

Empowering Women through Waste Management: The Gender Impact of Haritha Karma Sena in Kerala

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ABSTRACT

Waste management has emerged as a huge opportunity to understand the interconnections between environmental sustainability, public health, local government and social inclusion. Kerala has a unique institutional structure, where the Kudumbashree network of women plays a pivotal role in the decentralised collection, segregation, transportation and awareness creation of inorganic waste through Haritha Karma Sena (HKS). HKS, which started in 2017 as a micro-enterprise initiative under the umbrella of Kudumbashree and in partnership with the local governments, is a significant shift from a centralized waste-management or contractor-driven waste-management approach to a participatory and gender-responsive approach involving the community. This paper proposes an overview of the gendered aspects of HKS, especially in the areas of women's economic participation, skill development, public presence, social validation and civic engagement. It proposes to consider HKS in the context of a local institutional mechanism that connects livelihoods with decentralized governance and circular economy. Meanwhile, the paper also asserts that the empowering power of HKS is not automatic nor even. Women's involvement in waste management can generate income and increase their social empowerment; the degree of women empowerment however depends on the frequency of payment, safety at work, support from local government and awareness of sanitation work in the public eye. The paper thus takes an analytical stance from a balanced perspective: while HKS has clear transformative potential, it also shows that tensions remain with regard to stigma, precarious work, uneven implementation and incomplete formalisation. In this paper, the available policy material, institutional documentation and emerging body of case-based literature is synthesized to conclude that HKS offers a viable framework to understand how decentralized waste governance can help empower women and promote inclusive local development in Kerala and that it also identifies structural conditions for making the effects of such empowerment lasting and equitable.

Keywords: Haritha Karma Sena, Women's Empowerment, Waste Management, Kerala, Kudumbashree, Decentralized Governance, Circular Economy, Gender and Development, Environmental Governance, Social Inclusion.

Introduction

The concept of waste management has been shifted from the mere technical scope of collecting and disposing waste. It has grown into a multi-dimensional discipline related to public health, environmental sustainability, local governance, labour relations and social justice. In many developing situations, decentralized systems are now being used to enhance the segregation of waste, door-to-door collection and community awareness about the environment through the labor of local group of women together. swachhbharatmission.Kerala offers an especially salient context for exploring this relationship: its model of decentralised development, robust local governments and Kudumbashree women's network have created a very community-centric approach to waste governance.

In this context, Haritha Karma Sena stands out as one of the most prominent institutional innovations in Kerala's waste management scene. HKS is a team of workers who are from the Kudumbashree network and are engaged in collecting, sorting and delivering inorganic waste to the proper agencies for processing and end disposal. It was initiated in 2017 under the Nava Kerala Karma Paddhathi and is implemented under a micro-enterprise system under Kudumbashree. Official descriptions say that the HKS members pick up non-biodegradable waste from households and establishments, categorize it into several categories and facilitate its transport to downstream entities like shredding units and the Clean Kerala Company.

But the importance of HKS is not just the trash it processes, it's the sort of work and citizenship it creates. The worker of HKS is not only a sanitation worker in a narrow sense of the word. They are local environmental mediators, reach into homes, influence how to segregate waste, collect waste according to user-fee arrangements, and are the public face of decentralized waste governance. HKS comprises mostly of Kudumbashree women and the model also provides an important analytical perspective on how environmental service delivery can influence women's livelihoods, skills, dignity and engagement with public institutions.

This paper investigates the issue of gender impact of Haritha Karma Sena in Kerala as a conceptual and analytical issue. Its essence is that HKS needs to be understood as a gender responsive institutional mechanism, which connects women's economic participation with the decentralised governance and the circular economy agenda. Yet the paper also suggests that empowerment in HKS is still premised on certain conditions. It relies on compensation mechanisms, workplace health and safety measures, support structures, and social acceptance of the work, which is often met with stigma. The paper consequently does not simply focus on celebratory accounts of the model, but rather takes a critical approach that sees both the transformative promise and structural constraints of the model.

Background

Kerala's waste management problems have emerged as a result of the country's rapid urbanization, shifting consumption trends and rising waste flows of non-biodegradable materials. Previous methods relied on centralized disposal or scattered collection methods that have been hard to maintain. According to the Local Self Government Department, by the middle of the 2000s, centralized organic waste collection plants, so-called Clean Well Units, were set. But, as centralized treatment plants were not available, the long-term sustainability of those interventions was compromised. This institutional environment promoted the change towards treatment of organic waste on site and to more structured inorganic waste collection.

The broader development context of the state is also of great significance. Kerala has a very good local government structure, with well-established local government bodies and a tradition of participatory planning. The women-centric poverty eradication mission of the state, namely Kudumbashree is a significant platform which has facilitated women's collective action, enterprises and also the mobilization at neighborhood level. At the intersection of these two trends lay the need for more efficient decentralized waste management and the availability of a big and organized group of women with experience in collective action and local development, namely the HKS.

Haritha Keralam Mission, Suchitwa Mission, Clean Kerala Company and local bodies are said to be involved in the management and execution of HKS, where women workers serve as the basis of the institution and the local bodies have the authority to choose and oversee the execution. The relevance of this governance structure is that it demonstrates the non-isolation of the HKS selfhelp project but it's integration in an inter-institutional model of decentralized public service provision. This structure can be used to understand analytically the significance of HKS for environmental governance and gender studies.

Historical Development

The evolution of HKS could be seen as a part of the process of transitioning from waste disposal to waste governance in Kerala. Much of the early work on waste management focused on waste collection and treatment, and did not necessarily lead to sustainable community engagement or source level changes in behavior. Household segregation, community engagement, and local collection routes became newly highlighted as part of the subsequent focus on decentralized systems. In this institutional context, the participation of women became more and more central.

The initiation of the formation of Haritha Karma Sena was started in 2017 under Nava Kerala Karma Paddhathi with local self-governments. It was conceptualised as a "micro enterprise" under the

Kudumbashree and aimed at professionalising the decentralised inorganic waste collection. HKS members were given tasks on collection, transportation, sorting, recycling support and waste management etc. in cooperation with local governments and related missions.

The scope of it grew very quickly. According to the official state-level document, in Kerala there are over 36,000 HKS workers in local self-governments and the subsequent state communication revealed 35,214 women working in 4,438 units and collecting 50,190 tonnes of non-biodegradable waste from April 2024 till February 2025. The same source indicates that the women-led units made Rs. A total of Rs. 341 crore was collected as user fees and Rs. During that period, 7.8 crore was collected by handing over the segregated wastes to the Clean Kerala Company. These statistics show that HKS has grown from a local innovation to a significant statewide decentralized service delivery and women's livelihood development infrastructure.

Functional diversification has also occurred in the history. In addition to waste collection, official reports mention that the members of HKS are involved in micro enterprises related to waste disposal including cloth bags, paper bags, environmental friendly materials, composting and maintenance of the existing waste disposal systems. The expansion is significant because it represents a change from a sanitation service to a more comprehensive green livelihood platform. Diversification in a gender perspective can expand women's income opportunities and reinforce their role as environmental entrepreneurs and not just waste collectors.

Fundamental Concepts

Women empowerment is the first key concept of this paper. Empowerment, in the context of HKS, cannot be viewed simply in terms of labour force participation. A more meaningful interpretation entails income generation, gaining of skills, bargaining power, mobility in public space, recognition by institutions, and participation in local decision-making processes. This bigger picture is vital because women can be drawn into paid work without secure, dignified and autonomous outcomes.

The second one is decentralized governance. HKS is integrated with the local government and relies on close cooperation between households, elected institutions, mission and waste-processing facilities. In the context of this, decentralisation is not only administrative devolution, but also the transfer of responsibility for the governance of waste to the community and neighbourhood level. As HKS workers work directly at the nexus of homes and institutions, they turn into front line actors for decentralized governance.

The third idea is that of the circular economy. According to official descriptions, HKS is concentrating on collecting and segregating non-biodegradable waste and redirecting it to recycling processes, such as plastic shredding and reuse options. This follows the principles of the circular economy: Recovery, Reuse, Material Recirculation rather than Disposal. HKS also makes its contribution to the local circularity system, better sorting of materials and minimising the risk of waste being dumped in the open or mixed irretrievably.

The fourth concept is the dignity of labour. A consistent feature of the state and institutional narratives is that society needs to recognise the role and contribution of HKS workers and respect the dignity of their profession. This focus is not an accident. It brings to light an awareness of the fact that often waste work is socially devalued, even though it is environmentally necessary. The dignity question is thus a key to see if HKS truly promotes gender justice or if it merely reallocates stigmatised work to women in a developmental context.

Current Methods and Operational Model

The HKS model focuses not so much on the top end of the technology, as on the institutional organisation, the routine collection systems and the socially integrated service delivery. According to official descriptions, workers visit at least 250 households, and collect non-biodegradable waste. In other formal descriptions, two Green Technicians are assigned to each ward and one supervisor supervises a cluster of wards, who also are responsible for reporting and collection of user fees. As these operational details reveal, HKS is a hybrid of neighborhood level labour and a standardized service architecture.

HKS separates waste into several categories depending on the material plastic, metal, bulbs, PVC, bottles, e-waste parts etc. The waste is then dropped off at the waste processing or shredding facilities, including the channels operated by the Clean Kerala company. This approach enables source-level segregation to be reinforced due to the multiple interactions with the household after collection and sorting. It is also a labour intensive system, yet is socially adaptive as workers interact with residents and establishments on a regular basis.

In addition, a behavioural element is part of the method. As HKS workers are working daily with households, they are directly involved in sensitizing households on segregation and compliance. For the model is not only based on logistics but on social contact as well. One of its unique features is that it is in particular a repeated environmental communication right at the doorstep, which can lead to better long-term engagement in decentralized waste governance, unlike systems that are purely contractor-led.

Meanwhile, the operational model is based on user-fees supported collections in many areas. This can result in financial accountability and local ownership, but may also put workers at risk of conflict with households over payment, or irregular cash flows and income insecurity. The success of the implementation therefore relies strongly on the support of local governments, route management, facility availability and the effectiveness of downstream recycling channels.

Gender Impact and Women's Empowerment

The gender relevance of HKS is firstly its ability to generate large livelihoods for women. According to official sources, HKS is a women-centric programme which is linked to Kudumbashree neighbourhood groups and operates in the various local governments in Kerala. The membership of women is significant, as evidenced by state communications, which report that there are more than 35,000 members. This means that HKS is not a niche pilot, but a significant platform for paid work of women in the environment.

One of the most apparent routes to empowerment is income generation. As per the official state reporting, members of the HKS received Rs. As user fees and Rs. It has generated 7.8 crore by handing over sorted waste in a recent reporting period. Case level reporting of Erattayar Grama Panchayat shows that the members made Rs. 10,000 and Rs. 25 000 per month by waste collection and associated activities. These values are widely different depending on the locality, but they illustrate that, with good organization of local systems and connections with other businesses, women can generate significant income through HKS.

There is also a second pathway that is skill formation. HKS workers are defined as Green Technicians and Green Supervisors, who are involved in collecting, sorting and reporting, and coordinating operational activities. These positions include a hands-on understanding of the material sorting process, the local logistics, community communication, and in some cases digital and administrative work. This skill development can empower women, increase their confidence and expand their ability to interact with formal institutions outside of the home.

Public visibility is the third pathway. Women's labour is frequently limited to lowly valued, informal work or domestic work that goes unrecognised. By putting women in visible, community engaging roles with sanitation, environmental protection and local governance, HKS changes this. They are routinely seen in the street, ward and public campaigns thus offering a form of civic presence that could influence perception of women's work and public voice. In this regard, HKS offers not just a way of earning income but also of representing women symbolically in the public sphere.

Civic involvement is a fourth pathway. The HKS workers communicate with the households, institutions, local authorities and waste infrastructure networks. It is through these interactions that they are involved in the day-to-day management of environmental compliance. They aren't just carrying out directives they are shaping residents' habits, disseminating information and standing as neighborhood middlemen between state policy and people's behavior. This type of engagement is significant for women's leadership and grassroots citizenship.

However, empowerment is still a conditional form. There is a wide variation in income and occupational support across contexts, as can be seen in the local accounts. Workers seem to benefit more from having livelihood security when user fees are collected in practice, accident support is available and value addition enterprises are created. In less benign settings, the same model can create undignifying, unwelcoming, and unwarranted workplace burdens, with no commensurate welfare or bargaining power. It is therefore important to see the gender effects of HKS as a relational and institutional effect and not as an automatic one.

Comparative Analysis

Compared to the municipality or disposal waste systems, HKS shows clear advantages in neighborhood penetration, source separation and citizen engagement. Official descriptions focus on door-to-door and home-to-home pickups, sorting by category, and frequent engagement with homes and businesses. The attributes of HKS render it more effective at inducing behaviour change as compared to

models that only intervene at the disposal stage. Decentralized systems also provide for the distribution of waste governance from distant facilities to local ones and communities.

HKS has greater social embeddedness than contractor-led systems. Workers are drawn from Kudumbashree and are socially closer to the residents and have a more explicit mandate of development. This can help increase trust, awareness and responsiveness. It also incorporates a social inclusion aspect which is not found in many privatised systems, because the work is also an environmental management and women's livelihood generation.

Even so, compared to formal, public-sector jobs, HKS jobs could still be more fragile. Official and case-based documentation indicates that the collection of user fees, support from local bodies, and efficiency of downstream waste transactions could be a significant factor influencing income. This may expose workers to irregular wages, public opposition and weakness of local administration. Hence, HKS is a middle ground that is more participatory and empowering than top-down and contractor arrangements while remaining less secure than formal public employment.

Applications, Advantages, and Broader Significance

HKS can be applied immediately in the areas of decentralized inorganic waste collection, supporting household waste segregation, creating awareness in communities and connecting waste to authorized waste processors. It has broader implications as a governance innovation, too. HKS is an example of how women's work can be coordinated into a neighbourhood environmental service to address public sanitation and livelihood generation.

Environmental effectiveness is one key benefit. According to official state material, HKS is able to collect about 10 thousand tonnes of inorganic waste from households and public places each month. The state communications also show 50,190 tonnes collected in the past 11 months. Such gross numbers do not in themselves necessarily report the system-wide efficiencies but do suggest that the contribution from HKS in diversion from roadsides, open dumping areas and water bodies is significant.

Another benefit is livelihood integration. Through the implementation of user fees, remuneration for waste handover and allied green enterprises, HKS can act as a "local green economy platform," instead of just a public sanitation platform. Cloth bag/paper bag collecting units, conducted by the members of the HKS, is mentioned in official accounts, along with environmentally friendly products and compost-related activities. This diversification can help in creating less vulnerability in livelihoods and include women's work in a larger circular economy framework.

An institutional recognition of women's environmental labour is a third benefit. State and mission stories position HKS members as "green workers," and note the importance of recognizing their dignity of labour. This framing is important because it can help influence the public conversation around waste work from a low status manual job to one of critical environmental service work. This symbolic change can help in the overall effort for achieving gender justice if coupled with equitable remuneration, job security, and welfare measures.

Limitations and Challenges

However, HKS isn't without its weaknesses. Continuing stigma around work in waste is one of the biggest problems. Waste labour may be socially devalued at the household and community level, even if public institutions value the labour of members of HKS as green labour. This impacts on Women's dignity, bargaining position and the degree of empowerment is recognized social as opposed to only being celebrated at administration.

A second constraint is the risk of poverty. User fee based collection is explicitly mentioned in the official description, and workers may be dependent on the compliance with payment and the efficiency of collection. This is impressive at the State level, but some variation can be found at the local level. This results in the inequality of some units becoming viable micro-enterprises, some have unstable income, some have delayed payment, and some have weak institutional support.

Another consideration is occupational safety. Waste collection and sorting is physically demanding, exposes to risky material and exposure to hazardous poorly sorted material, and involves risk during transportation. Some local case reporting refers to accident insurance and corpus support in emergencies, but this may be dependent on local arrangements, and may not be guaranteed everywhere. The lack of safety equipment, medical care and formal safeguards could weaken the empowering potential of the model.

Administrative disparities are also a problem. Local self-governments, material collection facilities, downstream agencies, and community compliance are important factors that affect the success of the HKS. In areas where these systems are strong, the model seems to work; in those where they are weak, workers pay the price for the weaknesses in the institutional systems. This is particularly significant in a gender analysis as women may be expected to deliver environmental services where infrastructure is lacking.

Research Gaps

While there is significant institutional and policy rhetoric of the success and growth of HKS, there is a continued need for more systematic academic research on the gendered impacts of HKS. Lived experience is one big research gap. Further research is needed to assess the impact of participation in HKS on women's autonomy, mobility, self-perception, household decision-making power, and time burden. These dimensions cannot be measured with income data.

A second gap relates to differences between local contexts. Kerala comprises of municipalities, corporations and panchayats with varying infrastructural and socio-economic conditions. Case reporting indicates that certain units excel and might provide diversified income while other units continue to be involved in basic collection. Comparative studies could be used to establish the institutional variables that have the greatest impact on empowerment outcomes.

The third gap relates to labour conditions and occupational health. Materials available in the public domain speak to the dignity and contribution, but contain little systematic information on practices for safety, patterns of injury, mental stress, or long-term health effects. Waste labor is physically demanding and socially demanding, and both of these aspects are an integral part of any serious consideration of gender.

The fourth gap is related to intersectionality. Although public stories usually talk of the role of women in HKS, there is little available evidence on the role of caste, class, age, marital status, education, and locality. Otherwise the concept of 'women's empowerment' can serve to obscure significant intra-woman differences. It is therefore important to assess future research which would not only aim at asking if HKS empowers women, but would ask which women, when, and at what cost?

Emerging Trends and Future Directions

There are several emerging trends that suggest that HKS' role in Kerala's environmental governance structure could be even more pronounced. The first is the increasing policy focus on decentralized source separation and material recovery, as well as on minimizing the leakage of inorganic waste into open spaces. The other is the development of HKS in collaboration with green micro-enterprises, like paper bags, cloth bags, and environment-friendly products. These changes indicate a transition from a narrow 'collection service' to a more diversified local circular economy platform.

Another trend is the growing public presentation of HKS as a means of women's environmental governance. Official and institutional discourses highlight that the project is woman-led, community based and professionally organized. This framing can help boost legitimacy and garner policy support. But to make future gains possible will require a shift in this recognition that leads to better labor rights, safer working conditions, social protection and better career prospects for workers.

Future directions should thus be based on formalization but maintaining the community embeddedness. Part of the reason for the effectiveness of HKS is that is local, relational, and flexible. However, the same characteristics can make workers vulnerable to informality and differential protection. The future model could include at the grassroots level a participatory approach, clear mechanisms for the equitable remuneration of participants, insurance, safety measures, electronic monitoring (where relevant), and a formalised system for handling complaints once problems have arisen. These changes would further improve the environmental and gender impacts of the project.

Recommendations

Based on the available evidence, a set of policy and institutional recommendations have been developed to strengthen the gender-transformative potential of HKS.

- Implement periodic and open regular payments, based on standardized payment systems and accountability of local bodies.
- Improve the safety of working conditions with gloves, work suits, masks, transport support, health checks and full insurance coverage.

- Formalization of job roles, documentation of contribution and public recognition of the environmental service provided by HKS workers to improve professional recognition.
- Expand skill development in waste sorting, bookkeeping, digital reporting, public communication, enterprise management, etc. for the workers to shift into higher value jobs.
- Promote livelihood diversification through recycling related business activities, eco-friendly product units and local circular economy initiatives.
- Improve local infrastructure such as material collection facilities, transport systems and dependable downstream processing facilities.
- Support research and monitoring systems to track not only the amount of waste collected, but also the outcomes in terms of the income security, safety, dignity and civic participation of women.

Conclusion

Haritha Karma Sena is one of Kerala's most important experience in decentralizing waste governance and connecting it to women's collective labour. The model shows that inorganic waste governance, when institutionally supported and socially recognised, can be a way to generate livelihood opportunities for women, build their skills, provide access to public space and platform, and enable them to play a civic role.¹

Meanwhile, the paper has stated that empowerment via HKS is by no means granted. It will be transformative if it is regularly rewarded, if the working conditions are safe, if work is dignifying, if there is robust local support, and if there is less social stigma. If these conditions are missing, women's involvement could remain tenuous despite being officially embraced. The real importance of HKS, then, goes beyond the tonnage of waste that it is able to remove; it is about what it exposes regarding the social structuring of environmental labour, the politics of local governance, and the potential of gender-responsive development in Kerala.

Conceptually, HKS needs to be seen as more than sanitation intervention. Its the implementation of circular economy at a local level, decentralized governance, and women's collective action are all examples of the same thing. HKS is a compelling example for anyone interested in waste management, gender, and development, to examine how environmental sustainability and social empowerment can mutually reinforce each other, and how policymakers must pay attention to both the recognition of the need and the provision of structural support.

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