or communities in Kerala. In this way, the proposed framework depicts the means by which HKS has the potential to decrease inequities, but does not necessarily indicate a quantitative causal link between an HKS intervention and an environmental justice outcome, including a decrease in exposure or an improvement in health-related variables.

The discussion is also limited by the differences in the implementation of HKS in various local bodies, in terms of infrastructure, political support, community cooperation and the strength of Kudumbashree network, and how that influences the extent of the realization of the principles of environmental justice and inclusive governance. Furthermore, while gender is highlighted as a key axis of analysis, caste, class, religion, disability and migrant status are not fully analyzed as additional factors that may affect vulnerability to environmental risks or to waste related livelihoods.

Future Research

The next step in research is to take a mixed method approach, with a combination of household surveys, spatial analysis and qualitative interviews, to empirically evaluate the impact of Haritha Karma Sena on the distribution of the benefits and burden of waste across social groups and neighbourhoods within and between LSGIs. For instance, studies could be conducted comparing service coverage, complaints and perceived health outcomes in areas with good HKS unit presence and those with poorer or emerging units, in order to test the environmental justice hypotheses in this framework. Gender-specific studies might include analyses of the employment histories, working conditions, and decision-making power of HKS women compared to other actors in the waste value chain (such as private collectors of waste, waste contractors, and local government workers) to better understand the reproduction or transformation of gendered hierarchies in decentralised waste governance arrangements. Further, longitudinal and comparative research on states could investigate if the HKS model with effective labour safeguards and participatory governance can become a replicable model for gender responsive interventions towards environmental justice in other decentralised waste management situations in India and elsewhere.

Conclusion

Haritha Karma Sena is an important player in Kerala's decentralised waste management system, contributing to better household waste segregation, increased frequency of waste collection, and the creation of an income stream and environmental services from waste across the State. This paper focuses on the possibility of achieving reductions in inequities of exposure to waste, access to services, and livelihoods through the lens of environmental justice and inclusive governance in the context of HKS. Meanwhile, the continuing issues of poor remuneration, inadequate job safety, low access to formal decision-making and social invisibility reveal the importance of acknowledging HKS members as capable environmental actors and introducing gender-responsive justice principles into policies and practice. In this direction, strengthening Haritha Karma Sena can help Kerala move towards its goal of becoming a "litter-free" state, a zero-waste state where the governance of the environment is not only efficient from a technical point of view, but is also just, inclusive and based on the daily work and knowledge of those who manage waste at the grassroots.

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