

Semiformal waste management at the community level: A case study of employment opportunity creation in Cape Town, South Africa

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RESEARCH OVERVIEW

This research investigated the role of waste workers in the management of municipal solid waste, using a case study in Cape Town, South Africa. Despite their significant contributions to environmental sustainability and public health, waste workers often face societal marginalization, stigmatization, and low social status. South Africa, with a population exceeding 60 million, generates around 122 million tons of waste annually, of which only 10% is recycled. The rest is typically landfilled or improperly disposed of, causing severe environmental and health problems.

The ZeroToLandfill (ZTL) project in Cape Town's Rosebank and Mowbray suburbs exemplifies an innovative approach to waste management. ZTL focuses on reducing landfill waste through recycling, composting, and horticulture while providing employment opportunities for local unemployed individuals. The project's impact extends beyond environmental benefits, as it also aims to enhance the livelihoods of its part-time employees.

Using the Sustainable Livelihood Framework (SLF), this study assessed how ZTL impacted participants' well-being across five capital assets: human, social, physical, natural, and financial. The findings reveal that participants gained personal development skills, a deeper understanding of environmental issues, and improved social relationships, and financial stability. However, challenges such as inadequate remuneration, inconsistent working conditions, and financial burdens related to commuting were also reported. These challenges highlight the need for comprehensive support systems to ensure the sustainability and effectiveness of such initiatives.



Left | Collection Day- Large truck collecting the recyclate | Right- Vegetable & herb variety grown at ZTL

KEY FINDINGS

Through the ZeroToLandfill waste management project:

- Participants gained new skills and a better understanding of environmental issues.
- Some participants experienced improved financial stability and positive shifts in attitudes towards waste management.
- The initiative fostered a stronger sense of community and mutual respect, demonstrating the value of community-driven efforts.

Challenges Identified:

- High participant turnover rates.
- Transportation costs were a financial burden.
- Discrepancies between participant expectations and project delivery.
- Internal organisational issues affected functionality.

Recommendations for Management:

- Prioritise participant welfare to reduce turnover.
- Maintain transparent and open communication.
- Address transportation challenges through local hiring or better cost transparency.
- Provide continuous training to support participant growth and improve project outcomes.

DEVELOPMENT OF FIVE CAPITALS OF EMPLOYEES WORKING AT ZTL

Through the use of a questionnaire and semi-formal interviews, participants were asked questions related to the 5 capitals to determine any changes that had occurred. A Likert-style questionnaire was used to generate scores for each participant. The results are presented in Graph 1, and a brief explanation is given of the varied impacts that were experienced by participants. Although there wasn't a baseline questionnaire before the project, the questions were formulated to inquire about each participant's perspective change since their participation.

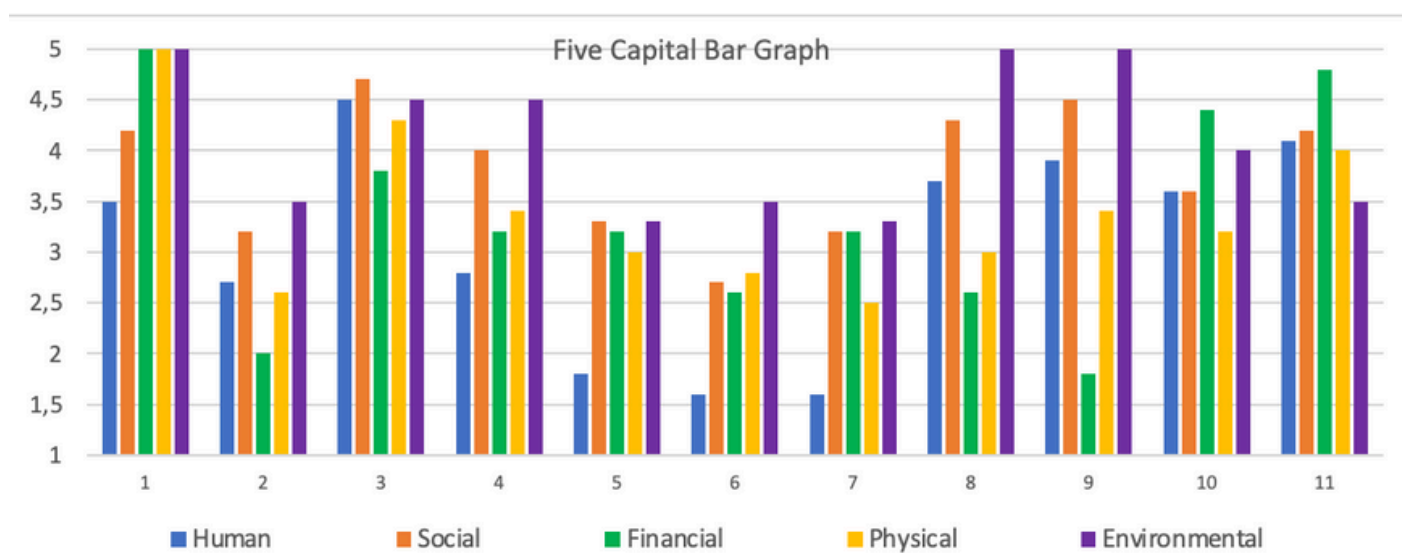
Human capital saw notable improvements through skill development in gardening, recycling, and composting, transforming participants' views and management of waste. This increased awareness and implementation of waste management practices promoted a cleaner environment. Additionally, the project's positive effects on mental health and social interactions underscored the therapeutic potential of community engagement in environmental work. However, job satisfaction varied, with some participants benefiting from new skills and leadership roles, while others faced unmet expectations, poor working conditions, and inadequate compensation, leading to high turnover.

In **social capital**, the project enhanced workplace relationships and community engagement, fostering a "family-like" atmosphere and boosting environmental awareness and recycling behaviours. This collective sense of responsibility and community advocacy generally led to positive recognition within participants' communities. However, challenges like trust issues, internal conflicts, and perceived inequities emerged, highlighting the need for effective management practices to ensure project sustainability.

Financial capital impacts were mixed. Some participants could contribute to household expenses and save for future goals, while others struggled with the high transportation costs that meant there were limited financial benefits for them. Strategic financial practices like bulk buying and monthly planning were adopted by some, yet many found the income insufficient to significantly improve their financial stability. This mirrors broader issues in South Africa's waste management sector, where job insecurity and low wages are common. Addressing these challenges with transportation subsidies, fair wages, and financial literacy training is crucial.

The project's effect on **physical capital** also varied. Some participants benefited as their transport costs were more affordable, while others faced high costs, underscoring the importance of physical capital in supporting livelihoods. Most participants used their income for daily necessities, highlighting the direct link between employment income and essential needs. Challenges like inadequate equipment such as the initial collection of bikes and trolleys and high transportation costs persisted, mirroring issues in waste management co-operatives. Improved workplace conditions, such as better sanitation facilities including toilets that are well stocked, are needed to create a safer and more productive environment. Notably, those who saw financial improvements also reported better access to physical resources.

Finally, **environmental capital** was significantly enhanced by increasing participants' environmental consciousness. The project shifted their perception of waste from rubbish to a valuable resource and expanded their knowledge of waste management, recycling, and composting. Participants adopted sustainable practices and advocated for environmental issues within their communities, reflecting a deepening of environmental capital that benefits individual and community well-being. Despite these positive developments, some participants did not experience significant changes, indicating a need for more comprehensive education and engagement.



Above | Graph 1: The X-axis (1-11) represents each participant and the Y-axis (1-5) represents their scores. 1 being a large negative impact, 3 - negligible change and 5 showing a large positive impact

UNDERSTANDING WASTE: CHANGES IN PARTICIPANTS ATTITUDES AND COMPREHENSION:

The ZTL project has significantly improved participants' attitudes and understanding of waste management, evolving their baseline knowledge to include systematic waste tracking and responsible behaviours like '*no more littering*'. Participants' comprehension of sustainable practices such as recycling and composting has deepened, leading to practical applications at home and aligning with global waste management efforts. The project's influence extends to community benefits, as participants act as educators and ambassadors, promoting recycling and composting within their communities. Initiatives like a community gardening project, where people learn to recycle organic waste for composting and horticulture, demonstrate the project's potential to foster skill exchange and community engagement.



Left| Composting and shredding explained to community | Middle- Community project leader explaining the organic waste recycling process| Right- Community members being shown the organic garden at ZTL

POTENTIAL AND CHALLENGES OF COMMUNITY BASED INITIATIVES

The ZeroToLandfill (ZTL) project has shown the potential to provide employment opportunities for disadvantaged individuals. The project's strategic advantage is evident for nearby residents who benefit from reduced transportation costs. However, high staff turnover, exceeding 66%, reveals significant challenges, including the pursuit of better-paying jobs and transportation difficulties. Participants often see ZTL as a stepping stone to broader career aspirations, gaining valuable skills and experiences in the process. The project also highlights the necessity for comprehensive studies to assess the sustainability and quality of employment opportunities in community-driven waste management initiatives.



Left | Wire cages being used to assist in breakdown of organic matter | Middle- Shredder | Right- Shredded organic waste being collected for cages

RECOMMENDATIONS FOR FUTURE PROJECTS:

- Future initiatives should foster teamwork to ensure social cohesion and prevent workplace cliques or bullying.
- Addressing participants' needs and challenges is crucial for creating an accommodating environment where everyone feels valued.
- Adhering to promises made to participants is essential to maintain satisfaction and reduce turnover.
- To mitigate transportation costs, hiring locally or clearly communicating potential costs to distant participants is recommended.

These strategies will help enhance the effectiveness and sustainability of similar community-focused projects and contribute towards a just transition and the global effort to improve the livelihoods of those most underprivileged

All opinions, interpretations and conclusions expressed are entirely those of the authors and do not reflect the views of the funder, or the African Climate and Development Initiative.

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