COMMUNITY BASED WASTE MANAGEMENT IN URBAN AREAS

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ABSTRACT

Throughout Zimbabwe, urban waste collection rates dropped from at least 80% (mid 1990s) to as low as 30% in some large cities and small towns [1]. Currently, more than 2.5 million tonnes of household and industrial wastes are produced per annum in urban areas and this continues to rise due to unprecedented urban growth rates and absence of waste minimization strategies. Areas worst affected are low-income residential areas and informal settlements, with some not receiving service at all.

The low waste collection levels have triggered widespread illegal open dumping and backyard incineration. This has created negative environmental impacts and increased the health risk of the residents. Open waste dumps are prime breeding sites for houseflies, rodents, mosquitoes and other vectors of communicable diseases such as fever, dysentery, diarrhea, cholera and malaria. Fumes from burning waste causes acute respiratory infections and the odours make the environment uninhabitable. The leachate from the dumpsite pollutes underground water, which is an important alternative water source for the residents. Loose papers and plastics blown by wind result in an aesthetic intrusion of the surrounding environment.

There are various waste management strategies and Practical Action has thus adopted an integrated waste management system to address the problem. The system has 3 ways in which waste is being properly managed in Chitungwiza, Epworth and Mbare. Through technological interventions waste is being converted into marketable products. There are micro-enterprises providing low cost waste management services. Through community health and hygiene extension education and training waste handling has improved and thus contributed to improved health and hygienic standards. One of the key success factors is the effective working partnerships formed between communities, local authorities and private sector. Although the project is still in its infancy, this paper shares the concept, steps followed, impacts and lessons drawn so far.
INTRODUCTION

The challenge of waste management has been a growing concern for the national government, local authorities, environmentalists, researchers and the communities at large. Throughout Zimbabwe there has been an increase in the amount of waste generated at household level yet there has not been the requisite collection and disposal services, let alone an effective waste management strategy to meet the rising challenge. At present about 2.5 million tonnes of both industrial and household waste is generated per annum and only 30% of this waste is collected and disposed off in many large towns and cities. This is a far cry from the previous case of 80% in the mid 90s, which was considered adequate given the urban population then.

The situation has been compounded by the rapid urbanisation, which stands at 30% for Zimbabwe that has seen the demand soaring on the available resources and facilities offered by the Local Authorities (LAs) in the country. Taking the example of three urban areas namely Harare the capital city, Chitungwiza a dormitory town and Epworth which has a combination of both formal and informal settlements there seem to be no solution in sight. Harare has an estimated population of about 3 million inhabitants and the available refuse collection and disposal equipment do not suffice to meet the needs of the city as shown in table 1 below.

Table 1: Current waste fleet disposition. [2]

<table>
<thead>
<tr>
<th>Type of Equipment</th>
<th>Operational</th>
<th>Broken Down</th>
<th>Ideal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compactor Trucks</td>
<td>13</td>
<td>10</td>
<td>60</td>
</tr>
<tr>
<td>Skip Trucks</td>
<td>1</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>Tipper Truck</td>
<td>0</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>Tractors</td>
<td>3</td>
<td>4</td>
<td>20</td>
</tr>
<tr>
<td>Front End Loaders</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Dozer</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Landfill Compactors</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

Chitungwiza is resident to 35,000 households and 60 commercial entities which are serviced by only 7 refuse trucks and the only loader and compactor truck available are broken down while Epworth has 6,000 households in the formal areas that are serviced by only one tractor and the remaining 16,000 households in the informal areas do not receive any refuse removal service at all.

Without delving into the impact of economic crunch currently bedevilling the nation, fuel shortages corruption and mismanagement within the LAs the lack of adequate service provision has resulted in the mushrooming of illegal waste dumps in most open spaces within the urban areas. The chaotic solid waste disposal has put the health of residents at great risk as the open waste dumps are prime breeding sites for houseflies, rats and mosquitoes and other vectors of communicable diseases such as fever, dysentery, diarrhoea, cholera and malaria. These waste dumps are a source of environmental problems such as odours and smoke emissions resulting from rampant waste burning cause acute respiratory infections.

The leachate from the dumpsites pollute the underground water which has emerged as an alternative a source given the current water shortages while loose papers and plastics are blown by wind resulting in aesthetic intrusion of the surrounding environment.

These challenges in urban waste management have continued unabated despite the existence of a conducive policy and legislative environment, which is provided for by, a number of policies and legislative instruments that deal with waste management issues, such as the Environmental Impact Assessment (EIA) Policy, National Sustainable Development Policy, Science and Technology Policy, and the Draft National Environmental Policy, Environmental Management Act (CAP 20:27), Urban Councils Act (CAP 29:15), Water Act (CAP 20:22), Public Health Act (CAP 15:09) and Municipal By-laws.

The absence of an effective enforcement strategy coupled with the lack of innovative initiatives of handling waste has left the local authorities with a mammoth task in their hands. It is against this background that Practical Action is implementing community based waste management initiatives to improve the urban environment with organisations of men and women. The initiatives were born from the realisation that communities themselves can be drivers of change within
THE INTERVENTION STRATEGY

Figure 1: Implementation Model

The intervention strategy hinges on the strength of the partnerships formed and the role of each player is thus illustrated in the implementation model above

Identifying Areas Of Intervention

Baseline surveys were conducted in three Local Authority areas namely Chitungwiza, Epworth and Mbare (Harare). The main purpose of the surveys sought to:

- To inform of the situation on the ground with regards to the current practises
- Establish the quantities and the types of waste being generated
- Investigate the health dimensions relating to waste
- Analyse and review the policy and legislative environment in waste management, identifying existing gaps
- Assess the technologies in use in waste management
- Conduct a waste market chain analysis
- Identify key players in waste management

The findings pointed out to the priority areas of intervention as well as help in the establishment of benchmarks against which the impact of the interventions would be measured

Liasing With Local Authorities

Since the handling of urban waste is the responsibility of the LAs as enshrined in the Urban Councils Act consultations were done at all levels within the LAs so as to introduce the concept of Community Based Waste Management (CBWM). The acceptance of the concept however, was rather slow, as there
appeared to be some hesitation on the part of local authorities when it came to communities offering refuse collection services. These consultation were key because LAs:

- Have the mandate to handle waste hence offloading that responsibility to communities would mean a shift in their traditional practices
- Could easily mobilise the communities through their social services department when the need arises
- Could create an enabling environment for SEs and CBOs to operate without being exposed to the usual bureaucracy associated with LAs
- Could provide the requisite technical and logistical support in waste transportation and disposal
- Could provide ideal and legal operating spaces for the SEs and CBOs

Community Mobilisation

The mobilisation of communities was done through the local authorities, and existing community leadership structures. The identified people formed themselves into either Community Based Organisations (CBOs) which are groups formed within a local community [3] or Micro-Enterprises (MEs), which are defined as a service delivery or production business, usually low capital intensive and consisting of an individual or up to about 20 persons, either registered or operating informally in an area [4]. These have proper leadership structures where gender equality was greatly encouraged to ensure that women take up positions of leadership

Implementing Ground Activities

Before the ground activities could be done, a business perspective approach was used where the established CBOs and MEs are oriented to look at waste management as a business venture and not just community service to ensure sustainability of their interventions. As a result the CBOs or MEs and had to produce business proposals which demonstrated the viability of their businesses. When it came to the implementation stages there was need in some cases to engage in pilot activities as was the case in Epworth where one of the MEs (CNM Environmental Action Group) started with a 6-month pilot refuse collection initiative. This was done as a way of demonstrating the Epworth Local Board that they were capable of offering a consistent and reliable service after which they signed a service provision contract to provide refuse collection services to 961 stands which are home to at least three households per stand. These households received no such service before despite the fact that they were regularly paying for the service.
To augment the waste management services, Participatory Health and Hygiene Education (PHHE) has been offered to the communities through community-based trainers who use tools which cover various diseases, water and sanitation issues and general hygiene aspects. These trainings enabled communities to not only benefit from proper waste management services but also from good health and hygiene practices. To date 3888 (2474 women & 1414 men) people have been trained in health and hygiene issues a move that benefited their households through the cascading effect.

As the implementation gathered momentum the need to raise awareness of the new approaches in urban waste management among the communities became apparent, awareness campaigns were used and as a result there has been tremendous support given to the CBOs and MEs involved in both refuse collection and recycling activities.

**Capacity Building**

The effective operation of the CBOs and MEs has been through enhanced capacity, which encompassed various trainings, which include: Social trainings, to enable them to relate constructively with the communities they serve as well as address the social challenges they would face. The requisite business trainings were given to ensure that all operations are business focused while technical trainings ensured that both the CBOs and the MEs are capable of managing and fully utilising the waste they were handling.

The profile of the CBOs and MEs were raised through participating at multi-stakeholder foras where they would present papers on their experiences and as a result they managed to clinch some new markets as well as drumming up institutional support from participating stakeholders.

**Progress Monitoring**

The monitoring process provided for by both Practical Action and the LAs was done through site visits which enabled interaction with the CBOs and MEs when they are in their field of operation while regular meetings provided for an opportunity to critically analyse progress and plan for the future.

Community surveys provided for opportunities to assess the impact of the initiatives on lives of the people and on the environment.

Results from the monitoring process show a significant reduction on indiscriminately dumped waste in the areas that used to receive no refuse collection service. Opinions of residents indicate a high level of satisfaction and appreciation of the new initiatives especially with the reduction of diarrhoeal and malaria cases which were caused by poor hygienic practices and vectors from indiscriminately dumped waste.

**CHALLENGES AND CONSTRAINTS**

The implementation of the community-based initiatives was not without its own challenges, which emanated from various issues such as the stigma associated with waste handling and bureaucracy form LAs. The impression that waste is a ‘dirty’ job has been imprinted in the minds of many people to the extent that mobilisation of the community to be involved in the waste related initiative took a considerable time before people could participate.

Hesitation from LAs to allow for CBWM was a major stumbling block, as the concerned LAs could not decide progressively so as to embrace the concepts. The commonly cited example was the failed attempt by Harare City Council to sub contract refuse collection services, at the turn of the decade a move that proved to be their major undoing with regards to service provision.

**LESSONS LEARNT**

The implementation of the CBWM has so far given valuable lessons among them are the following:
➢ The health and hygienic conditions of communities can be significantly improved by participatory innovative approaches that take knowledge to the people
➢ Peer education has worked and needs to be replicated in other areas. It is an effective tool and works effectively as a low cost awareness raising technique that builds the confidence and trust among the community members and helps to bring the community together
➢ Enterprise development need financial and technical support especially in low income areas as many may have the energy and passion but will be incapacitated by a poor asset base
➢ Access to markets is limited for individuals involved in waste management activities like recycling because many recycling companies only accept bulk supplies which are normally difficulty to gather
➢ There is need to look for alternative markets for the recovered products from waste as the available markets offer low and unattractive prices to sustain MEs
➢ Giving up or sub contracting of services in the traditional sector occupied by LAs has been a challenge taking a cue from past experiences from the City of Harare
➢ Policy issues need to be addressed around handling of waste so that the sector can be opened up to more players to ensure a healthy and hygienic environment for the communities.

SCALING UP TO OTHER TOWNS AND CITIES

Based on the lessons learnt so far the integrated waste management system can be best adopted in other towns and cities if the community based waste management model is embraced by all stakeholders as a working model worth implementing. A wholistic approach is required which will not only look at waste when it becomes a problem but one that will address the policy and legislative environment, health and hygienic issues and the socio-economic dimensions relating to waste. There is need for an effective participatory engagement of the key stakeholders who include: the Ministry of Environment and Tourism, the Ministry of Health and Child Welfare, Ministry of Local Government and Urban Development, LAs, finance institutions, NGOs, private sector and the communities at large.

The role of the Ministry of Environment and Tourism will be to spearhead the formulation of a comprehensive national strategy that provides for a conducive policy and legislative environment which takes into cognisance the afore mentioned issues relating to waste. The Ministry of Health and Child Welfare will have to play an active role in addressing the health and hygienic issues and design programmes that can easily reach the people at the grassroots level. The Ministry of Local Government and Urban Development, the parent ministry for LAs will have to render more support for the technical and budgetary decisions taken by different LAs towards this new initiative. LAs who are mandated by the law to ensure that waste is managed well within the areas of their jurisdiction will have to provide a conducive operating environment for the local people by providing legal operating spaces, technical and financial support in cases where they contract CBOs or MEs to do refuse collection on their behalf.

Finance institutions and NGOs will be key in the provision of the much needed start-up capital while NGOs can further provide the requisite business and technical skills. The private sector who are the major consumers of recyclable materials will have to come up with competitive pricing structures for the goods they buy from the community for sustainability purposes while at the same time introducing technology transfer programmes that would enable CBOs, MEs or even individuals to add value to the waste they would have collected. The interested communities be they CBOs, MEs or individuals have to approach the whole process with a business focus so that they take up the different waste management activities as a source of livelihood that has a benefit of improving their living environment.

The successful adoption of the community based waste management model can be achieved if it is preceded and supported by effective public awareness campaigns in which case both the print and the electronic media become very handy.

CONCLUSION

The community based waste management model has so far proved to work when there is full Local Authority support and success is possible when the members of CBOs or SEs offering the service are form within the same community. The model has not only addressed the environmental problems resulting from poor waste management but has to a great extent contributed to the establishment of good health and hygienic standards which have led to the reduction of diseases such as fever, dysentery, diarrhoea, cholera and malaria. . Although the project in its infancy the results achieved so far indicate
great potential for the improvement of the living environment through processes that are managed by communities

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