



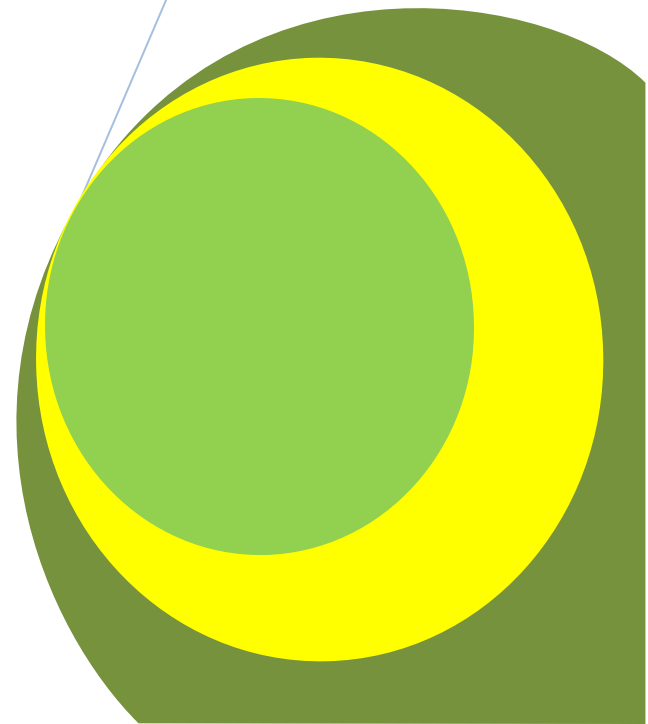
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Waste Disposal Practices That Involve Communities

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Research Article

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ABSTRACT

The aim of the study was to explore challenges faced by local authorities in the management of solid wastes, and to establish the kind of linkages that exist between the ratepayers and local authorities. The study also focused on discovering what information needs exist among urban ratepayers about waste disposal. A descriptive survey design was used and involved informants from Bindura Municipality. These included council officials, ratepayers and the business community. The main questions of pursuit were:

- What challenges face the town in its efforts to dispose of solid wastes?
- What information about waste disposal do ratepayers of the town have?
- What linkages should exist between local authority and ratepayers to ensure effective waste disposal?

The data collected were transcribed and themes developed in line with existing theories. Percentage frequencies were also computed for the quantitative data. It was hoped that the results of the study would help to create baseline knowledge for funding proposals in waste management. Community participation will also encourage entrepreneurs to play a meaningful role in the town's waste management programmes.

Keywords: Waste, Communication, and Participation.

INTRODUCTION

Waste management is the collection, transport, processing, recycling or disposal and monitoring of waste materials. The term usually relates to materials produced by human activity and is usually undertaken to reduce their effect on health, the environment or aesthetics. Dealing with waste has become a growing challenge for all urban councils and authorities the world over. The fact that people live means that they have to consume and with consumption comes wastes that need to be disposed of.

According to de Blij and Murphy (1998: 464) "If anything has grown faster than population itself, it is the waste generated by households, communities, and industries- much of it a matter of bulk, some of it a source of danger". In the developed world, garbage is seen as a potential resource through a system of reusing, recycling and recovering value from waste. According to the Sustainability Report (2010:46) the American company Waste Management sees garbage as a resource.

From the moment the waste leaves the curb, it can go to a recycling centre to be repurposed for further use; to a clean power plant for use as fuel to provide renewable energy; to a composting facility where organic waste can be converted into nutrient-rich soil amendment or a high octane vehicle fuel; or to a landfill where it creates energy as it decomposes.

In the third world, and likewise the Zimbabwean situation, refuse collection is the burden of local councils which collect garbage on behalf of the rate-payers. Local authorities have in place policies for management and disposal of garbage. Such policies are enunciated in council by-laws. Due to challenges not only relating to finances, but also a lack of effective communication between council and the rate-payers among others, the burden of waste disposal remains a perennial challenge in most local authorities in the developing world.

The purpose of the study was therefore to explore challenges faced by the Bindura Municipality in the management of solid waste, and to establish the kind of linkages that exist between council and rate-payers in relation to waste disposal. The study also focused on discovering what information needs exist among ratepayers about urban waste disposal.

According to the Municipality of Bindura by-laws (Refuse Removal) Section 4.(i) of 2009, All domestic refuse accumulated on premises shall be removed from time to time and shall be deposited at a refuse disposal site, and the council shall be entitled, in its discretion, either to remove such domestic refuse itself or by its contractors, or to require the owner or occupier to do so at any time under the supervision of the environmental health officer

Background

According to Sapru (1996), the success of any programme of action depends on response to it of the citizens particularly the class of people whom the programme is intended to benefit. Since the late 1960s the term citizen or community participation has come to mean the direct involvement and engagement of communities in the process of administrative decision making, policy formulation and policy implementation. Dillon and Stiefel (1987) further state that people's engagement involves the deliberate and systematic mobilization of local communities around issues and problems of common concern.

In the Sustainability Report of 2010, the Chief Executive Officer of Waste Management (USA), David Steiner, claims that these days, excellence in operations and environmental protection are no longer sufficient to drive urban authorities' success. Rather, there should now be increased conversations and genuine engagement with local residents and community organizations to address their concerns. The question that can be asked is why seek and enlist the involvement of ratepayers in waste disposal practices? Sapru (1996) gives important reasons that should apply, not only to local authorities, but also to other service organizations through community engagement.

Why Community Engagement?

- Community engagement kindles the interest of ratepayers in imparting a new thrust to programmes of which they are the beneficiaries. This means that participation is a means of showing, by their behaviour and action, that they are capable of assuming responsibility.
- It is a means of ventilating their feelings and thoughts.
- Community engagement offers the ratepayers an opportunity to demonstrate their willingness to do constructive work and show that they are good citizens.
- Involving communities in waste disposal can also be seen as a cure for the unresponsiveness and repressiveness of traditional decision making mechanisms.
- Another advantage of engaging communities in waste disposal activities is that the financial burden on council could be reduced since some of the activities could be managed by volunteers or community-based workers.

These reasons about why communities must be engaged in service delivery activities are an indication of the importance of mobilizing and educating the people for full participation. This calls for open, clear and formal channels of communication between ratepayers and council. It was one of the objectives of this study to explore various ways council could engage ratepayers in efforts to improve solid waste disposal. In the *Indian Journal of Public Administration*, Vol. xxxvi, No. 1, Ashokvardhan (1990) asserts that involvement of ratepayers in matters to do with waste disposal can be achieved by persuasion, cooperation, mass education, demonstration and by assisting ratepayers' own associations.

Some authorities have identified certain conditions that must prevail for effective participation of ratepayers in council business that affect their lives, (Sapru, 1996; Harrison, 1988; Ashokvardhan, 1990, and Cohen and Uphoff, 1998). First, and foremost, participation requires that the ratepayers who take part must be knowledgeable. They should be able to express their opinions freely and openly.

Secondly, efforts should be made to keep the participants concerned adequately informed of the matters in which they will be engaged. Thus, the information required for taking part has to be clear, precise and adjusted to suit the ratepayers for whom it is intended. Thirdly, community engagement requires a well-organized communication network. Such networks might include interest groups like residents associations or ward development committees. Fourth, both sides, the council and the ratepayers, must demonstrate willingness to take on responsibility.

The role of council should be to facilitate the process of ratepayers' participation in the disposal of solid waste by creating the right type of institutional infrastructure. Finally, for participation to be effective, an important prerequisite is to carry out a practical survey for which it is intended, to specify its proposed objectives, and to ensure that representatives of the administrative authority (council) who come into contact with the ratepayers have received training which enables them to discuss the matter with the latter, (Rondinelli and Ruddle, 1997). It is hoped that the findings of this study will contribute to the demands of this prerequisite.

METHODOLOGY

This descriptive survey sought to establish the waste disposal perspectives in practice in Bindura Municipality's area of responsibility.

Research Paradigm

The research paradigm in this case was more qualitative than quantitative. According to Polkinghorne quoted in Rudestan and Newton (1992:31) qualitative research methods are especially useful in the "generation of categories for understanding human phenomena and the investigation of the interpretation and meaning that people give to events they experience".

However, it is imperative that qualitative research alone without statistical analysis may be deficient in the interpretation of such data. It follows that in addition to the qualitative aspects it would be necessary to employ the quantitative approach. This is supported by Thomas and Nelson (2001:15) who advocate for researchers to move among paradigms (qualitative and quantitative) in the process of acquiring knowledge.

Research Design

According to Kitchin and Tate (2000) the research design is the framework with which we operationalise the research process.

The main focus was on the ratepayers, council heads of departments and the business community in Bindura municipal area as units of analysis. The research instruments were designed to gather data on refuse disposal from the above informants.

Population and Sampling

According to Bindura Municipality's department of housing, the council has 7 700 households distributed as follows:

- | | | |
|----|-------------|-------|
| 1. | Low density | 1 000 |
| 2. | Chipadze | 3 000 |
| 3. | Chiwaridzo | 3 000 |
| 4. | Aerodrome | 700 |

The 7 700 households were the total population under investigation. A sample of 80 households, representing 1.04% of the total population was selected. A further convenient sample from the industrial, commercial and the informal sectors were added as given below. Since the thrust of this research paper was more qualitative than quantitative, the researchers were satisfied that this proportion was enough for the research to come up with valid views about practices and knowledge of waste disposal in Bindura.

The final sample was, therefore, distributed as follows:

- | | | |
|----|-----------------|----|
| 1. | Low density | 10 |
| 2. | Chipadze | 30 |
| 3. | Chiwaridzo | 30 |
| 4. | Aerodrome | 10 |
| 5. | Industrial area | 5 |
| 6. | Commercial area | 5 |
| 7. | Informal sector | 10 |

Research Instruments

The study focused primarily on urban ratepayers' knowledge of solid waste management and disposal practices. The study utilized the questionnaire, interviews and observation for data collection. The three instruments were viewed as adequate in providing the necessary data triangulation for this study.

Questionnaire for Ratepayers

This questionnaire sought to determine knowledge of solid waste disposal and to establish the challenges they faced in dealing with waste disposal. It also collected data on the communication channels that existed between ratepayers and the council.

Interview

The interview collected information from council directorate and the business community covering three main aspects. Firstly, challenges encountered in solid waste disposal, secondly solid waste disposal practices by ratepayers, and finally the effectiveness of council and ratepayers interaction in relation to waste disposal.

OBSERVATION

An observation schedule was also used to gather data. The purpose of the observation schedule was to authenticate data proffered by the interviewed informants. The schedule recorded data on availability or non-availability of waste disposal facilities, nature of disposed waste, and presence or non-presence of solid waste piles.

Data Presentation and Analysis

Return rate for ratepayers questionnaires stood at 73 out of 80, representing 91.3%. Results for this category of respondents are therefore presented on the basis of information given by these 73 informants.

Table 1: Distribution of Informants by Age

Age Range	Frequency	% Frequency	Cumulative Frequency	% Cumulative Frequency
20-29	17	23.3	17	23.3
30-39	30	41.1	47	64.4
40-49	14	19.2	61	83.6
50-59	9	12.3	70	95.9
60+	3	4.1	73	100
Totals	73	100	-	-

The highest number of informants was between 30 and 39 years of age. Cumulatively, 83.6% of the informants fell under the age of 50 years. The significance of this age distribution could be that most ratepayers are young, probably of some level of education, and in possession of appreciable knowledge of safe environmental practices. This background can present an ideal condition for cultivating community participation in development programmes.

Table 2: Distribution of Informants by Nature of Residency

Nature of Residency	Frequency	% Frequency
Lodger/Tenant	44	60.3
Owner	29	39.7
Totals	73	100

The situation that is presented in the distribution above could militate against the possibilities anticipated in the age distribution discussed in the preceding section. This is in view of the fact that the majority of informants (60.3%) were lodgers and not the owners of the properties. The commitment of lodgers to participate effectively in community programmes aimed at improving waste disposal could be viewed with some scepticism. It could take much mobilization to bring everybody into active participation.

Table 3: Distribution of Informants According to Whether They Had or Had no Waste Disposal Receptacle

Do you have a waste disposal receptacle?	Frequency	% Frequency
Yes	47	64.4
No	26	35.6
Totals	73	100

More than 50% of the informants said they did possess waste disposal receptacles. Only 35.6% indicated that they had nowhere to dispose of the waste created at their places of residence. Though a small figure, the question was how were they disposing of waste then? Most of the informants in this category told the researchers that they were using roadside dumps, and the evidence of this practice was clearly observed in such areas. As to why they did not have receptacles, some said they had no money to buy one, others indicated that they had no knowledge of where to obtain the containers, while yet another group said it was council responsibility to ensure every ratepayer had a receptacle at his/her place of residence.

What surprised the researchers was that these sentiments from ratepayers came at the same time the Director of Environmental Management indicated that receptacles were available and could be purchased at council offices at US\$1 per bag. This harks back to the nature of residency discussed under Table 2 above and also to lack of effective communication between council and ratepayers.

Table 4: Knowledge of Penalties Levied for Inappropriate Waste Disposal

Are There Penalties Levied for Inappropriate Waste Disposal?	Frequency	% Frequency
Yes	7	9.6
No	62	84.9
Abstentions	4	5.5
Totals	73	100

Informants were asked whether there were, or they knew of any penalties levied on ratepayers for inappropriate or careless disposal of waste from their places of residence. The majority (84.9%) said they had never heard of any penalties regarding inappropriate disposal of waste. A small number (9.6%) had some knowledge of regulations governing waste disposal where some penalties could be levied against those flouting them. Four informants abstained that the Director of Environmental Management did concede that council had no by-laws in place then to enforce good waste disposal practices.

This situation could be interpreted as a serious breakdown of the relationship between council and ratepayers, where council is expected to create the legal framework to guide the activities of those that should enjoy its services. The importance of effective and good waste disposal for any urban settlement depends, to a very large extent, on the policies in place, how these policies are implemented, and to what extent the policies respond to ratepayers' needs. A state of anarchy is sure to reign and problems of poor waste disposal may wreak havoc where a town or city is left to run without by-laws to guide the behaviour of residents.

Table 5: Distribution of Informants on Whether They Ever Hold Meetings on Waste Disposal With Council or Not.

Do you ever hold meetings on waste disposal with council	Frequency	% Frequency
Yes	11	15.1
No	62	84.9
Totals	73	100

When informants were asked whether there were meetings held between ratepayers and council on matters to do with waste disposal, only 15.1% of them remembered of such meetings. The remainder, 84.9%, said there were no meetings held between council and ratepayers. It could not be established why a small number of ratepayers agreed that there were meetings held. However, one could assume that notification of meetings was flawed, leading to very few ratepayers knowing about, and attending such meetings.

Table 6: Rating of Waste Disposal Practices in the Town.

Rating Scale	Frequency	% Frequency
Very Good	0	0.0
Good	2	2.7
Poor	29	39.7
Very Poor	42	57.6
Totals	73	100

The informants were given an opportunity to express their overall assessment of waste disposal practices in their areas of residence. Their responses were clearly on the unpleasant side. Ninety-seven percent said the waste disposal practices were either poor or very poor. The implications of these ratepayers' perceptions about the quality of waste disposal is that they know the desirable conditions for a healthy environment and are open to objectively describe their current condition. One would consider this a conducive setting for community mobilization in effective participatory waste management practices.

Business Community

The survey also covered the business area in Bindura town. There is a diversity of business ventures in the municipality area. Such ventures divide into three main groups: the commercial (which include supermarket and department stores like OK and Topics), informal businesses (as in Flea Markets, food preparation and vending) and the light industry where a variety of activities occur. Examples from the sample drawn from the light industrial area included a panel beater's, a steel fabrication and precast concrete producer's, a funeral parlor, a carpentry workshop, a miller's, a hairdresser's and medium scale shops that included a butchery, a hardware, a greengrocer's and car parts sales.

The survey concluded that garbage collection receptacles are available in the main. Out of the 20 respondents, 16 said that they have receptacles of different shapes and sizes, mostly plastic, metal and paper bins. It appeared that the bins found within the central business district are collected at different frequencies according to the respondents. 13 out of the 20 interviewed agreed that council collects their rubbish. What was not unanimous was the frequency with which this service is provided by council. It ranged from twice per week to weekly and at times rarely. This meant that a lot of the paper and plastics generated in supermarkets pile up and end up being burnt in rubbish dumps that have formed behind each of these supermarkets. These dumps, besides contributing to air pollution, are becoming a serious eyesore in the town.

In the light industrial area, however there is no collection of garbage at all. The informants there said they all depend on rubbish pits that they dig behind their premises for disposal of waste. These pits are just dug at the people's discretion; there are no regulations or any requisite standards set by council. Though the funeral parlor has bins, their rubbish, which includes shrouds, gloves, soiled clothing is burnt in a rubbish pit behind the building. The food vendor also disposes of left-over waste in a pit.

It was interesting to note that the other industries have developed ways of utilizing almost all of their raw materials that they are left with very little to dispose of. They do a lot of recycling and the small left-over materials are either sold or used for something else. For example left over pieces of wood are used as fuel for preparing the day's lunch. The wood shavings are sold to chicken breeders who use them as bedding in their coops. The same applies to the mealie-meal residue in the millers; it is sold to the same chicken breeders who mix it with chicken feed concentrates. The panel beaters normally burn paper and plastic, but the tin cans are collected by people who turn them into a variety of household goods for sale. The steel fabricator said there is no small piece of iron that is ever lost, it gets used somewhere and all the left over rubble in the precast section is recycled into future products or used when they erect their concrete structures. Cement bags are sold to people who make them into carrier bags which are then sold in town.

It seems there is ample opportunity for council to establish synergies with the business community to regulate and formalize the disposal of waste in the industrial area. As it is the business people in the light industrial area feel there is nothing that council is doing for them, leading at times to random piling of waste not recycled and

therefore contributing to the pollution of the environment. Of particular note is the rubbish generated in a hairdresser's shop.

Council

This section deals with council's perception as regards waste management in the municipal area.

In interviews, the Director of Environmental Management and the chairperson of the Health Services Committee admitted to inadequate waste management services. They attributed this mainly to lack of equipment such as tractors. Council has two tractors, one new and reliable and the other old and unreliable. These cannot cope with the demands for such services in the entire town.

Though council holds meetings with ratepayers, these meetings seem to be infrequent with very low attendance. The Committee chairperson acknowledged that only three meetings in wards ten and eleven had been held since January 2011. The majority of the ratepayers confirmed that they had never attended meetings with council on waste management.

There appears to be a weak link between the council and the ratepayers. The Prime Minister's directive of 1984 clearly provides for structures that seek to enhance communication between the ratepayers and council. These structures include neighbourhood and ward development committees. Such committees were said to be non-existent in Bindura.

There is no evidence of feedback on council meetings deliberations by councillors to their constituencies. Feedback on committee meetings is only given in full council meetings and does not cascade to the ratepayers. This leads to a lack of support from or compliance by the rate payers.

CONCLUSIONS AND RECOMMENDATIONS

The study revealed that there were challenges faced both by council and ratepayers in implementing effective waste disposal practices. It was clear that communication between ratepayers and council fell short of expected standards. Knowledge of safe refuse disposal was lacking amongst the informants. This has led to a situation where piles of solid waste litter roadsides in Bindura town.

In view of the above the following recommendations are suggested.

- More interaction between council and ratepayers is recommended using structures provided for in the Prime Minister's directive of 1984.
- Council should engage with and involve ratepayers in making decisions that seek to enhance efficiency in council operations.
- The Environmental Management Directorate should come up with programmes that promote acquisition of knowledge on safe waste disposal.
- Council should establish synergies with the business community who already recycle wastes to encourage and regulate the practice.
- Council should expedite the promulgation of requisite bylaws that govern the disposal of solid waste in Bindura municipality.

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Do you hold any meetings with ratepayers concerning waste disposal?

Do you have a waste management policy in place as Council?

How often does the Health Committee meet and how do they report back to the ratepayers?

Please, give an overall evaluation of Council's waste collection efforts?

Appendix C

THE BUSINESS COMMUNITY

Type of business

Where business is located

Do you have a solid waste disposal receptacle?

If "Yes" what type of solid waste disposal receptacle do you use?.

If "No" how do you dispose of solid waste?

How often does Council collect waste from your business premises?

Are there specific days that Council collects waste from your business premises?

If "Yes" indicate the days that Council collects waste from your business premises.